

THE RELATIONSHIP OF SMOKING ATTITUDES  
TO THE SMOKING BEHAVIORS OF  
FIRST & SECOND YEAR NURSING STUDENTS  
IN A RURAL NURSING PROGRAM

by

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**THE RELATIONSHIP OF SMOKING ATTITUDES TO THE SMOKING  
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RURAL NURSING PROGRAM**

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## ABSTRACT

Title of Thesis: THE RELATIONSHIP OF SMOKING ATTITUDES TO  
THE SMOKING BEHAVIORS OF FIRST & SECOND  
YEAR NURSING STUDENTS IN A RURAL  
NURSING PROGRAM

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The purpose of this study was to explore the relationship between the smoking attitudes/beliefs and professional role attitudes of nursing students and the smoking behaviors and year of formal nursing education in the program. The findings may assist in understanding relationships between smoking and nursing education.

The review of literature indicates that while nurses can make a difference with minimal effort, smoking nurses are poor role models and provide little education about smoking to clients. Cessation education is especially important to rural family nursing since this brief teachable moment may be a rare opportunity.

This study was a cross sectional descriptive survey using a demographic tool and two questionnaires. The Smoking Attitude Questionnaire (Reeve, Adams, & Kouzekanani, 1996) measures attitudes towards smoking related to the nurse's counseling clients to stop smoking and as related to role modeling positive health. The Smoking and Women Questionnaire (Gulick & Escobar-Florez, 1995) measures behaviors/attitudes supportive of smoking cessation.

The study used a convenience sample of first and second year nursing students in a two year community college nursing program.

Data analysis of six hypotheses involving variables of smoking behavior, year, SAQ score, SWQ score, age, recent changes, and other smokers in the household found no significance. A seventh hypothesis, that the SWQ score was inversely related to smoking behavior, was found to be significant ( $r=.370$ ,  $p<.01$ ).

Findings from further analysis of the type of change (quit/decrease, no change, increase/start) in smoking behavior compared to the presence of another smoker in the household were significant ( $\chi^2=7.207$ ,  $df=2$ ,  $p=.027$ ). The presence of another smoker in the household had a significant association with the student's smoking behavior ( $\chi^2=5.949$ ,  $df=1$ ,  $p=0.015$ ). Based on the findings of this further analysis, the type of change in smoking behavior and the student's smoking behavior were significant with the presence of another smoker in the household. These findings lend support for Bandura's Social Learning Theory and reciprocal determinism which were used as the theoretical framework of this study.



## DEDICATION

This thesis is dedicated:

To my family members who have died because of tobacco. Among the long list of victims are my father, Nelson C. Campbell and my mother in law, Miriam Jones.

And to the innocent victims of the tobacco epidemic. The loved ones who watched as their parents or spouses suffered and died, and the loved ones, Lillie and Carlene, who cared for them, nursed them, and suffered by their sides until the end.

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## Chapter I

### Introduction

#### Introduction to the Problem

Smoking is the major health concern and problem for the American people as well as the world population. It is estimated that over 419,000 people die as a result of smoking behavior in the U.S. every year and about 2.1 million people in developed countries died as a result of smoking in 1995 (American Cancer Society, 1998). While the consumption of cigarettes has decreased and the number of adult smokers has decreased, the number of adolescent smokers has increased. However, the number of people dying from smoking behaviors has increased alarmingly. The incidence of lung cancer has increased an alarming 85% in males and 438% in females since 1960 (American Cancer Society, 1998).

Lung cancer is only one end product of smoking but its death toll is staggering. It is estimated that one in three people will die from lung cancer (Insel & Roth, 1994). Unheard of a century ago, it has been slowly growing since the beginning of this century and has now grown to a worldwide epidemic (a 400% increase in just the last 30 years) (Dumas, 1992). The most common type of cancer, lung cancer now accounts for 15 percent of all cancer cases and 25 percent of all cancer deaths - about 168,000 new cases and 146,000 deaths annually in the US (NIH, 1993). By the year 2000, lung cancer mortality will be an estimated 2 million worldwide. Lung cancer is the leading cause of death among all the cancers for men and for women (American Cancer Society, 1998). In 1987, lung cancer passed breast cancer as the leading cause of death among women. Breast cancer had held the number one position for 40

years (American Cancer Society, 1998). Estimates are that 87% of all lung cancers are related to smoking (American Cancer Society, 1998).

Lung cancer is only one risk the smoker faces; smoking is related to cancers of the mouth, pharynx, larynx, esophagus, pancreas, uterus, cervix, kidney, and bladder. Smoking is responsible for 29% of all cancer deaths. Smoking is also related to various heart diseases, colds, gastric ulcers, chronic bronchitis, emphysema, and cerebrovascular diseases (American Cancer Society, 1998).

The nationwide goal of Healthy People 2000 is: 1. to decrease to 15% the number of regular smokers below the age of 20, 2. to decrease to 20% the number of children exposed to passive smokers, 3. to decrease to 18% the number of lower socioeconomic level tobacco users, and 4. to decrease the number of lung cancer deaths to 42 per 100,000 (USDHHS, 1990). Even with the new political interests, the new legislation and court battles, and the increased media attention to smoking cessation, there is still a long journey ahead before these goals will be realized. Since meeting these goals would necessitate cutting the current smoking and cancer rates roughly in half, it is safe to say that the year 2000 will pass with these goals left unmet.

#### Statement of the Problem

Smoking cessation should be a primary concern for all nurses. The majority of nursing clients, especially on the medical-surgical and critical care units, have a cancer, respiratory, or cardiac related diagnosis. Cancer and coronary disease remain the two leading causes of death among middle aged and mature adults. Everyone's life has been or will be impacted directly at some time by smoking related illnesses. The client/peer/family member may be the victim of tobacco use or may be an innocent victim of environmental



tobacco smoke.

Today's professional nurses have many roles and duties to perform while delivering care to their clients regardless of their diagnosis or health habits/lifestyle. Many sources list the various roles of the professional nurse. Three roles often included on that list are: direct patient care giver (helping, monitoring, managing, administering, and organizing) (Black & Matassarin-Jacobs, 1993), educator (Nelson, Giovino, Emont, Brackbill, Cameron, Peddicord & Mowery, 1994; Padula, 1992; Olive & Ballard, 1992; Entekin & McMillan, 1993; Shelton, 1993; Orem, 1991) and role model/exemplar (Reeve, Adams, & Kouzekanani, 1996; Olive & Ballard, 1992). Even patients surveyed in a study expected nurses to serve as exemplars of healthy behaviors (Olive & Ballard, 1992). Every nurse has autonomy and independence in organizing and prioritizing nursing care for clients, in developing and initiating health education for clients, and in modeling and projecting oneself as a professional exemplar.

All nurses, smoking or non-smoking, satisfy the role of direct patient care giver and provide nursing care based on the needs of the client regardless of the client's diagnosis. Many nurses, especially nurses who smoke, limit their nursing care roles in the area of patient education. While the role of exemplar is important, the role of a nurse as patient educator is even more important (Black & Matassarin-Jacobs, 1993; Orem, 1991).

The role of patient educator is an important role that nurses hold in the battle against the smoking epidemic. The nurse educator was identified by Orem as a role in nursing agency (Orem, 1991) and by Luckman and Sorenson as a role of medical-surgical nursing (Black & Matassarin-Jacobs, 1993). "Opportunities for health education and health promotion in the hospital setting

should not only be taken but planned, as an integral part of hospital health care and as part of an encompassing prevention strategy with primary care” (McBride, 1994, p. 99).

Nurses not only send a verbal message as patient educators but also a non-verbal message as exemplars. “Nurses are in a highly visible position as health behavior role models to the general public” (Alexander & Beck, 1994, p. 843). Even nurses who smoke can set a good example by not smoking in front of their clients and most are active about concealing their habit (Kudzma, 1988).

Although Herman (1991) believed that the nurse should respect the clients wishes as to quitting or not quitting, the nurse should let the client know that she is there to help identify and achieve his goals and to provide information and support. Even if the client is not ready to quit, the nurse can model a positive role for the client by not smoking and by working for a smoke free environment at the hospital and in the community (Frank-Stromborg & Rohan, 1992).

Rates of smoking among nurses vary with geographical area, age, sex, specialty, and education, but may range from 25% to 30% (Fiore, 1992; Shelton, 1993; Nelson et al, 1994). Smokers make up a large number of the ranks of nurses. Nelson et al (1994) found that smokers accounted for 18.3 % of the RN's and 27.2% of the LPN's. This compares to only 3.3% of physicians who are smokers. Nurses are lagging behind other health professionals in smoking cessation. Smoking cessation rates for nurses are down from the early 1970's when RN smokers were at 31.7% and LPN smokers were at 37.1% (Nelson et al, 1994). This decline among nurse smokers is partly the result of cessation, but also partly due to the increasing number of nonsmokers entering health care professions (Nelson et al, 1994). A study by Schwartz-

Barcott and Schwartz (1990) found that nurses tend to evaluate their personal health status more positively than non-nurses even though their smoking behaviors and resulting illness are similar. This may suggest a reason for the lag in nurses' smoking cessation when compared to other health professionals.

In the nursing population the percentage of smokers decreased with the advancing levels of nursing education (Casey, Haughey, Dittmar, O'Shea, & Brasure, 1989). Likewise, Nelson et al (1994) found this true for the lesser educated LPN's when compared to the RN's. Educational status is in fact the sociodemographic variable most highly predictive of smoking prevalence for the general population (Shelton, 1993).

Smokers among nursing students usually range between 30 - 39%, extreme ranges being 6 - 57%, with most students entering nursing education as a smoker and a lesser degree beginning while in school (Casey et al, 1989; Kudzma, 1988; Murray, Swan, & Mattar, 1983; Rausch, Zimmerman, Hopp, & Lee, 1987). Twice as many students entering nursing were smokers as compared to other professions (Elkind, 1988) and a considerable number started smoking while in school (Adriaanse, Reek, Zandbelt, & Evers, 1991).

Tobacco addiction can be a problem for many nurses and nursing students. Smoking is a concern for nurses just as it is for nurses' clients. However, the nursing education process may discourage undesirable health habits or educate the nursing students in such a way that their professional role prevails over unhealthy habits and attitudes. Research is needed to contribute to the understanding of this problem.

#### Purpose of the Study

The purpose of this study was to explore the relationship between the smoking attitudes/beliefs and professional role attitudes of first and second year

nursing students in a two year rural community college nursing program and the smoking behaviors and year of formal nursing education in that program.

Findings from this research may assist in understanding relationships between smoking and nursing education. Such information might be helpful in developing smoking cessation classes for nursing students or in educating smoking nursing students (tomorrow's nurses) to better educate their clients regarding the dangers of smoking.

## Chapter II

### Review of Literature

#### Introduction

This review will examine the literature currently available on smoking, nurses, and nursing students. First, it will look at the professional roles of educator and exemplar and whether these roles make a difference in the smoking epidemic. Second, it will examine nurses and nursing students not fulfilling these roles. Third, it will discuss two nursing professional roles: the educator and exemplar roles. Finally, it will examine how the core elements of beliefs/attitudes, socializing, self-efficacy, and support are related to smoking and nursing students.

#### The Roles and the Difference Nurses Make

Client surveys done upon discharge or later showed only 6-58% of nurses did teaching or gave smoking cessation information during the hospitalization for a smoking related illness (Wewers, Bowen, Stanislaw, & Desimone, 1994). Another way of stating the same is that 94-42% of nurses did not do the teaching or give the needed information. Chart reviews for documentation of smoking cessation interventions showed no documentation existed (Wewers et al, 1994). One study showed the effects that nursing can have on the delivery of information. In many doctor's offices, the chart is stamped with an inked rubber stamp for each client's current visit. The stamp includes TPR & BP and sometimes weight. The triage nurse or first professional to see the client completes this information. The addition of smoking status to the vital sign stamp increased the likelihood of counseling by the nurse from 23% to 77% and by the doctor from 47% to 86% (Robinson, Laurent, & Little,

1995; Stanislaw & Wewers, 1994). Even though nurses see smoking cessation counseling as their job, most report not doing it (Stanislaw & Wewers, 1994).

Soeken, Bausell, Winkelstein, & Carson (1989) found that nurses have a compliance rate less than 50% of all behaviors considered to be important to a healthy life including smoking. Fewer nurses who smoke felt that they should be role models, or advise clients to stop smoking, or discuss the hazards of smoking, or do smoking assessments, compared to non-smoking nurses (Mundt, Glass, & Michaels, 1995). Research suggests that most health care providers do not provide smoking cessation information routinely (Furlow & O'Quinn, 1996).

Smoking cessation information from a nurse (or physician) regardless how minimal can make a difference to a client. One study in California was based on the Social Learning Theory and the nicotine addiction model. The nurse reviewed the benefits of not smoking and the dangers of smoking after an MI with the clients, distributed a booklet and tapes, developed an action plan, and then conducted follow-up. The smoking cessation rate was 71% for the nurse intervention group compared to 45% in the usual-care group (Taylor, Houston-Miller, Killen, & DeBusk, 1990). In a replication of the study with oncology patients in Ohio, the nurse intervention group had a 75% cessation rate compared to 43% for the usual-care group (Stanislaw & Wewers, 1994). The study was also conducted with a surgical group in Ohio. The intervention group received three structured smoking cessation sessions and telephone follow-up after discharge. Five weeks after discharge 38% of the previous smokers were now non-smokers compared to 26% of the usual care group (Wewers et al, 1994).

While self-help among clients is popular the nurse fills a role here also.

The client who prefers self-help and self-care can receive minimal help from the nurse but yet she can make a difference (Altman, Flora, Fortmann, & Farquhar, 1987). The self-help approach is the most effective, most flexible, and allows the most choice (Altman et al, 1987; Shuster, Utz, & Merwin, 1996). Cost effectiveness can be further increased if the nurse focuses her energy on clients identified as intent on quitting (Taylor et al, 1990).

