REASONS FOR ATTRITION FROM A SMOKING CESSATION PROGRAM

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The present study examined various psychosocial variables that may influence success in a stop smoking program (*QuitSmart*) used by the North Texas Veterans Health Care Service (NTVHCS). The *QuitSmart* program utilizes the Stages of Change Model, with its focus on the last three stages (preparation, action, and maintenance). It was proposed that factors including shame-proneness, guilt, anger/hostility, depression, self-efficacy – both global and smoking situational, neuroticism, and level of nicotine dependence might individually or in combination predict attrition from the NTVHCS smoking cessation program. Results indicate that shame-proneness, guilt, anger/hostility, and depression did not individually predict attrition. Persons with high levels of smoking situational self-efficacy tend to utilize self-change strategies leading to greater success in smoking cessation. Participants with a psychological diagnosis, when combined with neuroticism and shame-proneness, appear to have more difficulty with cessation than those with only a medical diagnosis. Clinical implications and suggestions for change to the NTVHCS smoking cessation program are discussed.
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CHAPTER 1
INTRODUCTION

Smoking Prevalence Rates

According to the Centers for Disease Control (CDC, 2001a), approximately 47 million adults in the United States smoke cigarettes. Half of the smoking population will suffer disability or death from this single behavior. Each year, one in every five deaths in the United States is the result of cigarette smoking (or more than 430,000 persons). For the period from 1990-1994, the CDC averaged the annual number of deaths from smoking in the following hierarchy: lung cancer, coronary heart disease, chronic lung disease, other smoking-related diagnoses (e.g., slow healing of wounds, emphysema, and peptic ulcer disease), stroke, and other cancers (American Lung Association, 2000). Paralleling the enormous health toll is the economic burden amounting to $50-$73 billion in medical expenses.

Of current adult smokers in the United States, 33 million say they want to quit smoking completely (American Lung Association, 2000). Benefits of cessation include an improved quality of life and longer life expectancy. The risk of coronary heart disease in ex-smokers is cut in half after one year of not smoking (Shipley, 1998). Lung cancer risk decreases by 50-70% within ten years of quitting smoking and the risk of other cancers also decreases significantly the longer a smoker stays abstinent.

According to data provided by Haddock et al. (2000), 29.9% of all U. S. military personnel still smoke. The increased health care costs, increased alcohol use, and decreased physical fitness are concerns for military and taxpaying civilians alike. By banning tobacco use during basic military training, long-term smoking cessation rates have increased. Also, those who relapse maintain their desire to quit (Haddock et al., 2000). Bushnell, Forbes, Goffaux,
Dietrich, and Wells (1997) found that the strongest predictors of smoking cessation in military personnel were class attendance, access to free nicotine replacement therapy, higher education levels, reduced stress, older age, and retirement. These authors believe that the “time preceding retirement may be a ‘critical period’ for the offering of smoking cessation interventions because 80% of the retirees screened attended classes” (p. 718) versus much lower percentages of other subjects. They further recommended “strong organizational support to promote smoking cessation” (p. 719). Whiteman, Snyder, and Ragland (2001) stated that leadership by example was extremely important in implementation and maintenance of an effective health promotion program, including smoking cessation. Because military personnel may have some different concerns than civilian populations regarding smoking cessation, this study looked at factors of attrition from a population of veterans who have expressed a desire to stop smoking cigarettes.

**QuitSmart Stop Smoking System**

The North Texas Veteran Health Care System (NTVHCS), in aiding the veteran population that wants/needs to quit smoking, uses the QuitSmart Stop Smoking System, authored by Robert H. Shipley, Ph.D. (1998). The QuitSmart program uses many techniques designed to aid smokers in their smoking cessation efforts, including “a wide variety of cognitive and behavioral coping methods (in addition to biological treatment of nicotine addiction)” (Shipley, 1998, p. 15). Participants are encouraged to try many different coping methods and then selectively use those that are most effective on an individual basis. Biological treatment includes nicotine fading, nicotine replacement therapy, and other medications that may be helpful in combating withdrawal and depressive symptoms. Further discussion of each method will be presented in the appropriate sections below. Shipley (1996) stated that 6-month quit rates for US veterans averaged 44-45%. The NTVHCS rates are considerably lower.
Purpose of The Present Study

The present study examined psychosocial variables that may explain reasons for attrition from the NTVHCS QuitSmart Stop Smoking Program. For the purpose of this study, successful completion of the QuitSmart Stop Smoking Program will be defined as the complete cessation of smoking tobacco. This study reviewed how guilt and shame, nicotine and alcohol dependence, personality traits, anxiety and depression are related to smoking cessation and investigated how these factors contributed to attrition rates in the QuitSmart Stop Smoking Program at the NTVHCS.

Stages of Change Model

Prochaska and DiClemente (1983) described smoking cessation as a process, stating that smokers go through different motivational stages. DiClemente and Prochaska (1982) found that self-quitters tended to be more successful than persons enrolled in aversion groups or behavioral management groups. This seminal research found that behavioral change depended on self-change, self-efficacy, and decision-making processes in the latter motivational stages. The transtheoretical model of behavior change states that in the early stages smokers require more educational techniques, whereby smokers must evaluate the pros and cons of smoking and decide if the balance is important enough to institute change. This decisional balance theory helps explain the cognitive processes involved in using the five stages of change for smoking cessation (described below). Perz, DiClemente, and Carbonari (1996) believed that experiential processes that involve cognitive and/or affective activity are used more in the first two stages whereas smokers in the latter stages tend to emphasize behavioral processes as they begin an actual quit attempt.
Smokers in the first stage, precontemplation, are more likely to see the benefits of smoking as outweighing the risks, and have no intention to quit smoking within the next six months (Fava, Velicer, & Prochaska, 1995). During the second stage, contemplation, smokers understand and decide that a quit attempt is something they want to do within six months. It is here that attitudinal changes lead to a decisional balance toward the preparation stage. The cons of smoking become more salient as smokers begin to look at ways to stop smoking, thus the decisional balance crosses over from benefits of smoking (pros) to understanding the risks (cons) of smoking.

In the third stage, preparation, smokers begin to explore and plan behavioral changes aimed at a quit attempt. Generally, smokers seriously plan to quit within 30 days once they have reached the preparation stage. Also, they normally have had at least one quit attempt during the past year (Fava et al, 1995) but have not been able to maintain abstinence (Boudreaux, Carmack, Scarinci, & Brantley, 1998). The fourth stage, or action stage, involves implementing an actual quit plan. People at this stage often have stopped smoking in the past for more than one day, but less than six months. Behavioral tasks should replace emotional reactions and thoughts about attitude change as the action plan is implemented.

In the fifth stage, maintenance, behaviors have changed and smokers are able to maintain abstinence for more than six months. In maintenance, ex-smokers work to prevent relapse and consolidate gains.

Obviously if smokers approaching a stop smoking program are in the first two stages, success rates for smoking cessation would be expected to be lower than for those in the latter three stages. Perz, DiClemente, and Carbonari (1996) reported that timing of interventions is
essential for the use of behavioral techniques. Thus, intervention programs generally target the last three stages.

*QuitSmart* uses a three-session treatment protocol that corresponds to the latter three stages reviewed above. In the preparation stage, smokers review the reasons for quitting and set a quit date. The quitting stage includes the quit date. Smokers learn to use various coping skills and are encouraged to use a nicotine-replacement product (if nicotine-addicted), and a “realistic plastic cigarette substitute is provided to help overcome the habitual aspects of smoking” (Shipley, 1998, p. 14). The third session, or maintenance stage, emphasizes abstinence and being prepared to cope with situations that place smokers at risk for relapse. Also emphasized are lifestyle changes that add daily pleasurable activities to compensate for the loss of pleasure experienced from smoking.

Affect Theory

To understand how guilt and shame may affect attrition in smoking cessation, a brief review of affect theory is necessary. According to Tomkins (1962), affects are the primary human motives with the face being the primary site of action for the affect system. Tomkins and McCarter (1964) believed that affect caused behaviors all over the body because of relations between physiological correlates, specific facial muscles, and specific affects. Tomkins further elaborated that there are nine innate affects: three positive (1962; interest-excitement, enjoyment-joy, and surprise-startle) and six negative (1963; distress-anguish, shame-humiliation, anger-rage, contempt-disgust, fear-terror, and dissmell). Affects were each given bipolar names (with the exception of dissmell), indicating a continuum from mild to intense.

Each affect must be activated by a characteristic array of neural stimulation such that the activator triggers the appropriate affect stored in a subcortical center. Differences in affect
activation depend on the frequency of neural firing and are further divided into three levels: stimulation increase, stimulation level, or stimulation decrease (Tomkins, 1982). Tomkins stated that positive and negative affects can be activated by stimulus increase. However, only negative affects occur from sustained levels of stimulation. Conversely, only positive affects can be activated from stimulus decrease. For example, interest-excitement occurs when there is an optimal increase in a stimulus. If the stimulus becomes too intense and sustained, then the fear-terror affect becomes the response. Enjoyment-joy occurs as a relief of stimulus decrease—the smile of pleasure represents a mild decrease while laughter represents a precipitous decrease (Nathanson, 1996). The startle response results from surprise, occurs at the most intense state of neural firing, and causes redirection of the focus of attention. Obviously, how the person interprets the interrupting stimulus determines whether the affect is positive or negative.

Tomkins believed “the affect system provides the primary blueprints for cognition, decision, and action” (Tomkins, 1987, p. 139). Although primary affects are innate, humans have the ability to respond to the environment around them and thus attempt to control circumstances that evoke both positive and negative affective responses. The ultimate goal would be to maximize positive affect and minimize negative affect. Under this theory, learned stimuli and responses can contribute to initiating the affect system. The meaning one gives the affect experience allows for differences in experience for the same affect. In other words, cognition, perception, and motor responses can lead to differences in how the affect is experienced. Although there was debate regarding whether shame was a learned or innate affect, Tomkins believed shame to be innate and an inhibitor of the positive affect of interest-excitement and enjoyment-joy. As his theory developed, he came to believe that shyness, shame, and guilt...
were identical as affects, but experienced differently because of differences in perceived causes and consequences (Tomkins, 1987). Shyness involves strangeness of another, guilt involves moral transgression, and shame involves inferiority (Tomkins, 1982). The present study addressed differences in experiences of guilt and shame during smoking cessation attempts, as well as other reasons for attrition discussed in later sections.

Guilt and Shame

The psychological constructs of guilt and shame vary across the research literature. However, the general consensus is that guilt is associated with feelings of having done something wrong and for which reparation may be necessary (Caprara, Manzi, & Perugini, 1992; Gerrard & Hyer, 1994; Hendin & Haas, 1991; Joseph, Williams & Yule, 1997; Kubany et al., 1995; Kubany & Manke, 1995; Lewis, 1990; Nathanson, 1987). Guilt is event-related. Shame, on the other hand, is viewed as a core construct in which one’s entire being is seen as being defective, inferior, or flawed (Greenberg & Paivio, 1997; Lewis, 1987, 1990; Nathanson, 1997; Stone, 1992; Tangney, 1990; Tomkins, 1987; Wurmser, 1999). A person may attempt to hide the flaw from exposure so that others cannot see it (Joseph, Williams & Yule, 1997). Shame has a tendency to be trait-related (Cook, 1996). Paunovic (1998) stated that guilt tends to lead toward reparative actions whereas shame results in avoidance coping or withdrawal from the social sphere.

Some researchers say it is difficult to distinguish between guilt and shame because there is a strong relation between the two constructs (Harder & Zelma, 1990; Henning & Frueh, 1997; Kugler & Jones, 1992; Nathanson, 1992). Cook (1996) proposed that guilt is a variant of shame, but stated that investigating guilt as a separate construct by using separate measurement instruments is an “empirical dead-end for the study of psychopathology” (p. 134). Guilt is,
however, an “important social and psychological phenomenon worthy of study in relation to such issues as conscience, social control, and morality” (Cook, 1996, p. 146-147). According to Kubany (2000), most shame theorists agree that shame involves deprecation of the entire self. This total deprecation is distinctly different from guilt which involves deprecation of specific actions or behaviors, which hold considerable moral weight in today’s society in which smoking is no longer seen as a desirable behavior.

Models of guilt

Kugler and Jones (1992) defined guilt as “the dysphoric feeling associated with the recognition that one has violated a personally relevant moral or social standard” (p. 318) and further theorized that it can be adaptive or maladaptive. They looked at three conceptualizations of guilt: state guilt, trait guilt, and moral guilt. In validating the Guilt Inventory, Kugler and Jones looked at several measures of guilt and shame, most of which they concluded did not measure the entire domain of guilt. Those designed to differentiate between guilt and shame were seen as better measures of shame. Kugler and Jones concluded that there was poor support for maintaining a distinction between trait and state guilt. Moral guilt was directly correlated with religious involvement and, as such, may need to be evaluated separately from the affective experience of guilt, according to Kugler and Jones. Their evaluation of moral standards guilt was based on behaviors rather than feelings. However, violating one’s moral standards may lead to excessive feelings of guilt. In evaluating the Guilt Inventory with the Internalized Shame Scale, no relation was found between moral guilt and shame (Taber, 2002). Moral guilt may well arise from what Tangney (1990) described as a past behavior that involves harm to someone or something. As smoking becomes less socially acceptable, many smokers may feel guilt not
only about harming themselves physically, but harming others around them. This guilt may be exacerbated by the inability to successfully quit smoking.

Caprara, Manzi, and Perugini (1992) stated that guilt is accompanied by feelings of responsibility for a negative outcome. They see guilt as multidimensional, having affective, cognitive, and motivational dimensions. Tangney (1990) stated that reparative action, which can include “confessing, apologizing, undoing, repairing” (p. 103), helps one’s self-concept to remain intact so that the sense of self remains stable. Condiotte and Lichtenstein (1981) stated that of subjects in their study who relapsed to smoking, “83% reported experiencing mild to severe guilt reactions following their first relapse episode” (p. 655). For this study, it was thought that if smokers were able to admit to a slip without fear of repercussion (that appears to induce guilt), they may be more likely to continue in a smoking cessation program rather than completely giving up.

**Conceptual definition of guilt**

For this study, guilt was defined as a dysphoric feeling based on an internal evaluation that one has violated a personally relevant or moral social standard. In other words, the guilt smokers experience was based on behaviors and feelings regarding harmful effects of smoking both to themselves and those around them (e.g., second-hand smoke). By their inability to quit, they know they were harming themselves and others. Theorists agree there is an affective and cognitive component to guilt. Generally when dealing with guilt, a person tends to believe in a need for reparation for an event for which he/she acknowledges some responsibility. For smokers, the only “reparation” they can make was to stop smoking as reparation for past damage they may have caused to others is likely not possible.
Models of shame

According to affect theory, shame stems from the interest-excitement and enjoyment-joy affects. When shame is triggered, it decreases the rate of these positive affects and becomes a powerful impediment. The shame affect then acts as an ongoing trigger to more impediment. Cognitively, the ashamed person scans memory for associations to previous experiences of this affect, bringing into consciousness everything that has ever been embarrassing (Nathanson, 1989). Lazare (1987) describes the cognitive aspects of shame as “...a painful awareness of oneself as defeated, deficient, exposed, a failure, inadequate, wanting, worthless, and wounded. ...The very essence of the self feels wrong” (p. 1654). Cook (1987) elaborated that shame can be so painful that defensive mechanisms such as addictive behaviors may attempt to reduce the feelings of shame. At the same time, addictive behaviors can also contribute to the intense feelings of shame, thus creating a vicious cycle.

Tomkins (1963) put forth that “shame strikes deepest into the heart of man” (p. 118). Because it is felt as inner torment, it reaches into the person’s sense of self and is felt as a sickness within. In a sense, the self splits into both subject and object: as subject it becomes the judge and shows contempt; as the object it receives the contempt, experiences self-disgust and thus becomes ashamed.

Shame becomes malignant if it is magnified in frequency, duration and intensity. When this occurs, one may develop a shame-prone identity. Persons who are shame-prone tend to interpret any vague or negative experience as validating their worthlessness, their badness, and their inability to give to others. According to Harper and Hoopes (1990), shame-prone people experience guilt that is excessive, intense and rarely evocative of a change in behavior. They propose that shame is always the underlying foundation of pathological guilt. Thus, extreme
guilt tends to shame the self more, which leads to a splitting off of emotions or feelings as being bad parts of themselves. Because such persons go to extreme lengths to hide their shame, the presenting problem can be anything from depression to other mental disorders, but all act as covering agents for the shame-proneness.

Shame is often experienced as disproportionate to the seriousness of the initial experience, such that the shamed person cannot see his/her overblown affective reaction. It was thought that smokers who relapse see smoking one cigarette as “total relapse” due to this overblown affective reaction rather than seeing the smoking of a cigarette as a “slip.”

Goss, Gilbert, and Allan (1994) viewed shame from the aspects of inferiority, helplessness, anger, and self-consciousness; they found that inferiority accounted for the largest proportion of the variance. This affirms Lewis’s (1971) theory that shame occurs when one negatively evaluates the self or sees others as looking down on oneself. Allan, Gilbert, and Goss (1994) further found that shame-related beliefs about negative evaluations by others have a high association with measures of clinical distress and are strongly associated with measures of psychopathology, including depression.

