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Motives for Smoking: Who Smokes and Why? How Personality and Motivational Variables
Influence Smoking Behaviours

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Abstract

Many smokers express a desire to quit but have difficulty doing so even with cessation aides. In order to understand why some smokers have difficulty quitting, it is important to understand why they smoke. The Wisconsin Inventory of Smoking Dependence Motives (WISDM; Piper et al., 2004) proposes thirteen different motives for smoking. These motives were compared with four personality variables consistently demonstrated to be correlated with substance use; anxiety sensitivity, hopelessness, impulsivity, and sensation seeking. The Substance Use Risk Profile Scale (SURPS; Woicik et al., 2009) was used to assess these personality variables. Motives for smoking were also assessed with the Reasons for Smoking Scale (RSS; Russel, Peto, & Patel, 1974) and personality variables were corroborated with well-established personality measures, the Anxiety Sensitivity Index (ASI; Taylor, & Cox, 1998), the Centre for Epidemiological Studies Depression Scale (CESD; Radloff, 1977), the Sensation Seeking Scale (SSS-V; Zuckerman, 1994), and the Impulsivity, Venturesomeness, and Empathy Inventory (IV-I7; Eynseck & Eynseck, 1978). It was found that sex was related to weight control motives, anxiety sensitivity scores, and dependence. Anxiety sensitivity scores predicted cognitive enhancement and negative reinforcement motives. CESD scores predicted negative affect and negative reinforcement motives. Sensation seeking scores predicted behavioural choice-melioration and negative affect motives, and impulsivity scores predicted behavioural choice-melioration and loss of control motives.

Motives for Smoking: Who Smokes and Why? How Personality and Motivational Variables Influence Smoking Behaviours

Negative health outcomes associated with tobacco use continue to be the leading cause of preventable death worldwide (World Health Organization, [WHO] 2011a). In Canada, approximately twenty-five percent of individuals over the age of eighteen smoked as of 2003 (Shields, 2007). Tobacco use will result in a premature death for up to half of its users (WHO, 2011b). This is primarily through the development of cancers, particularly lung cancers, or cardiovascular diseases, particularly stroke or coronary heart disease (Shields, 2007). Up to eighty percent of all lung cancer deaths and ninety percent of chronic obstructive pulmonary disease are attributable to smoking (Centers for Disease Control and Prevention, [CDC] 2011). Lung cancer and other cancers are the second and third top disease groups rated according to the World Health Organization's rankings for environmental burden of disease in Canada (WHO, 2009). Smoking has a much wider range of negative effects, however. It has been linked with multiple forms of cancer including esophageal, leukemia, pancreatic, kidney, and bladder. Similarly, the associated chronic diseases are wide ranging and encompass many of the organs of the body. Some examples include stroke, aortic aneurysms, pneumonia, asthma, and reproductive effects (WHO, 2011a). It can also cause bronchitis and emphysema (CDC, 2011).

Unfortunately, the negative effects are not limited to the smoker themselves, but also affect others through second hand smoke exposure. Those exposed to second hand smoke can also suffer from lung cancer, coronary heart disease, reproductive effects, nasal irritation and other respiratory symptoms, middle ear disease and even sudden infant death syndrome (WHO, 2011a). Almost half of the world's children are regularly exposed to second hand smoke (WHO, 2011b). Matt et al. (2011) assert that there is no safe level of exposure to second hand smoke.

Third hand smoke results from exposure to pollutants from tobacco smoke that remains on surfaces or in dust long after initial contact and can include pollutants not originally found in tobacco smoke. The potential negative health implications of third hand smoke may vary from those known of first and second hand smoke (Matt et al., 2011). While all this seems very bleak, cessation reduces the risk of developing all these negative effects (Shields, 2007). Within a year of abstinence, the risk of heart attack is cut in half; within ten years, the risk of fatality from lung cancer is also cut in half; and within fifteen years, the former smokers' risk of a heart attack returns to the level of those who have never smoked (Canadian Lung Association, 2010).

Having such wide-ranging negative effects on health, one might wonder why a person smokes at all. Aside from the physically addictive qualities of cigarettes, there are many motivating factors that may contribute to the initiation and maintenance of smoking and psychological dependence. The task of classifying smokers has been continued in research of smoking behaviours, and different approaches, through their strengths and weaknesses, have provided a growing multidimensional conception that aims to answer the question of why people smoke. One approach to classifying smokers is categorical diagnosis, and is widely used in the health sciences fields. *The Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision* (DSM-IV-TR, American Psychiatric Association [APA], 2000) classifies smokers as either dependent or non-dependent based on criteria including tolerance and withdrawal (APA, 2000). However, other approaches do exist and are widely used. One such measure of dependence is the Fagerstrom Tolerance Questionnaire, which was later revised into the Fagerstrom Test for Nicotine Dependence, which provides a single score for dependence. However, dependence has also been found to be multidimensional, threatening the internal

validity of such scales. While dichotomous classifications can be useful they have also been criticized as ignoring variability (Shiffman, Waters, & Hickcox, 2004).

In response to such criticisms, other approaches have focused more on typology. In 1968, Tomkins proposed four major types of smoking behaviours including negative affect, positive affect, addictive and habitual smoking. His theoretical model was used as a basis for the development of questionnaires, which demonstrated some evidence for his theory. Another approach formulated around the same time, referred to as the McKennell-Thomas Typology sought to describe occasions in which individuals were likely to smoke. Factor analysis of responses demonstrated an “inner need factor” and a “social factor” (Russel, Peto, & Patel, 1974). More recently, the focus in classification has been in multidimensional approaches that provide scores on a variety of factors for each individual. Such multidimensional approaches have strengths and limitations. Obtaining scores on a number of factors may provide more information about a particular individual, but factors overlap, falsely creating high scores in multiple factors that really are measuring a single higher-order factor. Nonetheless, multidimensional approaches, with careful revision and testing, are likely a better avenue at capturing the variability in motives for smoking when compared to dichotomous or descriptive categorizations (Piper et al., 2004).

One such recent classification is the Nicotine Dependence Syndrome Scale (Shiffman, Waters, & Hickcox, 2004), which measures; drive, priority, tolerance, continuity, and stereotypy. Drive refers to the urge to smoke which taps into a need to reduce withdrawal symptoms. Priority refers to the preference of smoking when compared with other environmental reinforcers. Tolerance refers to a need for an increasing amount of nicotine over time. Continuity and stereotypy are somewhat similar in that continuity refers to the tendency to smoke without

interruption whereas stereotypy refers to a pattern of habitual smoking at certain times or in certain situations and is difficult to interrupt (Shiffman et al., 2004). This scale seems a promising multidimensional approach to describing to what degree a person is dependent on nicotine and what factors may sustain this dependence. The Wisconsin Inventory of Smoking Dependence Motives (Piper et al., 2004) focuses on motivational factors that may lead to a greater depiction of why smoking is initiated and more deep reasons for maintenance.

The reasoning behind the WISDM is that though motives are not equivalent to dependence, they serve as underlying indicators of dependence (Piper et al., 2004). Another advantage to this approach is that different levels and types of dependence can be represented. By measuring multiple types of motivational factors, levels of dependence can be assessed through the strength and number of motivational factors associated with an individual's use. The WISDM measures thirteen factors: automaticity, affiliative attachment, behavioural choice-melioration, cognitive enhancement, craving, cue exposure-associative processes, loss of control, negative reinforcement, positive reinforcement, social-environmental goals, taste and sensory properties, tolerance, and weight control (Piper et al., 2004). These subscales have been shown to be internally consistent in multiple trials (Piper et al., 2004; Shenassa, Graham, Burdzovic, & Buka, 2009; Smith et al., 2010).

In the WISDM (Piper et al., 2004), affiliative attachment refers to an emotional attachment to the substance in question. Automaticity taps into habitual use without intention or awareness. Behavioural choice-melioration refers to use despite restrictions or consequences. Cognitive enhancement measures use for the purposes of increasing cognitive functioning. Craving refers to the craving itself or use in response to craving. Cue exposure-associative processes taps into a link between external cues and urges to smoke and the frequency of

encountering such cues. The loss of control measure is based on the logic that once a person is dependent they feel that their use is no longer under their control. Negative reinforcement refers to use to alleviate negative states whereas positive reinforcement refers to use to induce pleasant states. Social-environmental goals refers to modeling or encouragement of use within a social context. Taste and sensory properties measures use motivated by the sensory properties associated with use. Tolerance refers to an increasing amount of the substance needed to achieve desirable effects and the ability to use such amounts without toxicity. Weight control refers to use motivated by a desire to control appetite or weight (Piper et al., 2004).

Through repeated testing of the WISDM it has been suggested that there are four primary dependence motives and nine secondary dependence motives. The primary dependence motives identified are automaticity, loss of control, craving and tolerance whereas the nine secondary dependence motives are affiliative attachment, behavioural choice-melioration, cognitive enhancement, cue exposure-associative processes, negative reinforcement, positive reinforcement, social-environmental goals, taste-sensory properties and weight control. It has been suggested that this distinction may be key in determining the progression from elective smoking to compulsive smoking (Piasecki, Piper, Baker, & Hunt-Carter, 2011). Thus, the WISDM may be a particularly useful tool in determining the motivation behind smoking and the degree to which a person has become dependent.

Pihl and Peterson (1995) described personality differences relevant to addictive disorders in relation to individual variability in psychobiological systems that govern motivation. Put simply, a person may be motivated toward the same action for different reasons, which have a psychobiological basis. For example, someone high in anxiety sensitivity may use tobacco to ease symptoms of anxiety, whereas someone who suffers from depressive symptoms would be

motivated to use tobacco in order to lessen those symptoms. More specifically, the psychobiological systems Pihl and Peterson (1995) identified included cues for punishment, also called threats, unconditioned rewards, also called satiating agents, incentives, also called cues for satiation, and unconditioned punishments. A genetic or learned predisposition in how these four systems influence a person's behavior may explain individual differences and vulnerabilities in substance use initiation, continuation, and dependence (Pihl & Peterson, 1995).