Taylor et al (1990) found that abstinence at 3 weeks after hospitalization and counseling was a good predictor of abstinence at one year. Puskar (1995) found that in women, quitting smoking, was part of a larger commitment to health and that nurses working with smoking cessation with their clients should also encourage other positive health behaviors in those clients.

With all hospitals now being smoke free, an excellent opportunity for smoking education and smoking cessation has been created for nursing. The hospitalized clients have been forced to stop smoking for the duration of their stay. They may also be motivated by their illness. This forced cessation provides an excellent opportunity. Rice, Fox, Lepczxk, Sieggreen, Mullin, Jarosz, & Templin (1994) found support for the role of the nurse as an effective smoking cessation counselor during these certain critical time periods. It is much easier to teach cessation while they are not smoking (Taylor et al, 1990). Teaching at this time not only utilizes the moment but also supports the institution's smoke-free policy (Stanislaw & Wewers, 1994). At this time the nurse has a short teachable moment. During this time, the client has an elevated level of motivation (Herman, 1991). Motivation is a key (a core element) to a behavior change such as smoking cessation and the fear of impending death tends to be a strong motivator (Manley, Epps, & Glynn, 1992). The more motivated, the more likely to quit. Most of the clients in this study were

already slightly motivated prior to admission and report that 50-70% have already made at least one serious attempt to quit (Manley et al, 1992; McIlvain, Susman, Davis, & Gilbert, 1995). Many report that they would try to stop if they were told to do so by a doctor or nurse. The hospitalization and the severity of the illness only increases this motivation (Stanislaw & Wewers, 1994).

Those smokers who are motivated or have previously attempted to quit or desire to quit now are not likely to approach the health care provider. They will attempt to quit on their own and are usually more successful than those who seek help. Only the heavier smokers will seek help after several failed attempts (Fiore, Novotny, Pierce, Giovino, Hatziaandreu, Newcomb, Surawicz, & Davis, 1990). Smokers who attempt to quit on their own have a success rate of 12.9 - 48% and the most used method is still cold turkey (Fiore et al, 1990; Macnee & Talsma, 1995; McIlvain et al, 1995; Mundt et al, 1995). The nurse should attempt to identify these clients, help motivate them, assist them, and help overcome any barriers. Mundt et al (1995) found that 73% of clients said they could be motivated to quit smoking. The nurse must first reinforce that they have the ability and then help to lower the barriers. These barriers, such as stress or perceived difficulty, can make the difference between being successful or not (Macnee & Talsma, 1995; Soeken et al, 1989).

Haughey, O'Shea, Dittmar, Bahn, Mathewson, Smith, & Brasure (1986) conducted a study with nursing students in which they asked smokers who had attempted to quit and former smokers to identify their motives. The most frequent response (78%) was to protect their health and second was to save money. The same study showed that the students were very knowledgeable about the ill effects of smoking.

When keeping in mind the area of rural family nursing, it is important for



the rural nurse to capitalize on the brief teachable moment because this may be the first and only opportunity to reach this client due to his infrequent exposure to the health care system (Weinert & Burman, 1994). The nurse also needs to look at the family environment because smoking family members may be a barrier and non-smoking family members may be at risk (Mundt et al, 1995). Research has shown that nurses have a health need within the family of a smoker. Brownson, Alavanja, Hock, & Loy (1992) found that the exposure of a non-smoking adult to high levels of environmental tobacco smoke in the home (40 pack years duration) increased the risk of lung cancer by 30%.

#### Nurses and Nursing Students Not Filling These Roles

According to Buchanan, Huffman, and Barbour (1994) most nurses see health education or risk education regarding smoking to be a nursing function but few nurses actually provide this care for their clients. Nurses are found to be poor educators related to smoking cessation even though they know the risks (Gritz, Berman, Marcus, Read, Kanim & Reeder, 1989; Kudzma, 1988; Sacker, 1990). This is partly due to nursing instructors and administrators being slow to implement anti-smoking activities and values (Kudzma, 1988).

Entrekin & McMillan (1993) conducted a study of nurses' knowledge, beliefs, and practices related to cancer prevention including the prevention of lung cancer. The researchers found that only 10.9% knew about reversing the effects of smoking to decrease the risk, only 19.3% knew the warning signs of lung cancer, and only 31.8% knew the screening guidelines. More alarming was the findings that only 3.4% of the nurses counseled the smokers 81-100% of the time and that 8.7% counseled them 41-80% of the time. The other 87.9% of the nurses counseled their smoking clients only 0-40% of the time.

Nurses are poor smoking cessation educators but nurses who smoke are

even worse. Nurses failed to educate the smoking client regarding risks or quitting and some nurses did not even see that as a nurse's role (Becker, Myers, Sacci, Weida, Swank, Levine, & Pearson, 1986; Dalton & Swenson, 1986; Kudzma, 1988; McBride, 1994; Padula, 1992). "Studies suggest that smoking by physicians and nurses undermines the message to patients about the adverse health effects of smoking and physicians and nurses who smoke are much less likely to recognize their importance as health educators or to encourage smoking cessation by their patients" (Nelson et al, 1994, p.1275).

Nurses have an obligation to point out the poor health habits and risks of their clients. Nurses are health promotion advocates and therefore the nurses need to be aware of their own poor habits and especially how these may effect their credibility as health promotion advocates or health counselors. It is the responsibility of the nurse or nursing student to provide accurate and factual information to clients about the dangers of smoking (Franklin, 1992). Nurses are the largest group of health care providers, yet they model unhealthy behaviors such as smoking and may have a negative influence on the health behaviors of clients (Rausch et al, 1987). Despite their own experiences with disease consequences and knowledge the nurses continue to smoke (Gritz et al, 1989). Fear seems to have no effect, yet is often stated as a reason for quitting, but research shows this is often only temporary. Education, a positive attitude towards quitting, and a desire for the health benefits are more successful motivators. Unfortunately education is one of the least frequently given reasons for smoking cessation (Sacker, 1990). Quitting on their own by the cold turkey method seems to be the best method for nurses (86.1%) and for the general population (Gritz et al, 1989). The quit rate for the general population in one study by Fiore et al (1990) had a result of 48%. Minimal

intervention methods by a nurse including simply giving advice and materials have shown quitting rates of 15-17% (Shuster et al, 1996; Clark, Haverty, & Kendall, 1990). Planned educational programs with follow up have shown sustained quitting rates of up to 40% (Stillman, 1995). Baer (1997) designed and delivered a smoking cessation program through the VNA home care division and had a cessation rate of 19.5%. She questioned the results of her own study because of the client's labeling of themselves as more or less able to change. She found the client's belief in success with smoking cessation was tied to their belief in addiction and the expense of changing (nicotine patches, cessation programs). The same idea had been suggested years earlier by Taylor et al (1990) when they found that extra time spent with clients who stated that they had little intention of quitting did not produce any better results.

#### Professional Roles: Educator, Exemplar

Continued smoking among nurses is a great concern because of its negative influence on clients who need to stop smoking for treatment and the negative role model behavior. Nurses need to serve as role models and educate or counsel their clients to quit even when it means ignoring their own personal smoking behaviors (Padula, 1992). In one study the researchers found that 83% of nurses thought the nurse should set a good example by not smoking and 75% of nurses agreed that nurses should be more active in reaching their communities by speaking to lay groups about the dangers of smoking even if the nurse speaker was a smoker herself (Haughey, Mathewson, Dittmar, & Yow-Wu, 1989).

Prevention through the roles of educator and exemplar should be included with direct patient care. Nurses are promoters of health as well as care givers to the ill and nurses who smoke still feel that they can help their

clients to stop smoking (Lazenbatt & McEwen, 1991). The nurse's intervention is quite important. Rice and others (1994) found that the opportunity for client professional interaction was much more effective than just providing self help materials. The timing of that interaction was also very important such as just after having cardiac bypass surgery.

Smoking prevalence is highest in nurses with the least educational level of training (40% in LPN's) (Nelson et al, 1994). While Nelson and others found that increasing education programs and degrees lead to decreasing smoking prevalence (LPN's the highest, BSN's the lowest), there are no studies to examine if the smoking prevalence in a formal nursing program changes as the nursing students progress through the years of the program.

It appears that while the level of education may have the strongest relationship to the declining prevalence of smoking among nurses, quitting behavior and the increasing number of nonsmokers entering nursing are also reasons for the decline (Nelson et al, 1994). While Nelson found a steady yearly decline in smoking behavior there was no mention of how age and the aging of the nurses effected these numbers. The American Cancer Society (1998) reports a slower decline in smoking among women than men and an increase in adolescents smoking, yet this seems to contradict what Nelson found about young females entering nursing. Gulick & Escobar-Florez (1995) found a group of smoking nurses to have a greater mean age than the non-smoking group while Reeve et al (1996) found that a group of Texas oncology nurses had no difference between smokers and non-smokers for age. There is no conclusive research in the literature on aging of the nurse (and years of experience) and its effect on their smoking behavior.

There is a change occurring in the professional roles and attitudes of

nurses throughout the country. In a study of Wisconsin registered nurses there was a low prevalence of only 13.5% smoking cigarettes. Also 59% had never smoked and 28% had successfully quit smoking. Of those who had successfully quit most had done it by self-initiated self-help methods and 88% of those still smoking had made serious attempts to quit (Mundt et al, 1995).

Research shows that nurses can make a difference in the smoking rates and the success of cessation programs. In studies ranging from the Carolinas to Ohio to California to Oregon the nurses' effectiveness as a health educator has been empirically supported. Nurses involvement in client education can have a dramatic effect on the smoking cessation rates and on reducing the risk for lung disease, cancer, and heart disease in clients (Furlow & O'Quinn, 1996).

In a study of 316 female registered oncology nurses in Texas, Reeve et al (1996) found that only 7% currently smoked. Using the Smoking Attitude Questionnaire, they found that the attitudes towards smoking of those that smoked were significantly different than the attitudes of those who did not smoke. The researchers found that the nurses' smoking status had a greater effect on their attitudes about smoking behavior than did any other variable. Smoking status also effected the nurses' role as an exemplar. The current smokers held a negative attitude toward counseling patients not to smoke, toward their role as an exemplar, and toward participating in smoking cessation programs.

In another study, using an early version of the Smoking Attitude Questionnaire, Haughey et al (1989) looked at smoking attitudes of New York critical care nurses. They found that professionalism in attitudes toward smoking was mostly high. The subjects agreed that they should help clients to quit, that teaching or encouraging cessation was their responsibility, that they

should set a good example, and that nurses should be more active as speakers to lay groups about unhealthy habits such as smoking. However the same group reported that the smoking problem is minor (8%), their time could be better used in teaching elsewhere (46%), their clients will not give up smoking (85%), and there is no method to help them other than self-help (29%).

### Core Elements of Smoking

Since most nurses who smoke enter their profession from nursing school already smoking it is important to look at the reasons for nursing students to smoke. The most cited reason was peer pressure and social support (Alexander & Beck, 1990; Cinelli & Glover, 1988; Feldman & Richard, 1986), in addition to smoking parents (Winkelstein, 1992), venting frustrations (Murray et al, 1983), and contact with suffering and death (Adreaanse et al, 1991). Many researchers have identified numerous other reasons which appear to be related to smoking and the decision to start or to quit or to continue. These elements include depression (Hemenway, Solnick, & Colditz, 1993), a coping mechanism (Gritz et al, 1989; Dines, 1994), a maladaptation (Hawkins, 1987), or "a socially acceptable way by which women may express anger" (Elkind, 1988, p. 742). Padula (1992) mentioned addiction and dependence and others have identified weight gain and habit as reasons to smoke.

Gulick, Hayes, and Kennelly (1991) identified specific characteristics of women pertaining to the smoking/nonsmoking process over their life span and grouped together eight core elements of smoking. These eight core elements were used to develop a tool to test readiness to quit by Gulick and Escobar-Florez (1995). The eight core elements are: beliefs/attitudes towards smoking, sociability, stress, coping, self-efficacy, motivation, nicotine dependence, and support. Only the four elements related to this project will be discussed. They

are: beliefs/attitudes, sociability, self-efficacy, and support.

Beliefs/attitudes are views, positive or negative, which are held by the individual about some action such as smoking and is the first of the eight core elements. Images from the media, advertisements, and peers form a positive attitude for smoking while parents, teachers, and health professionals will tend to encourage a different set of negative attitudes in the smoking individual.

Gulick and Escobar-Florez (1995) found in their sample of 376 nursing students and health workers at a large university and urban hospital setting, that there was moderate to strong agreement with the belief that smoking is bad for the smoker and for others around the smoker. This agreement was across all ethnic groups with female subjects.

One group of very strong attitudes which keep a smoker from successfully quitting is perceived barriers. The nurse needs to be aware of the client's barriers as well as her own barriers. These barriers, such as anticipated costs or inconvenience, can contribute significantly to the prediction of success or relapse in one's attempt at cessation (Macnee & Talsma, 1994).

A very dramatic example of attitude change as influenced by health professionals was shown in a study by Dawley, Carrol, and Morrison (1981). In a VA center lobby with no smoking signs posted, a model dressed as a doctor stopped to speak to an assistant and started smoking. Within 10 minutes, 15 percent of those present also started smoking. When the same situation was repeated with the model dressed as an unkept visitor, only 10 percent started smoking within 10 minutes. Bandura's social learning theory suggests that the credible source of a person in a professional role had a much greater effect on the attitudes and the suppressed behavior of the subjects than did the nonprofessional source. This momentary change in attitudes towards no

smoking, as influenced by the pretend-professional, disinhibited the suppressed behavior (Olive & Ballard, 1992).

The second is sociability. Sociability has a strong effect on smoking behavior especially among younger age groups. Smokers tend to group together outside the entrances at nursing schools or at the hospital's butt huts and socialize with other smokers in a friendly group atmosphere. Elkind (1988) found smoking as a way of belonging to a group and as an identity within that group with cigarettes being gifts to the group members. It is the lack of support of these friends or significant others that creates a high level of stress when the smoker attempts to quit and often leads to a relapse in smoking behavior to decrease that level of stress (Macnee & Talsma, 1995).