When shame occurs, the self must choose from what Nathanson (1997) calls the Compass of Shame. The compass has four poles (withdrawal, attack self, avoidance, attack other), each with its own learned resources of response. These poles are conceptualized as continua. The withdrawal pole impedes personal interaction, and indicates the person wanting to hide or retract whatever he/she just did or said. This can be as mild as a minor gesture of embarrassment to a “pathological withdrawal from all human interchange” (Nathanson, 1993, p. 19). For smokers, attrition from smoking cessation could be one way to deal with feelings of shame. At the attack self pole, one must demean one’s sense of self “in order to maintain association with others,
ranging from simple deference to pathological masochism” (Nathanson, 1993, p. 19). At the avoidance pole, one can avoid shame by calling attention to whatever brings pride (or by use of alcohol or drugs that bring about excitement). At the attack other pole, one is likely to attempt to reduce another’s self-esteem by use of mild put-down, or by outright abuse at the other end of the spectrum. An example of this attack other phenomenon may be the anger and frustration smokers demonstrate toward people who disapprove of their smoking. Tangney, Wagner, Fletcher, and Gramzow (1992) described such shame-based anger as a result of the imagery of disapproving others.

Cook (1996) agreed with Tomkins and Nathanson in the respect that guilt is a variant of shame. Nathanson (1987) specified that shame and guilt differ as mature emotions in that “guilt limits action, especially action that may be harmful to another, whereas shame guards the boundaries of the self” (p. 46). Cook believed that shame emotions influence personality development in that they result from many shame scenes internalized over time; they become an aspect of the self-concept. As a result, higher levels of anxiety can be expected as one attempts to hide the feelings of inadequacy and worthlessness experienced internally. On the other hand, guilt requires a cognitive capability and is “an important social and psychological phenomenon worthy of study in relation to such issues as conscience, social control, and morality” (Cook, 1996, p. 146-147). Nevertheless, shame is viewed by these theorists as the dominant emotion regarding psychopathology, treatment, and mental health assessment issues. Cleary (1992) discussed the importance of helping shame-prone individuals develop action-oriented strategies for neutralizing negative affect as well as identifying and replacing negative identity scripts.
Conceptual definition of shame

For the present study, shame was understood as viewing oneself as inadequate or inferior (e.g., a “total loser,” or as “damaged goods”). The entire self is viewed in a global, negative way; this requires the occurrence of negative affect. Kubany (2000) stated shame is often expressed in “I feel” statements conveying a desire to disappear, shrink, or hide. Because shame affects the entire self, it is likely to be concealed and disguised and tends to be concerned with being—with who one “is.”

Other Reasons for Attrition

Smokers have difficulty quitting smoking for a variety of reasons. Shipley (1992) states, Individuals who have continued to smoke despite pressure to quit tend to be more ‘hard core’ than were smokers several years ago. These smokers are more likely to be physically addicted to nicotine, feel guilty, angry, and rebellious in the face of social pressures to quit, and to be emotionally dependent on cigarettes for the fulfillment of many needs (p. 188).

Irvin and Brandon (2000), in a review of 23 studies published from 1977 through 1996 that used group-administered, multi-component smoking cessation trials, found that efficacy of such treatments is declining. They believe that persons who currently seek treatment are older, have been smoking longer, and are less successful in quitting. On the other hand, Zhu, Melcer, Sun, Rosbrook, and Pierce (2000), using California Survey data, found 20% of persons trying to quit used assistance, and had more than double the long-term cessation rate of those who quit without assistance. They also found that those seeking assistance initially smoked significantly more cigarettes and had longer smoking histories.
Mood states influence a smoker’s ability to quit. For example, El-Guebaly and Hodgins (1998), in a study of substance-related cravings and relapses, stated that “over half of all relapses are attributed to negative emotional states” (p. 31). A second factor was social pressure and positive emotions, and a third factor consisted of physical withdrawal, testing control, substance cues, and urges to use.

In the above review, a broad overview of reasons for attrition was given. Below are more specific factors, both physiological and psychological, that affect person’s abilities to quit smoking.

**Nicotine Dependence**

According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition–Text Revision (DSM-IV-TR, APA, 2001) criteria for nicotine dependence is similar to criteria for substance dependence and must consist of three or more symptoms including tolerance, withdrawal, using nicotine in larger amounts or over longer periods of time than intended, persistent desire or unsuccessful efforts to cut down or quit, activities given up or reduced because of nicotine use, or continued use despite knowing recurrent physical/psychological problems are caused or exacerbated by nicotine. The DSM-IV-TR further describes symptoms of nicotine withdrawal. Criteria include daily use of nicotine for at least several weeks; and symptoms (after abrupt cessation or reduction in the amount of nicotine) of four or more of the following within 24 hours: depressed mood, insomnia, irritability or anger, anxiety, concentration problems, restlessness, decreased heart rate, or increased appetite (p. 244-245). Both diagnoses require clinically significant levels of distress or impairment. In researching withdrawal symptomatology, Pomerleau, Marks, and Pomerleau (2000) noted that nicotine dependence increased likelihood of craving and insomnia; depressed mood increased the
likelihood of depression; increased appetite and weight was predicted by disordered eating; and the “increased likelihood of irritability, anxiety, difficulty concentrating and restlessness were associated with both anxiety and nicotine dependence” (p. 277). Their overall results support the idea that individuals with cofactors for “depression, anxiety, and disordered eating” (p. 278) may use smoking as a form of self-medication, thus making smoking cessation much more difficult. Another explanation offered by Shiffman et. al (1997) stated that nicotine withdrawal makes smokers irritable—in other words, they are more reactive to minor stressors—and experience such stressors in an overblown manner. Furthermore, because of heavy nicotine dependence, such smokers may have more experience with withdrawal symptoms and relief (i.e., by smoking more frequently) and thus experience more conditioned associations. Heavy nicotine dependent smokers experience higher urges and worse negative affect. They are likely to identify stress as the cause of their relapse (Shiffman et. al, 1997).

Researchers (Cohen et al., 1989; Farkas et al., 1996) have demonstrated that lighter smokers are more likely to achieve successful cessation due to less dependence on nicotine. However, Breslau and Peterson (1996) stated that older smokers (over age 40) are more likely to quit than younger smokers. Health concerns are given as the reason for this phenomenon, regardless of how much a person smokes. Farkas (1999) found that heavy smokers who used nicotine fading to become light smokers prior to quit attempts were significantly more successful in cessation attempts than heavy smokers who did not use nicotine fading. In other words, nicotine fading may aid in successful cessation for heavier smokers who are more nicotine dependent. The QuitSmart program used by NTVHCS recommends and uses brand fading or nicotine fading. Smokers switch to brands with less and less nicotine. Shipley (1998) indicated that brand fading is more effective than “number” fading (i.e., smoking the same brand, but
fewer cigarettes) because smokers receive the same powerful and rewarding “hit” when they smoke the same brand, whereas nicotine faders receive less reinforcement/reward. Brand fading does require smokers to be mindful of inhalation patterns and number of cigarettes smoked to insure they are not compensating for the reduced nicotine by deeper inhalation or increased number of cigarettes.

The NTVHCS, in conjunction with the QuitSmart program, uses nicotine replacement therapy (NRT) as well as nicotine fading for addicted smokers. QuitSmart protocol prefers for smokers to use brand fading prior to quitting, followed by use of nicotine patches after quitting. Researchers (Bolin, Antonuccio, Follette & Krumpe, 1999; Killen, Fortmann, Davis, Strausberg, & Varady, 1999; Saxon, McGuffin, & Walker, 1997) have found that smokers who smoke while using the nicotine patch have a far greater relapse rate than smokers who abstain while on the patch. Other side effects of dual nicotine use include increased restlessness, craving, irritability, and poor concentration. More importantly, according to Bolin, Antonuccio, Follette, and Krumpe (1999), those who smoked while using the patch reported lower certainty of their ability to quit (i.e., lower self-efficacy).

Physical addiction may be a result of nicotine’s propensity to act as a reinforcer of pleasurable feelings, a muscle relaxer, and a hunger reducer. According to Fisher and Rost (1986), a pack-a-day smoker has inhaled the smoke from cigarettes over one million times in twenty years of smoking. Such behavioral repetition certainly becomes a habit that is associated with many daily situations and feelings. The desire for a cigarette can be triggered by various environmental cues and feelings, including social activities such as drinking, being around other smokers, or during work “breaks.” Shiffman et al. (1996) reported lapses are generally associated with negative affect, presence of smoking cues, and alcohol and coffee consumption.
Alcohol Dependence

According to the CDC (2001b), “Current smokers are more likely to be heavy drinkers and illicit drug users than nonsmokers. Among smokers in 1995, 12.6 percent were heavy drinkers and 13.6 percent were illicit drug users.” In contrast, of nonsmokers, only 2.7 percent were heavy drinkers and 3.0 percent were illicit drug users. Of persons consuming distilled alcohol products in a tobacco-cession program, Faue, James, Folen, and Needels (1997) found that 8 percent maintained abstinence, 17 percent were late relapsers, and 75 percent were early relapsers. Breslau, Peterson, Schultz, Andreski, and Chilcoat (1996) reported that “smokers with active alcoholism in the preceding year were 60% less likely to quit than were smokers with no history of alcoholism” (p. 985). They further reported that alcoholics who were in remission were as likely to quit smoking as smokers with no history of alcoholism. Hayford et al. (1999) also reported a history of alcoholism was not associated with reduced likelihood of smoking cessation, but this population experienced a more severe nicotine dependence. Humfleet, Munoz, Sees, Reus, and Hall (1999) reported that even low to moderate levels of alcohol consumption during smoking cessation decreased the likelihood of successful smoking cessation. Using data from the 1992 National Longitudinal Alcohol Epidemiology Survey, Dawson (2000) found that “lifetime and past-year smoking had positive bivariate associations with drinking status, volume of alcohol intake, frequency of heavy drinking and alcohol abuse and dependence” (p. 246). Dawson further reported confirmation of other studies that indicate alcohol-potentiated smoking occurred more often in heavier drinkers. This means that smoking relapse might occur during a disinhibition condition of heavy drinking, or alternatively, heavy drinkers continue to smoke because they believe it makes them more alert and/or sociable when they are intoxicated.
Self-Efficacy

On a global level, Bandura (1986) stated that the change in belief about one’s ability to successfully execute a given action mediates the initiation and maintenance of a behavioral change (i.e., self-efficacy). Prochaska, DiClemente, Velicer, Ginpil, and Norcross (1985) defined smoking self-efficacy as “the subjects’ level of confidence that they can resist smoking across a number of tempting situations” (p. 396-397). Prochaska, DiClemente, Velicer, Ginpil, and Norcross (1985) further noted that “self-efficacy contributed strongly both to change from contemplation to action and from action to maintenance” stages (p. 404). Such change should be expected because, according to Bandura (1986), self-efficacy is influenced by performing the behavior. Persons in the action and maintenance stages are performing the nonsmoking behavior. Herrick, Stone, and Mettler (1997) also found self-efficacy scores were higher in action and maintenance stages.

Although some literature (Carey, Snel, Carey, & Richards, 1989; Stretecher, Devillis, Becker, & Rosenstock, 1986) state that pre-treatment self-efficacy is not an indicator of smoking cessation success, other studies have found that as self-efficacy increases through treatment, there is more likelihood of maintaining smoking cessation rates (Coelho, 1984; Haaga, 1989; Mothersill, McDowell, & Rosser, 1988; Pederson, Strickland, & DesLauriers, 1991). Boudreaux, Carmack, Scarinci, and Brantley (1998) stated that “[T]he greater a person’s belief that he or she can successfully quit smoking, the greater the likelihood he or she will try and succeed at cessation” (p. 150). They further reported that although temptation to smoke remained high in all people in their low socio-economic sample, those with higher self-efficacy reportedly had more confidence in their ability to resist temptations.
Faue, Folen, James, and Needels (1997) reported on three groups (abstainers, early relapsers, and late relapsers) and found that all groups tended to believe an inability to cope with current stressors increased difficulty in quitting. However, early and late relapsers tended to have less belief in their ability and efforts to succeed, (i.e., relapsers’ self-efficacy levels may have contributed to their relapse). Condiotte and Lichtenstein (1981) reported that 80% of the subjects who relapsed in their study stated “the first smoking episode had had a moderate to severe negative effect on their confidence in their ability to resist further cigarettes, and 49% reported that they made no attempt at all to control their smoking after that first cigarette” (p. 655). In this study, it was thought that low situational self-efficacy may have led to the first cigarette, whereas low global self-efficacy may have contributed to seeing the “slip” of smoking one cigarette as a complete relapse. Stanton, Dittmar, Wooldridge, and Kuo (1992) reported that ratings of self-efficacy discriminated between joiners and non-joiners of smoking cessation groups and that self-efficacy seems to be increased by participation in a smoking-cessation program. In other words, those with higher self-efficacy are more likely to join a program, more likely to benefit from its interventions—increasing self-efficacy, and more likely to maintain higher quit rates than those with lower levels of self-efficacy. These authors also reported that group attendance was significantly important in maintaining smoking cessation.

This study attempted to understand global levels of self-efficacy versus smoking situational (i.e., smoking-specific) self-efficacy. Such knowledge could target areas where cognitive and behavioral difficulties could be addressed to better serve the smoking population. Two schools of thought regarding self-efficacy and smoking cessation appear in the literature. First, a “general” self-efficacy factor demonstrates that higher confidence levels in people’s ability to stop smoking predicts the outcome of a smoking cessation attempt. Studies from this
school of thought use a one-factor self-efficacy measure for a global assessment of self-efficacy. Other researchers believe a situation-specific measure may be more realistic. Velicer, DiClemente, Rossi, and Prochaska (1990) used confirmatory factor analysis to determine a three-factor model using a positive-social factor, a negative-affective factor, and a habit-addictive factor. Gwaltney et al. (2001) found seven factors (negative affect, positive affect, restrictive situations, idle time, social-food, low arousal, and craving) and believe such information would be helpful in tailoring a smoking cessation program around an individual’s vulnerabilities. In a group setting, this may become a cumbersome and costly method to lessen participants’ vulnerabilities. On the other hand, developing a better understanding of self-change strategies that successful quitters use may be practical for determining strategies aimed at helping more people become successful quitters (Etter, Bergman, & Perneger, 2000). Matheny and Weatherman (1998) stated that perceived coping resources that aided smokers in handling stress (tension control, problem solving skills, and self-directedness) were more likely to aid in maintaining abstinence. They also found self-efficacy factors likely to improve the prospect for permanent smoking cessation. The areas of self-efficacy described—global and situational—may also affect how current smokers use self-change strategies in smoking cessation attempts.

For the present study, both global and smoking situational self-efficacy were studied to determine what effects these factors have on the veteran population of smokers attempting to quit smoking via the NTVHCS QuitSmart program. The present study also examined self-change strategies used by smokers prior to beginning a cessation attempt to determine if such factors relate to attrition in the NTVHCS QuitSmart stop smoking program.
Personality Traits

Personality factors could also impact certain behaviors required for persons to quit smoking. Breslau, Peterson, Schultz, Chilcoat, and Andreski (1998) believed the trait of neuroticism may play a role in the depression-smoking association. Forgays (1986) summarized a “personality profile” that indicates high neuroticism, extroversion, and a strong need to engage in new and unconventional experiences are common for persons who engage in tobacco, alcohol, or illegal drug use. Lemos-Giraldez and Fidalgo-Aliste (1997) discussed “personality as a predictor of dangerous behaviours model” (p. 198). This model postulated that certain dispositions (or traits) “prompt the person to create or choose situations that elicit reactivity, incur undue burdens, facilitate engagement in unhealthy behaviors, or discourage preventive health behaviors” (p. 198). Furthermore, it may not be a single unhealthy habit, but a combination that predicts health difficulties. Also, certain personality traits tend to cause an increase in behaviors that make certain kinds of events more likely to happen, which also adds to life stressors for people with these traits. According to research quoted by Lemos-Giraldez and Fidalgo-Aliste (1997), traits such as psychoticism, extraversion, hostility, and sensation seeking are linked to smoking, drinking, and drug taking. Cleary (1992) noted that research had demonstrated a positive correlation between shame and neuroticism. Shame-prone people are likely to experience higher levels of anxiety, guilt, and shame and lower levels of self-efficacy. Determining such factors may be helpful in demonstrating more effective coping and self-change strategies to help the hard-core smoker become abstinent.

Anxiety and Depression

Greenberg and Paivio (1997) discuss anxiety as “a response to uncertainty that arises when the sense of self-integrity, coherence, continuity, or agency is threatened” (p. 194). If a
person’s history is characterized by unpredictability and lack of interpersonal control, levels of anxiety can increase and a sense of loss of control can result. However, anxiety can also be seen as positive and performance-enhancing when the increased arousal can be channeled into the capacity to plan for the future or is experienced as excitement.