These individual personality differences often pre-exist initial use of tobacco and can influence the continuation of use (Hu, Davies, & Kandel, 2006). One higher order personality factor known to be associated with cigarette use is neuroticism. Joseph and Papakryiazi demonstrated that smokers who scored more highly in neuroticism used cigarettes as a means to control negative affect (1998). Woicik et al. (2009) proposed a negative reinforcement pathway which arises through two different motivational processes mediated by anxiety sensitivity and hopelessness, which are lower-order dimensions of the personality trait neuroticism. More specifically, depression-proneness, anxiety-proneness, sensation seeking, and impulsivity have been shown to be correlated with problematic patterns of substance use. This may be explained by differential sensitivity to different types of reinforcement including positive incentive or negative reinforcement.

The Substance Use Risk Profile Scale (SURPS) was developed under this theoretical assumption of personality factors being linked to differential patterns of substance abuse (Woicik, Stewart, Pihl, & Conrod, 2009). The four factors it measures, anxiety sensitivity, impulsivity, hopelessness, and sensation seeking have been shown to be particularly relevant for substance use in general, and tobacco use specifically (Krank, Stewart, O'Connor, Woicik, Wall, & Conrod, 2011).

Anxiety sensitivity has been defined as a cognitive variable that is differentially expressed and is characterized by a person's fear of symptoms of anxiety based on the idea that they may be harmful (Armstrong, Khawaja, & Oei, 2006). These consequences may be perceived to be damaging in a physical, psychological, or social context and a person who scores highly in anxiety sensitivity often reacts with avoidance (Mullane, Stewart, Rhyno, Steeves, Watt, & Eisner, 2008). In a study with adolescents, symptoms related to anxiety were correlated with an increased likelihood of smoking initiation and the transition from casual to regular use (Johnson, Stewart, Zvolensky, & Steeves, 2009).

Anxiety sensitivity has important implications for cessation success as well. Higher scores in anxiety sensitivity have been shown to correlate with an increased risk or relapse prior to a quit attempt, especially during the first week (Mullane et al., 2008). It has been suggested that this is due to them having particular difficulty with the symptoms of withdrawal and being more motivated to relapse to relieve negative symptoms of withdrawal or anxiety symptoms (Battista et al., 2008). Furthermore, it has been shown that those who score higher in anxiety sensitivity retrospectively report the symptoms of withdrawal prior to quitting smoking as being more intense (Zvolensky, Baker, Leen-Feldner, Bonn-Miller, Feldner, & Brown, 2003). The culmination of these studies gives us a conception of how anxiety sensitivity is related to smoking initiation, maintenance, and difficulties surrounding cessation attempts.

There has been past evidence to support that depressive symptoms in general are related to smoking behaviours. Studies have shown that smokers are up to twice as likely as nonsmokers to have a history of major depression and that measures of depressive symptomatology before a cessation attempt are predictive of relapse (Leventhal, Ramsey, Brown, LaChance, & Kahler, 2008). Hopelessness, a component of depression, has been related to coping motives for

smoking including negative reinforcement processes specific to depression (Woicik et al., 2009). Hopelessness can be defined as a person's negative expectancies concerning themselves and their future (Beck, Weissman, Lester, & Trexler, 1974). Malmberg et al. found that hopelessness was correlated with the early onset of substance use, possibly because those individuals who score highly in hopelessness, and anxiety sensitivity, are more sensitive to negative reinforcement processes associated with substance use (2010).

Sensation seeking is the desire to experience new, varied, or intense sensations and engaging in risky behaviours in order to do so (Lee, Perkins, Zimmerman, Robbins, & Kelly, 2011). It has been linked to polysubstance use and increased frequency or intensity of use of a variety of substances (Woicik et al., 2009). Specifically in regard to smoking, those high in sensation seeking are at greater risk of initiation and a higher amount of tobacco use, and decreased odds of successful cessation (Kahler, Spillane, Metrik, Leventhal, & Monti, 2009). Smoking individuals tend to score higher in sensation seeking than those in the general public who do not smoke (Kraft & Rise, 2004). It has been suggested that those who score high in sensation seeking are more sensitive to the reinforcing properties of smoking (Lee et al., 2011). One suggestion is that those who score high in sensation seeking are chronically under aroused, and therefore are particularly reinforced by the stimulant properties of cigarettes (Carton, Houezec, Lagrue, & Jouvent, 2000). However, studies have shown that the relationship between sensation seeking and smoking behaviours changes dependent on age (Kahler et al., 2009) and motivation for smoking (Carton et al., 2000). It has been suggested that the increased risk for smoking initiation in those who score high in sensation seeking comes from seeking novel experiences, but that as novelty wears off continuance results from avoidance of negative withdrawal symptoms (Kahler et al., 2009).

Individuals that score high in sensation seeking and smoke primarily for stimulant effects are more likely to develop negative emotional symptoms following a cessation attempt (Carton et al., 2000). Following twenty-four hour deprivation, regular smokers who scored high in sensation seeking demonstrated more relief from withdrawal symptoms than their lower sensation seeking scoring controls and displayed more negative affect and anhedonia (Lee et al., 2011). Another factor influencing cessation success in those who score high in sensation seeking is the requirement of executing consistent planned behaviours throughout treatment (Kahler et al., 2009). The trait of sensation seeking influences smoking initiation, continuation, and cessation. Those who score high in sensation seeking are more likely to initiate, are more sensitive to the reinforcing properties, and are more likely to relapse, possibly due to difficulty following treatment plans or increased sensitivity to negative outcomes of withdrawal (Lee et al., 2011).

Impulsivity is closely related to sensation seeking, but is differentiated in that it is a lack of the ability to control behaviour in response to threats of punishment or potential rewards (Woicik et al., 2009). Impulsivity has been connected with poorer cessation outcomes resulting from a relatively more rapid relapse not otherwise accounted for by craving or other subjective reports (Kahler et al., 2009). Similar to sensation seeking, it has been demonstrated that those scoring high in impulsivity attain greater relief from negative withdrawal symptoms than those scoring lower in impulsivity, suggesting a powerful negative reinforcement motive (Doran, VanderVeen, Richmond, McChargue, Spring, & Cook, 2006).

The purpose of the present study is to examine the relationships between personality variable and smoking motives. It is hypothesized that the SURPS (Woicik et al., 2009) personality risk factors will be related differentially to motives for smoking. Specifically, anxiety

sensitivity will predict craving and negative reinforcement motives, hopelessness will predict craving and negative reinforcement motives, sensation seeking will predict cognitive enhancement and positive reinforcement motives, and impulsivity will predict automaticity, loss of control, craving, behavioural choice-melioration, and positive reinforcement motives.

Method

Participants and Recruitment

Ninety-four male (31.9%) and female (68.1%) undergraduate students at Lakehead University over the age of 18 who self-identified as being occasional and regular smokers were recruited through advertisements during class, email invitations, or through responding to posters posted on campus.

Measures

Demographics

A demographics questionnaire assessed family income, education level, and whether or not the individual is currently dieting.

Smoking History Questionnaire

The Smoking History Questionnaire (SHQ; Brown et al., 2002) assesses current and past smoking behaviours with 30 items including family members who smoke and previous quit attempts.

Smoking Dependence

Nicotine Dependence Syndrome Scale

The Nicotine Dependence Syndrome Scale (NDSS; Shiffman, Waters, & Hickcox, 2004) is a 19 item measure on a Likert-type scale ranging from 1 = “not true at all” to 4 = “very true”. It has been shown to have adequate internal and test-retest reliability in adult regular smokers

(Shiffman, Waters, & Hickcox, 2004). A modified version where items were altered for clarity and brevity was applied to youth regular and irregular smokers also demonstrated test-retest reliability, and some subscales demonstrated predictive validity (Sterling, Mermelstein, Turner, Diviak, Flay, & Shiffman, 2009).

Personality Variables

23-item Substance Use Risk Profile Scale

The 23-item Substance Use Risk Profile Scale (SURPS; Woicik et al., 2009) assesses hopelessness, anxiety sensitivity, impulsivity, and sensation seeking using a 4-point Likert-type scale ranging from 1 = “strongly agree” to 4 = “strongly disagree”. It has been shown to have good construct validity, good subscale reliability, adequate subscale internal consistency, good test-retest reliability, and significant discriminant and convergent validity in undergraduate populations (Woicik et al., 2009).

Anxiety Sensitivity Index - Revised

The ASI Revised (ASI-R; Taylor, & Cox, 1998) consists of 36 items on a 5-point Likert-type scale which indicates to what degree the individual is concerned with the potential negative effect of symptoms associated with anxiety (0 = “very little” to 4 = “very much”). It has demonstrated good internal consistency and test-retest reliability and good convergent and discriminant validity in adult populations (Armstrong, Khawaja, & Oei, 2006).

Center for Epidemiological Studies – Depression Scale

The Center for Epidemiological Studies – Depression Scale (CESD; Radloff, 1977) is a 20 item measure assessing depressive symptomatology through self-report questions. It demonstrated adequate internal consistency and test-retest reliability in an adult population (Radloff, 1977).

Sensation Seeking Scale

The Sensation Seeking Scale, form V (SSS-V; Zuckerman, 1994) is a 40-item forced choice measure of sensation seeking (Zuckerman, 1994). It has demonstrated adequate factor validity and good reliability in an undergraduate sample (Ferramdo & Chico, 2001).

Impulsivity and Venturesomeness – I7

The Impulsivity and Venturesomeness – I7 (IV-I7; Eynseck & Eynseck, 1978) is a 54 dichotomous item measure of impulsivity, empathy, and venturesomeness. It has been demonstrated to have convergent validity and reliability in undergraduate population samples (Russo, Leone, & Pascalis, 2011).