The third element is self-efficacy. Self-efficacy is how the individual perceives their ability to perform a duty or fill a role and is important to the performance of that role and its successful achievement (Bandura 1977; Bandura 1986). While first introduced as part of social learning theory by Bandura (Zimmerman, Brown, & Bowman, 1996) it was later redefined and attached to a health care theory by Pender (Tillett, 1994). In discussing self-efficacy, Laschinger (1996) stated "self-efficacy expectations determine an individual's decision to engage in a behavior, the amount of effort to be expended and the degree of persistence at the task" (p. 36). She therefore states that it is positively correlated with success and performance. Her study with nursing students found that their level of self-efficacy increased with years in a nursing program although it decreased when it involved any educational endeavor leading to a client's behavioral change. Taylor et al (1990) found that the person's level of self-efficacy is positively related to their likeliness to undertake a certain task as well as their ability to cope with a situation. Self-



efficacy effects both the nurse as a health educator of smokers and as a smoker who has decided to attempt to quit.

Support is the last element of smoking and the decision or ability to quit. Support is an external force that influences smoking behavior. It may be society based or it may be interpersonal. Societal support comes from policies and laws restricting smoking in all hospitals and most other public places including classrooms and labs. Public, legislative, legal, and media support also play a positive role in societal support. Interpersonal support is that which comes from other people including significant others, family members, peers, instructors, and health care professionals. Peer support is a factor along with smoking history, habit, and history of attempts to quit (Shelton, 1993).

Laschinger (1996) suggested that both health educators of clients and instructors of nursing students need to be aware of the value of verbal expressions of positive reinforcement and to give support through positive feedback. Positive feedback from credible sources is support for change in a health setting and effective learning in an educational setting. This may be an instructor with a nursing student or a health educator (including a nursing student) with a client in the hospital.

In summary there is a wealth of information in the literature documenting many studies dealing with smoking, smoking clients, and smoking cessation. The most recent studies deal with how to get the client to quit smoking. However, the change agent in this case is the health professional and usually the nurse. Some studies deal with nurses, how many are smoking, and why they smoke. Still fewer studies, mostly from the 1980's, deal with the nursing student, how many are smoking, and why they smoke. Far fewer articles examine the roles of the nurse and nursing student related to the smoking

epidemic. Few studies explore the relationship between nursing students' smoking habits, their roles and attitudes, and factors related to their nursing education. Understanding the relationship between these variables may contribute to our knowledge about nurses' smoking behavior.

### Theoretical Framework

The theoretical framework used for this study was Bandura's Social Cognitive Theory. Bandura's theory has strong ties to the educational setting used for this study and the nursing students involvement with social learning both as the learner and as the health care teacher. It involves the nurses' and nursing students' (teacher) teaching healthy behaviors to their patients and peers (student). The theory also involves role modeling and vicarious learning. This study investigated nursing students' behaviors and its relationship to their attitudes. These attitudes and beliefs may have a relationship to the behaviors of the nursing students and these behaviors become models for others to see and to learn vicariously. A factor effecting a person's attempt to change his/her own behavior or to teach change to another person is self-efficacy. A person must believe they will be successful in order to attempt change.

At the heart of his theory is reciprocal determinism which suggests that learning is due to a number of interacting variables. These variables according to Bandura include personal, behavioral, and environmental factors. Personal factors would include beliefs and attitudes that affect learning especially in the presence of behavioral and environmental stimuli. Behavioral factors would include how one reacts in a given situation. Environmental factors include the roles played by others. The idea of reciprocal determinism suggests that personal factors such as one's beliefs affect behaviors and the interpretation of environmental cues. One way in which this works is with mediated responses -

how events are interpreted cognitively prior to a response (Bandura, 1986; Bruning, Schraw, & Ronning, 1995; Perry, Baranowski, & Parcel, 1990).

Two personal factors that affect behaviors and environmental cues are self-efficacy and outcome expectancy. Self-efficacy is the degree to which one possesses confidence in his or her ability to achieve a goal. The second, outcome expectancy, is the perceived relationship between performing a task successfully and eliciting a specific outcome as a result of that task (Bandura, 1977; Bandura, 1982; Bruning et al, 1995). When dealing with life-style behaviors requiring long-term change, such as smoking cessation, a good deal of confidence or self-efficacy is required. Rosenstock (1990, p. 45) states "for behavior change to succeed, people must feel threatened by their current behavioral patterns and believe that change of a specific kind will be beneficial by resulting in a valued outcome at acceptable cost, but they must also feel themselves competent to implement that change."

Learning occurs in two ways. The first is enactive learning - when one learns a task by doing it. The second is vicarious learning - when one learns about a task by observing others perform it. There are three influences on the effectiveness of learning and performance. They are the developmental status (age of the learner or nursing student), prestige of the model (such as health professional or nursing instructor), and one's ability to set an attainable goal (smoking cessation) (Bruning et al, 1995).

Self-efficacy is an important part of Bandura's theory. Self-efficacy is one's ability to perform a task within a specific domain. High efficacy in one setting does not guarantee high efficacy in another. Within that domain self-efficacy is linked to behavioral outcomes and environmental cues. A high self-efficacy positively effects performance, whereas good performance positively

affects one's sense of self-efficacy. "When a change is difficult to make even if the outcome is desirable (i.e. smoking cessation), self-efficacy considerations are particularly significant" (Salazar, 1991, p. 131). Rosenstock, Strecher, and Becker (1988) demonstrated the self-efficacy and outcome interrelationship when they said "in order, say, for a woman (person) to quit smoking (behavior) for health reasons (outcome), she must believe both that cessation will benefit her health (outcome expectation) and also that she is capable of quitting (efficacy expectation)" (p.178).

Self-efficacy is closely linked with initial task engagement, persistence, and successful performance. High self-efficacy in students is related to greater flexibility, resistance to negative feedback, and improved performance. Self-efficacy effects the teacher (nurse or nursing student in a teaching role) in two ways. One is teaching efficacy - the belief that this education will affect the learner (client) in an important way. Second is personal teaching efficacy - the belief that the teacher can enact a significant change on the student. Modeling, demonstrating and describing, is an important component in the development of self-efficacy. Self-efficacy strongly influences many behaviors, task engagement, performance, anxiety, stress, persistence, and the use of academic or social coping strategies (Bruning et al, 1995).

Bandura's theory may help to explain the findings of this study. The nurse is an educator and a role model and therefore fits Bandura's Social Cognitive Theory which includes vicarious learning and self-efficacy. The nurse's (nursing student's) effort to instruct a hospitalized cardiac patient to stop smoking may be related to her belief in her success at teaching smoking cessation to others. Her efforts to teach may be related to her own attitudes/beliefs or her effort to teach may be related to her own smoking

behavior or influenced by what she saw and learned as a student. Her teaching may be effective, but her efforts may be undermined due to unhealthy role modeling when the patient observes her smoking behavior. This unhealthy role modeling may be related to vicarious learning for the patient and also for other peers. Will the attitudes toward smoking of the nursing student in the second year, who has been exposed to clients with cancer and pathophysiology classes, be influenced by these environmental cues? Will nursing students' smoking status shape their personal beliefs and attitudes toward smoking? The many complex reciprocal relationships between smoking behaviors, smoking attitudes, readiness to quit, and the level in nursing education may be partially explained using social learning, vicarious learning, and self-efficacy.

#### Research Questions

The purpose of this research project was to explore the relationships between nursing student's levels/years of education, their smoking behaviors, their role attitudes, and their readiness to quit.

The following research questions were developed based on the previous review of the literature regarding smoking, nurses, nursing students, their role attitudes, and their readiness to quit. They are:

Is there a relationship between role attitudes and smoking behavior?

Is there a relationship between readiness to quit and smoking behavior?

Is there a relationship between role attitudes and the year in the nursing program?

Is there a relationship between readiness to quit and the year in the nursing program?

Is there a relationship between smoking behavior and the year in the nursing program?

Is there a relationship between smoking behavior and the age of the nursing student?

Is there a relationship between recent changes in smoking behavior and the year in the nursing program?

Is there a relationship between recent changes in smoking behavior and the presence of another smoker in the household?

### Hypotheses

The research hypotheses developed based on the research questions and the review of the literature were:

H1: Role attitude is inversely related to smoking behavior.

H2: Readiness to quit is inversely related to smoking behavior.

H3: There will be a positive relationship between role attitudes and the level in the nursing program.

H4: There will be a positive relationship between readiness to quit and the level in the nursing program.

H5: Smoking behavior and the level in the nursing program will be significantly associated.

H6: There will be a significant association between recent changes in smoking behavior and the level in the nursing program.

H7: Recent changes in smoking behavior and the presence of other smokers in the household will be significantly associated.

### Theoretical Definitions

The variables as stated in the research questions and the hypotheses were theoretically defined as follows:

Role Attitudes - The nursing students attitudes toward smoking as they pertain to the responsibilities of nurses in counseling or educating patients to

stop smoking and in serving as role models for positive health behaviors for their patients and peers.

Readiness to Quit - The nursing students attitudes and behaviors that are indicative of their support of smoking cessation. These attitudes and behaviors include eight core elements: beliefs/attitudes toward smoking, sociability, stress, coping, self-efficacy, motivation, nicotine dependence, and support.

Smoking Behavior - The nursing student's current status as a smoker or a non smoker of tobacco. Only the current status was used without regard to age at starting, number of cigarettes smoked, or pack-years.

Level in the nursing program - The nursing student's current status as to first year or second year of enrollment in the full time nursing theory and clinical courses offered in a two year NLN accredited community college in a rural area.

Age - The chronological age of the nursing student.

Recent changes - The nursing student's status as having: started smoking, increased the amount of cigarettes smoked, decreased the amount of cigarettes smoked, or quit smoking since entering nursing school or the student's smoking habits have remained the same.

Other Smokers in the Household - Other smokers would include parents, spouses, children, siblings, roommates, or any one else living in the same household with the nursing student who is a smoker as defined by the student respondent.

### Operational Definitions

The variables as stated in the research questions and the hypotheses were operationally defined as follows:

Role Attitudes - Role attitudes was defined as a total score on the Smoking Attitude Questionnaire as revised by Reeve, Adams, & Kouzekanani

(1996). The respondent received a score within the range of 8 to 32. The higher the score the stronger the attitude towards responsibilities in counseling and educating patients to stop smoking and in serving as a role model for a positive health behavior.

**Readiness to Quit** - Readiness to quit was defined as the total score on the Smoking and Women Questionnaire (two versions, one for non-smoker and one for smoker) developed by Gulick & Escobar-Florez (1995). The respondent received a score ranging between 14 and 84. The higher the score, the more indicative of behaviors and attitudes supportive of smoking cessation.

**Smoking Behavior** - Smoking behavior was defined as the respondents self report on the demographics sheet as: currently a smoker, or currently a non-smoker.

**Level in the Nursing Program** - Level in the nursing program was defined as: first level (year) or second level (year). It was marked on the demographics sheet by the respondent and verified by the class's course number in which the respondent is seated.

**Age** - Age was defined as the age category identified by the respondent on the demographics sheet. The categories were: 18 to 25, 26 to 35, 36 to 45, and over 45.

**Recent Changes** - Recent changes in smoking behavior were identified by the nursing student respondent on the demographics sheet as to: no changes in smoking behavior since entering nursing school or changes in smoking behavior (started, increased, decreased, or quit) since entering nursing school. A second question asked them to identify what type of change they made in their smoking behavior: started, increased, decreased, or quit.

**Smokers in household** - Other smokers in the household was defined



solely on the nursing students response to the question asking if there are other smokers currently in the students household: yes or no. This question appeared on the demographics sheet.

### Chapter III

#### Methodology

##### Research Design

This study used a cross-sectional descriptive survey design. A demographic sheet and two questionnaires were utilized for the data collection from the subjects. Cross sectional designs are used to capture all the data at one moment in time. The variables under study are captured during one period of data collection. These designs are “especially appropriate for describing the status of phenomena or for describing relationships among phenomena at a fixed point in time” (Polit & Hungler, 1995, p.145). Correlational research attempts to understand a relationship without any intervention by the researcher or as they naturally occur. It is research that looks at an “interrelationship or association between two variables, that is, a tendency for variation in one variable to be related to variation in another” (Polit & Hungler, 1995, p. 176). The goal of this research project was to explore the variables and identify the relationships between them in this sample.

##### Research Setting

Data collection occurred at a community college in rural Southern Delaware. The community college has an NLN accredited LPN and ADN nursing program. The program is structured in a two year nursing education design with one year of pre-nursing classes before the formal two years of the program. LPN's complete only the first formal year while ADN's complete both the first and second years. During the first year of formal education the LPN's and ADN's are in class together and take exactly the same classes. There is also an eighteen month ADN evening program for returning LPN's. The students in this program were not included in the sample due to the years of

experience and personal and professional observations that they had made as an LPN prior to returning for their second year of education to complete their ADN. Data collection occurred in the regular nursing classrooms during scheduled theory classroom time.

### Population and Sample

The accessible population used for this research project was all nursing students in a formal two year nursing program at a small community college in a rural setting. Polit & Hungler (1995) state that the population is the entire set of subjects with some common characteristic or characteristics shared among them and the accessible population is the group of subjects available for a particular study. Both first and second year day-time nursing students were surveyed. The first year class (NUR 122) included both LPN candidates in their only year of formal education plus ADN candidates in their first year of classes. Both degree candidates take the same pre-nursing classes and have basically the same admission requirements. The second year students were ADN candidates who have returned for their second year of classes after having completed their first year the previous school year. Second year students were enrolled in one of five classes (NUR 222, 223, 224, 225, and 226). Some of these students were currently working as LPN's. Most working LPN's who completed their education prior to the last school year return in the evening RN program and these students were not included in this study due to their extended clinical experiences. The total accessible population was 110 nursing students in year one or year two.

