

FACTORS RELATED TO NURSES SMOKING BEHAVIOR

by

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ABSTRACT

Nurses, as the largest professional group in healthcare, have tremendous influence in the promotion of health, particularly as it relates to smoking. Smoking is considered to be the most important avoidable cause of chronic ill health in the world and several studies have found that many nurses smoke; which not only places their own health at risk, but also the publics (Piko, 2002; Hawkins, White & Morris, 1982; Booth & Faulkner, 1986). The purpose of this research was to describe nurses' experiences with smoking as well as describe their smoking behavior in relation to demographics and socio-psychological influence. The relationship between smoking and the nurses' perceived role in health promotion was also described in this research.

The theoretical framework for this proposed study is Simmons (1990) Health Promotion Self Care System Model (HPSCSM). This model integrates the constructs of Pender's Health Promotion Model, Orem's Self-care Deficit Theory and Cox's Interaction Model of Client Health Behavior.

The study design was descriptive correlational. A convenience sample of 196 nurses employed in a variety of patient care settings within an urban medical center was used for this study. Data collection included a revised version of the Oncology Nurses and Tobacco Control Survey (Sarna, et al., 2000). Descriptive and inferential statistics that include Chi Square analysis was used to address four research questions.

The description of nurses' experiences with smoking in this sample showed that 68 (34.7%) reported that they had smoked at least 100 cigarettes in their lifetime and 39

(19.9%) reported current smoking. Among the demographic factors, the level of nursing education was positively correlated with current smoking behavior. Among the socio-psychological factors, stress was rated highest in importance by current smokers. More non-smokers and former smokers, compared to current smokers, felt positively about nurses serving as role models by not smoking.

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CHAPTER I

INTRODUCTION TO THE STUDY

Smoking prevalence among nurses poses a serious health concern. Nurses represent the largest group of healthcare professionals who have the greatest amount of contact with patients and yet studies have found that 25-50% of nurses smoke, (Adriaanse, Reek, Zanbelt, & Evers, 1991; Booth & Faulkner, 1986; Clark, Haverty, & Kendall, 1990; Davies & Rajan, 1989; Elkind, 1988; Gritz, Marcus, Berman, Read, Kanim, Reeder, 1988; Hawkins et al., 1982; Piko, 2002; White & Morris, 1982;). A large study of nurses analyzed in 21 countries ($N = 200,000$) from 1959 to 1988 found that there were just as many smokers among nurses as compared to the general population, sometimes even more (Adriaanse, 1991).

A recent study by Rowe and Clark (2000) also found that although among the general population there was a decrease in smoking (36-29%) during the period from 1960-1975, there was an increase in smoking among nurses (36-39%) during the same period. Additional studies have also found that not only were nurses smoking just as much, or more, than the general population, nurses smoked more than any other group of healthcare professionals (Jacobson, 1981; Piko, 2002; Soeken, Bausell, Winklestein, & Carson, 1989). Although smoking among nurses continues to be a problem most of our knowledge is based on findings from studies conducted in the 1990's and earlier.

Purpose of the Study

The purpose of this study is to describe nurses' experiences with smoking as well as describe their smoking behavior in relation to demographics (age, gender, marital

status, education, clinical area, and work shift) and socio-psychological influence (social influences, stress, and addiction). The relationship between smoking and the nurses' perceived role in health promotion will also be described in this research.

Better understanding of factors related to nurses' smoking behavior is needed before interventions that address smoking cessation and prevention can be developed. Results from this study will help guide the development of prevention and cessation interventions which will specifically suit nurses' needs.

Background and Significance

Nurses are exposed to the damaging often life threatening outcomes associated with smoking and are employed in healthcare environments where their professional role involves health promotion. Smoking among nurses not only jeopardizes their own health, but it may compromise credibility as an advocate for health promotion as well as portray a harmful and confusing message to the public (Elkind, 1988).

Healthcare organizations have promoted efforts to emphasize the role of health promotion and to deter smoking among healthcare professionals, particularly nurses. The World Health Organization (WHO) for example, has documented a new code of conduct which asks all healthcare professionals to lead by example and reduce smoking themselves (WHO, 2003). This call for action by the WHO has evolved from ongoing reports which suggest that even a brief counseling encounter by a healthcare professional on the dangers of smoking and the importance of quitting as being one of the most cost-effective methods to reduce smoking. With that in mind, studies have also found that as a consequence of their own tobacco use choices, nurses who smoke did not place the same

value on tobacco education for their patients compared to those nurses who did not smoke (Sarna, Brown, Lillington, Wewers, & Brecht, 2000). These findings suggest nurses' who smoke may fail to educate their patients adequately, if at all, given their own health threatening behavior, thus jeopardizing their health promotion role.

In addition to the call for action by the World Health Organization, the Oncology Nursing Society (ONS) has also strongly emphasized the importance of nursing action in tobacco control activities. The Oncology Nursing Society suggested through written testimony announced at the Centers for Disease Control and Prevention Tobacco Workgroup in November 2002, that a primary goal for Healthy People 2010 should be to increase the involvement of nurses, as the largest group of health care professionals, in all tobacco prevention and cessation efforts within healthcare settings and communities (ONS, 2002). The American Nurses Association (ANA) and the International Council of Nurses (ICN) also mandate the duty of nurses to promote public health and the decision to smoke among nursing professionals is not a matter of personal choice but a professional responsibility.

To facilitate nursing involvement in tobacco control activities it is essential to first determine factors which might jeopardize their role in health promotion, including their own smoking behavior. The benefits of promoting a non-smoking nursing profession are four-fold. First, nurses who model non-smoking behavior will be more likely to take on the responsibility of educating their patients to adapt smoke-free lifestyles (Sarna et al., 2000; Booth & Faulkner, 1986). Second, goals outlined by the WHO and the ONS will

be attained. Third, the risk of smoking related diseases and disabilities among nurses will be reduced. Fourth, professional responsibilities to promote health will be achieved.

Statement of the Problem

The literature has emphasized the important roles nurses have in increasing smoking prevention and cessation among patients in a variety of settings (ONS, 2002; WHO, 2004). Also apparent are the barriers created by nurses' own smoking behavior in achieving effective tobacco prevention, cessation and control (Sarna et al., 2000). Many studies have found that the majority of nurses began smoking in adolescence (Booth & Faulkner, 1986; Hawkins, 1982; Sarna et al., 2000), yet very limited research has been conducted to determine why nurses continue to engage in risky health behavior upon entering the healthcare field.

The concepts of stress, social influences and addiction are the three most common reasons noted in the literature for tobacco use among nurses (Bener, Gomes, Anderson, & Abdullah, 1994; Elkind, 1988; Hawkins, 1982; Sarna, 2000; Jacobson, 1981). The literature lacks specific recommendations with respect to how, or if, these influences could be avoided or modified to foster nurses' own health promotion efforts.

Determining why nurses smoke is essential in developing effective resources to assist all nurses with cessation support as well as promote their role in health promotion (ONS, 2002). To accomplish this goal, research is needed to assess tobacco use behavior and potential influences among nursing populations.

Theoretical/Conceptual Framework

A conceptual model is a set of abstract, related constructs that broadly explains phenomena of interest, expresses assumptions, and reflects a philosophical stance (Burns & Grove, 2001). For this study, the phenomenon of interest is health promotion.

At least 50% of deaths in the United States are due to unhealthy life-styles according to the World Health Organization (WHO, 2003). Objectives for promoting health and preventing disease were brought to the forefront of public awareness following the Surgeon General's Report, (Department of Health and Human Services, 1980). Since that time, a considerable amount of research focused on understanding why and under what circumstances individuals engage in unhealthy behavior (Walker, Sechrist, & Pender, 1987). The Health Promotion Model (HPM) developed by Nola Pender (1982) has been a popular model to study individuals and the concept of health promotion (Walker, et al., 1987).

A more recent model developed by Simmons (1990) incorporates the constructs of Pender's Health Promotion Model (HPM) (1982): Orem's Self-Care Deficit Theory (SCDT) (1985): and the Interaction Model of Client Health Behavior (IMCHB) (Cox, 1982). The Simmon's conceptual model is referred to as the Health-Promoting Self-Care System Model (HPSCSM) and was used to guide this study. A full diagram of the HPSCSM is provided in Figure 1. Concepts of the model which apply to this study are bolded in this Figure. Demographics, social influences, environmental influences, healthcare experiences, perception, health responsibility, interpersonal support,

education, and stress management are the concepts associated with this model which relate to the underlying phenomena of health promotion and the purpose of this research.