Litz and Keane (1989) used previous information processing research to build the case that anxiety occurs when fear-relevant stimuli are encoded in memory in such a manner that the fear information facilitates cognitive, motor, and meaning distortions. The cognitive portion of the fear network occurs when information causes an unnecessary fear response. Motor responses include psychophysiological responses such as increased heart rate and avoidance behavior. Meaning distortions occur when the information activates memories of previous fear experiences. Shame-proneness may also affect levels of anxiety because of the stress the person experiences in attempting to hide their feelings of inferiority. Higher levels of anxiety may also result from perceived negative evaluation by others. The use of negative, self-evaluative self-statements may contribute to anxiety, depression, and additional levels of shame. Delfino, Jamner, and Whalen (2001) found that men and women use smoking for negative affect regulation, as well as for combating fatigue. Because they studied differences by gender, they found men use tobacco as a stimulant and to avoid sadness more than women. They further reported “men and women were around twice as likely to have an urge to smoke if they also reported being anxious” (p. 245). Both genders experienced increased urges to smoke when around others besides family and friends, although both men and women actually smoked less in such situations.

Breslau, Peterson, Schultz, Chilcoat and Andreski (1998) conducted a longitudinal investigation that indicated
(1) history of major depression. . .was associated with a 3-fold increase in the risk for progression to daily smoking, (2) history of major depression at baseline did not decrease significantly smokers’ rate of quitting. . . (3) history of daily smoking at baseline increased significantly the risk for major depression. . . (p. 164).

These authors also stated a “history of early conduct problems was an influential antecedent factor in both smoking and major depression” (p. 165). Tsoh et al. (2000) found a 14.1% incidence of major depression 12 months after smoking cessation treatment. They reported that a “history of depression, baseline BDI score, college education and age at smoking initiation were significant predictors of major depression after treatment” (p. 368). Although incidence of major depression was higher in this group than in the general population, there was no significant difference in depression rates for those who maintained abstinence or those who relapsed. They concurred that persons who had previously experienced major depression were more likely to experience depressive episodes after treatment, but reasons for the elevation were not clear. Burgess et al. (2002) reported that early relapsers in smoking cessation programs tended to have high rates of recurrent depression, younger age at onset of first major depressive episode, and higher rates of depression immediately upon cessation of smoking. Participants whose depressive symptoms increased more slowly had moderately positive outcomes at two weeks after quitting, but “showed continued decreases in abstinence over the next year” (p. 360). These results may indicate that smokers who are more prone to major depressive disorder may need to have further treatment for depression if they are to maintain abstinence.

Zelman, Brandon, Jorenby, and Baker (1992) reported that negative affect interfered with skills training in smoking cessation groups. For persons high in depression proneness and negative affect, supportive counseling (where participants were encouraged to discuss thoughts
and feelings regarding smoking cessation difficulties) and skills training predicted a more positive outcome. For persons low in depression proneness and negative affect, skills training alone was sufficient to limit relapse susceptibility.

According to Shipley (1998), smokers come to rely on cigarettes as others rely on friends; therefore quitting is similar to the loss of a “best friend.” Conditions such as alcohol/drug abuse, depression, and anxiety disorders may interact with nicotine dependence. Breslau, Kilbey, and Andreski (1991) found smokers with moderate nicotine dependence were more likely to have higher rates of other substance dependencies, were five times more likely to experience major depression, and more than four times more likely to suffer from anxiety disorders than persons with no nicotine dependence. These authors further reported “despite the strong association between major depression and any anxiety disorder, each had an independent association with nicotine dependence” (p. 1072). It is unknown whether co-morbid conditions lead to nicotine dependence, or if nicotine dependence leads to the co-morbid conditions (Shipley, 1998). Regardless of the cause/effect relationship, if co-morbid conditions are present, quitting smoking is likely to be more difficult. Smoking cessation programs may be more successful if these conditions are taken into consideration.

Smoking Cessation Program Components

Shipley (1998) stated that smoking cessation program should include treatment components that are “clinically effective, appealing to smokers, and time efficient” (p. 12). The QuitSmart treatment protocol includes a variety of strategies that meet the above three criteria. The following is a list of components from the QuitSmart guide. Following the list is a discussion of those components used by the NTVHCS.

- Stop smoking guide with various coping strategies (Shipley, 1997a)
• Nicotine replacement therapy
• Nicotine fading
• Health professional counseling and support
  1. Withdrawal symptom management
  2. Hypnosis audiotape (Shipley, 1997b)
  3. Cigarette replacement device (Shipley, 1997b)
  4. Relapse prevention/recovery strategies
  5. Weight control strategies
  6. Social support from spouse/partner, close friends, and coworkers

**Coping Strategies**

Research has found that smokers who use behavioral and cognitive coping responses were less likely to relapse. Behavioral coping can include:

• Eating or drinking as a substitute for smoking
• Physical activity as a distraction or substitute for smoking
• Relaxation (deliberate attempts to relax with behavior means)
• Distraction
• Escape from the threatening situation
• Delay or waiting out the urge (p. 14)

Cognitive coping responses include:

• Thinking about the positive health consequences of not smoking
• Thinking about the negative health consequences of smoking
• Thinking about the negative consequences of smoking unrelated to health (e.g., thinking about the disapproval of others)

• Intention to delay (e.g., “I’ll just wait this out.”)

• Distraction by shift of attention to other contents of consciousness such as imagery, other problems, and so forth

• Other self-talk—cognitions that restructure the subject’s view of the situation (e.g., “There is really no reason to be upset”) or of the subject’s own responses (e.g., “I don’t really want to smoke.”) (p. 15).

Shipley (1998) stated that “precise coping responses used are less important than the use of several responses (other than willpower or self-punitive thoughts)” (p. 15).

**Nicotine Fading/Brand Switching**

The *QuitSmart* program recommends brand-switching prior to quitting. To determine level of nicotine use by each smoker, *QuitSmart* offers information regarding nicotine content of various brands of cigarettes. Shipley (1998) stated that most non-filter store brands have 1.5 mg of nicotine, full flavor store brands have 1.1 mg of nicotine, lights have 0.8 mg of nicotine and ultra-lights have 0.5 mg of nicotine. Once current nicotine usage is determined by smokers, they are encouraged to select a step-down brand each week to reduce nicotine consumption prior to quitting. Brand-switching requires from one to three weeks, depending on the amount of nicotine in the smoker’s baseline brand. As fading progresses, smokers must not smoke more cigarettes, take more puffs from each cigarette, or inhale more deeply to compensate for decreased nicotine content of brand switching. In using the group protocol, brand switching occurs over a two-week period prior to the second scheduled meeting. Smokers agree on a quit date that corresponds to the second scheduled meeting of the *QuitSmart* program.
Nicotine Replacement Therapy (NRT)

The use of NRT has been found to be helpful for smoking cessation. “The purpose of NRT is to relieve cigarette urges and other withdrawal symptoms by adding sufficient nicotine to the blood stream” (Shipley, 1998, p. 11). NRT consists of a variety of methods including gum, patch, nasal spray, and more recently, an oral inhaler.

Because the NTVHCS QuitSmart program uses the nicotine patch, only this type of NRT will be discussed. The patch is preferred because of ease of use and proven effectiveness. The advantages of NRT for smokers with histories of alcohol or other drug problems has been particularly pronounced, according to Saxon, McGuffin, and Walker (1997). According to Tsoh et al. (1997), abstinence rates for persons using nicotine patches is two times greater than those using placebo. Using the patch diminishes the desire to smoke, thus giving the new non-smoker the opportunity to practice new behavioral and coping methods without increased withdrawal symptoms. It “buys time” for persons attempting to quit whereby quitters can figure out alternatives they can use in place of smoking. It also helps quitters recognize high risk situations and have appropriate strategies learned to deal with them.

Tsoh et al. (1997) stated that NRT may not be appropriate for persons with unstable heart arrhythmia or if a myocardial infarction has been experienced within four weeks of quitting. Persons with active peptic ulcers may not be good candidates for NRT. Also, NRT may not be appropriate for persons with systemic hypertension, hyperthyroidism, and insulin-dependent diabetes mellitus. Shipley (1998) discussed the controversy of using NRT with pregnant women, stating that a cost-benefit analysis must be done to determine if the benefits of NRT outweigh the risks.
Side effects of NRT include nausea and lightheadedness, which may be indicative of nicotine overdose—a reduction in nicotine intake is needed. Causes can include using a dosage of NRT that is too high, or it could also indicate that the person is smoking and using NRT simultaneously. If a person finds him/herself unable to resist smoking, he/she should immediately discontinue NRT. The most frequently experienced side effect is skin irritation at the patch site that could be caused by sensitivity to the adhesive or the medium containing the nicotine, but not to the nicotine itself. Other side effects include dry mouth, abnormal dreams, and insomnia (Saxon, McGuffin, & Walker, 1997). Tsoh et al. (1997) stated that a minimum of 6 to 8 weeks of nicotine-patch treatment is necessary, but that increased efficacy beyond 8 weeks has not been found.

Tsoh et al. (1997) reported a maximum dosage is 21 mg/day and is recommended for smokers smoking 10-15 cigarettes or more per day. A gradual fading process is done by stepping down at 2 to 3 week intervals to a lower dose patch. Although they stated there is no empirical evidence for this procedure, each step down serves as a milestone in the process of quitting for those attempting smoking cessation. Killen, Fortmann, Davis, Strausberg, and Varady (1999) reported using higher dose nicotine patches (25 mg. dose vs. 15 mg. dose) for heavy smokers (above 25 cigarettes per day). Their results found no significant difference for routine use of higher dose nicotine patch therapy for treating nicotine dependence. Hughes et al. (1999) also reported on higher dose nicotine patches (42 mg. dose vs. 21 mg. dose) but did not find statistically significant increase in the quit rate of heavy smokers (30 or more cigarettes/day) at 12 month follow up. No additional adverse effects were found at the higher dosage level.

Beginning patch strength for quitters in the QuitSmart program is determined by number of cigarettes smoked per day (>25 = 21 mg NRT, <24 = 14 mg NRT). Course of treatment
should be 2-4 weeks on the beginning patch dose, followed by 2 weeks on the next lower dose, and if applicable, 2 weeks on the lowest does (7 mg NRT). *QuitSmart* also recognizes the need for alternatives if previous quit attempts were unsuccessful with use of the patch, or if heavy smokers have not gotten enough relief from withdrawal symptoms from the patch. At that point, consideration should be given to other NRTs.

**Bupropion**

Wellbutrin SR (BW USA, Inc. Corporation By Assignment, Delaware Five Moore Drive Research Triangle Park, North Carolina 27709) or Zyban (Glaxo Group Limited Corporation, United Kingdom, Glaxo Wellcome House, Berkeley Avenue Greenford, Middlesex UB6 ONN United Kingdom), trade names for bupropion, have been used as an aid to smoking cessation and have been approved by the Food and Drug Administration as an effective treatment in aiding smoking cessation (Hurt, et al., 1997). Previous research (Ferry & Burchette, 1994) demonstrated efficacy in two double-blind, placebo-controlled trials using 300 mg/day for 12 weeks. Hurt et al. (1997) used four groups—placebo, 100 mg/day, 150 mg/day, and 300 mg/day and found one year abstinence rates to be significantly better in the 150 mg/day group and the 300 mg/day group than in the placebo group. However, Hurt et al. recommended 300 mg/day (150 mg twice a day) because it was “the only one to show a difference in the rates of continuous abstinence from target quitting date through the end of treatment” (p. 1199). In addition, ex-smokers experienced less weight gain when using the 300 mg/day dosage. The Hurt et al. study provided bupropion for 7 weeks based on pilot study that showed extending treatment did not add efficacy. However, if relapse is a concern, they saw no problem with extending treatment since antidepressants are commonly used for several months, depending on reason for use.
Jorenby et al. (1999) conducted double-blind, placebo-controlled comparison of bupropion, a nicotine patch, bupropion and a nicotine patch, and a placebo group. Results for abstinence at 12 month follow up showed 15.6% for placebo, 16.4% for nicotine-patch, 30.3% for the bupropion group, and 35.5% in the group given bupropion and nicotine patch. “As compared with the use of placebo, treatment with the nicotine patch, the nicotine patch and bupropion, and bupropion alone all resulted in less severe withdrawal symptoms and less weight gain after smoking cessation” (p. 690). Such studies continue to demonstrate the efficacy of using bupropion as an adjunct to smoking cessation. Shiffman et al. (2000) emphasized the mechanism by which bupropion affects smoking cessation and withdrawal is unknown. This research group believes that the noradrenergic and dopaminergic activity of bupropion may “result in activation and mood elevation, or may partially mimic nicotine effects” (p. 39). They do not believe that the central effect of bupropion relieves craving and withdrawal because bupropion’s effects on abstinence “seem more robust than those on craving or withdrawal” (p. 39). Hayford et al. (1999) reported that higher doses of bupropion were more effective for smoking cessation in a subgroup of smokers who had a history of major depression.

The QuitSmart program used by the NTVHCS includes the use of bupropion hydorchloride (Wellbutrin SR or Zyban) for all smokers for whom it is medically indicated, not just for those with current or past co-morbid depression. According to research reported by Shipley (1998), nicotine withdrawal symptoms including irritability, frustration/anger, anxiety, restlessness, and depressed mood or negative affect have been lessened by use of Zyban. QuitSmart guidelines recommend beginning Zyban 8-14 days prior to the quit date because it takes approximately one week for steady-state blood levels of bupropion to be attained. Beginning dosage is 150 mg/day for three days, then an additional 150 mg/day added for a total
of 300 mg/day administered in two doses, usually morning and evening. Recommended duration of treatment is 7-12 weeks.

**Health Professional Counseling and Support**

The *QuitSmart* program consists of a six-week counseling program that meets every two weeks for six weeks. Smokers who apply to the program are given a pre-quitting questionnaire to complete and bring to the first session. Discussion at the first session focuses on psychoeducational information including addiction, habit, emotional dependence, reasons for quitting, explanation of brand switching and quitting instructions. Smokers are encouraged to enlist social support from family and friends and set limits with other smokers in their households. Because the next meeting, held two weeks later, will be the quit date for participants, detailed instructions help the smoker with brand switching and “how to” smoke-proof their homes.

Session two focuses on quitting by reinforcing coping strategies and techniques, and emphasizing their use. Symptoms of withdrawal are discussed and group members are told what to expect and how long symptoms may last. NRT is discussed and offered. Also at this session, the “better quit cigarette substitute” is given to participants to use as a substitute in a variety of situations where smoking used to occur. As withdrawal symptoms ease, most persons discontinue use of the cigarette substitute within two weeks (Shipley, 1998). Stress management strategies are also offered including diaphragmatic breathing via demonstration along with the suggestion that the new ex-smoker take time outs during the day to use controlled deep breathing as a way to reduce cigarette craving.

Session two also introduces hypnotherapy as a relaxation technique. Hypnosis is explained as focused mental concentration in a relaxed state of mind and body. A practice
session prepares group members to use the *QuitSmart* Hypnosis Tape at home. They are instructed to use side one of the tape every day in a quiet place where they will not be disturbed. The tape focuses on self-relaxation, positive thoughts about quitting smoking, and care and nurturing of one’s body to keep it healthy.

The possibility of weight gain is discussed during session two and participants are counseled that “some weight gain (e.g., five pounds) is a normal part of quitting smoking” (Shipley, 1998, p. 5). Groups are encouraged to worry less about weight gain and focus more on quitting smoking. Shipley (1998) stated “any unacceptable weight gain can be addressed with diet and exercise some months after quitting smoking” (p. 5). However, new ex-smokers are advised to eat balanced meals and increase physical activity to lessen weight gain.

Session three focuses on maintaining smoking cessation. Time is spent reinforcing coping skills, adding pleasurable activities to replace the pleasures of smoking, helping those who may have relapsed discuss what their next step should be, discussing how to limit weight gain, and reinforcing benefits of nonsmoking. To initiate closure of the group, participants are encouraged to maintain abstinence, continue using the strategies they have learned, and continue using their social support systems.

The Present Study

The present study examines psychosocial variables that may explain attrition from the NTVHCS *QuitSmart* Stop Smoking Program. Although there has been a plethora of research on smoking cessation that examines particular variables, combining shame-proneness, guilt, anxiety, self-efficacy, and personality factors with a particular program used by many veterans’ facilities may be beneficial for future treatment planning in such facilities, as well as in other settings where the *QuitSmart* Stop Smoking Program is used.
Research Hypotheses

First, it was hypothesized that participants with high rates of moral standards guilt were more likely to relapse than those with low levels of moral standards guilt. According to Kugler and Jones (1992), moral standards guilt is based on violating a moral standard based on one’s behavior. By smoking, participants realized they have harmed others by past behavior (Tangney, 1990) and are not able to make reparation (which tends to alleviate guilt).

Second, it was hypothesized that participants with high levels of tension/anxiety were more likely to relapse than those with low levels of tension/anxiety. The inability to stop smoking may lead to annoyance, anxiety, resentment, and symptoms of depression as smoking becomes less socially acceptable and smokers continue to experience failure in their quit attempts. They may use smoking as a coping mechanism to lower anxiety reactions.