Smoking Motives

Wisconsin Inventory of Smoking Dependence Motives

The Wisconsin Inventory of Smoking Dependence Motives (WISDM-68; Piper et al., 2004) is a 68 item measure that assesses 13 different domains of motivation relating to tobacco use. Items are on a Likert-type scale from 1 to 7 with options ranging from “not true of me at all” to “extremely true of me”. All subscales have displayed good internal consistency and validity analyses showed correlation with DSM criteria for dependence as assessed in adult and undergraduate samples (Piper et al., 2004).

Reasons for Smoking Scale

The Reasons for Smoking Scale (RSS; Russel, Peto, & Patel, 1974) is a 23 item measure on a Likert-type scale ranging from 1 = “never” to 5 = “always”. It has demonstrated good factor validity, convergent validity, and internal consistency in an adult population (Currie, 2004).

Procedure

All participants read a cover letter informing them of the nature of the study as well as providing information about informed consent. They then indicated their understanding and consent to participate. Participants filled out questionnaires containing a variety of measures determining demographic information, smoking history and current habits, specific personality dimensions, and motives for smoking. Questionnaires were completed online through SurveyMonkey.

Results

Bivariate Correlations

Correlational results are presented in Tables 1, 2, 3 and 4. Sex was positively correlated with anxiety sensitivity as measured by the SURPS but not as measured by the ASI. Sex was also correlated with WISDM weight control, loss of control, and tolerance motives. Dependence was correlated with the ASI physical subscale and total score, as well as all RSS and WISDM subscales.

Anxiety sensitivity

Anxiety sensitivity was correlated with RSS stimulation motives when measured by the ASI and the SURPS. The ASI physical subscale was also correlated with the RSS automaticity and addictive subscales. Anxiety sensitivity was not correlated with WISDM motives when measured by the SURPS but when measured by the ASI the physical subscale was correlated with affiliative attachment, automaticity, loss of control, cognitive enhancement, craving, cue exposure-associative processes, social-environmental goals and total scores. The ASI cognitive subscale was also correlated with affiliative attachment, behavioural choice-melioration, and cognitive enhancement. These results support the notion that those who score highly in anxiety

sensitivity may be smoking to treat symptoms of anxiety, including negative reinforcement (Mullane et al., 2008, Woicik et al., 2009).

Depressive symptoms

Hopelessness as measured by the SURPS was correlated with the RSS sensorimotor subscale and the WISDM behavioural choice-melioration and total scores. Depressive symptoms as measured by the CESD correlated with RSS negative affect, sensorimotor, and automaticity, and with WISDM affiliative attachment, automaticity, behavioural choice-melioration, negative reinforcement, positive reinforcement, social-environmental goals, taste-sensory properties, and total scores. These results support the notion that those with more depressive symptomatology may be smoking for negative reinforcement motives (Woicik et al., 2009), but also suggests more diverse motives.

Sensation seeking

Sensation seeking as measured by the SURPS was correlated with WISDM loss of control, behavioural choice-melioration, and craving subscales as well as RSS negative affect. It was also correlated with RSS negative affect when measured by the SSS but was only correlated with WISDM loss of control when measured this way. These results may support the suggestion that those who score high in sensation seeking are particularly susceptible to the reinforcing properties (Lee et al., 2011), which then leads to an increase in negative symptoms associated with withdrawal (Carton et al., 2000).

Impulsivity

Impulsivity was correlated with the RSS sensorimotor subscale as measured by both the SURPS subscale and the IV. It was correlated with WISDM behavioural choice-melioration and total scores when measured with the SURPS subscale, but only with the WISDM affiliative

attachment subscale when measured by the IVEQ. This may reflect the proposed lack of ability to control behaviour in response to threats of punishment or potential rewards in those who score more highly in impulsivity (Woicik et al., 2009), but also supports more varying motives.

Regression Analyses

There were numerous statistical trends in our regression analyses which are presented in Table 5.

Sex

WISDM – weight control was predicted by sex, supporting findings that females are more motivated by this factor (Riedel, Robinson, Klesges, & McLain-Allen, 2002).

Anxiety sensitivity

WISDM – cognitive enhancement subscale scores were predicted by both ASI physical and ASI cognitive scores after controlling for sex. WISDM – negative reinforcement was also predicted by ASI physical scores after controlling for sex. These results support the notion that those who score highly in anxiety sensitivity may be smoking to treat symptoms of anxiety, including negative reinforcement (Mullane et al., 2008, Woicik et al., 2009).

Depressive symptoms

WISDM – negative reinforcement and RSS negative affect were both predicted by CESD scores after controlling for sex, supporting the notion that those with more depressive symptomatology may be smoking to relieve negative affect (Woicik et al., 2009).

Sensation seeking

WISDM – Behavioural choice-melioration was predicted by SURPS – sensation seeking after controlling for sex. This may reflect that sensation seeking is the desire to experience new, varied, or intense sensations and engaging in risky behaviours in order to do so (Lee, Perkins, Zimmerman, Robbins, & Kelly, 2011). RSS negative affect was also predicted by SURPS –

sensation seeking after controlling for sex, possibly supporting that those who score higher in sensation seeking experience more negative affect symptoms with withdrawal (Carton et al., 2000).

Impulsivity

WISDM – behavioural choice-melioration was predicted by IV - impulsivity after controlling for sex. WISDM – loss of control was predicted by impulsivity as measured by the SURPS after controlling for sex. This may reflect the proposed lack of the ability to control behaviour in response to threats of punishment or potential rewards in those who score more highly in impulsivity (Woicik et al., 2009).

Discussion

The purpose of this study was to examine the relationships between personality variables and smoking motives. It was hypothesized that the SURPS (Woicik et al., 2009) personality risk factors would be related differentially to motives for smoking. Specifically, anxiety sensitivity was hypothesized to predict craving and negative reinforcement motives. Anxiety sensitivity was correlated with a number of motives, including affiliative attachment, automaticity, loss of control, cognitive enhancement, craving, cue exposure-associative processes, social-environmental goods and on the RSS stimulation, automaticity, and addictive motives. In regression analyses it predicted cognitive enhancement and negative reinforcement motives. This may support previous evidence that those who score highly in anxiety sensitivity may be smoking to treat symptoms of anxiety, including negative reinforcement (Mullane et al., 2008, Woicik et al., 2009). The large number of motives being correlated with the measures of anxiety sensitivity may reflect the diversity of situations that elicit anxiety in the individual. Furthermore, dependence was correlated with the ASI physical score, and automaticity, loss of

control, craving, and RSS addictive motives are all presumed to be related to higher levels of dependence (Piasecki et al. 2011), and it is possible that cue exposure- associative processes is related to higher dependence scores or in this case may be an indication of the individual smoking in response to a cue that elicits anxiety for them, as it was correlated with both dependence and ASI scores.

Depressive symptoms were predicted to be related to craving and negative reinforcement motives. In regression analyses, RSS negative affect and WISDM – negative reinforcement were both predicted by CESD scores after controlling for sex. However, in the correlation analyses more diverse motives were represented. Depressive symptoms were correlates with RSS negative affect, sensorimotor, and automaticity, and with WISDM – affiliative attachment, automaticity, behavioural choice-melioration, negative reinforcement, positive reinforcement, social-environmental goals, and taste-sensory properties. This supports the suggestion that some people may be smoking to relieve depressive symptoms (Woicik et al., 2009), but again suggests more diverse motives. An interesting finding is that both RSS sensorimotor and WISDM – taste-sensory properties were both correlated with measures of depressive symptoms.

Sensation seeking was hypothesized to predict cognitive enhancement and positive reinforcement motives. It was not correlated with these motives nor related in regression analyses. Instead, sensation seeking scores predicted behavioural-choice melioration and negative affect motives in regression analyses after controlling for sex. This may support previous evidence that supporting that those who score higher in sensation seeking experience more negative affect symptoms with withdrawal (Carton et al., 2000), and may reflect that sensation seeking involves engaging in risky behaviours in order to experience novel sensations (Lee et al., 2011). Measures of sensation seeking were correlated with loss of control,

behavioural choice-melioration, craving, and negative affect. These results may support the suggestion that those who score high in sensation seeking are particularly susceptible to the reinforcing properties (Lee et al., 2011), which then leads to an increase in negative symptoms associated with withdrawal (Carton et al., 2000).

Impulsivity was hypothesized to predict automaticity, loss of control, craving, behavioural choice-melioration, and positive reinforcement motives, which was partially supported by the results. Impulsivity was predicted by behavioural choice-melioration and loss of control in regression analyses. Correlations revealed other motives, affiliative attachment and sensorimotor, than those hypothesized. An interesting finding to note is that neither sensation seeking nor impulsivity were correlated with positive reinforcement, as hypothesized. A complicating factor regarding some motives may be that smoking can be sedative for some smokers and stimulating for others, or even at differing times for the same individual (O'Neill & Parrott, 1992). Furthermore, negative and positive reinforcement are related concepts. It is presumably difficult in some cases to determine whether a person is smoking for positive reinforcement or negative reinforcement. For example, a person may state they are smoking for cognitive enhancement. This could be perceived to be for positive reinforcement, as it is eliciting a more desirable state, or for negative reinforcement, if the person is feeling cognitively impaired in some way. Survey items may fail to include some relevant information such as this.

It is important to note that given the large number of statistical trends in regression analyses, it is presumable that with a greater sample sizes and thereby more statistical power, more significant results may have been found. Furthermore, the differences in correlations with motives depending on whether the SURPS personality measures were used or other personality measures suggests that, at least in regard to smoking behaviours, there may be measurement

problems. However, the SURPS has not been used in its entirety in comparison to measures of smoking motivations in the past that I am aware of. Also, all of the WISDM subscales were very highly correlated, which while expected to some degree might indicate a measurement issue, or a singular, global factor. These are issues that should be addressed in future research. However, given that with some personality measurements significant results were found but not with other personality measures that are supposed to measure the same variable, it is possible that some of these results are Type I errors.