The sample consisted of the actual number of first and second year nursing students who were: 1. currently enrolled in the LPN or ADN day-time nursing program at this rural community college in southern Delaware, 2. who

were present in class for the data collection, and 3. who choose to voluntarily complete the questionnaires. The sample was a non-probability convenience sample of nursing students. The only criteria for inclusion in this project was that the subject had to be a day-time nursing student at that college. The total sample was 106 nursing students.

### Instruments

The research tool consisted of two questionnaires (with two versions - smoker and non-smoker versions of the second questionnaire). These were used for the data collection in addition to the demographic sheet. The demographic sheet asked for: level or year in the nursing program, gender, age, current smoking status, a recent change in smoking habits, and the presence of other smokers in the household. (Appendix A).

The first questionnaire was the Smoking Attitude Questionnaire (SAQ) developed and used by Reeve, Adams, and Kouzekanani (1996). It was developed by them based on a previous instrument used in studies by Haughey, Mathewson, Dittmar, and Yow-Wu (1989) and Haughey, O'Shea, Dittmar, Bahn, Mathewson, Smith, and Brasure (1986). The original 1986 tool was used with nursing students and the current version of the SAQ was used once with a group of 316 female registered oncology nurses from Texas. The questionnaire was developed to measure attitudes toward smoking as they relate to the nurses's responsibilities of counseling clients to stop smoking and as they relate to the nurses serving as role models for positive health by not smoking. The instrument is an eight item questionnaire with a four point Likert type scoring/scaling (with 4 = strongly agree to 1 = strongly disagree). A total score of 8 to 32 is possible. A higher score reflects a higher commitment to a nurse's responsibility for counseling and educating clients about cessation and

a stronger commitment towards a positive role model of not smoking. It has been relabeled Questionnaire #1 for this study (Appendix B). It was used with permission of Kathleen Reeve, Assistant Professor at The University of Texas - Houston (Appendix C).

Reliability and validity were established by the developers of the tool using the sample of 316 oncology nurses. Internal consistency of the Smoking Attitude Questionnaire in the published report was estimated using Cronbach's coefficient alpha, yielding a "moderate reliability coefficient of 0.52" (Reeve et al, 1996, p.32). The reliability was measured for the data in this current study and the internal consistency was estimated using Cronbach's alpha for 8 items to be 0.6136. This value shows a generally accepted weak reliability. However Polit & Hungler (1995) state that "if a researcher is only interested in making group-level comparisons, then coefficients in the vicinity of .70 or even .60 would probably be sufficient" (p. 352).

The second instrument was the Smoking and Women Questionnaire (SWQ). It was developed and piloted by Gulick and Escobar-Florez (1995) and was a revision of a previous tool called the Self-Screening Smoking Survey (Gulick et al, 1991). The current tool was used by the developers with a sample of 376 female nursing students and health care workers at a large university and medical center setting. This instrument was specially developed for use with women and examines the core elements of: beliefs/attitudes toward smoking, sociability, stress, coping, self-efficacy, motivation, nicotine dependence, and support. These eight core elements were identified by the developers through theory and empirical evidence as being important over the women's life cycle during the smoking/ ex-smoking process. These eight elements are important in identifying the persons readiness to quit smoking or

in indicating behaviors and attitudes that are supportive of smoking cessation. Therefore, this instrument has been referred to as Readiness to Quit. Gulick's conceptualized model of smoking/ex-smoking women and the eight core elements provide the theoretical foundation for the development of the instrument. The instrument is a two version 14 item questionnaire using a six-point type Likert scale (with 6 = strongly agree to 1 = strongly disagree). Two versions exist with slight wording differences; one version for smokers and one version for non-smokers. Some of the elements have 2 -3 items while others have only one. The score on the tool is a total score for all fourteen items covering all eight elements. The possible range of scores is 14 to 84 with the higher scores being supportive of the more healthy, positive continuum of the fourteen items. This questionnaire was relabeled Questionnaire #2 - Non-smoker and Questionnaire #2 - Smoker to differentiate the two versions (Appendix D). It was used with the permission of Dr. Elsie Gulick, Professor at the State University of New Jersey - Rutgers (Appendix E).

Reliability and validity were estimated by the developers of the tool using the sample size of 376 subjects. Cronbach's alpha reliability coefficient was 0.82. Content validity was established by having experts in the field review the items and agree that the eight core elements were well represented in the tool. Construct validity was shown by contrasting scores to show that smokers had significantly lower scores than non-smokers and therefore displayed fewer attitudes and behaviors that were supportive of smoking cessation (Gulick & Escobar-Florez, 1995). Reliability was estimated for the data set in the current study using Cronbach's alpha and was found to be 0.7420 for the 14 items. This is above the generally acceptable level of 0.70 and is considered to be evidence of a reliable tool (Polit & Hungler, 1995).

## Research Procedure

The instruments were administered during the first week of classes of the spring semester so that second year students had been exposed to the fall semester's medical-surgical rotations as well as the previous spring's medical-surgical classes and clinical experiences. However, the first year students had only the fundamentals class and clinical. They had not started their medical surgical classes or clinical rotations of the spring semester.

The researcher was a part time clinical instructor at the college and was known to most of the students. Since he was a clinical instructor and not a classroom or theory instructor, only one group of eight students had been associated with him each semester. His association with the rest of the class was limited to name and title only and did not include knowledge of personal or professional views or interests. He administered the questionnaires to all the classes and students in order to assure that the conditions and instructions were equal among all the subjects and survey sessions.

The instruments were handed out during a regularly scheduled daytime class in each of the courses during the first week of classes. It required 10 - 20 minutes to complete the questionnaires. The instruments had a cover letter/disclosure form explaining the research project, that the student's participation was voluntary, and that anonymity would be maintained (Appendix F). No student names were included on the survey forms. The student's consent to participate in the research project was signified by their completion of the questionnaires. Male students were included in the data collection. The Smoking and Women Questionnaire can only be used with female subjects according to its developers. However, after consultation and review with several researchers and experts in this area, they found no reason

to exclude males based on the content of the questions within the questionnaire. The number of male students was very minimal. The first year class had 60 female and 2 male students and the second level classes had 44 female and 4 male students. A total of 110 subjects were included in the two levels of nursing students.

### Data Analysis

Data were collected and scored from the demographics sheet and the two questionnaires: Questionnaire # 1 - Smoking Attitude Questionnaire and Questionnaire # 2 - the Smoking and Women Questionnaire. Data collected on the demographics sheet were at the nominal level of measurement with the one exception of the age groups being at the ordinal level of measurement. The scores collected by the two questionnaires were at the interval level of measurement. Data were coded and entered into SPSS/PC.

Descriptive statistics, measures of central tendency, and measures of variability will be presented in tables. Hypotheses #1-4 were analyzed using Pearson's R Correlation Coefficient. Hypotheses #5-7 were analyzed using Pearson's Chi square or Crammer's V (Munro & Page, 1993; Polit, 1996).

### Assumptions

The assumptions for this research project were:

1. The nursing student can read, write, and understand English and can comprehend the questionnaires at their written level.
2. The nursing student did answer the questions honestly and accurately.
3. The purpose of the study was to explore the relationships among the variables and no cause and effect are implied.
4. Cohort differences were expected.



### Ethical Implications

The research project and the use of the nursing students at the community college was approved by the Nursing Department Chairperson (Appendix G). The Dean of Instruction also reviewed the tool and verbally approved the research project.

The proposal application, abstract, and a copy of the tool was reviewed by Salisbury State University's Human Subjects Committee. The project was approved by them without revision (Appendix H).

Ethical implications are minimal. The nursing student subjects have anonymity since no identifying names or numbers appear on any of the papers. There are no physical or psychological risks involved with participation in this study. The only ethical implication this researcher could possibly foresee was that the smoking nursing student might see herself as having a habit or addiction which is contrary to the highest goals of her professional role. While this might cause some emotional or role distress for the nursing student, participation was voluntary and the nursing students had the opportunity to refuse to participate. One student in the first level elected not to participate and returned the uncompleted questionnaire with the rest of the classes' questionnaires.

## Chapter IV

### Results

This chapter will present an analysis of the statistical results of this research project's data. The purpose of this study was to explore the relationship between the smoking attitudes/beliefs and professional role attitudes of first and second year nursing students in a two year rural community college nursing program and the smoking behaviors and year of formal nursing education in that program. Information should be gained related to roles as an educator and a role model and the subject's readiness to quit. The data should also answer other questions concerning their smoking behavior as related to their age, recent smoking changes, and the presence of other smokers. Data were collected at a local community college utilizing the three tools discussed earlier. The data collection tool contained the demographics information sheet, the Smoking Attitude Questionnaire, and the two version Smoking and Women Questionnaire. Descriptive, parametric, and non-parametric statistics will be presented and discussed. The demographic descriptive statistics will be presented first. Second, the descriptive statistics of the two tools will be presented. Third, the statistical analyses addressing the proposed research questions and hypotheses will be presented and discussed. Fourth, there will be other findings including a presentation of questions on each questionnaire and a discussion of some items.

#### Sample Characteristics

The convenience sample for this study consisted of 106 nursing students currently enrolled in day time classes at a community college. Data were collected from 61 first year students during class on the third day after returning

for the Spring semester. One student was absent on that day and one student apparently elected not to participate because one tool was returned blank. Data were collected from the second year students on two different days. Data were collected from 24 second year students in specialty rotations at the end of class on the first day of class of the Spring semester. All 24 students were present and elected to participate. The final data collection session was on the fifth day of class for the second year students in the medical surgical rotations. There were two students absent. The other 21 students elected to participate in the study. This gave a total of 45 second year students and 61 first year students who participated. The sample represents all but 4 students in the accessible population of 110 students. The response rate was 96% for this study and was a strength of the study.

#### Demographic Characteristics

The demographic data reveal a variation in characteristics (Table 1). Of the 106 student subjects, 57.5% were first level or year students and 93.4% were females. The age ranges were fairly evenly distributed with slightly more (33.0%) falling in the 26-35 years old grouping.

There were 64.2% non-smokers in the sample of 106. Of the 97 who answered the question about a change in smoking habits, 30.9% reported a change since beginning nursing school. Nine respondents did not answer the question about a change in smoking habits since entering nursing school. This omission may have resulted due to a misunderstanding of the previous question. It instructed the participant to complete certain questionnaires based on their response to that question. Some students may have moved immediately to those questionnaires instead of first finishing the demographics. Of the 30 students that reported a change in smoking behavior, the majority

Table 1

Demographic Characteristics of the SampleFrequency and Percent


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	<u>Frequency</u>	<u>Percent</u>
Level (Year) in the Program (N=106)		
First	61	57.5
Second	45	42.5
Gender (N=106)		
Female	99	93.4
Male	7	6.6
Age (N=106)		
18-25	26	24.5
26-35	35	33.0
36-45	30	28.3
over 45	15	14.2
Non-smoker/Smoker (N=106)		
Non-smoker	68	64.2
Smoker	38	35.8

Table 1 continued

	<u>Frequency</u>	<u>Percent</u>
Change in Smoking (N=97)		
Changed	30	30.9
Not-changed	67	69.1
(missing data)	9	
Type of Change (N=30)		
Started smoking	5	16.7
Increased smoking	7	23.3
Decreased smoking	10	33.3
Quit smoking	8	26.7
Other Smokers in Household (N=100)		
Yes	40	40
No	60	60
(missing data)	6	

reported quitting or decreasing their smoking behavior (60%). Only 100 students answered the question about other smokers in the same household. Of those 100, 40% reported there were other smokers in the household.

When the demographic information was sorted into smokers or non-smokers and the same categories of demographics were reviewed, the results were more revealing (Table 2). The cross tabulation shows that 31.1% of the first year students were smokers. However for the second year students, 42.2% were smokers. There were more smokers in the second year of the program than were in the first year. There were 36.4% smokers in the female ranks compared to 28.6% smokers for the males. An alarming 60.0% of those over 45 were smokers.

For non-smokers there has been little change since entering nursing school. Of the non-smokers 77.6% reported no change since entering nursing school. In contrast to the non-smokers the smokers have undergone more changes. Of the smoker group, 76.7% reported a change in smoking behavior. Obviously the only type of change for the non-smokers was to quit; which 7 non-smokers reported doing. Of the 23 smokers who reported a change in their smoking behavior, 43% decreased their smoking behavior. There was a total of 30 respondents who reported a change and 26.7% of them reported quitting. The majority of smokers (52.5%) lived in households with other smokers while a larger majority (71.7%) of nonsmokers lived in households with non-smokers.

When the subjects were sorted into first and second year students and smoking behavior was examined, trends could be seen (Table 3). Of the first year group, 31.1% were smokers while 42.2% of the second year group were smokers. Of the first year students, 25% reported a change in smoking behavior while 39% of the second year reported a change in smoking behavior. Of the

Table 2

Characteristics of the Sample: Non-Smoker vs SmokerFrequency and (Percent)


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	<u>Non-Smoker</u>	<u>Smoker</u>
Level (Year) (N=106)		
First	42 (68.9)	19 (31.1)
Second	26 (57.8)	19 (42.2)
Gender (N=106)		
Female	63 (63.6)	36 (36.4)
Male	5 (71.4)	2 (28.6)
Age (N=106)		
18-25	17 (65.4)	9 (34.6)
26-35	23 (65.7)	12 (34.3)
36-45	22 (73.3)	8 (26.7)
over 45	6 (40.0)	9 (60.0)
Change (N=97)		
Changed	7 (23.3)	23 (76.7)
Not changed	52 (77.6)	15 (22.4)

Table 2 Continued

	<u>Non-Smoker</u>	<u>Smoker</u>
Type of Change (N=30)		
Started		5 (100)
Increased		7 (100)
Decreased		10 (100)
Quit	7 (87.5)	1 (12.5)
Others (N=100)		
Yes	19 (47.5)	21 (52.5)
No	43 (71.7)	17 (28.3)



14 first year students that reported a change in smoking behavior, 78.6% had decreased or quit smoking. However, of the 16 second year students who reported a change, 56.3% had started smoking or increased their smoking behavior. There was more of a change towards not smoking with the first year students, but more of a change towards smoking with the second year students. The second year class had more smokers and more students had started or increased their smoking behavior while the first year had fewer smokers and more students had quit or decreased their smoking behavior since entering nursing school.