Third, it was hypothesized that participants with high levels of internalized shame were more likely to relapse that those with low levels of internalized shame. Because shame, according to Tomkins (1963) “strikes deepest into the very heart of man,” shame-prone people experience tremendous fear of failure. According to Harper and Hoopes (1990), shame-prone people experience guilt that is excessive, intense, and rarely evocative of a change in behavior. In smoking cessation, this population may well set themselves up to fail before they even begin the cessation process.

Fourth, it was hypothesized that participants with high rates of global and situational smoking self-efficacy were less likely to relapse than those with low rates of global and situational smoking self-efficacy. On a global level, Bandura (1986) stated that the change in
belief about one’s ability to successfully execute a given action mediates the initiation and maintenance of a behavioral change (i.e., self-efficacy). He further stated that as the behavior is practiced, self-efficacy continues to be enhanced. Therefore, those who have high rates of global and situational self-efficacy should be less likely to relapse as they put behavioral changes into practice.

Fifth, it was hypothesized that participants with high levels of smoking self-efficacy were predicted to demonstrate higher levels of self-change strategies than participants with low levels of smoking self-efficacy. Matheny and Weatherman (1998) found self-efficacy factors likely to improve the prospect for permanent smoking cessation. Stanton, Dittmar, Wooldridge and Kuo (1992) reported that ratings of self-efficacy discriminated between joiners and non-joiners of smoking cessation groups and that self-efficacy seemed to be increased by participation in a smoking-cessation program. Because self-change strategies may be enhanced during smoking cessation groups, it was predicted that participants high in smoking self-efficacy would also score high on self-change strategies.

Sixth, it was hypothesized that participants with high levels of neuroticism would be more nicotine dependent than participants with low levels of neuroticism. Forgays (1986) summarized a “personality profile” that indicates high neuroticism, extroversion and a strong need to engage in new and unconventional experiences are common for persons who engage in tobacco, alcohol, or illegal drug use.

Seventh, it was hypothesized that participants with high levels of neuroticism would be more alcohol dependent than participants with low levels of neuroticism. According to research quoted by Lemos-Giraldez and Fidalgo-Aliste (1997), traits such as psychoticism, extraversion,
hostility, and sensation seeking are linked to smoking, drinking, and drug taking. Such traits were predicted to lead to higher recidivism rates.

For easier reference hereafter, the hypotheses are enumerated below without elaboration:

1. It was hypothesized that participants with high rates of moral standards guilt were more likely to relapse than those with low levels of moral standards guilt.

2. It was hypothesized that participants with high rates of tension/anxiety were more likely to relapse than those with low levels of tension/anxiety.

3. It was hypothesized that participants with high levels of internalized shame were more likely to relapse than those with low levels of internalized shame.

4. It was hypothesized that participants with high rates of global and situational smoking self-efficacy were less likely to relapse than those with low rates of global and situational smoking self-efficacy.

5. It was hypothesized that participants with high levels of smoking self-efficacy were predicted to demonstrate higher levels of self-change strategies than participants with low levels of smoking self-efficacy.

6. It was hypothesized that participants with high levels of neuroticism would be more nicotine dependent than participants with low levels of neuroticism.

7. It was hypothesized that participants with high levels of neuroticism would be more alcohol dependent than participants with low levels of neuroticism.
CHAPTER 2
MATERIALS AND METHODS

Participants

Participants were 119 veterans recruited from ongoing smoking cessation groups offered at the NTVHCS. Participants were asked to complete a series of self-report measures prior to their first meeting for the QuitSmart Stop Smoking Program. Each participant signed an informed consent form (Appendix A) and was given a copy to keep. Of the 119 participants, 11 withdrew from the study without completing the initial measures and were thus eliminated from the study. Eight other participants were lost to follow-up.

Measures

Fagerstrom Test for Nicotine Dependence (FTND). The FTND has been used extensively in research to determine the level of nicotine dependence in current smokers. A significant correlation ($r = .53$) was found between cotinine and FTQ scores (Hall & Killen, 1985). A revision of the Fagerstrom Tolerance Questionnaire (FTQ), the FTND (with less items than the FTQ) has an internal consistency of .61 which is an improvement over the FTQ. Using factor analysis, Heatherton, Kozlowski, Frecker, and Fagerstrom (1991) determined the FTND loads on a single factor with a total scale mean value of .70. They further reported that, when compared to the Heaviness of Smoking Index (HSI), either measure is appropriate to measure level of dependence. However, these authors stated the FTND is a better predictor of smoking cessation. The FTND has shown excellent test-retest reliability at .88 (Pomerleau et al., 1994).
The FTND is a 6-item self-report measure that was used to determine level of nicotine dependence for veterans joining the *QuitSmart* Stop Smoking Program.

**Self-Efficacy Scale (SES).** The SES is a 27-item self-report measure designed to determine global self-efficacy (Tipton & Worthington, 1984). The SES shows excellent test-retest reliability as well as internal consistency with an alpha of .86. Validity of the SES has been demonstrated by a correlation between the SES and Goal Attainment Scale of .37 (Tipton & Worthington, 1984). The SES was used to quantify participants’ global self-efficacy prior to beginning the *QuitSmart* Stop Smoking Program.

**Self-Efficacy Questionnaire-Smoking Version (SEQ-SV).** The SEQ-SV has been adapted by Stanton, Dittmar, Woolridge, and Kuo (1992) to measure beliefs in one’s ability to succeed in smoking cessation. Internal consistency reliability is high with an alpha of .90. A check of the SEQ-SVs’ validity consisted of conceptual agreement by a panel of health educators and smoking cessation instructors who aided in revision after a pilot study (figures not available). The SEQ-SV is a 12-item self-report measure. The SEQ-SV was used to determine participants’ belief that they could quit smoking prior to beginning the *QuitSmart* Stop Smoking Program.

**Self-Change Strategies-Current Smoker’s Version (SCS-CS).** The SCS-CS is a 19-item self-report measure that was developed to measure self-change strategies current and former smokers have used to aid in smoking cessation. Etter, Bergman, and Perneger (2000) hypothesized that the self-change strategies would be used with differential frequency in the various stages of change, but would be used more frequently in the action stage. Internal consistency exceeded .70. The authors stated content validity was assured via representation of all main categories of qualitative data in the final questionnaire. Construct validity was demonstrated by standard deviation units that ranged from 0.59 in precontemplation to 1.58 in...
preparation stages. Etter, Bergman, and Perneger (2000) stated the SCS-CS demonstrated statistically significant short-term (one month post-quit) predictive validity for the use of self-change strategies; however at a 13 month follow-up, self-change strategies were not predictive of quitting smoking. The SCS-CS was used to assess self-change strategies being used prior to beginning the QuitSmart Stop Smoking Program.

**Beck Depression Inventory (BDI-II).** The BDI-II is a 21-item self-report measure used to determine current levels of depression. The BDI-II has well-established reliability and psychometric properties, with a coefficient alpha of .92 for an outpatient population and a test-retest correlation of .93 (Beck, Steer & Brown, 1996). Significant correlations between the BDI-II and other measures of depression include: Beck Hopelessness Scale ($r = .68$), Revised Hamilton Psychiatric Rating Scale for Depression ($r = .71$), and the Beck Anxiety Scale ($r = .60$; Beck, Steer, and Brown, 1996). These correlations aid in establishing the validity of the BDI-II. The BDI-II was used to quantify depressive symptoms prior to beginning the QuitSmart Stop Smoking Program.

**Profile of Mood States (POMS).** The POMS is an economical method of identifying transient, fluctuating affective states. The 65-item self-report inventory contains six scales including tension, depression, anxiety, fatigue, confusion, and vigor. Internal consistency rates for the scales of the POMS are high, measuring at near .90 or above (McNair, Lorr, & Droppleman, 1992). Validity of the POMS with the Hopkins Symptom Distress Scales was demonstrated with correlations ranging from .33 to .83 for POMS subscales and negative correlations for the POMS Vigor subscale ranging from .21 to .49, as would be expected. Concurrent/construct validity coefficients between the Manifest Anxiety Scale and the POMS ranged from .36 to .80, depending on sample (e.g., college males, dental patients, or psychiatric
outpatients; McNair, Lorr, & Droppleman, 1992). The POMS was used to assess negative affect and anxiety for participants before beginning the QuitSmart Stop Smoking Program.

The NEO-Five Factor Inventory (NEO-FFI). The NEO-FFI is a shortened version of the NEO-PI-R, providing a quick, reliable, and accurate measure of the five domains of adult personality (Neuroticism, Extroversion, Openness to Experience, Agreeableness, and Conscientiousness). The NEO-FFI offers global information on personality, with internal consistency ranging from .75 to .89 (Costa & McCrae, 1992). A reduction in the validity of the NEO-FFI is to be expected given the shortening of the scales. Convergent correlations range from .56 to .62; divergent correlations do not exceed .20. The NEO-FFI consists of 60 items and was used to assess personality traits of participants before beginning the QuitSmart Stop Smoking Program.

Internalized Shame Scale (ISS). The 30-item ISS is a self-report measure that evaluates the extent to which the negative affect of shame has become magnified and internalized. The ISS is designed to measure trait shame characteristics. Internal consistency testing has produced alpha coefficients of .95 (nonclinical group) and .96 (clinical group). Test-retest correlation for a nonclinical sample was .84 (Cook, 1996). The ISS consists of two scales, self-esteem and shame (which itself contains two subscales, inferiority and alienation; Rybak and Brown, 1996). The validity of the ISS has been established through correlational studies of self-esteem measures (e.g., the Tennessee Self Concept Scale, -.66 as TSCS high scores indicate a more positive self-concept) and depression measures (e.g., BDI, ranging from .59 to .79, depending on sample population; and Multiscore Depression Inventory, .75). Other correlational studies included anxiety measures including the State-Trait Anger Inventory, ranging from .21 to .65, depending on specific subscales; and State Trait Anxiety Inventory, ranging from .68 to .91, depending on
sample population (Cook, 2001). The ISS was used to assess participants’ shame-proneness prior to joining the QuitSmart Stop Smoking Program.

*The Guilt Inventory (TGI).* The TGI is a 45-item self-report measure designed to tap into guilt characteristics using three scales. The TGI measures state, trait, and moral standards guilt. Cronbach’s alpha ranged from .81 to .89. Test-retest reliabilities of the three scales have been sufficiently demonstrated over ten week and 36-week intervals. The moral standards subscale was most stable (.81 and .77, respectively), followed by the trait guilt subscale (.72 and .75, respectively), and, as expected, state guilt was lowest (.56 and .58 respectively; Kugler & Jones, 1992). The TGI scales were compared to several measures of guilt and shame (e.g., Mosher Guilt Inventory, Hogan and Cheek Guilt and Shame Scale, and Bus and Durkee Guilt Scale). Trait and state guilt “were significantly related to every measure of guilt and shame, with the exception of Mosher’s Sex Guilt Scale” (Kugler & Jones, 1992, p. 321). The moral standards subscale correlated highly with Mosher Sex Guilt Scale (.51), Mosher Hostility Guilt (.33), Hogan and Cheek Guilt (.41), and Buss and Durkee Guilt (.42). Kugler and Jones (1992) indicated these guilt scales either contain scenarios or describe specific behaviors and reflect values or standards rather than affect. TGI scores were used to operationalize aspects of moral guilt experienced by participants before beginning the QuitSmart Stop Smoking Program.

*Michigan Alcohol Screening Test (MAST).* The MAST contains 24 items that ask about drinking habits. It has been very useful to determine level of alcoholism. Internal consistency testing has produced an alpha coefficient of .95 (Selzer, Vinokur, & van Rooijen, 1975). Two criterion groups (drivers renewing their driver’s license, and inpatients in alcohol rehab) were used to validate the MAST. The MAST has a product moment correlation yielding a validity coefficient of .90 (Selzer, Vinokur, & van Rooijen, 1975).
Demographic Data Sheet. Demographic data (Appendix B) was collected from each participant via self-report during the testing session. The demographic data sheet was designed to collect a variety of data including age, ethnicity, gender, education, marital status, employment status, age participant started smoking, reason for this quit attempt, and referral source.

Post-Attrition Interview (P-A). The P-A was conducted via phone as a follow-up after completion of the QuitSmart Program. The P-A focused on qualitative affective and cognitive information designed to determine success/relapse factors of persons who had entered into the QuitSmart Program. The P-A addressed participants’ decisions regarding specific reasons for current smoking condition (i.e., do they consider dropping out of the program the result of a “slip” or total “relapse”), number of and reasons for prior relapses, whether participants believe their treatment was successful. Successful quitters were asked what was most helpful in this attempt, and how this attempt was different from previous smoking cessation attempts. A copy of the P-A is included in Appendix C. During data collection, approximately 50 protocols for the qualitative data from the P-A were reviewed and a rating system devised by a panel of advanced graduate students in psychology. This system was used to derive categories of responses for computer analysis (e.g., reason for slip/relapse—personal responsibility, externalizing reason, stress; deciding factor that led to smoking a cigarette, and steps needed to get a cigarette), as well as general feedback given to the NTVHCS regarding ways to improve the current smoking cessation program. Additionally, qualitative information from the demographic information sheet was evaluated by this panel to categorize status data (e.g., reason for starting smoking, reason for present quit attempt—improving health, cost, family pressure, current health
condition). Following the panel’s derivation of the categories, the principal investigator then coded each participant’s responses according to the categories represented.

Procedures

The self-report measures were collected directly from participant veterans. After securing informed consent (Appendix A), all measures (except the P-A) were administered to each participant prior to attendance at the first session of the QuitSmart Stop Smoking Program. The P-A was collected via phone interview with participants after completion of the QuitSmart Stop Smoking Program. For participants who failed to complete the program, phone interviews were conducted shortly after the three bi-weekly sessions (i.e., 6-7 weeks after completion of the self-report measures). Approximately 6% of the participants who were shown on class rolls to be attriters actually completed the program via individual counseling sessions due to difficulty attending at least one session. Because 75-80% of participants were completing the program, but not necessarily quitting smoking, follow-up phone calls were made to almost every participant. However, eight participants were lost to follow-up due to disconnected/non-working telephone number. The process of calling each participant did not occur until at least 90 days after the classes ended because those who completed the three bi-weekly sessions received nicotine patches that would last them for 42 days after program completion (a 28-day supply was provided during the program, for a total of 70 days supply). Therefore, relapse was not as likely to occur if participants still had nicotine patches available to curb craving. Every effort was made to contact participants and most were open to describing their stop-smoking experience, or reasons they believed they had relapsed.
CHAPTER 3

RESULTS

Descriptive Statistics

One-hundred, nineteen people agreed to participate in this study. Of those 119, 11 withdrew from the study without completing the initial self-report measures. Eight of the remaining 108 were lost to follow-up for the post-attrition inventory, which was completed via phone. Of the remaining 100, one participant did not complete the Self-Efficacy Questionnaire and the NEO-FFI, and three people did not complete the Beck Depression Inventory and the Profile of Mood States. The sample was further dichotomized into “quitters” (those who completed the program and successfully quit smoking) and “attriters/relapsers” (those who did not complete the program and continued smoking, as well as those who completed the program but did not quit smoking or had restarted smoking at the time of follow-up). Because those lost to follow-up could not be classified as “attriters/relapsers” or “quitters,” they were not included in any of the analyses, thus leaving a total of 100 (55 “quitters” and 45 “attriters/relapsers”). Results of these analyses will be referred to as Plan A.

In order to further analyze a refined subset of the data, true attriters (only those 20 who dropped out of the program and continued smoking) and a group of 20 true quitters (those who completed the program and successfully quit smoking at follow-up) were matched on variables including medical/psychological category, gender, ethnicity, age, and age began smoking. Results of these analyses will be referred to as Plan B.
Descriptive statistics of the relevant study variables for Plan A are shown in Table 1 for the overall sample. The mean age of the group sampled for Plan A was 54.37, $\text{SD} = 9.93$ (range: 33-77).

### Table 1

Descriptive Statistics of Relevant Variables (Plan A)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Quitters $(n = 55)$</th>
<th>Attriters/Relapsers $(n = 45)$</th>
<th>Total $(n = 100)$</th>
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<td>SD</td>
<td>Mean</td>
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<td>Self-Efficacy Questionnaire - Smoking Version</td>
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Other demographic data examining sample characteristics are shown in Table 2 for Plan A.

Table 2
Demographic Data (Plan A)

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Plan B descriptive statistics are shown in Tables 3 and 4. The mean age of the group sampled for Plan B was 54.65, $SD = 9.32$ (Range = 33-77).