Anxiety has protective functions to save a person from things that have hurt them in the past or may hurt them in the future. It also serves to make a person more aware and cautious of potentially dangerous or hurtful stimuli. In this way it can sometimes be adaptive, but it can become problematic when anxiety is displaced or excessive (Pihl & Peterson, 1995). It has been suggested that anxiety sensitivity should be related to patterns of usage and personality measures that are theoretically connected to self-medication for anxiety symptoms (Woicik et al., 2009). Anxiety sensitivity has been shown to be related to motives for smoking including addictive, habitual, and coping as well as an increased perception of barriers for cessation success (Gonzalez, Zvolensky, Vujanovic, Leyro, & Marshall, 2009). It has also been shown to be related to usage for the purpose of lessening negative affect (Mullane et al., 2008). When analyzed in terms of potential factorial components of the Anxiety Sensitivity Index, it was found that the psychological component was related to both positive and negative reinforcement motives, while the physical component was more highly correlated with negative reinforcement motives (Battista, Stewart, Fulton, Steeves, Darredeau, & Gavric, 2008).

An important implication of such research is that by understanding why a person smokes cessation treatments can be more effective by addressing the reasons why the person is smoking.

Just as there are varying motivations for smoking, there are varying motivations for quitting. Measured levels of motivation to quit have been shown to correlate with cessation success in some studies (Shadel et al., 2005). However, other studies showed mixed results where some types of motivation were correlated with success, while other types were not (Mermelsteing & Turner, 2004). One example of this is the difference between extrinsic and intrinsic motivators for quitting. In one study, those who scored higher in measures of extrinsic motivation were less likely to quit smoking (Curry, Wagner, & Grothaus, 1990). Outcome expectancies have been shown to be correlated with motivation for quitting in multiple studies (Rundmo, Smeslund, & Gotestam, 1997; Shadel et al., 2005).

Similarly, contradictions have been found in an association between levels of motivation and gender. One study found that men were generally less motivated to quit than women (Rundmo, Smeslund, & Gotestam, 1997), while other studies found no interaction between gender and level of motivation (Shadel et al., 2005). A study of adolescent smokers found different motives were expressed differentially by the sexes. Females were found to be more motivated by extrinsic factors, including the number of other teens who do not smoke, weight and other appearance issues, and appearing calmer. These results have been replicated with mixed results (Riedel, Robinson, Klesges, & McLain-Allen, 2002). Our results supported the finding that the weight control motive was expressed differentially by the sexes. However, certain motivators, such as health and financial concerns, seem to be the most expressed in general and are of equal concern to both sexes (Riedel, Robinson, Klesges, & McLain-Allen, 2002). Many of the studies of motivations for quitting have left us with contradictions and more questions. One reason for this may be neglecting to measure the relation between motivations for

smoking and motivations for quitting. Understanding what factors contribute to sustained use of tobacco can help to formulate more effective prevention and treatment options for cessation.

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Table 1: Correlations between Substance Use Risk Profile Scale personality variables and Reasons for Smoking Scale motives subscales

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Sex	-	.006	.022	-.168	.249*	.185	.081	-.064	.113	.122	-.153
2. SURPS-Hopelessness		-	.228*	-.007	.158	.154	.206	.219*	.162	-.011	.074
3. SURPS-Impulsivity			-	.244*	.152	-.017	.068	.288**	-.068	-.049	-.098
4. SURPS-Sensation Seeking				-	-.323**	-.176	-.101	.143	-.228*	-.167	-.073
5. SURPS-Anxiety Sensitivity					-	.270*	.153	.031	.182	.062	.138
6. RSS-Stimulation						-	.607**	.516**	.768**	.692**	.502**
7. RSS-Automaticity							-	.361**	.516**	.689**	.305**
8. RSS-Sensorimotor								-	.488**	.498**	.441**
9. RSS-Negative Affect									-	.671**	.522**
10. RSS-Addictive										-	.621**
11. RSS-Relaxation											-

* $p < 0.05$, ** $p < .01$

RSS = Reasons for Smoking Scale

SURPS = Substance Use Risk Profile Scale

Table 2: Correlations between Substance Use Risk Profile Scale personality variables and Wisconsin Inventory of Smoking Dependence Motives subscales

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Sex	-	.006	.022	-.168	.249*	.094	.160	.244*	.167	.169	.193	.128	.106	.020	.133	-.059	.235*	.294**	.169
2. SURPS-Hopelessness		-	.228*	-.007	.158	.207	.057	.112	.271*	.108	.065	.050	.144	.175	.043	.169	.052	.086	.258*
3. SURPS-Impulsivity			-	.244*	.152	-.006	-.038	-.219*	-.030	-.064	-.124	-.058	-.120	-.073	.198	-.113	-.043	.041	-.103
4. SURPS-Sensation Seeking				-	-.323**	-.170	-.135	-.389**	-.221*	-.137	-.234*	-.148	-.166	-.168	.045	.029	-.156	-.089	-.170
5. SURPS-Anxiety Sensitivity					-	.241*	.021	.106	.077	.093	.015	.014	.059	.127	.065	.077	-.055	.168	.101
6. WISDM-Affiliative Attachment						-	.540**	.536**	.803**	.504**	.542**	.519**	.478**	.588**	.399**	.515**	.387**	.377**	.661**
7. WISDM-Automaticity							-	.778**	.650**	.557**	.808**	.795**	.610**	.620**	.419**	.555**	.764**	.386**	.838**
8. WISDM-Loss of Control								-	.665**	.539**	.837**	.732**	.636**	.597**	.208	.404**	.748**	.375**	.814**
9. WISDM-Behavioural Choice/Melioration									-	.763**	.715**	.717**	.708**	.777**	.332**	.643**	.543**	.501**	.840**
10. WISDM-Cognitive Enhancement										-	.716**	.692**	.819**	.790**	.260*	.657**	.603**	.614**	.864**
11. WISDM-Craving											-	.861**	.811**	.756**	.317**	.625**	.821**	.440**	.911**
12. WISDM-Cue Exposure/Associative Processes												-	.831**	.797**	.417**	.704**	.698**	.372**	.914**
13. WISDM-Negative Reinforcement													-	.914**	.339**	.735**	.594**	.446**	.870**
14. WISDM-Positive Reinforcement														-	.364**	.784**	.578**	.425**	.870**
15. WISDM-Social/Environmental Goals															-	.324**	.401**	.261*	.487**
16. WISDM-Taste/Sensory Properties																-	.408**	.285**	.786**
17. WISDM-Tolerance																	-	.322**	.832**
18. WISDM-Weight Control																		-	.627**
19. WISDM-total																			-

* $p < 0.05$, ** $p < .01$

SURPS = Substance Use Risk Profile Scale

WISDM = Wisconsin Inventory of Smoking Dependence Motives

Table 3: Correlations between dependence and other personality measures and Reasons for Smoking Scale motives subscales

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Sex	-	.171	.136	.008	.077	.106	-.128	-.005	.185	.081	-.064	.113	.122	-.153
2. NDSQ		-	.324**	.195	.300**	-.168	-.167	.041	.556**	.526**	.360**	.564**	.676**	.310**
3. ASI-physical			-	.840**	.969**	-.216	-.255*	.399**	.373**	.349**	.151	.217	.267*	.045
4. ASI-cognitive				-	.948**	-.307**	-.180	.395**	.248*	.146	.185	.085	.107	.052
5. ASI-total					-	-.263*	-.238*	.398**	.342**	.263*	.173	.165	.198	.051
6. IV-Impulsivity						-	-.362**	-.286*	-.055	-.050	-.242*	-.011	-.019	.109
7. SSS							-	.105	-.203	-.150	-.027	-.220*	-.117	-.001
8. CESD								-	.213	.348**	.268*	.229*	.197	.193
9. RSS-Stimulation									-	.607**	.516**	.768**	.692**	.502**
10. RSS-Automaticity										-	.361**	.516**	.689**	.305**
11. RSS-Sensorimotor											-	.488**	.498**	.441**
12. RSS-Negative												-	.671**	.522**
Affect														
13. RSS-Addictive													-	.621**
14. RSS-Relaxation														-

* $p < 0.05$, ** $p < .01$

NDSQ = Nicotine Dependence Syndrome Questionnaire

ASI = Anxiety Sensitivity Index

IV = Impulsivity, Venturesomeness, and Empathy Questionnaire

SSS = Sensation Seeking Scale

CESD = Centre for Epidemiological Studies of Depression Scale

RSS = Reasons for Smoking Scale

Table 4 : Correlations between dependence and personality measures and Wisconsin Inventory of Smoking Dependence Motives subscales

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. NDSQ	-	.324**	.195	.300**	-.168	-.167	.041	.457**	.680**	.708**	.606**	.574**	.795**	.701**	.642**	.629**	.329**	.457**	.775**	.294**	.787**
2. ASI-physical		-	.840**	.969**	-.216	-.255*	.399**	.392**	.316**	.253*	.293**	.297**	.221*	.260*	.208	.212	.227*	.214	.206	.187	.265*
3. ASI-cognitive			-	.948**	-.307**	-.180	.395**	.410**	.101	.072	.269*	.258*	.064	.142	.167	.122	.081	.177	.011	.135	.086
4. ASI-total				-		-.263*	.398**	.437**	.227*	.176	.306**	.292*	.151	.218	.202	.178	.167	.223	.109	.164	.201
5. IV-Impulsivity					-	-.362**	-.286*	-.243*	-.091	.101	-.200	-.059	.007	-.087	-.034	-.016	-.176	.014	-.056	.019	.062
6. SSS						-	.105	-.149	-.101	-.347**	-.119	-.148	-.207	-.189	-.191	-.139	-.075	.045	-.143	-.108	-.181
7. CESD							-	.410**	.263*	.099	.355**	.207	.152	.214	.244*	.313**	.318**	.372**	.121	.205	.366**
8. WISDM-Affiliative Attachment								-	.540**	.536**	.803**	.504**	.542**	.519**	.478**	.588**	.399**	.515**	.387**	.377**	.661**
9. WISDM-Automatcity									-	.778**	.650**	.557**	.808**	.795**	.610**	.620**	.419**	.555**	.764**	.386**	.838**
10. WISDM -Loss of Control										-	.665**	.539**	.837**	.732**	.636**	.597**	.208	.404**	.748**	.375**	.814**
11. WISDM-Behavioural Choice/ Melioration											-	.763**	.715**	.717**	.708**	.777**	.332**	.643**	.543**	.501**	.840**
12. WISDM-Cognitive Enhancement												-	.716**	.692**	.819**	.790**	.260*	.657**	.603**	.614**	.864**
13. WISDM-Craving													-	.861**	.811**	.756**	.317**	.625**	.821**	.440**	.911**
14. WISDM-Cue Exposure/Associative Processes														-	.831**	.797**	.417**	.704**	.698**	.372**	.914**
15. WISDM-Negative Reinforcement															-	.914**	.339**	.735**	.594**	.446**	.870**
16. WISDM-Positive Reinforcement																-	.364**	.784**	.578**	.425**	.870**
17. WISDM-Social/ Environmental Goads																	-	.324**	.401**	.261*	.487**
18. WISDM-Taste/Sensory Properties																		-	.408**	.285**	.786**
19. WISDM-Tolerance																			-	.322**	.832**
20. WISDM-Weight Control																				-	.627**
21. WISDM-total																					-