#### SAQ Characteristics

The Smoking Attitude Questionnaire (SAQ) measures the role attitudes of the nurse. It focuses on the nurse's attitudes as related to the nurse's role of educator and exemplar of non-smoking behavior. The possible score on the SAQ (Questionnaire #1) was 8 to 32 with the higher score reflecting the nursing student's stronger attitudes towards their responsibilities in counseling and educating patients to stop smoking and in serving as a role model for a positive health behavior. The actual range of scores for the sample was 18 to 31. The mean score was 25.0472 with a standard deviation of 2.7856. On two of the questions there were no respondents who strongly disagreed. The median was 24.5 and the mode was 25.0.

#### SWQ Characteristics

The Smoking Questionnaire for Women (SWQ) measured the nursing student's readiness to quit or their agreement with the attitudes of smoking cessation based on the eight core factors. The possible range of scores was 14 to 84. The higher the subject's score, the more indicative of the behaviors and attitudes supportive of smoking cessation. The actual scores were 55 to 84. The

Table 3

Characteristics of the Sample: First Year and Second YearFrequency and (Percent)


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	<u>First</u>	<u>Second</u>
Non-smoker/Smoker (N=106)		
Non-smoker	42	26
	(68.9)	(57.8)
Smoker	19	19
	(31.1)	(42.2)
	N=61	N=45
Change in Smoking (N=97)		
Changed	14	16
	(25.0)	(39.0)
Not changed	42	25
	(75.0)	(61.0)
	N=56	N=41

Table 3 Continued

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Type of Change (N=30)		
Started	1	4
	(7.1)	(25.0)
Increased	2	5
	(14.3)	(31.3)
Decreased	7	3
	(50.0)	(18.6)
Quit	4	4
	(28.6)	(25.0)
	N=14	N=16

mean score was 73.5 with a standard deviation of 7.2180. The median was 71 and the mode was 78.

### Data Analysis

The data analysis section will present the results. It will examine the findings as they relate to each of the project's hypotheses or research questions.

Research question 1: Is there a relationship between role attitudes and smoking behavior? Hypothesis 1: Role attitude is inversely related to smoking behavior. This question involved examining the nursing student subject's score on the SAQ and their smoking behavior as non-smokers or as smokers. The SAQ score would reflect the student's attitudes toward their responsibilities as an educator, counselor, and role model related to smoking behavior. The higher the score the more indicative of the attitudes for a positive health behavior. When the data were examined using the Pearson R Correlation Coefficient, it was found that  $r = -.126$ . The relationship was in the predicted direction, but the relationship was not significant. The significance (one-tailed) was .099. The hypothesis was not supported.

Research question 2: Is there a relationship between readiness to quit and smoking behavior? Hypothesis 2: Readiness to quit is inversely related to smoking behavior. Readiness to quit is indicated by the score on the SWQ. The higher the score the more indicative of behaviors and attitudes supportive of smoking cessation related to the eight core factors. The scores on the SWQ (Questionnaire #2) were examined in relation to the subjects status as a smoker or a non-smoker. When the data were examined using Pearson's R Correlation Coefficient, it was found that  $r = -.370$ . This result was significant at the .01 level (one-tailed). The relationship was in the predicted direction and was significant.

The non-smokers in this study have behaviors and attitudes that are more supportive of smoking cessation than do the smokers.

Research question 3: Is there a relationship between role attitudes and the year in the nursing program? Hypothesis 3: There will be a positive relationship between role attitudes and the level in the nursing program. Role attitudes were indicated by the score on the SAQ. Instead of comparing the scores to smoking behavior, this time the variable was the nursing student participant's level or year in the nursing program. Since a second year student has had more health and nursing education and has seen more patients with smoking related illnesses, the second year students were predicted to have a higher score on the SAQ. This would indicate that they had attitudes more supportive of responsibilities in counseling, teaching, and role modeling a positive health behavior. When the data was examined using Pearson's R Correlation Coefficient, the data showed that  $r = -.049$ . This was not in the predicted direction and showed no relationship. Significance was at .309 (one-tailed). The level in the nursing program, according to the data collected, does not have a relationship to the SAQ score. Therefore the level in the program does not have a relationship to nursing students attitudes towards educating, counseling, and role modeling positive health behavior in this sample.

Research question 4: Is there a relationship between readiness to quit and the year in the nursing program? Hypothesis 4: There will be a positive relationship between readiness to quit and the level in the nursing program. Readiness to quit was the score on the SWQ which was indicative of behaviors and attitudes supportive of smoking cessation. The higher score indicated the higher degree of support for smoking cessation. It was predicted that as the nursing student's exposure to clinical situations increased and as the

respiratory, cardiac, and cancer theory base increased that the student's score would also increase on the SWQ. It was predicted that the second level students' attitudes would move towards cessation and they would show a higher score. The Pearson R Correlation Coefficient was  $r = -.054$  which was in the wrong direction and showed no relationship. The significance was .290 (one-tailed) and was not statistically significant. Therefore the students level in the nursing program does not have a relationship to their behaviors and attitudes supportive of smoking cessation in this sample.

Research question 5: Is there a relationship between smoking behavior and the year in the nursing program? Hypothesis 5: Smoking behavior and the level in the nursing program will be significantly associated. Smoking behavior is a dichotomous variable. The subject answered yes -they were a smoker or no - they were not a smoker. The level in the nursing program was either first year or second year. The second year student should have been exposed to more smoking related illnesses in clinical and to more theory based knowledge related to smoking. The expected outcome was that the student's level would have an association to their smoking behavior. A Pearson Chi square was calculated ( $\chi^2=1.381$ ,  $df = 1$ ,  $p = 0.240$ ). This was not significant. There is no association between smoking behavior and the level in the program for this sample.

Research question 6: Is there a relationship between recent changes in smoking behavior and the year in the nursing program? Hypothesis 6: There will be a positive relationship between recent changes in smoking behavior and the level in the nursing program. Recent changes was defined as no change in smoking behavior or a change in smoking behavior since entering nursing school. A second question only for those students who had changes asked

what type of change: started, increased, decreased, or quit. The question was interested in this change as related to the level of the student. The second level student who had been exposed to more theory and clinical experiences should show more changes in smoking behavior. A Pearson Chi square was calculated ( $\chi^2=2.179$ ,  $df = 1$ ,  $p = 0.140$ ). The association was not significant.

Research question 7: Is there a relationship between recent changes in smoking behavior and the presence of another smoker in the household?

Hypothesis 7: Recent changes in smoking behavior and the presence of other smokers in the household will be significantly associated. This question investigated change in smoking behavior since entering nursing school. It looked at change or no change in relation to another smoker currently being in the nursing student's household. An association had been predicted. A Pearson Chi square was calculated ( $\chi^2=1.980$ ,  $df = 1$ ,  $p = 0.159$ ). The results were not statistically significant.

Since a change in smoking behavior and the presence of another smoker in the household was found to be not significant another analysis was conducted. The type of change and the presence of another smoker in the household was unable to be analyzed due to only 30 students. Therefore the type of change (healthy, no change, unhealthy) in smoking behavior was compared to the presence of another smoker in the household. This subset of students was composed of the subjects who answered the question asking if their smoking behavior had changed/not-changed and how had it changed ( $N=97$ ). Those who reported that they quit or decreased were grouped in a healthy change category. Those who reported that they started or increased were grouped in an unhealthy change category. A 2x3 Pearson Chi square was calculated and found to be significant ( $\chi^2=7.207$ ,  $df=2$ ,  $p=0.027$ ). There

was a positive association between the type of change in smoking behavior and the presence of another smoker in the household for the new subset.

In light of the significant Chi square results for the presence of other smokers in the household a 2x2 cross tabulation table was formed. The association between other smokers in the household and the subject being a smoker or a non-smoker was examined (N=100). A hypothesis had not been developed for these variables and no prediction was made. A Pearson Chi square was calculated and found to be significant ( $\chi^2=5.949$ ,  $df=1$ ,  $p = 0.015$ ). There was a positive association between the subject's smoking behavior and the presence of another smoker in the household.

Research question 8: Is there a relationship between smoking behavior and the age of the nursing student? Smoking behavior was operationalized as either a non-smoker or a smoker. The age of the nursing student was an ordinal variable of four groupings: 18 to 25, 26 to 35, 36 to 45, or over 45. A hypothesis was not offered because the trend or direction of the relationship, if any, was uncertain. While the first two age groups showed a rate of 34.6% and 34.3% respectively, the third age group of 36 - 45 year olds dropped to 26.7%. The over 45 age group moved to a very high rate of 60%. The data were organized into a 2x4 Chi square. A Pearson Chi square value was calculated and found to be not significant ( $\chi^2=4.959$ ,  $df = 3$ ,  $p = 0.175$ ). Cramer's V was .216 and also was not significant. Age does not appear to have a relationship with smoking behavior in the sample of students.

#### Other Findings

The responses for the individual items on the questionnaires are of interest in this study. Therefore, frequencies and percentages of answers to individual items are reported. These results by frequency and percentage are



reported in Table 4 for Questionnaire #1 (SAQ) and in Table 5 for Questionnaire #2 (SWQ). The 4 point and 6 point Likert scales have been compressed into only two levels: agree or disagree. Answers are also reported by frequency and percentage as to category of smoker or non-smoker so that these two groups may be viewed separately.

On the first two questions on the SAQ, 90 subjects (85%) agreed or strongly agreed that it is the nurse's responsibility to help patients who wish to stop smoking. Fourteen disagreed with that statement and only 2 strongly disagreed. On the second question, 85 (80%) agreed or strongly agreed that it is the nurse's responsibility to actively encourage smoking cessation. Only 17 disagreed and 4 strongly disagreed with that statement.

The fifth question on the SAQ stated that the problem of cigarette smoking and health is a very minor one. There were 104 students in disagreement with that statement, but only 2 who strongly disagreed.

The responses to select items on the SWQ show some of the beliefs and attitudes of the sample of students. Item 1, 2, 3, & 14 were representative of the core factor of beliefs/attitudes toward smoking. The first item had all 106 students in moderate to strong agreement with the belief that there is a health risk from smoking to the smoker. The second item was almost as unbalanced when 104 students agreed that smoking is a health risk to others around the smoker. Only 2 students slightly disagreed with that statement and both were smokers. Item 3, its not too late for a smoker to stop smoking, was also very weighted with responses to the agreement side with only 5 subject's responding in the negative. Four of the five were smokers. Nurses and doctors (and nursing students) who smoke should quit smoking (item 14) had only 10 subjects in disagreement. Seven of the ten were smokers.

Table 4

Subject's responses for Questionnaire #1 (SAQ)  
by Frequency and (Percent)  
for Total Sample (All), Smokers (S), and Non-Smokers(NS).

	<u>Disagree</u>	<u>Agree</u>	<u>Group</u>
1. It is the nurse's responsibility to help	16 (15)	90 (85)	All
patients who wish to stop smoking.	4 (11)	34 (89)	S
	12 (18)	56 (82)	NS
2. It is the nurse's responsibility to actively	21 (20)	85 (80)	All
encourage smoking cessation.	9 (24)	29 (76)	S
	12 (18)	56 (82)	NS
3. It is the nurse's responsibility to set a	19 (18)	87 (82)	All
good example by not smoking.	11 (29)	27 (71)	S
	8 (12)	60 (88)	NS
4. A nurse's time can be better spent	77 (73)	29 (27)	All
teaching patients other things than	26 (68)	12 (32)	S
smoking cessation.	51 (75)	17 (25)	NS
5. The problem of cigarette smoking and	2 (2)	104 (98)	All
health is a very minor one.	1 (3)	37 (97)	S
	1 (1)	67 (99)	NS
6. Nurses should be more active in	22 (21)	84 (79)	All
speaking to lay groups about smoking.	11 (29)	27 (71)	S
	11 (16)	57 (84)	NS

Table 4 continued

	<u>Disagree</u>	<u>Agree</u>	<u>Group</u>
7. Most patients will not give up smoking	30 (28)	76 (72)	All
even if their care provider tells them to.	8 (21)	30 (79)	S
	22 (32)	46 (68)	NS
8. There are no methods available to	99 (93)	7 (7)	All
really help a cigarette smoker.	34 (89)	4 (11)	S
	65 (96)	3 (4)	NS

Table 5

Subject's responses for Questionnaire #2 (SWQ)

by Frequency and (Percent)

for Total Sample (All), Smokers (S), and Non-Smokers (NS).