Table 3
Descriptive Statistics of Relevant Variables (Plan B)

<table>
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<tr>
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<th>Attritors (n = 20)</th>
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<td>Tension/Anxiety Subscale</td>
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<td>Age began smoking</td>
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<td>3.86</td>
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Cigarettes per day – Heaviest  41.50  19.27  45.50  15.72  43.50  17.48  
Current (start of QuitSmart)  28.95  16.63  37.00  15.25  33.08  16.25

Table 4
Demographic Data (Plan B)

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<th>Attritors Freq</th>
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<td>9  47</td>
<td>16  41</td>
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<td>3  8</td>
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<td>4  10</td>
</tr>
<tr>
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<tr>
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<td>12  30</td>
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<tr>
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<td>1  5</td>
<td>1  2</td>
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<tr>
<td>- F/T Employed</td>
<td>6  30</td>
<td>2  10</td>
<td>8  20</td>
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</tbody>
</table>
- Retired  4  20  7  35  11  27  
- Other   4  20  4  20  8  20

Marital Status
- Married   12  60  6  30  18  45  
- Divorced  4  20  12  60  16  40  
- Separated 3  15  0  0  3  7  
- Widow/Widower 0  0  2  10  2  5  
- Never Married 1  5  0  0  1  2  

Self-Rated Physical Health
- Poor  5  20  4  20  9  23  
- Less than average 4  20  4  20  8  20  
- Average 6  30  9  45  15  37  
- Better than avg. 4  20  2  10  6  15  
- Excellent 1  5  1  5  2  5  

Service Connected Disability  8  40  4  21  12  30  

Medical/Psychological Category
- Medical Dx. Only  13  65  11  55  24  60  
- Psych/Nonpsychotic 7  35  9  45  16  40  
- Psychotic 0  0  0  0  0  0  

Various qualitative data were also collected via the demographic data sheet and the Post-Attrition Inventory. For Plan A, total days quit ranged from 2 to 180, with a \( M \) of 53.13 and \( SD \) of 50.22 at follow-up phone interview for the P-A. Of the 39 veterans who stated they had
service-connected disabilities, 2 did not report the percentage. Table 5 shows the percentage breakdown for the 36 service-connected participants.

Table 5

Service Connected Disability Percentage (Plan A)

<table>
<thead>
<tr>
<th>No. of Participants</th>
<th>%</th>
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<tbody>
<tr>
<td>2</td>
<td>10%</td>
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<tr>
<td>5</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
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</tr>
<tr>
<td>3</td>
<td>90%</td>
</tr>
<tr>
<td>15</td>
<td>100%</td>
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</table>

Of those reporting service-connected disability, 14 (14.6%) reported psychological disability, 19 (19.8%) reported orthopedic disability, 9 (9.4%) reported systemic (medically-related) disability, and 3 (3.1%) classified their disability as “other.” It should be noted that some veterans reported more than one type of disability; thus the total participants does not equal 39, nor do the percentages equal 100%.

Seventy-eight of the participants stated they had smoked constantly since beginning smoking, whereas 21 reported prior quit attempts lasting a year or more. Regarding number of
attempts, 4 participants reported trying to quit on a daily basis, 6 reported “several” quit attempts, 9 reported never having tried to quit before, and others ranged from 1 to 50 attempts, with 2 or 3 attempts accounting for 37 (38.5%) of the group.

When asked about their social environments, 3 (3%) participants reported all their friends/family smoked, 15 (15%) reported most of their family/friends smoked, 25 (25%) reported many of their family/friends smoked, 43 (43%) reported that a few of their family/friends smoked, and 8 (8%) reported none of their family/friends smoked. Six (6%) participants did not respond to the question.

Of the 96 participants responding to the question of who referred them, 75 stated they were referred by their physicians, 2 by their treatment coordinator, 11 were self-referred, and 8 designated other sources (such as a vet center, friend, domiciliary staff) for referral to the QuitSmart program. Of the 45 persons who had either not quit or started smoking again, cigarette consumption ranged from 1 cigarette/day to 50 cigarettes/day, with 38 persons reporting 20 cigarettes or fewer, 2 reported smoking 30 cigarettes/day, 4 reported 40 cigarettes/day, and 1 reported 50 cigarettes/day. Regarding responsibility for the “slip/relapse,” 16 took personal responsibility, 22 used an externalizing reason (e.g., unemployed, improve self-esteem, drug-using stepson “disappeared”), 18 reported slipping because of stress, and 10 gave an idiosyncratic reason. Of the 45 attriter/relapsers, 19 reported they had stressful thoughts before they started smoking again, 18 stated an external event led them to thoughts about smoking, and 8 stated they began smoking again for personal reasons such as a cigarette would raise their self-esteem, a crutch to relieve pain, or a way to relieve anxiety. Thirty-five (78%) of the attriters/relapsers stated they were smoking a lower nicotine cigarette than when they started the program.
According to demographic data, 68 participants reported they were trying to quit for health-related reasons (improving their health, better quality of life, to get healthy), 14 reported the quit attempt was because of a health-connected disease (hypertension, liver disease, emphysema), 14 reported quitting because of cost, 6 reported quitting because of family pressure, and 23 reported a response of other or vague (time to quit, why not, I need to). Once again, persons could be classified into more than one area, depending upon their response. As to why they started smoking, 12 participants designated peer pressure (indication of coercion) as their reason, 23 gave reasons of normative fitting in (join the crowd), 13 responded as “trendy” fitting in (it was the thing to do, thought it was smart, to be cool), 6 participants responded that it was family influence (parents smoked, sister gave them a cigarette), 4 stated it was poor judgment (stupidity, to lose weight) on their part, 9 gave reasons that indicated self-medication (stress, nerves, bad dreams, events in Korea/Vietnam), 8 participants specifically mentioned military service, and 30 gave vague or other reasons (something to do, bored, because I wanted to). If persons gave more than one reason, they could be classified into more than one area.

For Plan B, total days quit ranged from 2 to 150, with a $M$ of 40.52 and $SD$ of 49.02 at follow-up phone interview for the P-A. Twelve veterans stated they had service-connected disabilities. Table 6 shows the percentage breakdown for the 12 service-connected participants.

Table 6

Service Connected Disability Percentage (Plan B)

<table>
<thead>
<tr>
<th>No. of Participants</th>
<th>%</th>
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</thead>
<tbody>
<tr>
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<td>10%</td>
</tr>
<tr>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>1</td>
<td>30%</td>
</tr>
</tbody>
</table>
Of those reporting service-connected disability, 5 (13.5%) reported psychological disability, 6 (16.2%) reported orthopedic disability, 3 (8.10%) reported systemic (medically-related) disability, and 1 (2.7%) classified their disability as “other.” It should be noted that some veterans reported more than one type of disability; thus the total participants does not equal 12, nor do the percentages equal 100%.

Thirty-one of the participants stated they had smoked constantly since beginning smoking, whereas 7 reported prior quit attempts lasting a year or more. Regarding number of attempts, 2 participants reported trying to quit on a daily basis, 2 reported “several” quit attempts, 3 reported never having tried to quit before, and others ranged from 1 to 20 attempts, with 3 and 6 attempts accounting for 12 (32.45%) of the group.

When asked about their social environments, 2 participants reported all their friends/family smoked, 5 reported most of their family/friends smoked, 11 reported many of their family/friends smoked, 16 reported that a few of their family/friends smoked, and 3 reported none of their family/friends smoked. Three participants did not respond to the question.

Of the 38 participants responding to the question of who referred them, 28 stated they were referred by their physician, 1 by their treatment coordinator, 5 were self-referred, and 4 designated other sources (such as a vet center, friend, domiciliary staff) for referral to the QuitSmart program. Of the 20 persons who had not quit, cigarette consumption ranged from 2
cigarettes/day to 50 cigarettes/day, with 15 persons reporting 20 cigarettes or fewer, 1 reported smoking 30 cigarettes/day, 3 reported 40 cigarettes/day, and 1 reported 50 cigarettes/day.

Regarding responsibility for the “slip/relapse,” 5 took personal responsibility, 12 used an externalizing reason (e.g., unemployed, improve self-esteem, drug-using stepson “disappeared”), 8 reported slipping because of stress, and 5 gave an idiosyncratic reason. Of the 20 attriters, 10 reported they had stressful thoughts before they started smoking again, 9 stated an external event led them to thoughts about smoking, and 1 stated he/she began smoking again for personal reasons such as a cigarette would raise their self-esteem, a crutch to relieve pain, or a way to relieve anxiety. Sixteen of the attriters stated they were smoking a lower nicotine cigarette than when they started the program.

According to demographic data, 26 participants reported they were trying to quit for health-related reasons (improving their health, better quality of life, to get healthy), 4 reported the quit attempt was because of a health-connected disease (hypertension, liver disease, emphysema), 6 reported quitting because of cost, 3 reported quitting because of family pressure, and 7 reported a response of other or vague (time to quit, why not, I need to). Once again, persons could be classified into more than one area, depending upon their response. As to why they started smoking, 5 participants designated peer pressure (indication of coercion) as their reason, 8 gave reasons of normative fitting in (join the crowd), 5 responded as “trendy” fitting in (it was the thing to do, thought it was smart, to be cool), 2 stated it was poor judgment (stupidity, to lose weight) on their part, 3 gave reasons that indicated self-medication (stress, nerves, bad dreams, events in Korea/Vietnam), 3 participants specifically mentioned military service, and 14 gave vague or other reasons (something to do, bored, because I wanted to). If persons gave more than one reason, they could be classified into more than one area.
Data were available regarding program success, even on persons who chose not to participate in the assessment components of the study. Thus, a Chi-Square analysis for participation was completed to determine if self-selecting to participate in the study may have been related to success. For example, those who participated in the study may have been more motivated to quit smoking, or, simply participating in the study may have increased participants’ motivation to quit. The Chi-Square was significant ($\chi^2 = 9.31, p = .002$), indicating that participants were more likely to complete the QuitSmart program than non-participants. The breakdown between those who chose to participate in the study versus those who attended the QuitSmart program showed that 96 chose not to participate, while 119 originally chose to participate. Because no follow-up was conducted with non-participants, the Chi-Square calculation was based on all persons who completed the program.

Hypothesis Testing

The first hypothesis, that participants with high rates of moral standards guilt are more likely to relapse than those with low levels of moral standards guilt was tested via analysis of variance (ANOVA). The independent variable was relapse condition; the dependent variable was moral standards guilt scale from The Guilt Inventory. Results for Plan A, $F(1,98) = .41, p > .50$ were non-significant. Plan B results, $F(1,38) = 1.41, p > .20$ were also non-significant. These results demonstrate that moral standards guilt is not a significant factor in quitting smoking.

The second hypothesis, that participants with high levels of anxiety/depression were more likely to relapse than those with low levels of anxiety/depression was tested via ANOVA. The independent variable was relapse condition; the dependent variable was tension/anxiety scale from the Profile of Mood States. Results for Plan A, $F(1,95) = .19, p > .66$ were non-significant.
Plan B results, $F(1,39) = .05, p = .83$ were also non-significant. These results demonstrate that tension/anxiety is not a significant factor in quitting smoking.

The third hypothesis, that participants with high levels of shame were more likely to relapse than those with low levels of shame, was tested via ANOVA. The independent variable was relapse condition; the dependent variable was scores from the Internalized Shame Scale. Results for Plan A, $F(1,98) = .40, p > .50$, were non-significant. Plan B results, $F(1,38) = .14, p > .70$, were also non-significant. Thus, attriters/relapsers did not differ significantly in level of shame from quitters. However, significant correlations exist between shame and neuroticism ($r = .86, p < .001$) and shame and depression ($r = .78, p < .001$) for Plan A. The neuroticism variable was dichotomized into high versus low, as determined by the NEO-FFI manual (High = T score greater than or equal to 65; low = T score less than 65). A multivariate analysis of variance was then calculated, using neuroticism as the independent variable; dependent variables were BDI (depression) and ISS (shame) scores. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, and homogeneity of variance. Tests for linearity and homogeneity of variance were significant; therefore results should be interpreted with caution. For Plan A, significant difference was found, $F(2,93) = 73.98, p < .001$; Wilks’ Lambda = .39; partial eta squared = .61, (BDI $M = 14.16, SD = 13.52$; ISS $M = 29.97, SD = 22.86$). Individual univariate tests were conducted; significant results are as follows: BDI, $F(1,94) = 68.33, p < .001$, partial eta squared = .78; ISS, $F(1,94) = 146.91, p < .001$, partial eta squared = .61. Persons high in neuroticism are more likely to be shame-prone and experience depression than those low in neuroticism. To analyze the combined relations between neuroticism, group status, and shame-proneness, a two-by-two between groups analysis of variance was conducted, using the dichotomized neuroticism variable (high vs. low) and
attrition status (true quitter vs. attriter/relapser) as independent variables, and shame-proneness as the dependent variable. As reflected by the analyses presented above, there was a main effect for neuroticism, but not for group status (with high neuroticism showing higher shame). The group by neuroticism interaction was not significant $F(1,95) = 1.00, p = .32$.

For Plan B, significant correlations also exist between shame and neuroticism and shame and depression ($r = .84, p < .001; r = .81, p < .001$) respectively. Again, the neuroticism variable was dichotomized into high versus low (High = T score greater than or equal to 65; low = T score less than 65). A multivariate analysis of variance was then calculated, using neuroticism as the independent variable; dependent variables were BDI (depression) and ISS (shame) scores. The same preliminary assumption testing was conducted with homogeneity of variance being significant; therefore results should be interpreted with caution. Significant results, $F(2,37) = 16.99, p < .001; \text{Wilks' Lambda} = .52; \text{partial eta squared} = .48$ were found (BDI $\text{M} = 13.00, \text{SD} = 13.28; \text{ISS M} = 28.50, \text{SD} = 23.27$). Persons high in neuroticism are more likely to be shame-prone and experience depression than those low in neuroticism, BDI, $F(1,38) = 16.39, p < .001$, partial eta squared = .30; ISS, $F(1,38) = 34.85, p < .001$, partial eta squared = .78.

The fourth hypothesis, that participants with high rates of global and situational smoking self-efficacy were less likely to relapse than those with low rates of global and situational smoking self-efficacy, was tested via MANOVA. The independent variable was relapse condition; the dependent variables were global and smoking-specific self-efficacy. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance, with no violations noted. For Plan A, no significance was found $F(2,96) = 2.42, p = .09; \text{Wilks' Lambda} = .95; \text{partial eta squared} = .05$. For Plan B, the same preliminary assumption testing was conducted with no serious violations noted. Once
again, no significance was found $F(2,37) = 2.01, p = .15$; Wilks’ Lambda = .90, partial eta
squared = .10.

The fifth hypothesis, that participants with high levels of smoking self-efficacy were
predicted to demonstrate higher levels of self-change strategies than participants with low levels
of smoking self-efficacy, was tested via Pearson’s Product Moment Correlation, assessing the
relation of scores on the SEQ-SV with scores on the SCS-CS. Results for Plan A ($r = .31, p =
.001$) supported the hypothesis. When hypothesis five was analyzed for Plan B, results of
Pearson’s Product Moment Correlation were non-significant ($r = .24, p = .16$). For Plan A, high
levels of smoking self-efficacy are related to participants using higher levels of self-change
strategies. For Plan B, this relation did not hold.

The sixth hypothesis, that participants with high levels of neuroticism were predicted to
be more nicotine dependent than participants with low levels of neuroticism, was tested via
correlation, measuring association with levels of nicotine dependence from the FTND with
scores from the neuroticism scale of the NEO-FFI. Results were significant for Plan A, $r = .25, p
= .014$, supporting the hypothesis. Plan B results for the Pearson’s Product Correlation for
hypothesis six showed a similar relation ($r = .30, p = .06$). For both Plan A and B, high levels of
neuroticism are related to higher levels of nicotine dependence.

The seventh hypothesis, that participants with high levels of neuroticism were predicted
to be more alcohol dependent than participants with low levels of neuroticism, was to be tested
via correlation, measuring the association with the neuroticism scale of the NEO-FFI to MAST
scores. Because many veterans did not complete the MAST, only 53 protocols were available.
Of those 53, many were only partially completed; some participants reported completing the
form “as they would have 10 years ago when drinking,” while others completed the form “using
their status at the time of testing.” Therefore, results for hypothesis seven would be unreliable and were not calculated.

Exploratory Findings

Other analyses were explored for which there were no a priori hypotheses. Statistical tests on such analyses were two-tailed and obtained findings are interpreted cautiously.