* $p < 0.05$, ** $p < .01$, NDSQ = Nicotine Dependence Syndrome Questionnaire

ASI = Anxiety Sensitivity Index

IV = Impulsivity, Venturesomeness, and Empathy Questionnaire

SSS = Sensation Seeking Scale

CESD = Centre for Epidemiological Studies of Depression Scale

WISDM = Wisconsin Inventory of Smoking Dependence Motives

Table 5: Regression Analyses Results

Predictors	R^2	Adj. R^2	β	ΔR^2	ΔF	df
WISDM-Cognitive Enhancement						
Step 1: sex	.014	.001	.117	.014	1.044	1, 75
Step 2: ASI-cognitive	.082	.057	.261	.068	5.481 ^a	1, 74
RSS-Negative Affect						
Step 1: sex	.015	.003	.122	.015	1.203	1, 79
Step 2: ASI-physical	.056	.032	.205	.041	3.399 ^a	1, 78
WISDM-Negative Reinforcement						
Step 1: sex	.009	-.004	.093	.009	.674	1, 78
Step 2: ASI-physical	.048	.023	.200	.039	3.163 ^a	1, 77
WISDM-Cognitive Enhancement						
Step 1: sex	.021	.009	.145	.021	1.703	1, 79
Step 2: ASI-physical	.099	.076	.282	.078	6.780 ^a	1, 78
WISDM-Negative Reinforcement						
Step 1: sex	.010	-.002	.101	.010	.810	1, 79
Step 2: CESD	.072	.048	.249	.062	5.213 ^a	1, 78
RSS-Negative Affect						
Step 1: sex	.013	.000	.113	.013	1.027	1, 79
Step 2: CESD	.066	.042	.230	.053	4.415 ^a	1, 78
WISDM-Behavioural Choice Melioration						
Step 1: sex	.020	.008	.142	.020	1.657	1, 81
Step 2: SURPS-Sensation Seeking	.061	.038	-.205	.041	3.493 ^a	1, 80
RSS-Negative Affect						
Step 1: sex	.012	.000	.111	.012	1.012	1, 81
Step 2: SURPS-Sensation Seeking	.058	.034	-.216	.046	3.872 ^a	1, 80
WISDM- Behavioural Choice Melioration						
Step 1: sex	.014	.002	.120	.014	1.131	1, 78
Step 2: IV-Impulsivity	.061	.037	-.218	.047	3.826 ^a	1, 77
WISDM-Loss of Control						
Step 1: sex	.038	.027	.196	.038	3.233 ^a	1, 81
Step 2: SURPS-Impulsivity	.088	.065	-.222	.049	4.319 ^a	1, 80
WISDM-Weight Control						
Step 1: sex	.086	.076	.294	.086	8.033 ^a	1, 85

^atrend

WISDM = Wisconsin Inventory of Smoking Dependence Motives, ASI = Anxiety Sensitivity Index

RSS = Reasons for Smoking Scale, CESD = Centre for Epidemiological Studies Depression Scale

SURPS = Substance Use Risk Profile Scale, IV = Impulsivity, Venturesomeness, and Empathy Questionnaire

APPENDIX A

Demographics Questionnaire

NOTE: IF YOU DO NOT KNOW THE EXACT ANSWER, PLEASE PROVIDE YOUR BEST ESTIMATE.	
<p>1. Your age: _____ years</p> <p>2. Your sex: male _____ female _____</p> <p>3. Your ethnicity (e.g., Asian, Caucasian/White, First Nations, etc.): _____</p> <p>4. Your biological mother's ethnicity: _____</p> <p>5. Your biological father's ethnicity: _____</p> <p>6. Your country of birth: _____</p> <p>7. Your biological mother's country of birth: _____</p> <p>8. Your biological father's country of birth: _____</p> <p>9. How long have you lived in Canada? _____ years</p> <p>10. Your relationship status: single _____ dating _____ separated _____ married _____ divorced _____ cohabiting (i.e., living with your partner) _____ widowed _____ other (please specify) _____</p> <p>11. Your number of years of formal education (i.e., from kindergarten to the present): _____</p> <p>12. Your year of study in university (e.g., 1st): _____</p> <p>13. Your major in university (e.g., Economics): _____</p> <p>Note: "undecided" or "undeclared" may be listed as a major</p> <p>14. Your occupation (e.g., teacher): _____</p> <p>Note: "student" may be listed as an occupation</p>	<p>15. Check the option that best describes your employment situation: I work full-time _____ I work part-time _____ I am unemployed _____ I am a homemaker _____ I am retired _____ other (please specify) _____</p> <p>16. Check the option that best describes your educational situation: I am a part-time student _____ I am a full-time student _____ other (please specify) _____</p> <p>17. Question 17 does <i>not</i> ask about your annual <u>personal income</u>. Instead, Question 17 asks about your annual <u>family income</u>. In other words, indicate how much money was earned last year in the household where you were raised. Check the option that best describes your annual <u>family income</u> in Canadian dollars (before taxes, deductions, etc.): \$0.00 - \$19 999 _____ \$20 000 - \$39 999 _____ \$40 000 - \$59 999 _____ \$60 000 - \$79 999 _____ \$80 000 - \$99 999 _____ \$100 000 - \$119 999 _____ \$120 000 - \$139 999 _____ \$140 000 - \$159 999 _____ \$160 000 - \$179 999 _____ \$180 000 - \$199 999 _____ greater than \$200 000 _____</p> <p>18. How many people are supported by your total annual <u>family income</u> (listed in question 17)? _____</p> <p>19. What is your current weight? Report either in pounds _____ or in kilograms _____</p> <p>20. What is your current height? Report either in feet/inches _____ or in meters/centimeters _____</p>

NOTE: IF YOU DO NOT KNOW THE EXACT ANSWER,
PLEASE PROVIDE YOUR BEST ESTIMATE.

1. Are you currently on a diet? (Circle your answer.)

YES or NO

If "YES" please describe: _____

2. Your highest education level (choose one):

some public school _____

completed public school _____

some high school _____

completed high school _____

some college _____

college diploma _____

some university _____

bachelor's degree _____

master's degree _____

doctoral degree (e.g., Ph.D.) _____

professional degree (e.g., LL.B., M.D.) _____

other (please specify) _____

3. Do you currently have a medical condition (e.g., diabetes) that affects your eating habits? (Circle your answer.)

YES or NO

If "YES" please describe: _____

4. Are you currently taking any prescription or non-prescription medication (e.g., weight-loss medication) that affects your eating habits? (Circle your answer.)

YES or NO

5. Are you currently participating in a self-help group (e.g., Overeaters Anonymous) or an organized program (e.g., Weight Watchers) aimed at weight control? (Circle your answer.)

YES or NO

If "YES" please describe: _____

6. Are you currently receiving treatment from a mental health professional for an eating-related problem (e.g., bulimia)? (Circle your answer.)

YES or NO

If "YES" please describe: _____

7. Do you experience any colour-blindness? (Circle your answer.)

YES or NO

If "YES" please describe: _____

8. FOR WOMEN ONLY: Are you currently pregnant? (Circle your answer.)

YES or NO

APPENDIX B

Smoking History Questionnaire

For each question below, please write the number of the answer on the blank line(s) to the right of each item.

1. How old are you? _____
2. What is your date of birth? _____
3. How old were you when you **first** smoked a cigarette? (years) _____
4. How old were you when you started regular daily cigarette smoking? (years) _____
5. Since you started regular daily smoking, what is the average number of cigarettes you smoked per day? _____
6. Think about your smoking during the **last week**, how many cigarettes did you smoke in a average day? _____
7. Do you currently use:

a. Cigars	1 = YES	0 = NO	_____
b. Smokeless tobacco	1 = YES	0 = NO	_____
c. Pipe tobacco	1 = YES	0 = NO	_____
8. How old were you when you were smoking the heaviest? _____
9. When smoking the heaviest, how many cigarettes did you smoke per day? _____
10. How many times in your life have you made a serious attempt to quit smoking? _____
(If more than 9 times, put 9)
11. As best as you can remember, how long ago did you make your first attempt to quit smoking? (years) _____
12. How many different times in you life have you made an attempt to quit smoking where you have stayed off cigarettes for 12 or more hours? (Do not include time sleeping) _____
13. Since you started smoking regularly, have you ever quit for a period of at least 24 hours?
1 = YES 0 = NO _____
14. Since you first started smoking, what was the **longest** period of time that you were able to stay off cigarettes? (If less than 1 day, do not include time sleeping)
Years _____ Months _____ Days _____ Hours _____
15. Please give us some information about your most recent attempts to quit smoking. Begin with the most **recent** date. Write answers on the lines below.