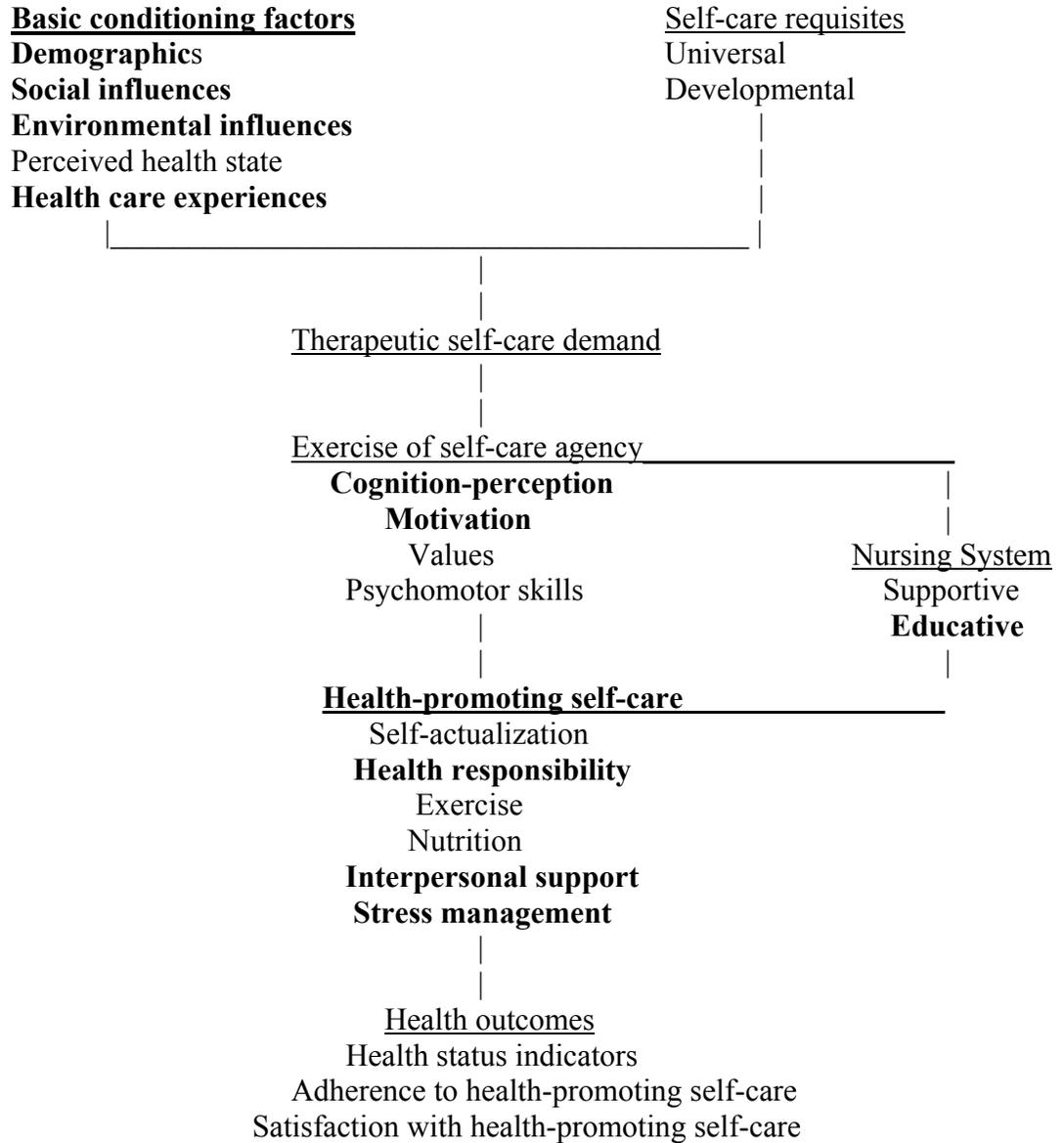


Figure 1. A theoretical model: Health-Promoting Self-Care System

Note: Bolded items of the model illustrate those concepts which apply to the variables of interest for this study.

This framework was chosen because it will identify and explain the cumulative and interactive relationships among factors which influence the decision making, performance, and outcomes of health promoting lifestyles (Simmons, 1990). The HPSCSM links nursing with both the attitudinal and behavioral patterns of one's health and is useful for identifying patterns among factors that may influence health promoting lifestyles (Simmons, 1990). In order to more fully describe the Health-Promoting Self-Care System Model (HPSCSM), the Health Promotion Model (Pender, 1982) will be described, followed by an overview of Orem's Self-Care Deficit Theory (Orem, 1985) and the Interaction Model of Client Health Behavior (Cox, 1982).

Health Promotion Model

The Health Promotion Model is one of three components of the HPSCSM. The HPM was proposed (Pender, 1982) and refined (Pender, 1987) to explain the health-promotion aspect of lifestyle. Pender (1987) believes that the health-promoting component of life-style is a positive approach to living that leads individuals toward realizing their highest potential for well being. The HPM describes biological characteristics, situational factors and interpersonal influences as key components which affect health-promoting behavior. This model applied to the underlying phenomena of interest for this study: health promotion.

Orem's Self Care Deficit Nursing Theory

The second component described in this model is Orem's Self-Care Deficit Nursing Theory (SCDT, 1985). The promotion and maintenance of health are recognized by Orem as outcomes to be achieved through self-care. Specific constructs of Orem's

SCDT are incorporated in the HPSCSM. These constructs include self-care (actions persons perform in the interest of maintaining life, health and well-being) and basic conditioning factors (age, gender, developmental state, conditions and patterns of living, family, sociocultural factors, health state and health-care system).

The notion of self-care is an important construct for nursing and has drawn nurse researchers to Orem's work (Burns & Grove, 2001). A publication by Denyes (1988) for example, describes how Orem's model can be useful in the study of health promotion. As described in this publication, Orem's general theory of nursing has provided insight into the conceptual nature of health outcomes in nursing situations; however her model of nursing can also be used to explore the concepts of health promotion. In this research, Orem's model provided direction and applied theory for the study of health promotion.

The Interaction Model of Client Health Behavior

The third and final component of the HPSCSM includes the Interaction Model of Client Health Behavior (IMCHB). The focus of the model is on the process by which the client's individual characteristics combine with sociopsychological, demographic and environmental factors to produce a selected health behavior. The model assumes that health care behavior is affected by the various aspects of the client individuality, including demographic and sociobehavioral characteristics, and by specific aspects of the client-provider relationship.

The IMCHB suggests that individual health behavior is influenced through multiple background variables that are expressed and interact with one another. The background variables include the client's demographic characteristics, the influence of

the client's social group, previous healthcare experiences, and environmental resources. These background variables apply to this proposed study.

Theoretical/Conceptual Framework Summary

The HPSCSM offers a unique expanded theoretical/conceptual perspective on the subject of health behavior and health promotion. An analysis of health behavior is a complex phenomena and one that requires an expanded perspective. Cox (1982), states that it is individuality which ultimately influences health behavior. Recognition of that individuality and a description of how interactions among demographic and sociopsychological variables affect outcome behavior could provide insight into client interventions, and subsequent tobacco prevention, cessations and control research (Cox, 1982).

The underlying concept of health promotion in itself incorporates broad phenomena and fits well within the comprehensive theoretical model chosen for this study. The HPSCSM is proposed as a framework for identifying and explaining sequential patterns among variables which influence the decision-making, performance, and outcomes of health promoting lifestyles (Simmons, 1990). Descriptive variables associated with nurses personal experience with smoking, demographic and socio-psychological influences relating to smoking behavior, and the nurses perceived role in health promotion are described in this research.

Purpose and Research Question

The purpose of this research was to describe nurses' personal experiences with smoking and the relationship of these experiences to demographics (age, gender, marital

status, education, clinical area, work shift) and socio-psychological influence (social influences, stress, and addiction). This research also described nurses' perceived role in health promotion. Among the study population of nurses, the following research questions were examined:

1. What are nurses' personal experiences with smoking?
2. What is the relationship between smoking and demographics?
3. What is the relationship between smoking and socio-psychological variables?
4. What is the relationship between smoking and the nurses' perceived role in health promotion?

Definitions

The major concepts in this study are defined conceptually and operationally to insure comprehension of their contextual use in this study. Conceptual and operational definitions are provided for the study variables; age, gender, marital status, education, clinical area, work shift, social influence, stress, addiction and the concepts of smoking, personal experience, and health promotion.

Age

Conceptual definition: Age refers to the length of time that one has existed; duration of life (Webster's Dictionary, 2004). Orem (1985) defines age as a basic conditioning factor which can influence self-care agency. The demographic characteristic of age also interacts as part of one's background profile to influence health behavior (Cox, 1982).

Operational definition: For the purpose of this study, age was measured in years through self-report in item number 1 of the Oncology Nurses Tobacco Control Survey (ONTCS) which asks the respondent to indicate their year of birth.