A between-groups multivariate analysis of variance was performed to investigate differences between medical and psychological diagnoses. The independent variable was the psychological diagnosis versus medical-only diagnosis; dependent variables were ISS (shame), SEQ-SV (smoking situational self-efficacy), SES (global self-efficacy), SCS-CS (smoking self-change strategies), and NEO-FFI neuroticism subscale scores. Preliminary assumption testing was conducted to check for normality, equality of variance, univariate and multivariate outliers, and homogeneity of variance. Test for equality of variance was significant for ISS; therefore a more stringent alpha of .01 was adopted for all tests. For Plan A, there was a statistically significant difference between medical and psychological diagnoses on the combined dependent variables: $F(5,93) = 3.89, p = .003; \text{Wilks’ Lambda} = .83; \text{partial eta squared} = .17$. When the results for the dependent variables were considered separately, the significant differences were as follows: NEO neuroticism, $F(1,97) = 12.05, p = .001, \text{partial eta squared} = .11$; ISS, $F(1,97) = 13.77, p < .001, \text{partial eta squared} = .12$. An inspection of the means indicated that participants with a psychological diagnosis reported higher levels of neuroticism and shame (Neuroticism Medical $M = 19.49, SD = 8.51$; Neuroticism Psychological $M = 26.32, SD = 10.91$; ISS Medical $M = 24.18, SD = 18.14$; ISS Psychological $M = 41.20, SD = 27.49$) than those with only a medical diagnosis. For Plan B, no significance was found.
Step-wise discriminant function analysis of quitters versus attriters/relapsers was explored. Predictor variables included FTND (level of nicotine dependence), ISS (shame measure), TGIM (moral standards guilt subscale), and SEQ-SV (smoking self-efficacy measure). An overall classification rate of 66.0% was obtained. At Step 1, significant results include Wilks’ Lambda = .92; \(F(1,98) = 8.58, p = .004\) with FTND entering the function (Quitters \(M = 5.49, SD = 2.22\); Attriters/Relapsers \(M = 6.71, SD = 1.88\)). At Step 2, significant results include Wilks’ Lambda = .89; \(F(2,97) = 6.12, p = .003\) with SEQ-SV entering the function (Quitters \(M = 61.33, SD = 9.67\); Attriters/Relapsers \(M = 56.51, SD = 11.98\)). No other variables entered. Plan B yielded an overall classification rate of 77.0% when the quitters and attriters variable was dichotomized. At Step 1, significant results include Wilks’ Lambda = .84; \(F(1,38) = 7.45, p = .010\) with FTND entering the function (Quitters \(M = 5.45, SD = 2.44\); Attriters \(M = 7.20, SD = 1.51\)). At Step 2, significant results include Wilks’ Lambda = .75; \(F(2,37) = 6.13, p = .005\) with SEQ-SV entering the function (Quitters \(M = 61.30, SD = 7.37\); Attriters \(M = 54.35, SD = 13.59\)). No other variables entered. For both Plan A and B, level of nicotine dependence was higher in attriters/relapsers than in true quitters, whereas smoking self-efficacy scores were higher for true quitters than for attriters/relapsers.

Step-wise discriminant function analysis of the medical versus psychological variable was explored. Predictor variables included FTND (level of nicotine dependence), SEQ-SV (smoking self-efficacy measure), participant’s present age, and age participant began smoking. An overall classification rate of 64.0% was obtained. At Step 1, significant results include Wilks’ Lambda = .87; \(F(1,97) = 14.72, p < .001\) with participant’s present age entering the function (Medical \(M = 57.25, SD = 10.95\); Psychological \(M = 49.84, SD = 5.83\)). At Step 2, significant results include Wilks’ Lambda = .85; \(F(2,97) = 8.56, p < .001\) with the FTND entering
the function (Medical $M = 5.74, SD = 2.02$; Psychological $M = 6.45, SD = 2.27$). No other variables entered. Plan B yielded an overall classification rate of 65.0% when the medical/psychological variable was dichotomized. At Step 1, significant results include Wilks’ Lambda = .91; $F(1,37) = 3.42, p = .007$ with participant’s age entering the function (Medical $M = 57.00, SD = 10.82$; Psychological $M = 51.50, SD = 5.84$). No other variables entered. For Plan A, older participants were more likely to have a medical diagnosis and a lower level of nicotine dependence whereas younger participants were more likely to have a psychological diagnosis and be more nicotine dependent. For Plan B, older participants were more likely to have only a medical diagnosis whereas younger participants were more likely to have a psychological diagnosis.
CHAPTER 4
DISCUSSION

Guilt and Smoking Cessation

The first hypothesis proposed that participants who experienced high moral standards guilt were more likely to relapse from the *QuitSmart* stop smoking program than those who did not experience high moral standards guilt. This hypothesis was not supported. It should be noted that the moral standards guilt subscale did not significantly correlate with any other measure used in this study. State and trait guilt subscales were highly correlated with the shame measure, which may indicate that the moral standards measure either did not measure guilt or was not an appropriate measure to use for smoking cessation. Tangney, Wagner, Hill-Barlow, Marschall, and Gramzow (1996) stated that a person’s guilt focuses on a particular behavior or failure, and that guilt is associated with accepting responsibility for one’s actions. According to Boyd and Orleans (2002), smokers over age 50 started smoking when it was “a glamorous part of the American social culture and long before its health consequences were well known” (p. 175). The participants in the present study could very well fall into that category and not experience moral standards guilt associated with smoking. Also, 36 of the participants started smoking for normative/trendy fitting in (join the crowd/to be cool) and 36 reported vague reasons (being bored, something to do). However, in this sample, the reason the person started smoking and guilt were not strongly correlated (normative/trendy $r = .18, p < .10$; vague reasons $r = .12, p < .25$). Affect theory proposes that

The innate affects, constellations of physiologic responses, are seen as underlying and forming the basis for the development of what is to become the unique emotional
experience of a given individual. With the biologic substrate of affective response as a template, a person’s memories, cognitions, and associations can accrete to become what we see as mature emotions (Stone, 1996, p. 290).

Thus, smokers who fit the above age cohort and were raised in families that smoked cigarettes, may have experienced affective reinforcement such that guilt would not be part of an emotional response to smoking/smoking cessation, even though many people will verbally state they “feel guilty” when attempting to quit smoking and are not successful. Such guilt may be pseudo-guilt; Nathanson (1996) stated that “[A]ny expression of emotion can be faked” (p. 5). Nathanson (1987) emphasized that guilt tends to be characterized by “wrongdoing over a wide range of behavior” (p. 47). Again, the behavior of smoking may not induce the affective experience of guilt because the behavior (of smoking) itself is not experienced as a wrongdoing.

Anxiety and Smoking Cessation

The second hypothesis proposed that participants with high levels of tension/anxiety were more likely to relapse from the QuitSmart Stop Smoking Program than those with lower levels of tension/anxiety. This hypothesis was not supported. According to Kendall and Watson (1989), anxiety and depression are strongly correlated with a high rate of comorbidity, “they probably should not be studied in isolation” (p. 233). The feelings of restlessness, irritability, and incompetence have negative behavioral correlates and could lead to fear of failure in smoking cessation attempts. However, Chassin, Presson, Sherman, and Kim (2002) found that attrition/relapse “did not raise the risks of increased stress and negative affect in the long run” (p. 442). Furthermore, they stated “the failure experience itself did not exacerbate or produce any additional stressors above and beyond those that were simply associated with being a smoker”
It is also possible that the physiological response to nicotine lessens feelings of anxiety when one is smoking.

Tsóh et. al (2000) found that more highly educated persons were “three times more likely than those less educated” to develop major depression. Because 57% of participants in this study had at least some college education, it would have been expected that depression/anxiety may have played a role in relapse/attrition. This however, was not the case. It is possible that the availability of bupropion in addition to nicotine replacement therapy lessened the possibility of relapse/attrition. Additionally, the age of participants could have had an effect because older adults tend to be more concerned with maintaining healthy lifestyles and thus were more willing to use the strategies offered in the QuitSmart program to greater advantage.

Lewis (1971) stated that shame plays an important role in anxiety, and that shame-prone individuals project their core shame feelings onto others (i.e., thinking that others judge them as harshly as they judge themselves). Therefore, if there is not a shame/smoking cessation connection, one would not expect an anxiety/smoking connection, especially if it is true that smoking a cigarette lessens feelings of anxiety. Anecdotal reports indicate that smokers tend to smoke when feeling stress or anxiety as a way to lower their stress levels.

Shame and Smoking Cessation

The third hypothesis proposed that participants with high levels of shame were more likely to relapse from the QuitSmart smoking cessation program than participants with low levels of shame. This hypothesis was not supported. Persons who are shame-prone believe they are “worthless, inferior, and damaged.” These beliefs tend to be characterized by complaints about the value of the entire person—or “self.” Linking the guilt hypothesis with shame, the act of smoking cigarettes may not be connected with core concepts of the “self.” The present study
found significant negative correlations between socially valued personality factors (agreeableness, openness to experience, and consciousness) and shame as well as guilt subscales (except moral standards guilt). These negative correlations would be expected, as they demonstrate shame-prone persons view themselves negatively. However, neuroticism (a socially devalued trait) and shame showed positive correlations.

Another possibility for lack of support for the third hypothesis could be that the physiological response to nicotine may play a role in mediating the feelings of shame when one is smoking. It is well known that many smokers enjoy smoking because it gives them feelings of pleasure, lessens anxiety, and is connected with the enjoyment-joy affect. The enjoyment-joy affect only leads to shame when the affect becomes over-stimulated (Tomkins, 1982), something not likely to happen from smoking.

Stanton, Dittmar, Wooldridge and Kuo (1992) found that psychosocial variables pertaining to attitudes and values did not correlate with smoking cessation success. Although their self-report measures were not specific to guilt, shame, or personality factors, it may partially explain the pattern of findings for the present study. Such variables may be less important in the act of smoking cessation than previously theorized. Future research could focus on whether a shame/smoking relation occurs.

Self-Efficacy and Smoking Cessation

The fourth hypothesis proposes that participants with high rates of global and situational smoking self-efficacy are less likely to relapse. This hypothesis was not supported, although Plan A results were trending toward significance. It is possible that a larger sample size may have provided sufficient statistical power to provide support for this hypothesis. However, the relation is modest at best. The present study assumed the global measure of self-efficacy (SES)
and the smoking situational self-efficacy questionnaire (SEQ-SV) would be correlated as they are both measures of self-efficacy. However, there was a significant negative correlation ($r = -0.24$, $p = .017$) between the SES and the SEQ-SV. This counterintuitive pattern may indicate a problem with the convergent validity of the SES (as the SEQ-SV proved to be a good predictor of smoking cessation). Or, it could be possible that differences exist between global and smoking situational self-efficacy. Dijkstra, De-Vries, and Bakker (1996) found that self-efficacy was a better discriminator between stages of change for action and maintenance, whereas expected positive outcomes was a better discriminator between the first two stages of change (pre-contemplation and contemplation). In other words, the more smokers intend to quit, the more reasons they report for quitting. Herrick, Stone, and Mettler (1997) reported that self-efficacy scores and “pros” for stopping smoking were higher during the action and maintenance stage than at other stages (i.e., pre-contemplation, contemplation). Such information conforms to the QuitSmart program goals as the program assumes participants are at the preparation/action stages when they enter the program.

Exploratory analyses yielded an interesting finding worthy of consideration in this context. Situational smoking self-efficacy was a strong predictor of smoking cessation. Bandura’s social learning theory was confirmed in that persons with a strong belief in their capabilities to succeed fared better than those who do not believe in their capabilities, at least for smoking-specific situations. In addition, Bandura’s theory posited that self-efficacy is reinforcing because as one practices the behavior, self-efficacy continues to rise. Mothersill, McDowell, and Rosser (1988) found that subjects who rated themselves higher on the likelihood of smoking cessation (prior to beginning a cessation program) were more likely to become abstinent and maintain cessation. The present study also supports the theory that those high in
smoking-situational self-efficacy tended to succeed in their efforts at smoking cessation. Faue, James, Folen and Needels (1997) found that participants who were able to quit smoking also rated their own abilities and efforts (self-efficacy) higher than any of the different relapse groups (e.g., early vs. late relapsers). Joseph, Manafi, Iakovaki, and Cooper (2003) found that low self-efficacy was associated with automatic habitual smoking, negative affect control, and social skills deficits. According to Matheny and Weatherman (1998), self-efficacy improves “the prospect for permanent cessation” (p. 230). Interestingly, however, their study also found that “participants who smoked a greater number of cigarettes per day and cigarettes with a higher tar content were actually more likely to be abstinent” (p. 231). These researchers conjectured that smokers who switched to lower nicotine/tar cigarettes believed they were less likely to be endangering their health and were “lulled into complacency by such a belief” (p. 231). However, Hughes, Cummings, and Hyland (1999) found that smoking reduction did not influence cessation, either positively or negatively, meaning that smoking reduction did not influence outcome of smoking cessation in their study. Of the 45 attriters/relapsers in this study, 78% were smoking lower nicotine cigarettes per self-report. Also, the vast majority of these attriters/relapsers reported smoking significantly fewer cigarettes currently (M=6.73, SD=11.02) than at the beginning of the QuitSmart program (M=30.16, SD=14.48). Nevertheless, it would be useful for the QuitSmart program to emphasize that smoking a lower nicotine cigarette does not lessen the risks of cigarette smoking in order to eliminate the possibility that participants are “lulled into complacency,” (as reported by Matheny & Weatherman, 1998). For the present study, participant’s age and referral source appear to be related to desire to quit smoking and smoking situational self-efficacy, as will be discussed below.
The present findings indicate that the *QuitSmart* Program should consider a measure of self-efficacy prior to beginning the program to target those who have lower smoking self-efficacy, or at the very least, include an intensive situational self-efficacy-building component. Low self-efficacy attempters appear likely to relapse to smoking (also supported by Gwaltney et al., 2002).

**Self-Change Strategies in Smoking Cessation**

The fifth hypothesis proposed that participants with high levels of smoking self-efficacy should also demonstrate higher levels of self-change strategies than participants with low levels of smoking self-efficacy. This hypothesis was supported for Plan A. Results of Plan B were less convincing, but the reduced sample size may have inordinately restricted power.

Self-change strategies are those activities and ideas that help smokers become non-smokers. According to Etter, Bergman, and Perneger (2000), the SCS-CS assesses five strategies in the smoking cessation process. These include: 1) commitment to change such as assessing the advantages of quitting; 2) taking control such as not smoking for an entire evening; 3) risk assessment—thinking about the impact of smoking on health; 4) helping relationships such as asking for help or telling others about the cessation attempt; and 5) coping with temptations to smoke, including ways to deal with cravings. Factor loadings (from a factor analysis of the SCS-CS) indicate telling others about the attempt, spending a whole evening without smoking, and telling oneself he/she should stop smoking were more heavily weighted than other items. Also important is a positive mindset about the quit attempt. If persons believe they can succeed at smoking cessation, then they are more capable of using self-change strategies prior to beginning the smoking cessation process.
Stanton, Dittmar, Wooldridge, and Kuo (1992) also supported the relation between change strategies and smoking self-efficacy. They stated that persons with high smoking self-efficacy seem to have an “easier time in overcoming side effects of smoking cessation” (p. 11). According to Prochaska, DiClemente, Velicer, Ginpil, and Norcross (1985), the use of self-change strategies through self-reevaluation during the stages of change process (especially pre-contemplation, contemplation, and relapse) tended to predict progress to the next stage of change. Most likely, those with high smoking self-efficacy can and do integrate self-change strategies into their stop smoking attempt, either consciously or subconsciously. With this knowledge, clinicians may find that giving potential participants self-change strategies prior to joining the QuitSmart program will aid in participants’ being able to have more control over their smoking, and thus make it easier for them to stop smoking when they participate in the program. Results should be viewed cautiously, given the lack of robust findings for Plan B.

Neuroticism and Addiction

The sixth hypothesis proposed that participants with high levels of neuroticism would be more nicotine dependent than those low in neuroticism. High neuroticism is indicative of persons who are less able to control impulses, cope more poorly with stress, and experience more anxiety and depression. They tend to be more emotionally unstable and maladjusted. Such persons are more prone to substance use as a way to cope with stress and emotional upsets. Hypothesis six was supported for Plan A (Plan B results were marginal, \( r = .30, p = .06 \)). Lemos, Fidalgo, and Angel (1997) found that a combination of personality dispositions rather than a single factor may lead to unhealthy habits such as smoking, alcohol abuse, overeating, and so forth. They further state that neuroticism, a proneness to strong negative emotions, and a vulnerability to stress, is moderately associated with the presence of harmful health practices.
(e.g., smoking, alcohol consumption, physical inactivity, and others). According to Joseph, Manafi, Iakovaki and Cooper (2003), neurotic smokers do so for emotional control (e.g., self-medication).

The current findings lend support to the idea that neuroticism may be one of a number of factors that produce a risk of nicotine dependence. Dijkstra and Borland (2003) found that factors associated with smoking relapse include negative affect, physical dependence, and social situations. Breslau, Peterson, Schultz, Chilcoat, and Andreski (1998) believe that the influences from major depression to subsequent smoking and smoking to major depression support the idea of shared etiologies. They found that “the potential role of neuroticism, self-esteem, and social skills in the depression-smoking association is an important topic for future research” (p. 165). Hitsman et al. (2003) reported meta-analytic results that a history of major depression does not appear to be an independent risk factor for attrition from smoking cessation treatment. However, a major depressive episode in combination with other factors could lead to attrition from a smoking cessation program.

The seventh hypothesis proposed that participants with high levels of neuroticism would be more alcohol dependent than those low in neuroticism. Hypothesis 7 was not analyzed due to too much missing data. Many of the participants stated they did not want to complete the MAST as they were former alcohol abusers with years of sobriety and believed this measure no longer applied to them. A review of the literature (Dawson, 2000; Hymowitz, Sexton, Ockene, et al, 1991; Richards & Kassel, 1998; Saxon, McGuffin, & Walker, 1997; Shiffman, Hickcox, Paty, Gnys, 1997) indicates a close association between smoking and alcohol use. Breslau, Peterson, Schultz, Andreski, and Chilcoat (1996) reported that “smokers whose alcoholism had remitted were at least as likely to quit as smokers with no history of alcoholism” (p. 985). They also
stated that “the remission of alcohol abuse or dependence . . . might enhance the chances of
smoking cessation . . .” (p. 989). Such findings may help explain why there was a higher than
expected success rate of smoking cessation in the present study. Indeed, former alcohol abusers
may experience higher levels of situational self-efficacy in that that had successfully quit alcohol
use, thus strengthening situational self-efficacy according to Bandura’s theory. Humfleet,
Munoz, Sees, Reus, and Hall (1999) concurred with the above findings, but stated that “low to
moderate levels of alcohol consumption during smoking cessation may decrease treatment
success” (p. 149). Such possibilities could not be tested in the present study because of missing
data.