<u>When did it occur?</u>	<u>How long did you quit?</u>
Days abstinent	Hours abstinent
_____ date	_____ days and/or _____ hours
_____ date	_____ days and/or _____ hours
_____ date	_____ days and/or _____ hours
16. In your attempts to quit smoking, what methods have you used?
1 = YES **0 = NO**
 - a. Cold turkey _____
 - b. Smoke-enders _____

- c. Behavior modification _____
- d. American Cancer Society / Lung Association Program _____
- e. Hypnosis _____
- f. Acupuncture _____
- g. With friends, relatives, etc. . . _____
- h. Gradual reduction _____
- i. Telephone Counseling _____
- j. Substitute other tobacco product _____
- k. Nicotine Patch _____
- l. Nicotine Gum _____
- m. Nicotine Nasal Spray _____
- n. Nicotine Lozenge _____
- o. Zyban (Wellbutrin) _____
- p. Chantix _____
- q. Electronic cigarettes _____
- r. Nicotine-free cigarettes _____
- s. Internet _____
- t. Self-help books _____
- u. Other type of smoking cessation group treatment _____
- v. Other _____ (please specify) _____

17. While trying to quit, how serious have each of the following problems been for you? Use the following scale.

- | | 1 | 2 | 3 | 4 | 5 |
|----|-----------------------------------|----------|------------|------|-----------|
| | Not at all | A little | Moderately | Very | Extremely |
| a. | Weight gain _____ | | | | |
| b. | Increased eating _____ | | | | |
| c. | Digestive problems _____ | | | | |
| d. | Nausea _____ | | | | |
| e. | Headaches _____ | | | | |
| f. | Drowsiness _____ | | | | |
| g. | Depression or low mood _____ | | | | |
| h. | Fatigue _____ | | | | |
| i. | Insomnia _____ | | | | |
| j. | Difficulty concentrating _____ | | | | |
| k. | Heart pounding, or sweating _____ | | | | |
| l. | Decreased heart rate _____ | | | | |
| m. | Irritability _____ | | | | |
| n. | Restlessness _____ | | | | |
| o. | Anxiety _____ | | | | |
| p. | Craving for tobacco _____ | | | | |
| q. | Other _____ | | | | |

18. Have you in the **past** had a disease or illness you believe was caused or aggravated by your smoking? 1 = YES 0 = NO _____
19. Do you have any symptoms **now** that you believe are caused by your smoking?
1 = YES 0 = NO _____
20. Do you have a disease or illness **now** that you believe is caused by or aggravated by your smoking? 1 = YES 0 = NO _____
21. Has a doctor ever told you to stop smoking? 1 = YES 0 = NO _____
22. Were you smoking 12 months ago? 1 = YES 0 = NO _____
23. Where you smoking 6 months ago? 1 = YES 0 = NO _____
24. Have you reduced the number of cigarettes you smoke in the last month? 1 = YES 0 = NO _____

_____ If **YES**, by how many cigarettes? _____

25. Did you switch brands in the last month? 1 = YES 0 = NO _____

If **YES**, what was your old brand _____

26. Does your desire for a cigarette ever disrupt the activities you are involved in?

1 = YES 0 = NO _____

27. In what situations DON'T you smoke?

0 = No, I never smoke . . .

1 = Yes, I sometimes/once in while smoke . . .

N/A = Not applicable

- a. In public _____
- b. At work _____
- c. At home _____
- d. In presence of certain relative (e.g., parents, grandparents, in-laws) _____
- e. In presence of my children _____
- f. At meetings _____
- g. Inside the home of non-smokers _____
- h. In my car when non-smokers are with me _____
- i. In other people's car(s) _____
- j. In restaurants _____
- k. In airplanes _____
- l. Other _____ (please specify) _____

28. To the best of your knowledge, categorize the use of cigarettes by the following people in your life. Please use the following scale and place the number answer on the line to the right.

1 = Smoker 2 = Ex-smoker 3 = Never smoked 4 = Don't know 5 = Not applicable

Biological Father _____

Biological Grandmother (father's side) _____

Biological Mother _____

Biological Grandmother (mother's side) _____

Biological Grandfather (father's side) _____

Biological Grandfather (mother's side) _____

29. How many biological brother and sisters do (did) you have? _____

30. How many of them had ever smoked cigarettes? _____

APPENDIX C

The Nicotine Dependence Syndrome Scale

Circle the number that indicates how well each of the following statements describes you:

1= Not At All True, 2= Somewhat True, 3=Moderately True, 4=Very True, 5=Extremely True

1. After not smoking for a while, I need to smoke to relieve feelings of restlessness and irritability.

1 2 3 4 5

2. Whenever I go without a smoke for a few hours, I experience craving.

1 2 3 4 5

3. When I'm really craving a cigarette, it feels like I'm in the grip of some unknown force that I cannot control.

1 2 3 4 5

4. After not smoking for a while, I need to smoke in order to keep myself from experiencing any discomfort.

1 2 3 4 5

5. I tend to avoid restaurants that don't allow smoking, even if I would otherwise enjoy the food.

1 2 3 4 5

6. Even if traveling a long distance, I'd rather not travel by airplane because I wouldn't be allowed to smoke.

1 2 3 4 5

7. Sometimes I decline offers to visit with my non-smoking friends because I know I'll feel uncomfortable if I smoke.

1 2 3 4 5

8. If you couldn't get ahold of any cigarettes for a whole day, how much would you be willing to pay by the next morning for just one cigarette.

1 2 3 4 5

9. Compared to when I first started smoking, I need to smoke a lot more now in order to really get what I want out of it.

1 2 3 4 5

10. Compared to when I first started smoking, I can smoke much, much more now before I start to feel nauseated or ill.

1 2 3 4 5

11. Since the time when became a regular smoker, the amount I smoke has either stayed the same or has decreased somewhat.

1 2 3 4 5

12. My smoking pattern is very irregular throughout the day. It is not unusual for me to smoke many cigarettes in an hour, then not have another one until hours later.

1 2 3 4 5

13. Sometimes, without realizing it, I go for several hours or more without smoking.

1 2 3 4 5

14. I smoke just about the same number of cigarettes from day to day.

1 2 3 4 5

15. My smoking is not much affected by other things. I smoke about the same amount whether I'm relaxing or working, happy or sad, alone or with others, etc.

1 2 3 4 5

16. Not even a torrential rainstorm could stop me – if I were out of cigarettes, I would be immediately on my way to the store to get some more.

1 2 3 4 5

17. Where regulations require that I go outdoors to smoke, it's worth it to be able to smoke a cigarette, even in cold or rainy weather.

1 2 3 4 5

18. If I wake up during the night, I feel I need a cigarette.

1 2 3 4 5

19. I can function much better in the morning after I've had a cigarette.

1 2 3 4 5

20. I feel a sense of control over my smoking. I can "take it or leave it" at any time.

1 2 3 4 5

21. Sometimes even when I'm telling myself I'm not going to have a cigarette, I find myself smoking anyway.

1 2 3 4 5

22. Whenever I quit or cut down on smoking, it is an unpleasant experience.

1 2 3 4 5 Does not apply

23. The last time I quit (for 24 hours or more), when I went back to smoking it took a *long* time for me to build up to my old level of smoking.

1 2 3 4 5 Does not apply

APPENDIX D

The Substance Use Risk Profile Scale

WE would like you to think about the following statements. Please fill in the circle completely to show how much you agree or disagree with the statements. Please use the scale shown.

Strongly Agree SA	Agree A	Undecided U	Disagree D	Strongly Disagree SD
-----------------------------	-------------------	-----------------------	----------------------	--------------------------------

	SA	A	U	D	SD
1. I am content.	1	2	3	4	5
2. I often don't think things through before I speak.	1	2	3	4	5
3. I would like to skydive.	1	2	3	4	5
4. I am happy.	1	2	3	4	5
5. I often involve myself in situations that I later regret.	1	2	3	4	5
6. I enjoy new and exciting experiences even if they are unusual.	1	2	3	4	5
7. I have faith that my future holds great promise.	1	2	3	4	5
8. It's frightening to feel dizzy or faint.	1	2	3	4	5
9. I like doing things that frighten me a little.	1	2	3	4	5
10. It frightens me when I feel my heart beat change.	1	2	3	4	5
11. I usually act without stopping to think.	1	2	3	4	5
12. I would like to learn how to drive a motorcycle.	1	2	3	4	5
13. I feel proud of my accomplishments.	1	2	3	4	5
14. I get scared when I'm too nervous.	1	2	3	4	5
15. Generally, I am an impulsive person.	1	2	3	4	5
16. I am interested in experience for it's own sake even if it is illegal.	1	2	3	4	5
17. I feel that I'm a failure.	1	2	3	4	5
18. I get scared when I experience unusual body sensations.	1	2	3	4	5
19. I would enjoy hiking long distances in wild and uninhabited territory.	1	2	3	4	5
20. I feel pleasant.	1	2	3	4	5
21. It scares me when I'm unable to focus on a task.	1	2	3	4	5
22. I feel I have to be manipulative to get what I want.	1	2	3	4	5
23. I am very enthusiastic about my future.	1	2	3	4	5

APPENDIX E

The Anxiety Sensitivity Index

Please circle the number that best corresponds to how much you agree with each item. If any of the items concern something that is not part of your experience (for example, “It scares me when I feel shaky” for someone who has never trembled or felt shaky) answer on the basis of how you expect you think you might feel *if you had* such an experience. Otherwise, answer all items on the basis of your own experience. Be careful to circle only one number for each item and please answer all items.