Gender

Conceptual definition: Gender refers to the condition of being male or female; sex (Webster's Dictionary, 2004). Orem (1985) defines gender as a basic conditioning factor which can influence self-care agency. The demographic characteristic of gender also interacts as part of ones background profile to influence health behavior (Cox, 1982).

Operational definition: Gender was measured as a self report in item number 2 of the ONTCS which asks the respondent to indicate whether they are male or female.

Marital status

Conceptual definition: Marital status refers to the condition of being married or unmarried (Webster's Dictionary, 2004). Orem (1985) defines family and conditions and patterns of living as a basic conditioning factor which influences self-care agency. The demographic characteristic of marital status also interacts as part of ones background profile to influence health behavior (Cox, 1982).

Operational definition: For the purposes of this study marital status was measured as single, married, divorced, widowed or partnered/living with someone by item number 5 of the ONTCS.

Education

Conceptual definition: Education refers to the knowledge or skill obtained or developed by a learning process (Webster's Dictionary, 2004). The primary assumption of

Simmons (1990) model is that individuals are capable of developing knowledge, attitudes and skills necessary for deciding upon and performing health-promoting behaviors. The demographic characteristic of education also interacts as part of ones background profile to influence health behavior (Cox, 1982). Orem (1985) also defines education as a basic conditioning factor which influences self-care agency as well as a part of the nursing system.

Operational definition: Education was measured as self report in item number 8 of the ONTCS which asks the respondent to indicate their highest level of educational background in nursing. Additional descriptive information related to education was included in items number 7 and 7a which asks the respondent to indicate how long they have been a licensed vocational nurse or a registered nurse.

Clinical area

Conceptual Definition: Clinical area is identified as the context or environment within which nursing care is given (Mosby's Medical and Nursing Dictionary, 1986). The Interaction Model of Client Health Behavior (IMCHB) describes resources in one's environment as an influence for health behavior (Cox, 1982).

Operational definition: For the purposes of this study, clinical area was measured as self report by item number 13 of the ONTCS which asks the respondent to indicate their primary practice setting. Additional descriptive information related to clinical area was included in items number 9 through 12 of the ONTCS which asks the respondent to indicate their primary functional area, whether they are primarily in an adult or pediatric clinical setting, general work setting, and primary position.

Work shift

Conceptual Definition: Work: activity in which one exerts strength or faculties to do or perform something (Webster's Dictionary, 2004). Shift: a group of people who work or occupy themselves in turn with other groups (Webster's Dictionary, 2004).

Operational definition: Work shift was measured as self-report in item number 15 of the ONTCS which asks the respondent to describe their current employment shift; days, evenings or nights.

Social influence

Conceptual definition: Social refers to marked or passed companionships with one's friend or associates tending to form cooperative and interdependent relationships with others of one's own kind (Webster's Dictionary, 2004). Influence refers to the power or capacity to cause an effect in indirect or intangible ways (Webster's Dictionary, 2004).

Social influence includes aspects of ones life that affect emotions and outcome behavior (Simmons, 1990). Social influence is described as a basic conditioning factor which influences health behavior (Orem, 1985). The amount and consistency of social influence are described in the IMCHB as interactive variables which influence health behavior (Cox, 1982).

Operational definition: Social influence was measured as a self report using a likert scale in item number 22 of the ONTCS which asks the respondent to rate among three factors the reasons for their current smoking behavior; stress, social influences, and addiction. A single score was measured in this item. Descriptive information about social influences on smoking behavior was included in items number 24, 25 and 26 of the ONTCS which

asked the respondent to indicate if they have had any experiences with household family members who smoke as well as experiences with a tobacco related illness in a family member or friend.

Stress

Conceptual definition: Stress occurs when demands placed on the person exhaust their resources (Webster's Dictionary, 2004). The concept of stress management is addressed in the HPM as a dimension of health-promoting self-care (Pender, 1987).

Operational definition: Stress was measured as a self report using a likert scale in item number 22 of the ONTCS which asked the respondent to rate among three factors the reasons for their current smoking behavior; stress, social influences, and addiction. A single score was measured in this item

Addiction

Conceptual definition: Addiction is the compulsive, uncontrolled dependence on a substance, habit, or practice to such a degree that cessation causes severe emotional, mental, or physiological reactions (Mosby's Medical and Nursing Dictionary, 1986).

Addiction to tobacco is included in this study.

Operational definition: Addiction to tobacco was measured as a self report using a likert scale by item number 22 of the ONTCS which asked the respondent to rate among three factors the reasons for their current smoking behavior; stress, social influences, and addiction. A single score was measured in this item.

Smoking

Conceptual definition: Smoking refers to the inhalation of tobacco smoke from cigarettes, cigars or pipes. Tobacco may include any type of tobacco product including cigarettes, cigars, pipes, chewing tobacco and snuff (Sarna, 2000). To facilitate comparisons with other studies, tobacco use in this study referred to cigarette use only. Smoking status; current smokers; former smokers and non-smokers was defined as follows:

1. Current smokers was defined as those who had smoked at least 100 cigarettes in their lifetime and were still smoking.
2. Former smokers was defined as those who smoked at least 100 cigarettes in their lifetime and are no longer smokers.
3. Non-smokers included those respondents who indicated that they have never smoked or were former smokers.

Operational definition: For the purposes of this study smoking status was measured as a self report in item number 18 and 20 of the ONTCS which asked the respondent to indicate if they have smoked at least 100 cigarettes in their lifetime and do they currently smoke.

Personal experience

Conceptual definition: Personal refers to those aspects which are particular to a given individual. Experience is the accumulation of or skill that results from direct participation in events or activities (Webster's Dictionary, 2004). Orem (1985) defines healthcare experience as a basic conditioning factor which influences self-care. Personal

experiences include multiple variables of ones individuality that interact with one another to produce a behavior (Cox, 1982).

Operational definition: Personal experiences as it relates to smoking was measured as a self-report in items 18, 19, 20 and 21 of the ONTCS which asked the respondent to indicate if they have smoked at least 100 cigarettes in their lifetime, what age they began to smoke, their current smoking status and how many cigarettes they smoke on an average day.

Descriptive information related to smoking behavior was included in items number 6, 16, 17, 23 and 27 of the ONTCS which asked the respondent to indicate if they have had a personal experience with a tobacco related illness, their experience with tobacco prevention and cessation learning opportunities in nursing school, their experience with quitting smoking, and their experiences with patients and tobacco in clinical practice.

Health promotion

Conceptual definition: Pender has defined health promotion as the health-promoting component of life-style which leads individuals toward realizing their highest potential for well-being (1987). Health promotion incorporates practices which enhance or sustain well-being (Pender, 1987).

Operational definition: Descriptive information related to nurses' perceptions of their role in health promotion was included in items numbered 34 and 35 of the ONTCS.

These items asked the respondent to indicate the level of importance of tobacco control

activities to health promotion and to predict, through self report, patient cessation outcomes following nursing intervention.

Assumptions

Three assumptions were identified for this study.

1. Participants responded honestly to the questions on the survey and their responses were valid.
2. Previous reliability and validity testing of the instrument would be upheld in this study.
3. Nurses share the primary goal of health promotion as healthcare professionals.
4. Nurses have the personal responsibility to promote their own health.

Limitations

Three limitations were identified for this study.

1. A convenience sample was used for this study which represented one geographic area.
2. The tools were based on self-report and, therefore, relied on truthful, accurate responses from the subjects.
3. Nurses working in psychiatric services were not included in this sample.

Summary

Tobacco use is a serious problem which threatens the health and well-being of many people, including nurses. Currently 1 billion people smoke worldwide and up to 50% of these will die of tobacco related diseases and illnesses (ICN, 2003). Nurses are uniquely positioned to enhance tobacco prevention and cessation strategies for their

patients; however, nurses who choose to smoke threaten their health promotion role as well as their own health and well being.

The researcher chose the Health-Promoting Self-Care System Model (HPSCSM) as the theoretical model because of its comprehensive nature and application to the study variables included with the scope of this descriptive study. The purpose of this study was to describe nurses' experiences with smoking as well as describe the relationship between nurses smoking behavior in relation to demographics (age, gender, marital status, education, clinical area, and work shift) and socio-psychological influence (social influences, stress, and addiction). The relationship between smoking and the nurses' perceived role in health promotion was also described in this research. The current study identified factors related to nurses smoking behavior and serve as a guide for future prevention and cessation strategies specifically suited to meet nurses' needs.

CHAPTER II

LITERATURE REVIEW

Introduction

This chapter provides a review of the literature which describes the problem and experiences of smoking among nurses. A discussion of the literature for the demographic and sociopsychological variables of age, gender, marital status, education, clinical areas, work shift, social influence, stress, addiction and the influences of smoking on the role of health promotion will also be described. The Health-Promoting Self-Care System Model (Simmons, 1990) is presented in this review within the context of how it will apply to this study.