Exploratory Findings

Exploratory analysis of the medical/psychological variable yielded an interesting finding
in that participants who had previously been identified with a psychological diagnosis tended to
experience more neuroticism and shame-proneness. Although shame-proneness has previously
been discussed as not independently being a factor for attrition in the present study, the
combination of a psychological diagnosis, shame-proneness and neuroticism may be a subtle
predictor of attrition. The neuroticism/addiction link has been well established. The exploratory
results suggest a further link with psychological diagnosis. Persons in this category may well
need a cessation program geared toward psychological diagnoses (e.g., increased number of
sessions, self-esteem building, or increased self-awareness of how various psychological
diagnoses make smoking cessation more difficult).

Step-wise discriminant function analyses for both Plan A and B used predictor variables
including nicotine dependence, shame, moral standards guilt, and smoking situational self-
efficacy. As discussed above, both nicotine dependence and the smoking situational self-
efficacy appear to be good predictors of who will successfully quit smoking. Participant’s present age and age participant began smoking were added to the analyses. Present age appeared to be a predictor for health status (i.e., medical vs. psychological diagnosis) for both Plan A and Plan B. Also for Plan A, the level of nicotine dependence aided in prediction, but not for Plan B. Breslau and Peterson (1996) reported that older smokers are more likely to quit than younger smokers, which they attribute to the “growing awareness of smoking-related illnesses with advancing age” (p. 214). The present study supports this theory, as the mean age of participants was just over 54, for both Plan A and Plan B.

Considerations Regarding Success Rate

Boyd and Orleans (2002) found that smokers currently receiving “physician-initiated interventions had long-term quit rates 2-6 times higher than patients receiving usual care” (p. 180). In the present study, physician individual assessment and referral to the QuitSmart program may have had a positive influence in participant’s smoking cessation attempts. Because the mean age of the present sample was over 54 and 70% of participants had a physician referral, the participants in the present study most likely had high awareness of health-related illnesses caused by smoking. Zhu, Melcer, Sun, Rosbrook, and Pierce (2000) found that heavy smokers used smoking cessation programs more than light smokers, individuals who used assistance had higher cessation rates than self-quitters, and the use of assistance increased with age. Increased age of participants as well as using the program itself may help explain why the QuitSmart program shows a relatively high cessation rate.

According to research by Bushnell, Forbes, Goffaux, Dietrich, and Wells (1997) with a military/DOD population, factors that led to more successful smoking cessation included “attendance at classes, access to free nicotine-replacement therapy, higher education levels,
reduced stress, older age, retirement, and advice from physicians” (p. 718). In the present study, for Plan A, 55% of the participants attended all three groups, all 100 participants had access to free nicotine-replacement therapy, 57% had more education than a high school diploma, the mean age was over 54, 35% were retired, and 75% of participants reported having a physician refer them to the QuitSmart program, thus supporting Bushnell et al.’s study. Plan B (as a subset of Plan A), had 50% of participants attend all three groups, all 40 participants had access to free nicotine-replacement therapy, 59% had more than a high school diploma, mean age was over 54, 27.5% were retired, and 70% reported having been referred by a physician. It is possible that those who joined the QuitSmart program and attended all sessions had truly made up their minds to quit. Because so many (70%) were medically referred, a serious enough health event may have occurred to make a quit attempt almost essential.

Bushnell et al.’s study also reported major disincentives to successful cessation include increased stress, nicotine withdrawal symptoms, weight gain, and other more military-focused reasons such as deployment and change in assignment. Of Plan A attriters/relapsers, 49% attributed the relapse to external causes (e.g., unemployed, improve self-esteem, drug-using stepson “disappeared”) and 20% reported stress as the reason to start smoking again. For Plan B, 60% of the attriters reported similar external causes and 40% stated stress led to their relapse. The participants in this group were not active military, and may have been more prone to using externalizing factors rather than take personal responsibility or realize the role stress played in their relapse. Pomerleau, Marks, and Pomerleau (2000) found that smokers who smoke to “self-medicate” may experience increased symptoms (e.g., cognitive or affective symptomatology) when they quit smoking. Plan A attriters/relapsers who were able to complete the program, but relapsed shortly thereafter, may have used externalizing rather than a stress attribution simply
because they did not understand the concept of self-medication to lessen stressful feelings. It should also be noted that the majority of attritors did not view their program attrition as a “relapse,” but rather a “slip.”

Shiffman, et al. (1998) reported that 48% of the participants in their study on smoking relapse quoted stress as a trigger to their relapse. They found that more nicotine dependent participants were more likely to endorse stress as a trigger. They concluded that nicotine dependent smokers have more conditioned associations between smoking and negative affect, which may indicate fewer coping resources in any stressful situation. Matheny and Weatherman (1998) also reported the importance of stress coping resources as being predictive of cessation maintenance. Faue, James, Folen, and Needels (1997) reported participants in the Tripler-Tobacco-Cessation Program had difficulty learning new ways to cope with stress. They stated that participants “perceived stress as contributing a great deal toward relapse” (p. 448). Such consistent information indicates the need for administration of a stress-assessment instrument prior to beginning the QuitSmart program to identify those who may be more vulnerable to relapse because of stress. Perhaps adding an extra session to focus specifically on stress management may help increase the level of success. El-Guebaly and Hodgins (1998) found that cognitive-behavioral relapse prevention treatment was an effective tool for smoking cessation. They found that when relapses occurred, there was reduced severity and improved durability of the effects of interventions (i.e., seeing it as a slip rather than a relapse, smoking lower nicotine cigarettes, and planning on another quit attempt). They also found that over half of all relapses in addicted persons were attributed to negative emotional states.
According to Faue, James, Folen and Needels (1997), smoking cessation treatment should follow the addiction model in that high relapse rates should be expected after initial success; then, for therapeutic intervention to be effective, persons “must acquire new cognitive strategies and problem-solving skills that will increase their overall capacity to deal with stress as well as to anticipate and cope with setbacks in their attempts to change from addictive behavior to more healthful living” (p. 449). Because cigarette smoking is seen as an addiction, relapse prevention—especially early relapse prevention—should be a useful and important aspect of smoking cessation programs. An addition, the QuitSmart program might include a hotline number or some other intervention that participants could use at the first sign of a slip/relapse situation as an additional “boost” to aid in relapse prevention.

Irvin and Brandon (2001) completed a review of 23 studies published on smoking cessation from 1977 through 1996 and found a steady decline in smoking cessation effectiveness, stating that “smokers seeking treatment are becoming progressively more recalcitrant, possibly reflecting general changes in the population of remaining smokers” (p. 83; i.e., today’s smokers are more nicotine dependent, have comorbid psychiatric and substance abuse disorders, less educated, and have lower socio-economic status). Participants in the present study had moderate to heavy nicotine dependence (Fagerstrom, 1978), 38% reported co-morbid psychiatric disorder, and were fairly well educated. The success rate in the present study is thus not entirely consistent with Irvin and Brandon’s conclusions. Psychiatric diagnosis continues to be an area of uncertainty among researchers. For example, Gariti, Alterman, Mulvaney, and Epperson (2000) reported that psychopathology was not a contributing factor to smoking relapse or successful cessation even though participants with lifetime psychiatric disorders wore the nicotine patch less frequently than those without psychiatric disorders. On the other hand,
Ferguson et al. (2003) found that patients with current psychiatric diagnoses were less likely to be successful at smoking cessation.

Gibbons and Eggleston (1996) performed a study attempting to change smokers’ perceptions of the typical smoker based on evidence that negative images of a behavior tend to lessen the likelihood of performing that behavior. They found that as length of cessation increased, negative view of “typical smoker” increased. Chassin, Preson, Sherman and Kim (2002) also found that quitters demonstrated increasing negative beliefs about smoking and became indistinguishable from stable nonsmokers. Gibbons and Eggleston (1996) also hypothesized that smokers’ environments would influence distancing from the smoker prototype in that it would be harder to distance the negative image of smoking if friends and family smoked. The results of their study supported this notion. However, in the present study, 40% (18) of the attriters/relapsers lived in a home environment where no one else smoked. A possible explanation could be that participants in this study felt undue stress in their smoke-free environment and coped by smoking, or externalized their inability to quit smoking to their environment and were unable to distance themselves from the view of the “typical smoker.”

There is considerable evidence that self-care grows with age (Berkman and Syme, 1979; Brody, 1985; Volden, Langemo, Adamson and Oechsle, 1990). For the present sample the mean age was over 54, 75% were physician referred (Plan A), and all participants seemed to be aware of the health risks associated with smoking. Improving current physical health may have played a significant role in helping persons in the present study stay motivated to successfully quit smoking, especially since 82 participants (Plan A) cited either health-related or health-connected reasons for the quit attempt. For Plan B, 30 participants cited these same reasons for the quit
attempt. For example, one participant had throat cancer and had to quit smoking prior to surgery; another required lung surgery and also had to quit smoking prior to necessary surgery.

Because of the high correlation between the guilt and shame measures (indicating both scales are measuring the same construct), finding different relations for these variables became a non-issue. Additionally, these participants did not experience significant shame/guilt phenomena, as demonstrated by low mean scores on the shame scale ($M = 30.26$, $SD = 23.53$; $M = 28.50$, $SD = 23.27$) for both Plan A and B, respectively. According to Cook (2001), a shame score “of 50 or higher on the Internalized Shame Scale is indicative of painful, possibly problematic levels of internalized shame” (p. 12). Harder and Lewis (1987) reported that shame elements sometimes “emerge only after extended psychological treatment, during which the painful shame vulnerabilities must be denied” (p. 90), suggesting that the participants in the present study may not recognize these emotional states/traits. Although this study found significant correlations between several psychological variables (e.g., shame, guilt, neuroticism, depression, and anger/hostility), physical health-related factors may have been more important.

How participants experience symptoms and attributions of illness may be important to smoking cessation success. Clark, Hogan, Kviz, and Prohaska (1999) found that a symptoms-based approach to smoking cessation is important for older smokers (aged 50 and older) in that older adults may attribute symptoms to “normal aging” rather than an indicator of illness. How older smokers evaluate their health is also important. If they perceive serious health problems from smoking, they are more likely to be ready for a quit attempt (Clark, Rakowski, Kviz, Hogan, & Brown, 1997). In the present study, most veterans were physician referred to the QuitSmart program, indicating that interaction with health care providers is helpful. Medical providers should counsel all smokers about smoke-related symptomatology and the benefits
associated with quitting. Also, health care providers are more likely than they were in the past to point out health-related problems that are a result of smoking. It appears the NTVHCS medical providers are providing adequate information in helping older, more nicotine addicted persons to consider a smoking cessation attempt.

According to Stanton, Dittmar, Wooldridge, and Kuo (1992), ratings of “self-efficacy were found to discriminate active quitters from continued smokers, joiners of smoking cessation programs from non-joiners, and successful from unsuccessful short- and long-term quitters” (p. 11). They also concluded that persons completing a smoking cessation program were more likely to quit smoking than those who did not complete the entire program. The present study provided support for this conclusion.

Limitations

Participants in the present study were self-selected (i.e., they freely chose to participate). This might have influenced the study when compared to persons who did not participate in the study but joined the QuitSmart program. It is possible that participants in the study could have been more motivated to quit smoking than non-participants. Conversely, participating in the study could have influenced participants by raising their level of interest in a stop smoking attempt. Regardless, this might reduce the generalizability of the present findings.

Another limitation could involve false reports of abstinence via the Post-Attrition Inventory, which was completed by telephone interview several weeks after participants completed/dropped out of the QuitSmart program. There was no biochemical confirmation of abstinence, either during or after program participation. Because the study was carried out with veterans, the results may not generalize to other populations. Previous literature has described higher rates of smoking in the military community, thus veterans may have higher rates of
nicotine addiction than the general public. Additionally, the *QuitSmart* program is a “treatment” program for smoking cessation. Therefore, results might not be applicable to a population of smokers attempting cessation without benefit of treatment. Although there were female participants in the study, there was not an equal distribution of male/female participants, so gender effects may be masked or spurious.

The relatively short follow-up time may limit the present findings. Participants were given approximately 70 days supply of nicotine patches, with follow-up for quitters occurring within 2-5 months of program completion. Follow-up for attriters occurred within a short time to capture why they were unable to complete the program as well as factors that may have led them to start smoking again.

The modest sample size is an additional limitation. A larger sample size may have enhanced the statistical significance of marginal findings.

A survival analysis had been planned as a way to investigate attrition from the program. However, it was not feasible to carry out this type of analysis. In survival analysis, the time until an index event is observed serves as the primary data. Where the event is attrition, the value of the survival function at time T is the probability that a subject will “attrite” at sometime greater than time T. In the present study, time T was 42 days—the end of the formal *QuitSmart* program. At that time, attriters were called to determine reason for dropping out of the program—and included attriters who never stopped smoking. Because the attrition rate was so small, variable length follow-up was then completed with all study participants. The group of attriters/relapsers for this study does not conform to minimal standards to calculate a survival analysis because of the way the data was collected. Survival analysis censors persons at the “failure” date (or in this case, follow-up date); the variable follow-up time caused censoring
when participants should not have been censored, making the survival analysis inaccurate and unusable. If the data in the present study had been collected with a constant interval prior to follow-up, survival analysis could have provided a smoke-free rate at each of the follow-up times. Such information could have provided more accurate success rates for the QuitSmart program at the NTVHCS. Future research should be structured so that follow-up with participants occurs at predetermined times (e.g., at the end of each session, again at the end of the formal program, then 70 days later—when participants no longer had patches, again 60 days later, and continuing with equal follow-up time periods until the end of the study).

The age of smokers in the present study ranged from 33 to 77. However, the mean age was slightly over 54. There may have been a cohort effect. Research (Berkman & Syme, 1979; Brody, 1985; Bushnell, Forbes, Goffaux, Dietrich, & Wells, 1997; Volden, Langemo, Adamson & Oeschsle, 1990) has demonstrated that older age and retirement status affects successful smoking cessation. Although sample size seemed to be adequate, a larger sample size would have increased power to detect subtle effects.

As with any study using self-report instruments, limitations arise regarding how participants interpreted the questions and whether or not they answered honestly. Kenkel, Lillard, and Mathios (2003) reported “retrospective data on smoking can be an important resource for tobacco addiction research” (p. 1307). Their study found that persons tend to be honest in their reporting, especially in regard to age of beginning smoking, prolonged abstinence, and permanent quit status over a period of 13 years. However, the possibility of unreliable self-report does limit the applicability of the present study.
Clinical Implications/Recommendations for NTVHCS

Because health care providers are more likely than they were in the past to point out health-related problems that are a result of smoking, older smokers are more interested in joining the ranks of nonsmokers. Additionally, older smokers tend to be more interested in self-care issues and are more open to life-style changes to improve their health. It appears the NTVHCS medical providers are making available adequate information in helping older, more nicotine addicted persons to consider a smoking cessation attempt, and this level of care should continue.

The present study confirmed a difference between global and situational smoking self-efficacy, demonstrating that smokers who specifically had higher levels of situational smoking self-efficacy were more likely to be able to quit smoking than those with low levels of situational smoking self-efficacy. Therefore, the QuitSmart Program should consider a measure of situational smoking self-efficacy prior to beginning the program to target those who have lower smoking self-efficacy. At the very least, an intensive smoking situational self-efficacy-building component might be implemented. According to Bandura’s social learning theory, practicing a behavior increases self-efficacy. Therefore, stressing smoking situational self-efficacy and offering ways to increase this construct may increase smoking cessation.

Clinicians may find that giving potential participants self-change strategies prior to joining the QuitSmart program will aid in participants being able to have more control over their smoking, and thus make it easier for them to stop smoking when they participate in the program. Self-change strategies include behaviors such as telling others about the smoking cessation attempt, spending a whole evening without smoking, reinforcing internal thoughts about stopping smoking, and doing risk assessment regarding the impact of smoking on health. Using
smoking situational self-efficacy and incorporating the use of self-change strategies prior to program initiation might further empower smokers toward smoking cessation.

Consistent research information regarding the construct of stress indicates the need for administration of a stress-assessment instrument prior to beginning the *QuitSmart* program to identify those who may be more vulnerable to relapse because of stress. Such an instrument should be a brief, self-report instrument that can easily be scored. Giving participants their own results so that they can be aware of how they handle stress might augment the effectiveness of stress reduction strategies.