	Very little	A little	Some	Much	Very much
1. It is important for me not to appear nervous	0	1	2	3	4
2. When I cannot keep my mind on a task, I worry that I might be going crazy	0	1	2	3	4
3. It scares me when I feel “shaky” (trembling)	0	1	2	3	4
4. It scares me when I feel faint	0	1	2	3	4
5. It scares me when my heart beats rapidly	0	1	2	3	4
6. It scares me when I am nauseous	0	1	2	3	4
7. When I notice that my heart is beating rapidly, I worry that I might have a heart attack	0	1	2	3	4
8. It scares me when I become short of breath	0	1	2	3	4
9. When my stomach is upset, I worry that I might be seriously ill	0	1	2	3	4
10. It scares me when I am unable to keep my mind on a task	0	1	2	3	4
11. When my head is pounding, I worry I could have a stroke	0	1	2	3	4
12. When I tremble in the presence of others, I fear what people might think of me	0	1	2	3	4
13. When I feel like I’m not getting enough air, I get scared that I might suffocate	0	1	2	3	4
14. When I get diarrhea, I worry that I might have something wrong with me	0	1	2	3	4
15. When my chest feels tight, I get scared that I won’t be able to breathe properly	0	1	2	3	4
16. When my breathing becomes irregular, I fear that something bad will happen	0	1	2	3	4
17. It frightens me when my surroundings seem strange or unreal	0	1	2	3	4
18. Smothering sensations scare me	0	1	2	3	4

19. When I feel pain in my chest, I worry that I'm going to have a heart attack	0	1	2	3	4
20. I believe it would be awful to vomit in public	0	1	2	3	4
21. It scares me when my body feels strange or different in some way	0	1	2	3	4
22. I worry that other people will notice my anxiety	0	1	2	3	4
23. When I feel "spacey" or spaced out I worry that I may be mentally ill	0	1	2	3	4
24. It scares me when I blush in front of people	0	1	2	3	4
25. When I feel a strong pain in my stomach, I worry it could be cancer	0	1	2	3	4
26. When I have trouble swallowing, I worry that I could choke	0	1	2	3	4
27. When I notice my heart skipping a beat, I worry that there is something seriously wrong with me	0	1	2	3	4
28. It scares me when I feel tingling or prickling sensations in my hands	0	1	2	3	4
29. When I feel dizzy, I worry there is something wrong with my brain	0	1	2	3	4
30. When I begin to sweat in a social situation, I fear people will think negatively of me	0	1	2	3	4
31. When my thoughts seem to speed up, I worry that I might be going crazy	0	1	2	3	4
32. When my throat feels tight, I worry that I could choke to death	0	1	2	3	4
33. When my face feels numb, I worry that I might be having a stroke	0	1	2	3	4
34. When I have trouble thinking clearly, I worry that there is something wrong with me	0	1	2	3	4
35. I think it would be horrible for me to faint in public	0	1	2	3	4
36. When my mind goes blank, I worry there is something terribly wrong with me	0	1	2	3	4

APPENDIX F

The Impulsiveness and Venturesomeness Inventory

Please answer each question by putting a circle around the “Yes” or the “No” following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the question.

PLEASE REMEMBER TO ANSWER EACH QUESTION

1. Would you enjoy water skiing?	Yes	No
2. Do public displays of affection annoy you?	Yes	No
3. Do you often long for excitement?	Yes	No
4. Usually do you prefer to stick to brands you know are reliable, to trying new ones on the chance of finding something better?	Yes	No
5. Would you feel sorry for a lonely stranger in a group?	Yes	No
6. Do you quite enjoy taking risks?	Yes	No
7. Do you feel at your best after taking a couple of drinks?	Yes	No
8. Do you often get emotionally involved with your friends' problems?	Yes	No
9. Do you save regularly?	Yes	No
10. Would you enjoy parachute jumping?	Yes	No
11. Do you think that people are too concerned about the feelings of animals?	Yes	No
12. Do you often buy things on impulse?	Yes	No
13. Would you prefer a job involving change, travel and variety even though it might be insecure?	Yes	No
14. Do unhappy people who are sorry for themselves irritate you?	Yes	No
15. Do you generally do and say things without stopping to think?	Yes	No
16. Do you prefer quiet parties with good conversations to “wild” uninhibited ones?	Yes	No
17. Are you inclined to feel nervous when others around you seem to be nervous?	Yes	No
18. Do you often get into a jam because you do things without thinking?	Yes	No
19. Do you think hitchhiking is too dangerous a way to travel?	Yes	No
20. Do you find it silly for people to cry out of happiness?	Yes	No
21. Would you often like to get high (drinking liquor or smoking marijuana)?	Yes	No
22. Do you like diving off the highboard?	Yes	No
23. Do people you are with have a strong influence on your moods?	Yes	No
24. Are you an impulsive person?	Yes	No
25. Do you welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional?	Yes	No

26. Does it affect you very much when one of your friends seems upset?	Yes	No
27. Do you usually think carefully before doing anything	Yes	No
28. Would you like to learn to fly an aeroplane?	Yes	No
29. Do you ever get deeply involved with the feelings of a character in a film, play or novel?	Yes	No
30. Do you often do things on the spur of the moment?	Yes	No
31. When the odds are against you, do you still usually think it worth taking the chance?	Yes	No
32. Do you get very upset when you see someone cry?	Yes	No
33. Do you often enjoy breaking rules you consider unreasonable?	Yes	No
34. Are you rather cautious in unusual situations?	Yes	No
35. Do you sometimes find someone else's laughter catching?	Yes	No
36. Do you mostly speak before thinking things out?	Yes	No
37. Would you make quite sure you had another job before giving up your old one?	Yes	No
38. Are you generally calm, even when others around are worried?	Yes	No
39. Do you often get involved in things you later wish you could get out of?	Yes	No
40. Do you prefer traditional to new, unusual and sometimes discordant music?	Yes	No
41. When a friend starts to talk about his problems, do you try to change the subject?	Yes	No
42. Do you get so "carried away" by new and exciting ideas, that you never think of possible snags?	Yes	No
43. Do you find it hard to understand people who risk their necks climbing mountains?	Yes	No
44. Can you make decisions without worrying about other people's feelings?	Yes	No
45. Do you get bored more easily than most people, doing the same old things?	Yes	No
46. Do you prefer friends who are reliable to those who are excitingly unpredictable?	Yes	No
47. Do you find it hard to understand why some things upset people so much?	Yes	No
48. Would you agree that planning things ahead takes the fun out of life?	Yes	No
49. Do you sometimes like doing things that are a bit frightening?	Yes	No
50. Can you remain in a good mood even if those around you are depressed?	Yes	No
51. Do you need to use a lot of self-control to keep out of trouble?	Yes	No

52. Would life with no danger in it be too dull for you?	Yes	No
53. Do you become more irritated than sympathetic when you see someone cry?	Yes	No
54. Would you agree that almost everything enjoyable is illegal or immoral?	Yes	No
55. Generally do you prefer to enter cold sea water gradually to diving or jumping straight in?	Yes	No
56. Are you often surprised at people's reactions to what you do or say?	Yes	No
57. Do you get extremely impatient if you are kept waiting by someone who is late?	Yes	No
58. Would you enjoy the sensation of skiing very fast down a high mountain slope?	Yes	No
59. Do you like watching people open presents?	Yes	No
60. Do you think an evening out is more successful if it is unplanned or arranged at the last moment?	Yes	No
61. Would you like to go scuba diving?	Yes	No
62. Would you find it very hard to break bad news to someone?	Yes	No
63. Do you get very restless if you have to stay around home for any length of time?	Yes	No

Please check to see that you have answered all the questions.

APPENDIX G

The Centre for Epidemiological Studies Depression Scale

Below is a list of the ways you might have felt or behaved.

Please indicate how often you have felt this way ***DURING THE PAST WEEK.***

Place a check mark (✓) in the column that describes your experience.

	Rarely or None of the Time (Less than 1 Day)	Some or a Little of the Time (1-2 Days)	Occasionally or a Moderate Amount of Time (3-4 Days)	Most or All of the Time (5-7 Days)
<i>DURING THE PAST WEEK:</i>				
1. I was bothered by things that usually don't bother me.				
2. I did not feel like eating; my appetite was poor.				
3. I felt that I could not shake off the blues even with help from my family or friends.				
4. I felt that I was just as good as other people.				
5. I had trouble keeping my mind on what I was doing.				
6. I felt depressed.				
7. I felt that everything I did was an effort.				
8. I felt hopeful about the future.				
9. I thought my life had been a failure.				
10. I felt fearful.				
11. My sleep was restless.				
12. I was happy.				
13. I talked less than usual.				
14. I felt lonely.				
15. People were unfriendly.				
16. I enjoyed life.				
17. I had crying spells.				
18. I felt sad.				
19. I felt that people dislike me.				
20. I could not get "going."				

APPENDIX H

The Sensation Seeking Scale

1. A. I would like a job which would require a lot of traveling.
B. I would prefer a job in one location.
2. A. I am invigorated by a brisk, cold day.
B. I can't wait to get into the indoors on a cold day.
3. A. I find a certain pleasure in routine kinds of work.
B. Although it is sometimes necessary I usually dislike routine kinds of work.
4. A. I often wish I could be a mountain climber.
B. I can't understand people who risk their necks climbing mountains.
5. A. I dislike all body odors.
B. I like some of the earthy body smells.
6. A. I get bored seeing the same old faces.
B. I like the comfortable familiarity of everyday friends.
7. A. I like to explore a strange city or section of town by myself, even if it means getting lost.
B. I prefer a guide when I am in a place I don't know well.
8. A. I find the quickest and easiest route to a place and stick to it.
B. I sometimes take different routes to a place I often go, just for variety's sake.
9. A. I would not like to try any drug which might produce strange and dangerous effects on me.
B. I would like to try some of the new drugs that produce hallucinations.
10. A. I would prefer living in an ideal society where everyone is safe, secure, and happy.
B. I would have preferred living in the unsettled days of our history.
11. A. I sometimes like to do things that are a little frightening.
B. A sensible person avoids activities that are dangerous.
12. A. I order the dishes with which I am familiar, so as to avoid disappointment and unpleasantness.
B. I like to try new foods that I have never tasted before.
13. A. I can't stand riding with a person who likes to speed.
B. I sometimes like to drive very fast because I find it exciting.