Nurses' experience with smoking

In the 21st century, tobacco will become the number one cause of preventable death throughout the world, resulting in half a billion deaths of the global population (World Health Organization [WHO], 1997). In the United States approximately 48 million adults and 4.5 million adolescents smoke (Centers for Disease Control, 1998). Tobacco use in Texas alone accounts for 30,000 annual deaths each year (National Center for Tobacco-Free Kids, 2002).

Smoking rates among nurses compares to the general population rate and has been clearly documented in the literature (Becker et al., 1986; Booth & Faulkner, 1986; Elkind, 1980; Jacobson, 1981; Rowe & Clark, 2000; Tagliacozzo & Vaughn, 1982). A randomized study surveyed 545 nurses in Connecticut and revealed that 25.5% of nurses

were current smokers (Knobf & Morra, 1983). Becker et al. (1986) also surveyed the smoking behavior of 1,380 nurses in the United States and found that 22% of nurses smoked. Gritz et al., (1988) noted that approximately 23% of nurses smoke.

The problem of smoking among nurses is evident in these early studies, as well as many others (Booth & Faulkner, 1986; Elkind, 1980; Jacobson, 1981; Tagliacozzo & Vaughn, 1982). A review of the literature conducted by Rowe & Clark (2000) documented the incidence of smoking amongst nurses. In this review they noted that in a number of earlier studies (1970's) the population of nurses who smoked exceeded that of the general population. With respect to recent studies they concluded that research into the smoking behavior of the nursing population overall has been scarce and has not kept pace with comparisons to general population government surveys. It would therefore be difficult to determine with any degree of accuracy the current situation with regard to nurses and tobacco use and further study was recommended.

Findings from a secondary analysis of 73 surveys which described the tobacco consumption of nurses in 21 countries during the period of 1959 to 1988 also suggest further study into the subject of smoking among nurses (Adriaanse, Reek, Zanderbelt &, Evers, 1991). This analysis compared smoking among nurses to the general population and found no difference. The exceptions noted were Sweden, Ireland, Switzerland, W. Germany, Czechoslovakia, Portugal, Spain, and Australia which showed that smoking among these nurses actually exceeded that of the general population. Finland was the only country among 22 studied in this review where nurses did not compare or exceed the smoking prevalence of the general population. Their analysis concluded that further

research into nurses' smoking should be based on comprehensive designs taking into account life-style variables as well as variables characteristic of the work environment.

Demographic Variables

According to Webster's dictionary (2004), demographics characterize human populations, or segments of human populations, by age, gender, income etc. For the purposes of this research the demographic variables of study included age, gender, marital status, education, clinical area and work shift.

Age

The demographic variable of age has been discussed in several studies (Becker et al., 1986; Knobf & Morra, 1983; Rausch, Zimmerman, Hopp & Lee, 1987; Rowe & Clark, 1999; 1988; Sarna et al., 2000). Very few studies, however, provide recent data which have directly examined the relationship of smoking to age among nurses. A randomized study of the smoking habits of nurses in Connecticut (N=545) reported that the age range for current smokers was 25-54 years (Knobf and Morra,1983). This study found that there were more nurses between the ages of 35-44 who have quit smoking and more nurses who have never smoked between the ages of 25-34. In the age category 45-54, the prevalence of current smokers seemed to be greater, which concurred with the general population. The current study's aim is to better understand the relationship between the demographic variable of age and current tobacco users, former tobacco users and non-tobacco users among the nursing population.

A study of the smoking behavior of student nurses enrolled in diploma, associate, and undergraduate nursing programs found that there was a significant difference of

smoking prevalence according to age groups (Rausch et al., 1987). The lowest percentage of smokers (16.7%) was in the 19 and younger age group while the highest percentage of smokers (40%) was in the 45 and older age group. A study of the smoking behavior and attitudes toward smoking among hospital nurses found that among their sample ($N = 1380$) that the highest prevalence of current smokers was in the 41-50 age group (Becker et al., 1986). These studies (Knobf & Morra, 1983; Rausch et al., 1987; and Becker et al., 1986) were conducted in the 1980's and their pattern of smoking prevalence may differ from the tobacco use patterns of nurses today. The current study will provide recent information about the relationship between age and smoking.

The conclusions from these studies also contradict other research findings which conclude the majority of tobacco users began smoking during adolescence (Rowe & Clark, 1999; Sarna et al., 2000). Rowe & Clark (1999) studied the effectiveness of a smoking cessation intervention specifically designed for nurses and student nurses. This study showed that the majority (97%) of the sample ($N = 236$) had commenced smoking prior to entering the nursing profession and the participants stated that peer influence during adolescence was the main factor for initiating tobacco use.

A study of the tobacco-control attitudes and smoking behaviors of oncology nurses noted among the sample population ($N = 1,508$) that 51% of the current smokers were 40-49 years of age whereas only 4% of current smokers were between the age of 20-29 (Sarna et al., 2000). Among this sample 57% of nurses began smoking when they were <18 years of age: 36% began smoking at 18-21 years of age, and only 7% began smoking > 21 years of age. This study also revealed that among the sample population

17% of the smokers had started before 14 years of age and the average age of smoking initiation by current smokers was 17.1 years with a SD of 4.7 years.

The studies noted in this review (Knobf & Morra, 1983; Rausch et al., 1987) were not only conducted prior to 1990 but reveal contradictory findings with respect to smoking and age. Nursing students were included in some of these studies (Rausch et al., 1987; Rowe & Clark, 1999), therefore, findings may not fully reflect the behavior of nurses in the work environment. The current study examined the demographic variable of age as it pertains to current smoking among nurses employed in an urban medical center. The current study's aim was to discover if there is a relationship between age and smoking, and if so, the nature of that relationship.

Gender

There have been several studies which included gender in the description of the sample (Becker et al., 1986; Hawkins et al., 1982; Ferrence, 1988; Rowe & Clark, 2000). Similar to the demographic variable of age, very few studies provide recent data which directly examine the relationship of smoking to gender among nurses. A study of the smoking behavior and attitudes toward smoking among hospital nurses found that among the sample population ($N = 1,380$) men were more likely to be current smokers than women (33.3 % vs. 21.2 %) (Becker et al., 1986). In a large study, ($N = 35,825$) which assessed the relationship between stress and smoking, 46.1% of male nurses smoked compared to 32.2% of female nurses (Hawkins et al., 1982).

A Canadian reconstructed cohort study specifically examined gender differences in smoking from the period of 1900 to 1978 (Ferrence, 1988). It was noted among the

sample population ($N = 19,448$) that smoking rates in 1975 among males aged 16-65 was 53% compared to 55% of females aged 16-45. Few women began to smoke before the 1940's but by 1975 the smoking prevalence of women was equal to men. While this study described tobacco use trends over a period of time with a large population, it was not specific for healthcare professionals.

A review of the literature conducted by Rowe & Clark (2000) noted that while there was a decrease in smoking among men from 1960 to 1975 (53% to 39%) and among women (32% to 29%) in the general population, smoking among nurses increased from 36% to 39% during the same period. Similar to the study conducted by Ferrence (1988), gender differences specific among the nursing population was not included in this review. Rowe & Clark (2000) recommended further study of gender as it relates to smoking incidence among nurses. The current study includes gender as a descriptive demographic variable in a sample of licensed professional nurses.

Marital Status

Several studies have noted a relationship between tobacco use and marital status (Bener, Gomes, Anderson, Abdullah, 1994; Dore' & Hoey, 1988; Gritz et al., 1988; Tagliacozzo & Vaughn, 1982). A study of the relationship between stress and smoking among hospital nurses noted among their sample ($N = 448$) that 13.7% of married nurses smoke compared to 25.4% of single nurses (Tagliacozzo & Vaughn, 1982). They concluded that abstinence from smoking by married women may be motivated by the presence of children in the home or by actual or expected pregnancies.

A study of the smoking practices, knowledge and attitudes regarding smoking among hospital nurses found among the sample ($N = 822$) that more single nurses smoked (Dore' & Hoey, 1988). They noted that 35% of nurses who smoked were either widowed, separated or divorced compared to 27% of single women and 17% of married women. These studies were conducted in the 1980's and may not reflect the current relationship between smoking and marital status today. The current study provides a description of the relationship between marital status to smoking among a population of nurses.

Contradictory to the findings of Tagliacozzo & Vaughn (1982) and Dore' and Hoey (1988), Gritz et al., (1988) and Bener et al., (1994) found no relationship between tobacco use and marital status in their studies. Gritz et al., (1988) evaluated a work-site self-help smoking cessation program for registered nurses and noted that among their sample of current smokers ($N = 149$) that 36.5% of current smokers were married compared to 35.8% of nurses who were single. A slight decrease in tobacco use was seen in the divorced/separated group (23.6%).