	<u>Disagree</u>	<u>Agree</u>	<u>Group</u>
1. Smoking is a health risk to the	0 (0)	106 (100)	All
smoker (to me).	0 (0)	38 (100)	S
	0 (0)	68 (100)	NS
2. Smoking is a health risk to others	2 (2)	104 (98)	All
around the smoker.	2 (5)	36 (95)	S
	0 (0)	68 (100)	NS
3. I believe it is not too late for a smoker	5 (5)	101 (95)	All
(for me) to stop smoking.	4 (11)	34 (89)	S
	1 (1)	67 (99)	NS
4. Smokers who are trying to quit smoking	7 (7)	99 (93)	All
(I) should seek smoke-free environments	6 (16)	32 (84)	S
in which to socialize.	1 (1)	67 (99)	NS
5. When smokers attempt to quit smoking	3 (3)	103 (97)	All
they (I) should plan activities that minimize	3 (8)	35 (92)	S
stress.	0 (0)	68 (100)	NS
6. Smokers should seek strategies aimed	6 (6)	100 (94)	All
at resolving the problems they face.	4 (11)	34 (89)	S
	2 (3)	66 (97)	NS

Table 5 continued

	<u>Disagree</u>	<u>Agree</u>	<u>Group</u>
7. Believing that one will be successful	0 (0)	106 (100)	All
in achieving goals enhances one's	0 (0)	38 (100)	S
chances of success.	0 (0)	68 (100)	NS
8. One (I) needs a high degree of persistence	0 (0)	106 (100)	All
to stop smoking.	0 (0)	38 (100)	S
	0 (0)	68 (100)	NS
9. When hooked on smoking, I believe	2 (2)	104 (98)	All
one's internal strengths are needed	0 (0)	38 (100)	S
to help the person kick the habit.	2 (3)	66 (97)	NS
10. When hooked on smoking, I believe	20 (19)	86 (81)	All
the smoker needs help from professional	7 (18)	32 (82)	S
sources to help the person kick the habit.	13 (19)	55 (81)	NS
11. Smokers (I) need family members and/or	18 (17)	88 (83)	All
friends to help them (me) quit.	11 (29)	27 (71)	S
	7 (10)	61 (90)	NS
12. I believe that the health of our society	24 (13)	82 (87)	All
should be protected by laws against	15 (39)	23 (61)	S
smoking.	9 (13)	59 (87)	NS
13. Nurses and doctors should set a	13 (12)	93 (88)	All
nonsmoking example for others .	8 (21)	30 (79)	S
	5 (5)	63 (95)	NS

Table 5 continued

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	<u>Disagree</u>	<u>Agree</u>	<u>Group</u>
14. Nurses and doctors who smoke	10 (9)	96 (91)	All
should quit smoking (I want to quit).	3 (8)	35 (92)	S
	7 (10)	61 (90)	NS

Item 4 was the only item which was representative of the core factor of socializing. When attempting to quit smoking the smoker should seek smoke-free environments in which to socialize had only 7 subjects in disagreement. Six of the seven were smokers.

All 106 subjects agreed with the statement that believing that one will be successful in achieving goals enhances one's chances of success (item 7). There were no students who disagreed with the statement. The students seem to believe that self-efficacy is important for achievement of goals such as to quit smoking. This was the only item representative of the core factor of self-efficacy which is related to Bandura's social learning theory.

The fourth core factor related to this study was support. Support was represented in item's 11, 12, & 13. The responses for these three items are more evenly distributed than the responses for the other three core factors discussed, but are more towards the agreement end of the response continuum. When comparing the percentage of smokers to non-smokers on the disagreement the smokers are always a greater percentage. Item 13, nurses and doctors should set a nonsmoking example for others, is of interest. This item not only looks at support but is certainly related to observational learning. Thirteen nursing student subjects disagreed with this statement. Smokers had 21% who disagreed while nonsmokers had only 5% in disagreement.

One of the most controversial questions on the SWQ was the belief that the health of our society should be protected by laws against smoking (item 12). It was one of the few SWQ questions that had answers across the whole continuum. There were 24 subjects who disagreed (11 of them strongly) with the idea of laws to protect society against smoking and 82 who agreed (41 of them strongly). More smokers disagreed than did nonsmokers.

## Chapter V

### Discussion

The purpose of this study was to explore the relationship between the smoking attitudes/beliefs and professional role attitudes of first and second year nursing students in a two year rural community college nursing program and the smoking behaviors and year of formal nursing education in that program. Information should be gained about the nursing student's role as a patient educator and role model and his/her attitude's about the eight core elements of smoking. The data would also answer other questions about the nursing student's smoking behavior as related to age, recent changes in smoking behavior, and the presence of other smokers in the student's household. Data were collected from a convenience sample of 106 nursing students in a community college enrolled in the daytime program. The students completed a three section questionnaire which included a demographics sheet, the SAQ, and the SWQ. Data analysis utilizing descriptive, Pearson's R, Chi square, and Crammer's V was performed. This chapter will present a discussion of the research findings, its significance to the theoretical framework, and conclusions of this study. Limitations of the study will be presented. Implications for nursing education and future nursing research will also be discussed.

### Findings and Significance

The data showed that 35.8% of the nursing students were smokers. When viewed by level however, 31.1% of the first level students (LPN and first year ADN) were smokers, while 42.2% of the second level students (second year RN) were smokers. This compares to a range of 25% to 30% in the literature for the 1990's (Fiore, 1992; Shelton, 1993; Nelson et al, 1994). The



range was higher during the 1980's when it was found to range from 30% to 39% (Casey et al, 1989; Kudzma, 1988; Murray et al, 1983; Rausch et al, 1987). More nursing students in this sample were smokers than in the previously reported norms for the 1990's and about equal to the norms for the 1980's. These numbers are even higher than the rates reported in the 1970's when smoking was at its highest numbers for nurses. In fact these numbers were almost as high as the results found with a study of British nurses who tend to have higher smoking behaviors than do their American counterparts (Callaghan, 1995). Nelson et al (1994) reported that smokers accounted for 31.7% of the RN's and 37.1% of the LPN's in the 1970's and currently at 18.3% for RN's and 27.2% for LPN's. This sample apparently was weighted with smokers. Two possible reasons may be suggested. One is the age of the students. Of the 106 students, 33% were aged 26-35 and 28.3% were aged 36-45. These students would have been at the typical baccalaureate college age of 18-22 or the traditional college entry age during the 1970's and the 1980's. When the over 45 group was examined, the smokers accounted for 60% of the group. The second possible explanation for the higher number of smokers is the rural area where the sample resides. The prevalence of smoking is high in the rural areas and due to limited health seeking behaviors, once started, the smoker is more reluctant to quit (Weinert & Burman, 1994). The fact that 40% of the students reported that they live in a household with other smokers is testimony to the heavy rate of smoking in this rural area. Even more alarming is the fact that, of the 30 students that reported a change in smoking behavior since beginning nursing school, 16.7% started smoking and 23.3% increased their smoking behavior.

Is there a relationship between role attitudes (SAQ) and smoking

behavior? The SAQ score reflected the nursing student's attitudes toward their responsibilities as an educator, counselor, and role model related to smoking behavior. The higher SAQ score would be more indicative of the attitudes for positive health behavior by the student subject. The relationship that the researcher had predicted was in the predicted direction, however the results were not strong enough to be significant. These results agreed with the relationship and direction that was found by Reeve et al (1996) in the original published report of the SAQ. However, Reeve et al found their results to be significant. The difference in significance could have been in the difference in samples. Reeve's sample was registered oncology nurses with only 7% smokers in the ranks. This was very different from the current sample of nursing students weighted heavily with smokers (35.8% smokers). The smoking nursing students did not have a strong positive relationship with attitudes toward counseling patients not to smoke, toward their role as an exemplar, and toward participating in smoking cessation programs.

The same tool was used by Haughey et al (1989) to look at smoking attitudes of New York critical care nurses. They found that the subjects agreed that they should help clients to quit, that teaching or encouraging cessation was their responsibility, that they should set a good example, and that nurses should be more active as speakers to lay groups about unhealthy habits such as smoking. The current study showed the same trends in the sample of nursing students. Haughey's study found that 8% reported that the smoking problem was a minor one compared to only 2% with this study. Haughey's study found that 46% reported that their time could be better used in teaching elsewhere, while this study found that only 27% agreed. Haughey reported that 85% agreed that their clients would not give up smoking, while this study reported

72% agreed. This item showed the most agreement between the two studies. On the last question, 29% in Haughey's study reported there was no method to really help the smoker quit. With this current study however, student attitudes about methods to help the smoker to quit decreased to 7%, possibly due to the new advances in cessation methods and nicotine patches known to the students. The nursing students in the current study seem to be aware of the importance of teaching cessation and a positive nonsmoking lifestyle. This agrees with a study of student nurse's opinions about the importance of health promotion practices in which student nurses rated the practice of eliminating cigarette smoking as the number two priority practice (Gorin, 1992).

The nursing student's smoking behavior and his/her attitudes about smoking education are strongly related to role modeling according to Bandura's social learning theory. Observational learning with vicarious reinforcements suggests that learning of a behavior occurs due to seeing others model a certain behavior and noting what happens to them (Perry et al, 1990). The nursing student who smokes may have been influenced to smoke by parents and peers that smoked. This study found a relationship between someone in the student's household smoking and the nursing student's smoking behavior. This could be evidence of a modeling effect on the nursing student from significant others. In turn the nursing student's smoking behavior will affect the smoking behavior of others including clients who observe the nursing student (nurse) engaged in the smoking behavior. According to the reciprocal determinism framework, the beliefs and attitudes of the student may have played a role in the student's learning of the behavior of smoking (Bruning, Schraw, & Ronning, 1995; Perry, Baranowski, & Parcel, 1990). If the model has prestige (a nurse), then the learner (client) is more likely to learn the behavior

(smoking). The presence of the smoking nurse could be a strong environmental factor in the person's decision to smoke or not to smoke. The influence of the health professional and the modeling effect this person can have on the client or public was demonstrated in the study by Dawley et al (1981) where the model dressed as a doctor influenced visitors to smoke.

Is there a relationship between readiness to quit and smoking behavior? In this study, the mean SWQ score for the nonsmoker was 75.5, while the mean SWQ score for the smoker was 69.9. Gulick & Escobar-Florez (1995) had found the mean SWQ score for nonsmokers to be 72.5 and for smokers to be 61. She found a difference of 11.5, while the current research showed a difference of only 5.6. The sample in the Gulick & Escobar-Florez study did include some nursing students but also included health workers, minority organization members, and friends of the researchers. The Gulick & Escobar-Florez study was conducted to establish validity and reliability of the tool across ethnic groups and was not solely directed towards nursing students or nurses. While the overall results of the current study agreed with the Gulick & Escobar-Florez's study, many of the individual question responses did not agree. Gulick & Escobar-Florez reported that they found disagreement across all groups with the statement that "Persons hooked on smoking need professional help to kick the habit", that "Smokers need close family members and/or friends to help them quit smoking", and that "The health of our society should be protected by laws against smoking". Results of the current study found agreement with all of these question items. Less than 20 students disagreed with the first two items, however 11 smokers strongly disagreed with the last item regarding laws against smoking. There were interestingly and predictably 41 nonsmokers who strongly agreed with that item. It may be that the smoker's responses toward

restrictions were determined by their smoking status. In other words, they viewed restrictions of smokers negatively as supported by Bandura's theory.

The SWQ involves the decision to smoke, to quit smoking, and to remain a nonsmoker. It looks at those important eight core elements of that decision. Bandura recognized that emotional arousal is related to learning, performance, and outcomes. Fearful thoughts such as dying from a MI caused by smoking could be a stimulus to quit smoking. However as is more often the case, these fearful thoughts, instead of producing emotional arousal and a healthy outcome, will trigger defensive behaviors. One such psychological defense is denial (Perry et al, 1990). Instead of the smoker becoming aroused to quit smoking they channel their energy towards denial and develop an attitude that the unhealthy consequences of smoking will never happen to them.

Is there a relationship between role attitudes and the year in the nursing program? Is there a relationship between readiness to quit and the year in the nursing program? A positive relationship was predicted. As the nursing student progresses through nursing school she/he is exposed to theory based information on cardiac, respiratory, and oncology diseases and their relationship to smoking behavior. The student is also exposed in clinical to clients who suffer with illness related to smoking behavior. As this learning and experience progresses it was predicted that the student would develop increased attitudes about education and role modeling against smoking and would develop increased attitudes supportive of smoking cessation. The data did not support these predictions.

Two recent studies were found to support the findings of the data from this study: nursing programs and education do not have a positive relation to smoking behavior. Warner, Halpern, & Giovino (1994) examined smoking

behavior related to differences in education. The randomly selected sample involved over 13,000 individuals, not just nurses or nursing students. They found that among smokers estimation of smoking's danger rises with education, but not nearly as rapidly as it does for nonsmokers. "Therefore the gap between smokers' and nonsmokers' assessment of smoking's risks appears to be greatest in the highest education class...Highest-education smokers in both surveys evaluated the risks of smoking at levels comparable to those indicated by lowest-education non-smokers" (Warner et al, 1994, p. 142). To reevaluate Warner's findings in terms of Bandura, as the level of education increases so does the amount of denial used to handle emotional and physiological arousal.

The second study was a British study of the prevalence of smoking behavior and when it started in relation to starting nursing school (West & Hargreaves, 1995). They found no support for the idea that smoking could be initiated during nursing school and that there was a decline in smoking behavior with time since starting nursing school. The findings of this study did agree with the findings of West and Hargreaves. West and Hargreaves (1995) did state that based on their study the experience of nursing school has relatively little impact on smoking and the student's beliefs about smoking has little effect on smoking behavior. These findings were supported by the findings of the current study. There were no statistically significant relationships found between the SAQ and SWQ scores and the level of nursing student.

While Bandura's theory did not appear to offer an explanation in regard to the SAQ and SWQ scores as related to level in nursing school, the theory did offer an explanation in some parts of the study. The lack of a relationship between level of student and other variables could be solely the result of cohort differences. Bandura's social learning theory involves role modeling and

vicarious learning. Therefore one could suggest that the instructors role modeling and the observational and vicarious learning in clinical is more important than the classroom theory learning. According to reciprocal determinism even the way the student learns in these observational situations (environmental factors) is influenced by their beliefs and attitudes (personal factors). How the student reacts or what behavior the student demonstrates is the third variable called behavioral factors. It is the interaction of these three variables that results in learning. The idea of reciprocal determinism suggests that personal factors such as one's beliefs affect behaviors and the interpretation of environmental cues (Bandura, 1986; Bruning et al, 1995; Perry et al, 1990). Smokers may be less likely to accept learning about smoking related illnesses than are nonsmokers.