14. A. If I were a salesman I would prefer a straight salary, rather than the risk of making little or nothing on a commission basis.
B. If I were a salesman I would prefer working on a commission if I had a chance to make more money than I could on a salary.
15. A. I would like to take up the sport of water skiing.
B. I would not like to take up the sport of water skiing.
16. A. I don't like to argue with people whose beliefs are sharply divergent from mine, since such arguments are never resolved.
B. I find people that disagree with my beliefs more stimulating than people who agree with me.
17. A. When I go on a trip I like to plan my route and timetable fairly carefully.
B. I would like to take off on a trip with no preplanned or definite routes, or timetables.
18. A. I enjoy the thrills of watching car races.
B. I find car races unpleasant.
19. A. Most people spend entirely too much money on life insurance.
B. Life insurance is something that no man can afford to be without.
20. A. I would like to learn to fly an airplane.
B. I would not like to learn to fly an airplane.
21. A. I would not like to be hypnotized.
B. I would like to have the experience of being hypnotized.
22. A. The most important goal of life is to live it to the fullest and experience as much of it as you can.
B. The most important goal of life is to find peace and happiness.
23. A. I would like to try parachute jumping.
B. I would never want to try jumping out of a plane, with or without a parachute.
24. A. I enter cold water gradually giving myself time to get used to it.
B. I like to dive or jump right into the ocean or a cold pool.
25. A. I do not like the irregularity and discord of most modern music.
B. I like to listen to new and unusual kinds of music.
26. A. I prefer friends who are excitingly unpredictable.
B. I prefer friends who are reliable and predictable.
27. A. When I go on a vacation I prefer the comfort of a good room and bed.

- B. When I go on a vacation I would prefer the change of camping out.
28. A. The essence of good art is in its clarity, symmetry of form, and harmony of colors.
B. I often find beauty in the “clashing” colors and irregular forms of modern paintings.
29. A. The worst social sin is to be rude.
B. The worst social sin is to be a bore.
30. A. I look forward to a good night of rest after a long day.
B. I wish I didn’t have to waste so much of a day sleeping.
31. A. I prefer people who are emotionally expressive even if they are a bit unstable.
B. I prefer people who are clam and even tempered.
32. A. A good painting should shock or jolt the senses.
B. A good painting should give one a feeling of peace and security
33. A. When I feel discouraged I recover by relaxing and having some soothing diversion.
B. When I feel discouraged I recover by going out and doing something new and exciting.
34. A. People who ride motorcycles must have some kind of unconscious need to hurt themselves.
B. I would like to drive or ride on a motorcycle.

APPENDIX I

The Wisconsin Inventory of Smoking Dependence Motives

Below are a series of statements about cigarette smoking. Please rate your level of agreement for each using the following scale:

	1	2	3	4	5	6	7
	Not true of me at all				Extremely true of me		
1. I enjoy the taste of cigarettes most of the time.	1	2	3	4	5	6	7
2. Smoking keeps me from gaining weight.	1	2	3	4	5	6	7
3. Smoking makes a good mood better.	1	2	3	4	5	6	7
4. If I can always smoke in a certain place it is hard to be there not smoke.	1	2	3	4	5	6	7
5. I often smoke without thinking about it.	1	2	3	4	5	6	7
6. Cigarettes control me.	1	2	3	4	5	6	7
7. Smoking a cigarette improves my mood.	1	2	3	4	5	6	7
8. Smoking makes me feel content.	1	2	3	4	5	6	7
9. I usually want to smoke right after I wake up.	1	2	3	4	5	6	7
10. Very few things give me pleasure each day like cigarettes.	1	2	3	4	5	6	7
11. It's hard to ignore an urge to smoke.	1	2	3	4	5	6	7
12. The flavor of a cigarette is pleasing.	1	2	3	4	5	6	7
13. I smoke when I really need to concentrate.	1	2	3	4	5	6	7
14. I can only go a couple of hours between cigarettes.	1	2	3	4	5	6	7
15. I frequently smoke to keep my mind focused.	1	2	3	4	5	6	7
16. I rely upon smoking to control my hunger and eating.	1	2	3	4	5	6	7
17. My life is full of reminders to smoke.	1	2	3	4	5	6	7
18. Smoking helps me feel better in seconds.	1	2	3	4	5	6	7
19. I smoke without deciding to.	1	2	3	4	5	6	7
20. Cigarettes keep me company, like a close friend.	1	2	3	4	5	6	7
21. Few things would be able to replace smoking in my life.	1	2	3	4	5	6	7
22. I'm around smokers much of the time.	1	2	3	4	5	6	7
23. There are particular sights and smells that trigger strong urges to smoke.	1	2	3	4	5	6	7
24. Smoking helps me stay focused	1	2	3	4	5	6	7
25. Smoking helps me deal with stress.	1	2	3	4	5	6	7
26. I frequently light cigarettes without thinking about it.	1	2	3	4	5	6	7
27. Most of my daily cigarettes taste good.	1	2	3	4	5	6	7
28. Sometimes I feel like cigarettes rule my life.	1	2	3	4	5	6	7

29. I frequently crave cigarettes.	1	2	3	4	5	6	7
30. Most of the people I spend time with are smokers.	1	2	3	4	5	6	7
31. Weight control is a major reason that I smoke.	1	2	3	4	5	6	7
32. I usually feel much better after a cigarette.	1	2	3	4	5	6	7
33. Some of the cigarettes I smoke taste great.	1	2	3	4	5	6	7
34. I'm really hooked on cigarettes.	1	2	3	4	5	6	7
35. Smoking is the fastest way to reward myself.	1	2	3	4	5	6	7
36. Sometimes I feel like cigarettes are my best friends.	1	2	3	4	5	6	7
37. My urges to smoke keep getting stronger if I don't smoke.	1	2	3	4	5	6	7
38. I would continue smoking, even if it meant I could spend less time on my hobbies and other interests.	1	2	3	4	5	6	7
39. My concentration is improved after smoking a cigarette	1	2	3	4	5	6	7
40. Seeing someone smoke makes me really want a cigarette.	1	2	3	4	5	6	7
41. I find myself reaching for cigarettes without even thinking about it.	1	2	3	4	5	6	7
42. I crave cigarettes at certain times of day.	1	2	3	4	5	6	7
43. I would feel alone without my cigarettes.	1	2	3	4	5	6	7
44. A lot of my friends or family smoke.	1	2	3	4	5	6	7
45. Smoking brings me a lot of pleasure.	1	2	3	4	5	6	7
46. Cigarettes are about the only things that can give me a lift when I need it.	1	2	3	4	5	6	7
47. Other smokers would consider me a heavy smoker.	1	2	3	4	5	6	7
48. I feel a strong bond with my cigarettes.	1	2	3	4	5	6	7
49. It would take a pretty serious medical problem to make me quit smoking.	1	2	3	4	5	6	7
50. When I haven't been able to smoke for a few hours, the cravings get intolerable.	1	2	3	4	5	6	7
51. When I do certain things I know I'm going to smoke.	1	2	3	4	5	6	7
52. Most of my friends and acquaintances smoke.	1	2	3	4	5	6	7
53. I love the feeling of inhaling smoke into my mouth.	1	2	3	4	5	6	7
54. I smoke within the first 30 minutes of awakening in the morning.	1	2	3	4	5	6	7
55. Sometimes I'm not aware that I'm smoking.	1	2	3	4	5	6	7
56. I'm worried that if I quit smoking I'll gain weight.	1	2	3	4	5	6	7
57. Smoking helps me think better.	1	2	3	4	5	6	7
58. Smoking really helps me feel better if I've been feeling down.	1	2	3	4	5	6	7
59. Some things are very hard to do without smoking.	1	2	3	4	5	6	7

- | | | | | | | | |
|--|---|---|---|---|---|---|---|
| 60. Smoking makes me feel good. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 61. Smoking keeps me from overeating. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 62. My smoking is out of control | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 63. I consider myself a heavy smoker | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 64. Even when I feel good, smoking helps me feel better. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 65. I reach for cigarettes when I feel irritable. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 66. I enjoy the sensations of a long, slow exhalation of
smoke. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 67. Giving up cigarettes would be like losing a good friend. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 68. Smoking is the easiest way to give myself a lift. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

APPENDIX J

The Reasons for Smoking Scale

Please indicate the extent to which you agree with the following statements using the below scale:

1 = Never 2= Seldom 3=Occasionally 4= Frequently 5=Always

1. I smoke cigarettes to stimulate me, to perk myself up ____
2. I've found a cigarette in my mouth and didn't remember putting it there ____
3. When I'm trying to solve a problem, I light up a cigarette _____
4. When I smoke a cigarette, part of the enjoyment is watching the smoke as I exhale it ____
5. I am very much aware of the fact that I am not smoking a cigarette _____
6. Part of the enjoyment of smoking comes from the steps I take to light up _____
7. When I feel "blue" or want to take my mind off cares and worries, I smoke cigarettes ____
8. I smoke cigarettes automatically without even being aware of it ____
9. I smoke cigarettes in order to keep myself from slowing down _____
10. I get a real gnawing hunger for a cigarette when I haven't smoked in a while ____
11. When I feel uncomfortable or upset about something, I light up a cigarette ____
12. Handling a cigarette is part of the enjoyment of smoking it _____
13. Between cigarettes, I get a craving that only a cigarette can satisfy _____
14. I light up a cigarette when I feel angry about something ____
15. I light up a cigarette without realizing I still have one burning in the ashtray ____
16. I find cigarettes pleasurable _____
17. When I feel ashamed or embarrassed about something, I light up a cigarette _____
18. When I have run out of cigarettes, I find it almost unbearable until I get them _____
19. Few things help better than cigarettes when I'm feeling upset _____
20. I smoke cigarettes just from habit, without even really wanting the one I'm smoking ____
21. Smoking cigarettes is pleasant and relaxing _____
22. I do not feel contented for long unless I am smoking a cigarette _____
23. I smoke cigarettes to give me a "lift" _____