Bener et al., (1994) studied the smoking behavior among healthcare professionals and noted among their sample of current smokers ($N = 268$) that 33.9% were married compared to 31.3% who were single. A slight increase in tobacco use however, was seen in the divorced group (37.5). This study was conducted overseas in Arabia and included doctors, specialists, pharmacists and dentists in their sample. The current study examined the relationship between marital status and tobacco use specifically among licensed professional nurses in the United States.

Education

There are three major educational paths to registered nursing: Bachelor of Science (BSN) degree; nursing diploma, and an associate degree in nursing (ADN). The BSN path usually is a 4-5 year program located in a college or university. The Diploma path is usually a 3- year program located in a hospital or in conjunction with a community college. The ADN path is usually a 2- year program, whose focus is more on technical skills than theory, and is located in a community college. Nurses may also be prepared as a licensed vocational nurse (LVN) or a licensed practical nurse (LPN) by attending a 1-year preparatory program.

Several studies have explored the relationship between education and tobacco use and the majority has indicated that education is in fact the major demographic predictor of adult smoking (Gritz et al., 1988; Knobf & Morra, 1983; Nelson, Giovino, Emont, Brackbill, Cameron, Peddicord, et al., 1994). Nelson et al., (1994) for example, studied the trends of smoking among US physicians and nurses and noted that between 1974 to 1985 the prevalence of tobacco use among the general population in the United States declined rapidly among persons with college degrees including physicians and nurses. In the sample population ($N = 848$), smoking had declined among physicians (18.8%-3.3%), registered nurses (31.7%- 18.3%) and licensed professional nurses (37.1%-27.2%); however, the smaller decline in smoking prevalence was noted among licensed practical nurses. The current study examined the relationship between smoking to educational preparation specifically among the nursing population.

Similar results were found in another study which evaluated a worksite smoking cessation program for nurses (Gritz et al., 1988). Among the sample studied ($N = 178$), the prevalence of smoking was directly proportional to the years of nursing preparation; AD (46.6%); Diploma (27.7%); BSN (19.6%); Master/Ph.D (6.1%). Licensed vocational or licensed practical nurses were not included in this sample. The current study is inclusive of all levels of nursing preparation.

The study of smoking practices of nurses in Connecticut concluded as well that a higher proportion of non-smokers than smokers had bachelor's degrees (Knobf & Morra, 1983). Among the sample studied ($N = 545$) 65% of smokers had diplomas; 10% had associate degrees; 17.5% had bachelor's degrees and 7.5% had masters degrees or above. Aside from the attainment of formal education, they had also noted in their study that former smokers and non-smokers showed a slightly higher number of accrued annual hours of education, journals read, and membership in professional associations than smokers did. The current study addresses the relationship of formal educational preparation to smoking behavior.

Clinical Area

Several studies have examined the demographic variable of clinical area in their studies (Tagliacozzo & Vaughn, 1982; Hawkins et al., 1982; Dore' & Hoey, 1988; Becker et al., 1986; Sarna, Brown, Lillington, Wewers, & Brecht, 2000). Tagliacozzo and Vaughn (1982) studied the relationship between stress and smoking in hospital nurses and noted that the highest prevalence of smoking was found among psychiatric nurses (28.6%) next in sequence were obstetric nurses (25.6%); medical/surgical nurses

(24.4%); surgical nurses (23.8%); community health nurses (20.6%); operating room nurses (18.2%); and the lowest among pediatrics nurses (12.2%). The researchers concluded that the majority of nurses had already established smoking prior to entering the healthcare field; therefore it was difficult to establish a relationship between clinical area and tobacco use. The current study includes ambulatory settings in the sample.

In a large study which assessed the relationship between stress and smoking ($N = 35,825$) the demographic variable of clinical area was described (Hawkins, White, Morris, 1982). It was noted among this sample that psychiatric nurses had the highest prevalence of tobacco use (42.4%) with community health (21.1%) and pediatric (21.4%) nurses having the lowest prevalence of tobacco use. Tobacco use among administration was also high in this large sample (32.3%) which concur with the findings of Dore' & Hoey (1988) and Becker et al., (1989).

A survey of 822 nurses in two hospitals in Canada found that the highest prevalence of tobacco use was among those who were employed in critical care, recovery room and the emergency room (33%) (Dore' and Hoey, 1988). Tobacco use was found to be lowest among psychiatric nurses (26%), administrative staff and outpatient nurses (20%). The current study provided a current description of tobacco use prevalence among nurses employed in various clinical settings in a U.S. based hospital.

A study of the smoking behavior and attitudes toward smoking among hospital nurses noted that among their sample ($N = 1,380$) the highest prevalence of current smokers was among nurses employed in administrative positions, emergency rooms, psychiatry, and general medicine while the lowest prevalence of current smokers was

among pediatric nurses (Becker et al., 1986). This study did not provide data on the percentage of nurses who smoked in each clinical area and it did not include ambulatory settings. The current study includes ambulatory settings as well as information which describes the prevalence of tobacco use behavior among the various clinical areas.

In a recent study conducted by Sarna et al., (2000), tobacco use among oncology nurses ($N = 1,508$) was 7% which is significantly lower than those studies (Hawkins et al., 1982; Dore' & Hoey, 1988; Becker et al., 1986) which described the pediatric population (21.4% & 12.2%) as having the lowest tobacco use prevalence. Sarna reveals that it is possible that oncology nurses who smoke may have been less likely to return the survey; thus the smoking prevalence may have be higher than that reported. The current study included a variety of clinical areas including an outpatient cancer center.

Work Shift

The demographic variable of work shift has been described in several studies (Gritz et al., 1988; Jacobson, 1981; and Dore' & Hoey, 1988). An evaluation of a workplace smoking cessation program for nurses found that the majority of tobacco users were employed on the day shift (69.4%) (Gritz et al., 1988),. However, another study found that nearly twice as many nurses smoked on the night shift (46%) as compared to those nurses who worked on the day shift (29%) (Jacobson,1981). A study of tobacco use among Canadian nurses also found ($N = 822$) that slightly more nurses smoked on the evening and night shift (22%) compared to daytime nurses (19%) (Dore' & Hoey, 1988). These studies did not reveal a consistent relationship between work shift and tobacco use. In the current study the employment shift of days, evenings, and nights was examined.

Sociopsychological Variables

According to Webster's dictionary (2004) the term sociopsychological involves a combination of social and psychological variables. Social variables include the interaction of the individual with members of society and psychological variables include the mental or behavioral characteristics of an individual or group. For the purposes of this research the sociopsychological variables that were studied included social influence, stress and addiction.

Social Influence

The term social influence refers to interdependent relationship of ones' own kind and their capacity to cause an effect in intangible ways (Webster's Dictionary, 2004).

The sociopsychological variable of social influence has been examined at some extent in several studies (Carmichael & Cockcroft, 1990; Gritz et al., 1988; Rowe & Clark, 1999; Rowe, 1998; Sarna et al., 2000). In the study ($N = 236$) conducted by Rowe and Clark (1999), the effectiveness of a smoking cessation intervention designed for nurses was analyzed and included the sociopsychological variable of social influence. They found that the majority of nurses (62%) commenced their smoking habit prior to entering nursing with 89% of nurses indicating being influenced by their peers as adolescents. The sample group disclosed that they also had spouses, partners or parents who smoked.

A study of the tobacco-control attitudes, advocacy, and smoking behaviors of oncology nurses found that among the sample studied ($N = 1,508$) 36% began smoking during nursing school (18-21 years of age) (Sarna et al., 2000). The majority (57%), however, began smoking before 18 years of age. Similar to these findings, Rowe (1998)

found that student nurses smoked for the same reasons as young adolescents in the general population and that the major barrier to stopping smoking was the influence of peer relationships.

A survey of the smoking habits of student nurses ($N = 152$) in a London teaching hospital noted that 18% had started smoking after starting nurse training and 62% said they had increased their smoking during nurse training (Carmichael & Cockcroft, 1990). The reason for the increased tobacco use among the student population was not clear in this study. The researchers concluded that stress, peer influence or other possible variables as significant influences among this group and recommend further study. The student nurse population may also reveal different responses compared to already practicing nurses. The current study assessed the impact of social influence on smoking behavior among nurses.

A study which evaluated the effectiveness of a smoking cessation program designed for nurses found that successful quitters were characterized as having a higher sociodemographic status, more likely to be married, less likely to have a spouse who smoked, have better social/psychological resources than those who were not successful at quitting (Gritz et al., 1988). In the current study the relationship between social influence and smoking is examined.