One personal factor that affects behaviors and environmental cues is self-efficacy. Self-efficacy is the degree to which one possesses confidence in his or her ability to achieve a goal. Self-efficacy is closely linked with initial task engagement, persistence, and successful performance. There was one question on the SWQ (Item 7) which evaluated Bandura's concept of self-efficacy and Gulick's core factor of self-efficacy. On that question all 106 students agreed with the statement that believing that one will be successful in achieving goals enhances one's chances of success. Obviously the students seem to believe that self-efficacy is important for the achievement of goals such as smoking cessation. The 100% response rate in agreement could also be the socially desirable answer. The student subjects may have answered in the way that they believed that the researcher and their instructor wanted them to answer.

Is there a relationship between smoking behavior and the year in the

nursing program? Smokers accounted for 31.1% of the first level students and 42.2% of the second level students. The results were not significant. This question is a good example of the cohort differences which may have caused other hypotheses of this research study to be non-significant relationships, or to be in the wrong direction. The researcher had predicted that the second level students would have a lower prevalence for smoking behavior than the first level students. This prediction was supported by the review of literature including Nelson et al (1994). Data from this sample showed the second year to have a much larger percentage of smokers than the first level students. Did learning occur which may have changed their smoking behaviors and/or smoking attitudes in the nursing students now in the second level of the program? Without data for the second level students when they were first level, the question must go unanswered. A longitudinal study is needed to answer this question. Also does the stress level of the student increase during the second year and if so how is this related to the smoking behavior?

Is there a relationship between recent changes in smoking behavior and the year in the nursing program? The findings were not significant. The first level students did show a tendency towards quitting or decreasing their smoking behavior since beginning nursing school. The first level students were able to show a decrease in smoking behavior in only four months. One has to question if this small exposure to theory and clinical had such a distinct effect or if it was simply the demand of a professional health related pending career choice. The second year also showed change but in both directions. Initial analysis lead to the questioning of stress as a possible reason for the starting or increasing of smoking behavior since entering nursing school. This direction of change was unexpected in either level of education and especially not in the



second level with the theory base and clinical experiences. One can only theorize that the second level of studies in the nursing program results in more stress to the nursing student. Clark et al (1990) found that stress was a reason not to quit and an explanation for relapse, but was not a reason to start smoking. Others have found no relationship between stress and smoking (Berman et al, 1992; Cinelli & Glover, 1988; Hawkins, 1987; Plant, Plant, & Foster, 1992).

Is there a relationship between recent changes in smoking behavior and the presence of another smoker in the household? While the association of recent changes in smoking behavior was not significant to the presence of another smoker in the household, the type of change in smoking behavior was significant with the presence of another smoker in the household (in the subset of 30 students who reported a change since entering nursing school). The presence of another smoker in the household could mean a parent, a roommate, or a significant other. There was a positive association between other smokers in the household and the type of change in smoking behavior. Who the nursing student lives with is more important to smoking behavior than what the student is studying in school. There was a positive association between the subject's smoking behavior and the presence of another smoker in the household. This is a strong argument for social learning theory. It appears that the behavior modeled at home, learned by observational learning, and reinforced vicariously, has a stronger influence on the nursing student than what the student learns academically.

While Bandura's Social Learning Theory was at first the framework for this study in the regard to the student as a model for patients, peers, and community, it has become clear that he/she is also the recipient of modeling by others (family, parents, spouse) in the household. The finding of the presence

of a smoker in the house supports social learning theory. Nursing students have had more exposure to influence them from parents and relatives than from nursing instructors. Two years in a nursing program are not likely to change years of exposure to smoking in the home.

In reviewing some of the individual items related to the core factors there appears to be agreement across the smoker non-smoker ranks with some of the items. The items representative of the core factors of beliefs/attitudes and socializing showed very high levels of agreement. Very few students disagreed with these statements and none disagreed with the statement about smoking being a health risk. The statement representative of self-efficacy had no students in disagreement. It is interesting that the students demonstrate agreement with these items on the questionnaires but their smoking behavior does not show a relationship to their statements. They appear to have learned the desirable responses but are not modeling them. Are these responses as recorded on the questionnaires only socially desirable responses. They may be picking the right responses, but it may not be their true belief especially when it means demonstrating the behavior.

The items which represented the core factor of support were also very interesting. This core factor was represented by item's 11, 12, & 13. The responses were not evenly distributed but more so than the responses to the items related to beliefs/attitudes, socializing, and self-efficacy. A small group of students disagreed with these statements which showed support. Many students that disagreed were smokers. These negative responses may indicate that they feel they do not need support to quit, that a healthy lifestyle does not require legal support, or that modeling of behaviors is not a factor in learning. The negative responses to the last question demonstrate that the smoker does

not understand or believe in the modeling effect of social learning as it relates to smoking.

In reviewing some of the other individual items there was an obvious tendency towards agreement in the healthy and predicted direction. The majority (85%) agreed or strongly agreed that it is the nurse's responsibility to help patients who wish to stop smoking and 80% agreed or strongly agreed that it is the nurse's responsibility to actively encourage smoking cessation. Almost all students (104) agreed that cigarette smoking and health is a very minor problem and 104 also agreed that smoking is a health risk to others around the smoker. Yet these numbers do not agree with the research of what is actually occurring in this area of smoking and nursing. Research has shown that nurses are doing little to no smoking cessation education for their patients (Wewers et al, 1994; Stanislaw & Wewers, 1994; Mundt et al, 1995; Furlow & O'Quinn, 1996). All 106 of the sample agreed that there is a health risk to the smoker, yet 38 were smokers. The nursing student's behavior does not reflect his/her stated attitudes. When finding few positive significant relationships while examining smoking behavior related to smoking attitudes of roles, education, counseling, role modeling, and responsibilities of cessation, the researcher must keep in mind the accuracy and honesty of the nursing students answers. West et al (1995) stated "the responses of some nurses may simply constitute a repetition of what they have learnt rather than their own belief " (p. 197).

The importance, significance, and need for studies of nursing students, smoking behaviors, and smoking attitudes was illustrated clearly during the study by two examples. One item on the SWQ reflected the importance and belief of this project. The thirteenth item states that nurses and doctors should set a non-smoking example for others. There were 93 students (87.7%) who

agreed with that statement, but there were still 13 who disagreed with the statement. Two of the 13 were not even smokers. A second example can be found on the demographics sheet which identified 38 smokers in this sample of nursing students. Based on item 14 on the SWQ, ten of them want to quit smoking, but 28 do not want to quit. The same 28 smoking students agreed with the statement in item 1 of the SWQ that there is a health risk from smoking to the student and in item 2 that there is a risk to others around the smoker. The need for counseling for smoking cessation and role modeling of positive health behaviors is clearly illustrated in the numbers and in the answers of those ten, but the need for education is illustrated in the other 28.

### Limitations

The limitations for this research project were:

1. Data were obtained cross-sectionally instead of longitudinally.
2. The project used a non-random convenience sample and is therefore not generalizable to all nursing students.
3. No cause and effect relationship can be implied due to the correlational design.
4. There may be preexisting differences between the two levels/years of students studied at one point in time in a cross sectional design which limits the value of any developmental interpretations. The first level students and second level students were two distinct groups of nursing students. Although both groups were admitted from the same geographical area using the same admission guidelines and requiring the same pre-nursing classes, the fact remains that the two groups are not the same. Therefore the differences in the SAQ and SWQ scores and the lack of the predicted positive relationships between level and score could be due to cohort differences.

5. There were two versions of the same tool used for smokers and for non-smokers. Even though there was only a difference in first person versus third person on seven of the items the use of two instruments contributed to measurement error.

6. The reliability of both tools was found to be weak based on the calculation of Cronbach's alpha. The Cronbach's alpha for the current data for the SAQ was .6136 and for the SWQ was .7420. The result for the SWQ was acceptable, but weak.

7. The subjects were students in a healthy lifestyle profession responding to items which were related to an unhealthy lifestyle behavior. The student subjects may have responded as they thought the researcher, also a nurse and their instructor, wanted them to respond. They may have also responded with the socially desirable responses and not with their true beliefs. Therefore their indicated beliefs may not represent their true beliefs.

#### Implications for Nursing

Prevention through the roles of educator and exemplar should be included with direct patient care. Nurses are promoters of health as well as care givers. Therefore nurses and nursing students regardless of their own personal health behavior must be able and feel confident that they can help their clients to stop smoking. In this age of cost cutting, declining health care dollars, and increasing public awareness, the nurse, with minimal effort, can save thousands of health care dollars, if attempts at smoking cessation are successful. Minor nursing interventions can be adequate for successful cessation. If the nurse can achieve a short term abstinence in clients then she/he has made an accomplishment which may have long lasting effects.

Nurses are increasingly working towards being positive role models and

creating positive health environments. They are refraining from smoking themselves and working to create a nonsmoking environment in their homes and in their places of employment (Frank-Stromborg & Rohan, 1992). Much of the anti-smoking legislation is partly the result of nursing's lobbying efforts. Something as simple as a smoke-free office makes a statement about the staff's commitment to nonsmoking and the nurses' and staff's role modeling of healthy behavior for the clients (Manley et al, 1992). Every nurse who models healthy behaviors including not smoking is making a statement for herself, nursing, and a positive healthy lifestyle. Based on Bandura's social learning theory the nurse or nursing student who models a nonsmoking behavior is teaching his/her clients, peers, and family a positive healthy lifestyle. Observational learning with vicarious reinforcement often delivers a stronger educational message than does traditional teaching methods.

One should not forget that nurses and nursing students are also the recipients of modeling behaviors. As was shown in this study, the smoker in the household has a strong influence on the smoking behaviors of the nursing student. The parent or spouse is modeling smoking behaviors for the nursing student. The nursing student can be on the receiving end or the sending end in Bandura's Social Learning Theory. The nurse must overcome the strong influences that the family places on smoking especially in a rural environment.

Education regarding smoking cessation is an important task for nurses and for nursing students. Part of the attention needs to focus on smoking among nursing students during their formal nursing education. "An emerging trend to include health promotion practices in some nursing school curricula may serve to prevent smoking initiation and encourage cessation among student nurses" (Casey et al, 1989, p. 398). Nursing students are expected to

learn a multitude of new skills in a short period of time. It may be an undesirable demand to also ask that they learn and model healthy lifestyles such as not smoking. This is quite an achievement in 2 years of school. However upon graduation they are expected to be professionals.

Nursing instructors can teach students, who in turn, teach clients through example and education. Nurse educators can not be held accountable but “they have the best opportunity to influence the students in regard to smoking behavior while the students are involved in the nursing educational process and while molding the attitudes of nursing students as future health practitioners and health educators” (Kudzma, 1988, p. 26). The sample for this study is just one example of nursing students who could benefit from interventions to decrease their smoking behaviors and then they would be better educators and exemplars for their clients and their community.

#### Future Research

This research study has identified the need for more research and the reinvestigation of this study with changes. More information needs to be gathered with the demographic sheet such as: when did the student begin smoking, how long has the student been smoking, how much has he/she been smoking, who else in the household smokes, did the nonsmoker ever smoke, has the smoker ever attempted to quit, and exposure to smoking at work and in the family setting. The study needs to be done with a scale for stress included with the SAQ and SWQ.

If this study was repeated, the most significant change should be in the study design. It should be a longitudinal study and not a cross sectional study. The questionnaires should be administered in the first week of the first year of school. The questionnaires should then be readministered to the same group

on the last week of the second year. The two sets of questionnaires should then be compared for the same group with only the paired questionnaires being used. A four year school of nursing might yield an even better sample of students since there would be four years for social learning to take place instead of just two years.

This complex interaction of smoking behaviors in nurses and nursing students and its relationship to smoking attitudes, education, counseling, role modeling, and responsibilities of smoking cessation requires and demands more research. This holds true especially when one considers the ranking of cancer on the morbidity and mortality tables and the huge numbers of individuals being consumed by this epidemic of tobacco smoking. Why can't nursing students stop smoking? Why can't nurses stop smoking? Why can't we convince our clients to stop smoking before it's too late?

### Conclusion

In conclusion, the purpose of this study was to explore the relationship of the smoking behaviors of first and second year nursing students to the role of attitudes of education, counseling, and role modeling, and to the responsibilities of supporting smoking cessation. The results of the study supported the relationship of smoking behaviors to behaviors and attitudes supportive of smoking cessation. The relationship between smoking attitudes and the level in the nursing program was not supported in this study. In fact all of the research hypotheses with a variable of level in the nursing program were not supported. There was however a significant association between smoking changes since entering nursing school and other smokers in the household. A strong association was found between smoking behavior and the presence of another smoker in the household. It was suggested that the smoking behavior



of a significant other in the household may have a greater modeling effect on the student than does the classroom theory and clinical experiences of nursing school. There was support and an explanation for the study found in Bandura's social learning theory.

Appendix A  
Demographic Data Sheet

## DEMOGRAPHICS SHEET

PLEASE DO NOT SEPARATE THE FOUR PAGES OR REMOVE STAPLE.

PLEASE MARK THE APPROPRIATE SPACE WITH AN 'X'.

MY LEVEL IN THE NURSING PROGRAM: ☐ FIRST LEVEL (YEAR)  
☐ SECOND LEVEL (YEAR)

MY GENDER: ☐ FEMALE ☐ MALE

MY AGE: ☐ 18-25 ☐ 26-35 ☐ 36-45 ☐ OVER 45

I WOULD CURRENTLY DESCRIBE MYSELF AS A:

☐ NON-SMOKER (Complete Questionnaire #1 & #2-Non-smoker)

☐ SMOKER (Complete Questionnaire #1 & #2-Smoker)

SINCE BEGINNING NURSING SCHOOL, MY SMOKING BEHAVIOR HAS:

☐ CHANGED ☐ NOT CHANGED (SKIP NEXT QUESTION)

MY SMOKING BEHAVIOR HAS CHANGED BECAUSE I HAVE:

☐ STARTED SMOKING ☐ INCREASED MY SMOKING

☐ DECREASED MY SMOKING ☐ QUIT SMOKING

IN MY CURRENT HOUSEHOLD, ARE THERE OTHER SMOKERS?