Because cigarette smoking is seen as an addiction, relapse prevention—especially early relapse prevention—should be a useful and important aspect of smoking cessation programs. When asked how the program could be improved, several participants stated they wished there had been someone to talk to when feeling overwhelmed. Some suggested exchanging phone numbers within the group, whereas others stated there was not enough personal interaction between group members (due to only 3 sessions) to feel comfortable sharing phone numbers. An addition to the *QuitSmart* program might include a hotline number or some other intervention that participants could use at the first sign of a slip/relapse situation as an additional “boost” to aid in relapse prevention. Additionally, the link between neuroticism, shame-proneness, and psychological diagnosis may indicate a need for either further education regarding psychological diagnoses and difficulty with smoking cessation, or a group format that is structured differently for this population.

**Future Research**

Future research in the area of smoking cessation should further confirm that smoking situational self-efficacy and self-change strategies are strong predictors of successful smoking
cessation by comparing these constructs with other predictors of successful smoking cessation. Research by Brandon et al. (2003) found that pretreatment task persistence was a strong predictor for smoking cessation, stating that “persistence predicted outcome independent of other significant predictors: gender, nicotine dependence, negative affect, and self-efficacy” (p. 448). Eisenberg’s (1992) learned industriousness (LI) theory, which posits that persons “being rewarded for high effort are more likely to persist at effortful tasks than . . . [those] with histories of being rewarded for low effort” (p. 448) was the basis for their study. Because smoking cessation is seen as a high effort task that requires persistence in both cognitive and behavioral coping skills, it would appear that persons with high LI would be more successful than persons with low LI. The Brandon et al. study measured persistence by using two timed measures: Anagram persistence task (consisted of 11 anagram trials with 4 easily solved and 7 anagrams that were very difficult-cognitive domain), and mirror-tracing persistence task (required hand-tracing of geometric figures while observing the hand movements in a mirror-motor domain). After an allotted amount of time, if participants could not complete the task, they were instructed to move on to the next item, thus using time as a measure of persistence.

A potential study could use the smoking self-efficacy questionnaire and the smoking self-change strategies scale as measures of self-efficacy and self-change strategies in relation to persistence tasks such as those used by Brandon et al. (2003). Undoubtedly, persistence is an important asset in many life areas, including smoking cessation. If a succinct measure of global self-efficacy could be found, that too would be helpful, not only in determining a relation between self-efficacy and persistence, but further confirming that smoking situational self-efficacy is a separate construct.
The Brandon et al. (2003) study used covariance to control for negative affect, and found only the PANAS a significant predictor of success. The present study provided other findings indicating that depression is not an independent risk factor for smoking relapse. However, a validated measure of stress should be considered due to stress being considered a risk factor for attrition/relapse. Demographic data would also be collected, at least as thoroughly as in the present study, with more emphasis on whether an actual health-related event caused by smoking was a precipitant in beginning a smoking cessation attempt. Expected results would show smoking situational self-efficacy as an excellent predictor of smoking cessation, with persistence being highly correlated, and perhaps demonstrating an interaction effect. Additionally, self-change strategies could again be tested for confirmation of the findings from the present study. Covariance of negative affect and/or stress could also be used to determine which factor is more important in the relapse process.

Summary and Conclusions

This study proposed several factors that may have been related to attrition/relapse from the NTVHCS smoking cessation (QuitSmart) program. Factors such as guilt and shame, anger/hostility, nicotine dependence, global/smoking situational self-efficacy, anxiety/depression, and personality traits (namely neuroticism) were measured in a self-selected group of persons joining the QuitSmart program. Almost all members who had signed up to join the smoking cessation program were contacted via phone, with approximately 75% agreeing to participate in the study (about 50% actually participated). Those agreeing to participate were asked to come in early for the first session to complete the self-report measures and were told they would receive a follow-up phone call several weeks after the program had ended to ask a variety of questions regarding their participation in the program.
Neither guilt nor shame appeared to have any independent influence on attrition/relapse rates for the QuitSmart program. Anecdotally, it is interesting that many smokers who are unable to stop smoking state they feel guilty, but such guilt appears to be pseudo-guilt in that smokers do no appear to be willing to take responsibility for their failure nor change their behavior—both factors that would lessen feelings of guilt. Although the anger/hostility measure was significantly correlated with shame (but not with the measure of guilt), it too failed to predict attrition/relapse.

Low situational smoking self-efficacy and a high level of nicotine dependence appeared to be the best predictors for attrition/relapse. The results of the present study indicate a difference between global and smoking situational self-efficacy in that the global measure of self-efficacy did not predict smoking cessation whereas smoking situational self-efficacy did. The use of smoking self-change strategies were more prominent by those who were successful at quitting smoking. In the present study, those who believed they could stop smoking were more likely to be successful quitters and were also more likely to believe they would use self-change strategies in the process.

Exploratory analyses showed that the older participants were better able to quit smoking. Although some studies have found that older smokers may have a more difficult time quitting, other research has found older smokers to be more interested in improving their health and quality of life. The latter finding was supported by the present study.

Although many of the hypotheses of the present study were not supported, the value of the results demonstrate methods the NTVHCS could use to increase the smoking cessation rate of the QuitSmart program. This study shows a differential influence of global and smoking situational self-efficacy, which is certainly worth confirming in future research studies of
smoking cessation. If further research confirms this difference, it may also apply to other areas of situational self-efficacy research.
APPENDIX A

CONSENT FORM
Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed procedures. It describes the procedures, benefits, risks and discomforts of the study. It also describes the alternative treatments that are available to you and your right to withdraw from the study at any time. It is important for you to understand that no guarantees or assurances can be made about the results of the study.

1. **WHAT IS THIS RESEARCH STUDY ABOUT?**

This study involves research into the factors that contribute to success in stopping smoking. The purpose of this research is to identify psychological characteristics that improve a person’s chances of successful quitting of cigarette smoking. The expected duration of your participation is approximately one and a half hours (90 minutes) before you start the stop smoking classes and one hour (60 minutes) after you complete (or leave) the stop smoking program. The approximate number of research subjects involved in this study is… This study is not sponsored by any company or institution that manufactures products to help persons quit smoking.

2. **WHAT WILL HAPPEN DURING THE STUDY?**

You will be asked to complete a series of brief questionnaires that measure various methods of coping with stress, anxiety and depression, strategies for coping with smoking cessation, level of nicotine dependence, and alcohol use. You will also be asked to complete demographic information (date of birth, education, etc.). Finally, as part of your participation in the study, you will be asked a series of questions via telephone interview after your involvement in the smoking cessation program.

3. **WHAT ARE MY RISKS?**

There are no foreseeable discomforts associated with the experimental procedures. Completing the questionnaires prior to beginning the smoking cessation program, and answering the interview questions should be minimally stressful. You are free...
to discontinue at any time should you choose to do so. Also, your doctor or another appropriate professional will be made available should you desire to discuss your participation in the study.

4. WILL THE RESEARCH BENEFIT ME OR OTHERS?

As this research study does not involve any treatment per se (only assessment), there are no specific benefits associated with your involvement. However, a better understanding of smoking cessation will result in a professional community (psychologists, physicians, and policy-makers) that is better equipped to assist persons entering into smoking cessation treatment. Thus, your involvement in the project might indirectly benefit other smokers who are attempting to quit smoking.

5. WHAT ARE MY ALTERNATIVES TO BEING A RESEARCH SUBJECT?

As this research study does not involve any experimental treatment components (only self-report questionnaires and interview), there will be no disruption in your on-going treatment. This research is related to the stop smoking program, however. As an alternative to the stop smoking program itself, you may attempt to quit smoking on your own, or you may ask your doctor for help.

6. WILL I GET PAID?

Subjects do not pay for treatment associated with participation in a VA research program.

7. WILL I HAVE TO PAY?

You will not have to pay for participation in this study.

8. DOES PREGNANCY OR THE POSSIBLY OF PREGNANCY PREVENT ME FROM PARTICIPATING?

No, whether or not you are pregnant has no impact on your ability to participate in this study. Every effort will be made to have females enter this study on an equal basis with male subjects.
9. **WHAT IF I GET INJURED?**

The investigators will make every effort to prevent injury that could result from this research. While there is no requirement for the VA to provide compensation for injuries related to research, it will provide reasonable medical treatment for injuries related to research in accordance with Federal Law.

You do not give up any legal rights to compensation for injuries related to research by signing this form. The Federal Tort Claims Act is a way to request compensation from the government for injuries related to research in VA research subjects. Investigators at the VA will advise you about medical treatment available at the Dallas VA Medical Center in case of bad effects, which you should report to them promptly. Investigators' phone numbers are at the end of this form.

10. **ARE MY RECORDS SAFE FROM THE PUBLIC?**

The investigators maintain confidentiality of your research records in the same way as your other medical records. No one has access to your records except as required by law. You are, however, authorizing the Dallas VA Institutional Review Board (IRB) to inspect your medical and research records. The IRB is the committee at the Dallas VAMC that oversees human research studies.

If you choose to participate in the study, certain government agencies (such as the FDA or VA) may examine your research records. Your name as a subject in this study is confidential, and will not be included in any publication prepared as a result of this study.

11. **DO I HAVE TO PARTICIPATE IN THIS STUDY, OR CAN I WITHDRAW FROM THE STUDY?**

Participation in this study is voluntary and you may refuse to participate without penalty or loss of benefits to which you are otherwise entitled. The investigators will answer any questions you may have about the study. You are free to withdraw your consent and discontinue participation at any time. If you decided to withdraw from this study, you should contact the investigator or his/her representative listed at the bottom of this form. Discontinuation will in no way affect or jeopardize the quality of care you receive now or in the future at this institution or your right to participate in other studies. Your doctor may also withdraw.
you without your consent for medical or administrative reasons. Any significant new findings that develop during the course of the research study that in the opinion of the investigator may affect your willingness to continue to participate will be provided to you as soon as possible.

12. **WHOM SHOULD I CONTACT FOR QUESTIONS OR PROBLEMS?**

If you have any questions regarding this study or have an unexpected reaction to your treatment, you should call the Principal Investigator, whose name and contact number appear on the last page of this form.

If you have any questions regarding your rights as a patient, complaints about your treatment or general concerns about the conduct of the research study, you may contact the Dallas VAMC Patient Representatives at 214-857-0482. The Patient Representative will guide you in resolving your question or complaint.

If you have a medical emergency you should immediately call 911 for assistance.
RESEARCH SUBJECT’S RIGHTS:

I have read or have had read to me all of the above. The study has been explained to me and all of my questions have been answered. I have been told of the risks or discomforts and possible benefits of the study. I have been told of other choices of treatment available to me.

I understand that I do not have to take part in this study, and my refusal to participate will involve no penalty or loss of rights to which I am entitled. I may withdraw at any time without penalty or loss of VA or other benefits to which I am entitled. The study physician can stop my participation at any time if it appears to be medically harmful to me, if I fail to follow directions for participation in this study, if it is discovered that I do not meet the study requirements, or if the study is canceled.

In case there are medical problems or questions, I have been told I can call Dr. James K. Besyner at 214-857-0534 during the day or at 800-725-4436 after hours.

I understand my rights as a research subject, and I voluntarily consent to participate in this study. I understand what the study is about and how and why it is being done. I will receive a signed copy of this consent form.

Subject’s Signature
Date

Signature of Subject’s Representative*
Subject’s Representative (print)

*Only required if subject not competent.

I certify that I have reviewed the contents of this form with the person signing above, who, in my opinion, understood the explanation. I have explained the known side effects and benefits of the research.

Principal Investigator or designee (Signature)
Date

In lieu of VA Form 10-1086

Version Number:
Submission/Revision Date:
Patient Initials:
Investigational Patient’s Bill of Rights

1. Be informed of the nature and purpose of the experiment.

2. Be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized.

3. Be given a description of any discomforts and risks reasonable to be expected from the experiment.

4. Be given an explanation of any benefits to the patient reasonable to be expected from the experiment, if applicable.

5. Be given a disclosure of any appropriate alternative procedures, drugs, or devices that might be advantageous to the patient, and their relative risks and benefits.

6. Be informed of the avenues of medical treatment, if any, available to the patient after the experiment if complications should arise.

7. Be given the opportunity to ask any questions concerning the experiment or the procedures involved.

8. Be instructed that consent to participate in the medical experiment may be withdrawn at any time and the patient may discontinue participation in the medical experiment without prejudice.

9. Be given a copy of the signed and dated written consent form.

10. Be given the opportunity to decide to consent or not to consent to a medical experiment without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on the patient’s decision.
APPENDIX B

DEMOGRAPHIC DATA
Demographic Information

Please circle your answer, or fill in the blank as appropriate.

1. Ethnicity
   Latino/Latina
   Caucasian (White)
   Asian/Pacific Islander
   Other (specify) _______________________

2. Gender
   Female
   Male

3. Education
   Some High School
   GED
   College Graduate
   High School Diploma
   Some College
   Graduate Degree

4. Current Employment Status
   Full Time
   Part Time
   Other (specify) _______________________
   Unemployed
   Retired

5. Current Marital Status
   Married or Living as Married
   Separated
   Never Married
   Divorced
   Widowed
6. How would you describe your physical health?

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7. Do you have a service-connected disability?

Yes               No
If yes, what percent? ________ %
What is the disability? _______________________________

8. How old were you when you began smoking? ________ yrs. old

9. Have you been smoking constantly since that time?

Yes               No
If not, describe your pattern of smoking _______________________________
______________________________

10. Why did you start smoking?

____________________________________________________________________
____________________________________________________________________

11. When smoking at your heaviest, how many packs per day did you smoke? ______

12. Are other people currently helping you quit smoking?

Yes               No

13. How would you rate their support?

1 = Not at all helpful
2 = Not very helpful
3 = Neither helpful nor unhelpful
4 = Somewhat helpful
5 = Very helpful
14. Living Environment
   1 = My spouse or significant other smokes
   2 = Other household members smoke
   3 = No one in my home smokes
   4 = I live alone

15. Number of times you have attempted to quit smoking _________

16. Before you decided to quit smoking this time, how many packs did you smoke per day? ___

17. What percentage of your family/friend/colleagues are smokers?
   None          Few       Many       Most       All

18. Why are you trying to quit smoking now?

   _______________________________________________________________________
   _______________________________________________________________________
   _______________________________________________________________________

19. Who referred you to the VA *QuitSmart* Program?___________________________
APPENDIX C

POST-ATTRITION INVENTORY
Post-Attrition Inventory

I’m going to ask you some questions about your stop smoking attempt. I want to remind you that your answers will not affect your right to receive any and all benefits from the VA to which you are entitled. Your answers will remain confidential. I ask for your honesty so that we may use the information gathered from all participants to make improvements to the program so that it will potentially help other persons who want to join the program to stop smoking.

Have you started smoking again?  Yes  No

How many cigarettes per day? __________

When did you start smoking again? __________

For how long did you quit? __________

Do you consider this a “slip” or a “temporary setback?”  Yes  No
Do you consider this a relapse?  Yes  No
Tell me about it. _________________________________________________________

Were you craving cigarettes prior to this slip/relapse?  Yes  No
Describe the cravings for me

Have you relapsed before?  Yes  No
When? __________
How many times? _____

Describe three situations of highest risk for relapse in the past year.
What was happening just before you decided to smoke?

________________________________________________________________________

What were you feeling (ex., glad, sad, mad, anxious, frightened, frustrated)?

________________________________________________________________________

What were you thinking (images of smoking, relief of tension, etc.)?

________________________________________________________________________

What was the deciding factor that led you to smoke?

________________________________________________________________________

What steps did you have to take to GET a cigarette?

________________________________________________________________________

Are you comfortable with the treatment you have received?    Yes       No

Do you believe your treatment is successful (i.e., even if you didn’t quit smoking, have you cut down considerably)?    Yes       No

How many cigarettes per day were you smoking prior to treatment?__________

How many cigarettes per day are you smoking now?________

What brand of cigarette are you smoking now (i.e., is it the same brand as before your quit attempt, or is it different)? __________________________

(Is this a lower nicotine type of cigarette?) ____________
## Correlation Matrix – Plan A

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FTND – Fagerstrom Test of Nicotine Dependence; ISS – Internalized Shame Scale; TGI-MS – The Guilt Inventory-Moral Standards Subscale; SEQ-SV – Self-Efficacy Questionnaire-Smokers Version; SCS-CS – Self Change Strategies-Current Smokers; NEO-N – NEO Five Factor Inventory-Neuroticism Subscale; POMSTA – Profile of Mood States Tension/Anxiety Subscale; BDI – Beck Depression Inventory. Values in parentheses ( ) on diagonals are alpha co-efficients.
Correlation Matrix – Plan B

N = 40

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*p<.05  
**p<.01

FTND – Fagerstrom Test of Nicotine Dependence; ISS – Internalized Shame Scale; TGI-MS – The Guilt Inventory-Moral Standards Subscale; SEQ-SV – Self-Efficacy Questionnaire-Smokers Version; SCS-CS – Self Change Strategies-Current Smokers; NEO-N – NEO Five Factor Inventory-Neuroticism Subscale; POMSTA – Profile of Mood States Tension/Anxiety Subscale; BDI – Beck Depression Inventory. Values in parentheses () on diagonals are alpha co-efficient.
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