Stress

Several studies have examined stress as a potential influence for nurses smoking behavior (Adriaanse, Reek, Zanderbelt, & Evers, 1991; Elkind, 1988; Hawkins et al., 1982; Carmichael & Cockcroft, 1990; Jacobson et al., 1981; Gritz et al., 1988). Tensions

and frustration make nursing a stressful profession and nurses may find relief from their occupational stress through smoking (Adriaanse et al., 1991). However, this observation does not explain why many nurses do not smoke and why many studies have shown that nurses took up the habit prior to entering the healthcare field (Hawkins et al., 1982; Rowe & Clark, 1999; Tagliacozzo & Vaughn, 1982;). Adriaanse noted that nurses who work in the hospital setting are considered to have restricted autonomy adding to the stress of their work. Community nurses were found to have more personal control over their work, lower stress, and lower smoking prevalence than their hospital-based colleagues. This observation may explain the reduced prevalence of smoking among community health nurses noted among other studies (Hawkins et al., 1982; Rowe & Clark, 2000).

Elkind (1988) was one of few researchers who specifically studied the relationship between stress and nurses smoking behavior. Similar to other research findings (Hawkins et al., 1982; Rowe & Clark, 1989; Tagliacozzo & Vaughn, 1982;). Elkind noted that the patterns of smoking prevalence had already been established prior to entering the nursing profession. Influences such as maladaptive coping techniques and absence of outside social support (family and non-nursing friends) may be associated factors worthy of additional review. The current study assessed through respondent self-report the relationship between reported stress to smoking among nurses.

A study of the relationship between stress and nurses smoking found that among the 48% of nurses who smoke more than half (54%) started smoking before entering the profession and 38.9% started the habit during training (Hawkins et al., 1982). As well 36% of the nurses surveyed stated that they had increased their smoking since starting

nursing. Carmichael and Cockcroft (1990) as described earlier, also noted that 18% of student nurses began smoking during nurse training and current smokers stated that they had increased their smoking during training. In the current study the relationship between stress and smoking behavior are examined.

A study of the smoking habits of 210 nurses noted several reasons for their current smoking behavior (Jacobson et al., 1981). These reasons included responses such as, “I smoke because I enjoy it” (63%), “because of sheer habit” (54%), “when angry or frustrated” (43%), and “to keep my weight down” (26%). In this study the majority of responses (69%) reported that they smoked whenever they felt anxious or under pressure. The researcher disclosed the difficulty in establishing a relationship between stress and nurses smoking behavior due to the same reasons cited in previous studies that the majority of nurses started smoking prior to entering the nursing profession (Adriaanse, et al., 1991; Elkind, 1988; Rowe & Clark, 1999; Tagliacozzo & Vaughn, 1982).

An interesting observation was made in a study which examined the effectiveness of a smoking cessation program specifically designed for nurses (Gritz et al., 1988). Self-reported stresses arising from caring for critically ill or dying patients were associated with a higher tobacco quit rate. These findings suggest that stress related to patient care may actually facilitate smoking cessation in nurses. In the current study the relationship between stress and smoking were examined.

Addiction

A review of the literature revealed that no studies have been conducted to examine the concept of addiction as it specifically relates to nurse’s smoking behavior. The addictive

nature of nicotine, however, among the general population has been documented by key healthcare organizations including the Centers for Disease Control, World Health Organization, American Cancer Society, and the American Lung Association. A review of the scientific basis for addiction found that some individuals, due to allele maladaptation, may actually be genetically at higher risk for nicotine dependency (Fernandez-Slquero & Cholerton, 1995; Heath & Martin, 1993). The current study assesses the relationship between addiction and smoking among nurses.

Nurses perceived role in health promotion

There have been several studies which have assessed the nurses' perceived role in health promotion (Becker et al., 1986; Booth & Faulkner, 1986; Clark et al., 1990; Dore & Hoey, 1988; Knobf & Morra, 1983; Nelson et al., 1994; Rowe & Clark, 1999; Sarna et al., 2000). One study assessed the smoking practices, knowledge and attitudes regarding smoking among university hospital nurses and found that overall nurses felt that part of their role should be to set a good example, (by not smoking) and that nurses should try to convince patients to stop smoking (Dore' & Hoey, 1988). In this study, these attitudes were more positive among non-smokers and former smokers than among current smokers although 62.5% of the current smokers indicated that this was part of their role.

A study of the smoking behavior and attitudes toward smoking among hospital nurses found that among their sample ($N = 1380$), 65% of never smokers, 68% of former smokers and 50% of current smokers agreed that it is the role of the nurse to counsel patients to stop smoking (Becker et al., 1986). This study showed that half of the smoking nurses held attitudes which were not supportive of their role to help patients to

stop smoking. The current smokers in this study also expressed stronger support of designated smoking areas for patients. An additional study assessed the links between nurses and smoking and concluded that nurses smoking behavior affected their advice to patients (Booth & Faulkner, 1986). Smoking nurses compared to their non-smoking colleagues were less likely to relate advice about smoking to their patients.

A study which assessed the trends in smoking among US physician and nurses concluded that because of their important roles as exemplars of health educators, physicians and nurses should not smoke (Nelson et al., 1994). This study found that smoking by physicians and nurses undermines the message to patients about the adverse health effects of smoking and those who smoke were less likely to recognize their importance as health educators or to encourage smoking cessation to their patients.

Another study evaluated the effectiveness of a smoking cessation intervention designed for nurses and found that current smokers felt guilty about the influence their smoking behavior had on their health promotional role (Rowe & Clark, 1999). Former smokers agreed also in this study that stopping smoking had positively influenced their role as a promoter of health and felt they had more understanding of patients needs in relation to stopping. A correlational analysis of smokers, former smokers, and non-smokers of nurses in Connecticut found that current smokers did not identify themselves as advocates for health compared to the former smokers and non-smokers (Knobf & Morra, 1983). More current smokers also disagreed in this study that nurses should set a good example or not smoke in public when in uniform.

A more recent study assessed the tobacco control attitudes, advocacy and smoking behaviors of oncology nurses and found that nurses who smoked did not place the same value on the importance of advocacy efforts in tobacco control compared to their non-smoking colleagues (Sarna et al., 2000). Smokers were also less likely to endorse the concept of the nurse as a nonsmoking role model.

A further study assessed the nurses' perceived role in health promotion following cessation intervention for patients. The intervention consisted of 3 steps, 1) the nurse giving advice to smokers, 2) providing them a leaflet, 3) and warning the smoker that there would be follow-up. One year following this intervention it was noted that 17% of the sample (N = 68) had successfully given up smoking and 12% had substantially reduced their cigarette consumption. As well 43% of the patients said they had made at least one serious attempt to quit. These findings suggest that that among this sample, 60% have been influenced in some way by nursing intervention. The nurses involved in this study felt very positive about the impact they had on patient health and outcomes.

This study did not assess the relationship of nurse's personal smoking to their perceived health promotional role; however it did reveal a very important point which relates to nurses and health promotion. Increased awareness of nursing influence on patient outcomes has the potential to motivate nurses to put forth more effort as well increase the value of their perceived role in health promotion. A review of the Interaction Model of Client Health Behavior also incorporates the element of motivation in its framework. The experiences of feeling competent provide an intrinsic reward for the individual and serves as a valuable motivator to promote health and healthy behavior

(Cox, 1982). The current study assesses nurses' smoking behavior to their perceived role in health promotion and was guided by aspects of the Interaction Model of Client Health Behavior.

Health-Promoting Self-Care System Model

Amelia Maglacas, the chief nursing scientist of the WHO in 1987 was the primary inspiration for Simmons in the development of the conceptual framework used in the HPSCSM model (Maglacas, 1988). Maglacas envisioned people synthesizing personal choice and social responsibility to create a healthier future. Maglacas reinforced the importance and influence of the nursing role in health promotion. Simmons (1990) proposes that the HPSCSM could be used to help organize perspectives for explaining the cumulative and interactive relationships among factors which influence the decision-making, performance and outcomes of health promoting lifestyles.

An example of one study published in the May/June (2004) edition of Nursing Research described how this model was effective for their study. This study, explored the relationship between health motivation, self-rated health, and health behaviors in community dwelling men through the utilization of a descriptive, correlational survey design (Loeb, 2004). The survey was distributed to 135 men and included demographic items as well as self report health promotion items. According to Loeb, the HPSCSM was useful in this setting as this model helped synthesize and expand upon the attitudinal and behavioral patterns of client's health. This observation concurs with the observations made by Simmons where she described the HPSCSM as a useful model for explicating patterns among facets influencing health-promoting lifestyles (1990). Similar to the

study conducted by Loeb, the current study applies the HPSCSM to a descriptive correlational design. This model was appropriately suited to the study of demographic (age, gender, marital status, education, clinical area, work shift) and sociopsychological (social influences, stress, addiction) variables and identification of tobacco use among nurses.