☐ YES ☐ NO

THANK YOU FOR YOUR PARTICIPATION IN THIS STUDY!

Appendix B  
Questionnaire #1  
Smoking Attitude Questionnaire (SAQ)

## QUESTIONNAIRE #1

Directions: Please indicate how much you agree or disagree with the following 8 statements by placing an (X) on the line across from each statement. Thank you.

STATEMENT	Strongly Disagree	Disagree	Agree	Strongly Agree
1. It is the nurse's responsibility to help patients who wish to stop smoking.	_____	_____	_____	_____
2. It is the nurse's responsibility to actively encourage smoking cessation.	_____	_____	_____	_____
3. It is the nurse's responsibility to set a good example by not smoking.	_____	_____	_____	_____
4. A nurse's time can be better spent teaching patients other things than smoking cessation.	_____	_____	_____	_____
5. The problem of cigarette smoking and health is a very minor one.	_____	_____	_____	_____
6. Nurses should be more active in speaking to lay groups about smoking.	_____	_____	_____	_____
7. Most patients will not give up smoking even if their care provider tells them to.	_____	_____	_____	_____
8. There are no methods available to really help a cigarette smoker.	_____	_____	_____	_____

---

Smoking Attitude Questionnaire

Developed by K. Reeve, J. Adams, & K. Kouzekanani

University of Texas - Houston

Appendix C

Permission Letter to use  
the Smoking Attitude Questionnaire



**School of Nursing**

November 18, 1997

Bill Campbell, RN  
109 Pine Grove Road  
Laurel, DE 19956

Dear Mr. Campbell:

Thank you for your interest in my work. I was pleased to learn that you are interested in examining smoking behaviors and attitudes in student nurses.

You have my permission to use any or all of the items in the Smoking Attitude Questionnaire, and/or to modify them to suit your purposes. I would ask, however, that you cite our work in reports of your investigation and that you forward a brief report of your results on conclusion of your research.

Please let me know if you have further questions or need additional information. Good luck with your work.

Sincerely,

A handwritten signature in cursive script that reads "Kathleen Reeve".

Kathleen Reeve, MSN, RN,CS, ANP  
Assistant Professor

Appendix D

Questionnaire #2 - Non-Smoker

Questionnaire #2 - Smoker

Smoking and Women Questionnaire (SWQ)



## QUESTIONNAIRE #2 - NONSMOKERS

Directions: Please indicate how much you agree or disagree with the following 14 statements by placing an (X) on the response line across from each statement. This questionnaire is only for nonsmokers. Thank you.

ASSESSMENT STATEMENT	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. Smoking is a health risk to the smoker.	_____	_____	_____	_____	_____	_____
2. Smoking is a health risk to others around the smoker.	_____	_____	_____	_____	_____	_____
3. I believe it is not too late for a smoker to stop smoking.	_____	_____	_____	_____	_____	_____
4. Smokers who are trying to quit smoking should seek smoke-free environments in which to socialize.	_____	_____	_____	_____	_____	_____
5. When smokers attempt to quit smoking they should plan activities that minimize stress.	_____	_____	_____	_____	_____	_____
6. Smokers should seek strategies aimed at resolving the problems they face.	_____	_____	_____	_____	_____	_____
7. Believing that one will be successful in achieving goals enhances one's chances of success.	_____	_____	_____	_____	_____	_____
8. One needs a high degree of persistence to stop smoking.	_____	_____	_____	_____	_____	_____
9. When hooked on smoking, I believe one's internal strengths are needed to help the person kick the habit.	_____	_____	_____	_____	_____	_____
10. When hooked on smoking, I believe the smoker needs help from professional sources to help the person kick the habit.	_____	_____	_____	_____	_____	_____
11. Smokers need family members and/or friends to help them quit.	_____	_____	_____	_____	_____	_____
12. I believe that the health of our society should be protected by laws against smoking.	_____	_____	_____	_____	_____	_____
13. Nurses and doctors should set a nonsmoking example for others.	_____	_____	_____	_____	_____	_____
14. Nurses and doctors who smoke should quit smoking.	_____	_____	_____	_____	_____	_____

Developed by E.E. Gulick

## QUESTIONNAIRE #2 - SMOKERS

Directions: Please indicate how much you agree or disagree with the following 14 statements by placing an (X) on the response line across from each statement. This questionnaire is only for smokers. Thank you.

ASSESSMENT STATEMENT	Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree
1. I believe there is a health risk from smoking to me.	_____	_____	_____	_____	_____	_____
2. Smoking is a health risk to others around the smoker.	_____	_____	_____	_____	_____	_____
3. I believe it is not too late for me to stop smoking.	_____	_____	_____	_____	_____	_____
4. When attempting to quit smoking I should seek smoke-free environments in which to socialize.	_____	_____	_____	_____	_____	_____
5. When attempting to quit smoking I need to plan activities that minimize stress.	_____	_____	_____	_____	_____	_____
6. Smokers should seek ways to solve the problems they face.	_____	_____	_____	_____	_____	_____
7. Believing that one will be successful in achieving goals enhances one's chances of success.	_____	_____	_____	_____	_____	_____
8. I will need a high degree of persistence in order to stop smoking.	_____	_____	_____	_____	_____	_____
9. When hooked on smoking, I believe one's inner strengths are needed to help the person kick the habit.	_____	_____	_____	_____	_____	_____
10. When hooked on smoking, I believe the smoker needs help from professional sources to help the person kick the habit.	_____	_____	_____	_____	_____	_____
11. I would need close family members and/or friends to help me quit smoking.	_____	_____	_____	_____	_____	_____
12. I believe that the health of our society should be protected by laws against smoking.	_____	_____	_____	_____	_____	_____
13. Nurses and doctors should set a nonsmoking example for others.	_____	_____	_____	_____	_____	_____
14. I want to quit smoking.	_____	_____	_____	_____	_____	_____

Smoking Questionnaire for Women  
copyright 1993 by Gulick, E.E.

Appendix E

Permission Letter to use

The Smoking and Women Questionnaire (SWQ)



College of Nursing  
180 University Avenue • Newark • New Jersey 07102-1897 • 973/353-5293

September 25, 1997

Bill Campbell  
109 Pine Grove Rd.  
Laurel, Delaware 19956

Dear Professor Campbell:

Enclosed is a copy of the **Smoking Questionnaire for Women** per your recent request. You have my permission to use it in your clinical and/or research activities. I would be interested in knowing how you used the **Questionnaire** and the outcome of the project.

Best wishes to you.

Sincerely,

A handwritten signature in cursive script that reads "Elsie E. Gulick".

Elsie E. Gulick, PhD, FAAN  
Professor

Enc.

Appendix F  
Cover Letter / Disclosure Form



Dear Nursing Student,

I am currently conducting a study on tobacco smoking attitudes and beliefs and the nurse's roles. I am seeking the assistance of the nursing students at Delaware Technical and Community College in completing the questionnaires concerned with roles and attitudes.

There are two questionnaires and a demographics sheet that will take about 20 minutes of your time to complete. In order to maintain anonymity, your name does not appear on the questionnaires and you will not be asked to supply it. DO NOT identify yourself by writing your name, Social Security number, or any identifying information on the forms.

Your cooperation and participation are strictly voluntary and your choice to participate or not to participate will in no way affect your grade. Your participation is very valuable and will help me learn more about smoking attitudes and the nurse's roles. Your return of the questionnaire will reflect your consent to be part of this study.

There are no physical or psychological risks to you. A slight discomfort may be experienced by smokers due to the nature of some of the questions, but your participation is valuable to this study. You will also be committing about 20 minutes of your time to complete the questionnaires.

If you have any questions about this study please contact the Nursing Department at Salisbury State University. The persons to speak to are Dr Ruth Carroll or William Campbell. Mr. Campbell may also be contacted at Delaware Technical and Community College. A summary of the results of the study will be distributed to the classes that participated when the study is completed.

Thank you for your cooperation.

William Campbell  
(302) 856-5400

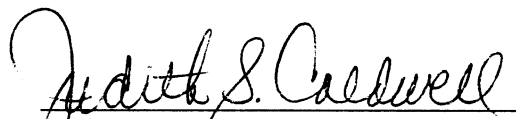
Dr. Ruth Carroll  
(410) 546-4333

Appendix G  
Permission Letter  
from Nursing Department Chairperson

## MEMORANDUM

### TO WHOM IT MAY CONCERN:

William (Bill) Campbell has permission to complete his study at Delaware Technical and Community College, Owens Campus. I understand that his study population will be first and second-level nursing students who will be voluntary participants. I also understand that there are no physical, psychological, social, legal or other risks associated with the study.

  
Judith S. Caldwell, MSN, RN  
Nursing Department Chairperson

10/30/97  
Date

JC/mb



Appendix H  
Approval Form  
Human Subjects Committee



## Statement of Approval Committee on Human Research

Date: January 21, 1998

To: Ruth Carroll/William Campbell

From: Betsey C. Corby, Director *BCC*  
Office of Grants and Sponsored Research

Subject: Relationship of Smoking Attitudes to the Smoking Behaviors of First and  
Second Year Nursing Students in a Rural Nursing Program  
Principal Investigator: Ruth Carroll  
Student Investigator: William Campbell

The Committee on Human Volunteers has considered the above application and, on the basis of available evidence, records its opinions as follows:

- (1) The rights and welfare of individual volunteers are adequately protected.
- (2) The methods to secure informed consent are fully appropriate and adequately safeguard the rights of the subjects (in the case of minors, consent is obtained from parents or guardians.)
- (3) The investigators are responsible individuals, competent to handle any risks which may be involved, and the potential medical benefits of the investigation fully justify these studies.
- (4) The investigators assume the responsibility of notifying the Committee on Human Volunteers if any changes should develop in the methodology or the protocol on the research project involving **a risk to the individual volunteers.**

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## EDUCATION

Salisbury State University, Department of Nursing - Graduate Studies.  
Master of Science in Nursing (MSN), May 1998 (anticipated)  
Track: Clinical Nurse Specialist - Family, Focus in Education

University of Delaware, College of Nursing. September 1979 to June 1982.  
Bachelor of Science in Nursing (BSN), June 1982.

University of Delaware, College of Arts & Science. January 1977 to June 1979.  
Bachelor of Arts (BA), June 1979, Major: Psychology, Minor: Biology.  
Associate of Arts (AA), June 1978, Major: Biology.

Philadelphia College of Pharmacy & Science. September 1974 to December 1976.  
Completed Pre-Pharmacy studies (non-degree).

Laurel Senior High School. June 1974. Diploma.

## EMPLOYMENT

Delaware Technical & Community College. Dec. 1991 to present. As a nursing instructor I am responsible for teaching basic LPN skills in the first year nursing lab; selecting patient assignments for 6-8 student nurses (LPN & ADN candidates) after doing chart audits and discussing patients with the charge nurse; conducting pre-conference; instructing, supervising, and evaluating the students on the clinical med-surg unit at an acute care hospital and on the geriatrics unit at a rehabilitation facility (also pediatrics and mental health as needed); conducting post-conference learning situations. As a classroom instructor of Med-Surg Nursing and Human Development, I am responsible for planning the classroom learning environment, lecturing and conducting the learning activities, and evaluating the students knowledge of the assigned material through exams and written projects.

Nanticoke Memorial Hospital (NMH). March 1991 to June 1992. As a staff nurse I was responsible for direct patient care to pre- and post- surgical patients and oncology patients. My duties included direct physical patients care, emotional support, medication administration, assessment, documentation, and education.

Milford Memorial Hospital (MMH). July 1989 to March 1991. As a staff nurse in the Ambulatory Surgery Unit my duties included pre-surgical preparation, education, and admission of one-day surgical patients as well as post OR recovery and discharge to home. Other duties included assisting in the GI Lab, minor surgery, patient transfusions and patient education/discharge instructions.

MMH. May 1985 to May 1989. As a staff nurse in the Special Care (Telemetry) Unit I was responsible for direct physical patient care, emotional support, medication administration, assessments, education, and cardiac monitoring of 4-8 telemetry patients.

NMH. July 1982 to May 1985. As 3-11 Charge Nurse on Fox Wing (Telemetry) I was responsible for immediate supervision of 4-5 staff nurses and assistants and a unit clerk. Other duties included assignments, evaluation input, staff counseling, family support, telemetry monitoring, physician orders, patient and staff education, and various staff nurse duties as needed.

#### OTHER CLINICAL EXPERIENCES

A. I. DuPont Institute - Pediatrics  
Wilmington Public Health - OB/GYN and public health  
Delaware Division - Acute, Neuro, Surgical, Critical Care  
General Division - OB/GYN, Oncology  
Elsmere V. A. Hospital - Chronic  
Union Hospital - Basics, Surgical  
Rockford Center - Mental Health

#### OTHER EDUCATIONAL TRAINING

Cardiac Life Support	Telemetry
Cardiac Assessment	Helicopter Transport
Numerous Continuing Education Classes & Seminars, PRMC Updates, & Delaware Nurses Association Conventions & Seminars	

#### PROFESSIONAL ORGANIZATIONS

Sigma Theta Tau  
Delaware Nurses Association  
American Nurses Association

## RESEARCH & PRESENTATIONS

Thesis Paper Presentation at SSU Graduate Nursing Research Day - The Relationship of Smoking Attitudes to the Smoking Behaviors of First & Second Year Nursing Students in a Rural Nursing Program (May 1998).

Poster Presentation at SSU Graduate Nursing Research Day - Age-Related Stress in Nursing Students (State Funded Research Grant) (May 1997).

## PROFESSIONAL NURSING LICENSURE

Delaware # L1014734 (1982 to present)

Maryland # R123439 (1994 to present)

## REFERENCES

Personal and professional references are available upon request.