Summary

The literature has consistently supported that there is a problem of tobacco use among nurses and has emphasized the nurse's important role in health promotion. Among this literature review many shortcomings were noted. Several studies were based on mixed samples, including student nurses and other healthcare professionals such as physicians, pharmacists and dentists (Bener et al., 1994; Cockcroft & Carmichael, 1990;). In addition, the samples were often small, less than 200 participants (Clark et al., 1990; Gritz et al, 1988; Rowe & Clark, 1999). Cross-national comparability may have also been hampered by variability of definitions, procedures and formats of those studies conducted in countries other than the United States (Adriaanse et al., 1991; Bener et al., 1994; Booth & Faulkner, 1986; Carmichael & Cockcroft, 1990; Dore' & Hoey, 1988; Ferrence, 1988; Rowe & Clark, 1999 & 2000). The majority of the studies noted in this review were also conducted prior to 1990 (Becker et al., 1986; Booth & Faulkner, 1986; Dore' & Hoey, 1988; Elkind 1979; Elkind, 1980; Ferrence, 1988; Gritz et al., 1988; Hawkins et al., 1982; Jacobson, 1981; Knobf & Morra, 1983; Rauch et al., 1987; Tagliacozzo & Vaughn, 1982).

In addition to these shortcomings, a review of the literature revealed contradictory findings between studies and poorly defined relationships among many of the study variables in relation to smoking behavior. For example, some studies found that more older nurses smoked (Knobf & Morra, 1983; Rausch et al., 1987) while other studies noted the highest prevalence among younger nurses (Rowe & Clark, 1999; Sarna et al., 2000). Some studies also found more married nurses smoked (Bener et al., 1994) compared to single nurses while other studies noted the opposite trend (Tagliacozzo & Vaughn, 1982; Dore' & Hoey, 1988). Similar contradictions were also noted among the demographic variables of gender, clinical area, and work shift. Thus the current study addresses the gaps and contradictions noted in previous studies of nurses and tobacco use.

CHAPTER III

RESEARCH METHODS

Introduction

This study explored nurses' experiences with smoking and described the relationship between nurses smoking behavior in relation to demographics (age, gender, marital status, education, clinical area, and work shift) and sociopsychological influence (social influence, stress, addiction). This study also described the relationship between smoking and the nurses' perceived role in health promotion. This chapter outlines the methodology used in the study of factors related to nurses' smoking behavior. It includes a description of the research design, population, and sample. Data collection procedures including instrument, procedures followed, and statistical analysis will be presented. Measures to protect human subjects are also discussed in the conclusion of this chapter.

Design

The design selected for this study was descriptive correlational. The purpose of descriptive research is to observe, describe, and document aspects of a situation (Polit, Beck, & Hunger, 2001). A descriptive correlational nonexperimental design is well suited and appropriate for the purposes of this study since this design is used to describe relationships among variables without necessarily seeking to find a causal relationship (Polit et al., 2001). In addition, the design was chosen because the purpose of this study is to describe nurses' personal experiences with smoking and relationships between the selected nursing demographic variables of age, gender, marital status, education, clinical

areas, work shift and the sociopsychological variables of social influences, stress and addiction in nurses working in an urban teaching hospital.

Population

The target population of this study included nurses who were currently employed in acute and ambulatory care settings of an urban medical center in a south central city in Texas. The nursing population included those who are both licensed vocational nurses and registered nurses.

Sample

A convenience sample of 150 nurses currently employed by a large (235 bed) urban medical center was used for this study. A representative sample is very important when conducting descriptive correlational research as this will help determine an existence of a relationship between the study variables (Burns & Grove, 2001). Diversity within this study will correlate with the sample population randomly selected and no effort was made to manipulate the variables of study.

Inclusion Criteria

1. Must be a registered nurse or a licensed vocational nurse.
2. May be employed either in a full-time, part-time, on-call, or temporary position.

Exclusion Criteria

1. Those who are not willing participants.

Sample Size Determination

Power is the probability that a statistical test will detect a significant difference exists. Power analysis is used to determine the power of a study (Burns & Grove, 2001).

The deciding factor in determining an adequate sample size for correlational studies is power. The level of significance (α) is the probability of making a Type I error (rejecting the null hypothesis when it is true) and making a Type II error (not rejecting the null hypothesis when it is false). A power analysis was used to determine sample size as this analysis can help determine the risk of a Type II error. Reducing the risk of a Type II error is significant when conducting nursing studies since study results may impact patient care outcomes. To reduce the risk of Type II error researchers should strive to obtain a power of 0.8, an alpha of 0.05, and a medium effect size (Burns & Grove, 2001). Power analysis for correlation with a power of 0.8, an alpha of 0.05, and medium effect size ($r=0.3$), would require a sample size of 83 (Burns & Grove, 2001).

Setting

The care settings at an urban 235 bed teaching medical center in West Texas included the intensive care unit, medical surgical units, operating room, pediatric unit, newborn nursery, labor and delivery, and emergency room. Nurses employed in education, management/administration and the outpatient cancer center were also included.

Instrument

The Oncology Nurses and Tobacco Control Survey (ONTCS) is a tool originally developed in 1998 by the University of California Los Angeles School of Nursing. The survey was developed to identify tobacco interventions by oncology nurses in clinical practice. The ONTCS was mailed to 4000 randomly selected members of the Oncology Nursing Society across the nation (Sarna, Lillington &, Brecht, 2000).

The ONTCS was revised with permission for use in this study (see Appendix A). The researcher excluded oncology nursing specific items from the original 47 item survey to allow for similar use among more diverse nurse practice settings. Questions related to nurses opinions in tobacco cessation, legislation, and health policies were omitted from the survey. The revised version of the ONTCS met the objectives for this study and contained 35 items. These items represent nurses' personal experiences with smoking, demographics (age, gender, marital status, education, clinical areas, work shift), sociopsychological influence (social influences, stress, and addiction) and perceptions of the nursing role in health promotion. The survey items asked the respondent to circle the best answer, place a check mark on, or fill in the blank with a yes or no or reply to the "other" option.

Reliability and Validity

Ensuring that instruments have adequate reliability provide data values with less random error and enhances the power of the study to detect significant differences or relationships in a population under study (Burns & Grove, 2001). Content validity examines the extent to which the method of measurement includes all the major elements relevant to the construct being measured (Burns & Grove, 2001). The reliability and the validity of the 45 item survey was tested in other research studies and has been documented in great detail (Sarna, 2000). The 35 item survey used in the current study was not pretested for reliability or validity.

Reliability

Reliability of the instrument was evaluated using two techniques: test-retest and internal consistency (Cronbach alphas). The test-retest evaluation and pilot questionnaires were sent to 100 Oncology Nursing Society Members with a yielded 33% response rate. Sarna (2000) noted the Cronbach alphas of the subscales in the final survey (n=1508) were acceptable ($\alpha = 0.92$ for tobacco control interventions, $\alpha = 0.79$ for facilitators for intervention, and $\alpha = 0.82$ for barriers to intervention).

Validity

To ensure content validity, Sarna (2000) developed the survey items based on a comprehensive literature review and the Agency for Health Care Policy Research (AHCPR) guideline. Following revisions of the survey items based on the review of a panel of three experts, Sarna utilized 3 focus groups (6-12 participants in each group) representing various regions of the U.S to review the survey. Trained group facilitators used a standard moderator guide to audio tape and transcribe the comments made to the survey. Further revisions were made to the survey based on the input of the focus groups. This version was used in the survey distributed nationally to oncology nurses.

Measurement

This research included a description of nurses' personal experiences with smoking and two broad categories of variables that are thought to influence smoking behavior, 1) demographic variables, and 2) sociopsychological variables. The relationship between smoking and nurses' perceived role in health promotion was also included in this research. The items included in the ONTCS which corresponded to the study variables were as follows:

Personal experiences with smoking

Personal experiences with smoking were measured in items 18, 19, 20, and 21 of the ONTCS. Question number 18 and 19 asked the respondent to indicate yes or no if they have smoked at least 100 cigarettes in their lifetime and at what age they began to smoke. Question number 20 and 21 asked the respondent to indicate yes or no if they currently smoked and how many cigarettes they smoked on an average day.

Personal experience was measured in two ways: 1) Amount of smoking will be determined as a continuous number. Scores can range from 1 to no specific upper limit, but presumably less than 1000. This number was used in statistical analysis about personal experience. 2) How long subjects have smoked was determined and used separately in statistical analysis about personal experiences, scores can range from 1-100.

Items number 6, 16, 17, 23 and 27 provided additional descriptive information related to the respondents personal experiences with smoking. Item number 6 asked the respondent to indicate any personal experiences with a tobacco-related illness and items 16 and 17 ask the respondent to recall any educational opportunities in nursing school related to tobacco prevention and cessation. Item number 23 asked the respondent to indicate their experience with smoking cessation and item number 27 asked the respondent to indicate personal encounters with patients who smoked in clinical practice.

Demographic variables

1. Age was measured in years by item number 1 of the (ONTCS). This is a ratio level of measurement.
2. Gender was measured as either male or female by item number 2 of the

ONTCS. This is a nominal level of measurement.

3. Marital status was measured as single, married, divorced, widowed or partnered/living with someone by item number 5 of the ONTCS. This is a nominal level of measurement.

4. Education was measured by item number 8 which asks the respondent to circle the highest level of educational background in nursing. Educational level options included in this item are licensed vocational nurse, diploma, associate, bachelor, masters and doctorate. This is a nominal level of measurement.

Additional descriptive information related to education was included in items number 7 and 7a of the ONTCS which asked the respondent to indicate their years of experience as a licensed vocational nurse or a registered nurse.

5. Clinical area was measured by the respondents circling options in item number 13 of the ONTCS which asked the respondent to indicate their primary practice area. Practice areas included in the ONTCS included; out-patient cancer center, public health/community health, intensive care unit, general med/surg, pediatrics, post partum/nursery, labor and delivery, emergency room, management, operating room, rehab, and other. These are nominal levels of measurement.

Additional descriptive information related to the respondents clinical area were included in items 9, 10, 11, and 12 of the ONTCS. These items asked the respondent to indicate their primary functional area, patient population (adult or pediatric), primary position, and work setting. These are nominal levels of measurement.

6. Work shift was measured as days, evenings or nights by item number 15 of the ONTCS. This is a nominal level of measurement.

Sociopsychological Variables

1. Social influence was measured in item number 22 of the ONTCS. Item 22 used a likert scale which asked the respondent to rate the level of importance (1 not important to 5 very important) among three variables (social influence, stress and addiction) which determined the most likely reason for the respondents current smoking behavior. This is an interval level of measurement. Scores can range from 1-5 with higher numbers reflecting more social influence.

Items number 24, 25 and 26 of the survey provided additional descriptive information pertaining to social influences on smoking behavior. Item number 24 asks the respondent if they have any members of their household who smoke. If yes, item number 25 asks the respondent to indicate by circling from a list of possible household members. Household members included in this list are roommate, son, daughter, spouse, partner or other. Item number 26 the survey asked the respondent if they have experienced a family member or close friend with a serious tobacco-related illness or disease such as heart disease, emphysema, or lung cancer.

2. Stress was measured using a likert scale in item number 2 which asks the respondent to measure the level of importance from 1 (not important) to 5 (very important) among the variables (social influence, stress, and addiction) which determine the respondent's reasons for current smoking behavior. This is an interval level of

measurement. Scores can range from 1-5 with higher numbers reflecting more stress as an influence.

3. Addiction was measured by item number 22 which uses a likert scale and asks the respondent to measure the level of importance from 1 (not important) to 5 (very important) among the variables (social influence, stress, and addiction) which determine the respondent's reasons for current smoking behavior. This is an interval level of measurement. Scores can range from 1-5 with higher numbers reflecting more addiction as an influence.

Health Promotion

The nurses' perceived role in health promotion was measured two ways and used separately in the analysis pertaining to health promotion. 1) Item number 34 used a likert scale and asked the respondent to indicate the importance of nurses' influence on health promotion as it relates to 4 tobacco control activities. The 4 activities include; nurses should set a good example by not smoking; nurses should actively encourage patients to stop smoking; nurses can and should be involved in actively helping patients to stop smoking and; nurses need additional training/skills in tobacco control. Scores ranged from 1-5 with higher numbers reflecting more importance. 2) Item number 35 asked the respondent to estimate how many patients will be smoke-free in one year following nursing intervention. This is an interval level of measurement.

Data Collection Procedures

Following approval by the Institutional Review Board (IRB), potential subjects who met the researchers study criteria, were identified by the Office of Nursing Support

Services. The nursing support staff provided the researcher with a printout of the nursing staff who are employed within the various departments. The researcher was interested in the number of participants per department and employment status only to determine inclusion criteria. The names of the licensed professional nurses were not available to the researcher and the list provided showed only the participant's credential and employment area.

The researcher recruited the assistance of four employees who were assigned nursing departments. The researcher reviewed with the assistants the inclusion and exclusion criteria, purpose of the study and the process in which to distribute and collect the surveys in their assigned departments. To accommodate the nature of nursing shift work and rotating schedules, the assistants were instructed to distribute the surveys at times to include all three shifts (days, evenings, nights) over the course of at least a three day period until a total of 150 surveys had been returned. The 4 assistants included day and night shift house supervisors, a nurse manager, and a pediatric nurse educator. All assistants had received the appropriate research training mandated by the TTUHSC Human Subjects Protection office.

The survey did not contain any personal identification information such as name or address, in order to protect the confidentiality of the subjects. The researcher chose not to be involved in the distribution and collection of the surveys for the same reason. The assistants were instructed not to leave the surveys on the units. The surveys were collected at the time of distribution and placed in an unmarked privacy envelope by the subject and the envelope returned to the assigned assistant. The 7 page survey took

approximately 15 minutes to complete. Participants who returned surveys with incomplete items were not excluded from the study.

Statistical Analysis

Data collected from the surveys were organized and entered into the Statistical Package for the Social Sciences (SPSS) version 8.0 and analyzed. Frequencies were run on all variables to ensure correct data entry and to assess for completeness of data and distribution of variables. Descriptive statistics including frequencies and measures of central tendency were used to describe characteristics of the sample. The critical p value was set at $p < 0.05$ for all inferential statistical procedures. The research questions were analyzed using the following statistical procedures:

1. Research question one was answered by reporting frequencies and descriptive statistics for personal experience.
2. Research question two was answered using Chi-square analysis and point biserial correlations for demographic influence.
3. Research question three was answered by using point biserial correlation for socio-psychological influence.
4. Research question four was answered using frequency counts and descriptive statistics for perceived nursing role in health promotion.

Protection of Subjects

Approval for the use of human subjects was obtained from the Institutional Review Board (IRB) of Texas Tech University Health Sciences Center prior to conducting the study (See Appendix B). Following approval from the IRB the survey

was distributed and collected in assigned clinical areas with the assistance of four employees. The assistant was instructed not to leave any surveys on their assigned units. This methodology ensured that the identity of the subjects was kept anonymous to the researcher.

The survey was distributed and collected by the assistants and upon completion, was secured in a privacy collection envelope. Completion of the survey indicated consent to participate in the study. Data was stored in a locked cabinet until completion of the study. Only the investigators have access to the data. Protection of subjects was also protected through the dissemination of the study results. No names were used and the data was reported in the aggregate. The researcher did not report back to the participants.

Summary

In summary, the study was a nonexperimental descriptive correlational design. The target population consisted of licensed vocational and registered nurses employed in a variety of care settings in an urban medical center in West Texas. Data was collected using a revised Oncology Nurses and Tobacco Control Survey. Statistical analysis focused on general description of study variables and correlational analysis to address the research questions. Human subject protection was integrated and was a primary concern throughout the implementation of this study.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

Introduction

The focus of the current study was to describe nurses' experiences with smoking as well as describe their smoking behavior in relation to demographics (age, gender, marital status, education, clinical area, and work shift) and socio-psychological influence (social influence, stress, and addiction). The relationship between smoking and the nurses' perceived role in health promotion was also described in this study. This chapter presents an analysis of the data collected from the sample of 196 nurses included as subjects for this study.

Data Management

Data was collected using the revised Oncology Nurses and Tobacco Control Survey (ONTCS). A total of 200 surveys were distributed and 196 of those were returned and were used in the data analysis. The return rate for this survey was 78%. The sample was described using demographic data. Frequency counts for all data were determined. Measures of central tendency were examined for all continuous variables and distributions were examined for normality. The Statistical Package for Social Sciences (SPSS) version 8.0 was used.

Description of the Sample

The study setting was an urban medical center in West Texas. Surveys were distributed and collected by 4 trained research assistants over a three week period. One hundred and sixty-eight (85.7%) women and 28 (14.3%) men ($N = 196$) completed the

survey. The age range of the sample was from 21 to 69 years with a mean age of 38.29 years. Sixty-eight (34.7%) nurses reported that they had smoked at least 100 cigarettes in their lifetime and 39 (19.9%) reported current smoking. Two participants (1.0%) reported a personal experience with a tobacco-related illness.

The majority of the sample, 148 (75.5%) was Caucasian; 5 (2.6%) African American; 23 (11.7%) Hispanic; 16 Asian (8.2%); and 1 Native American (0.5%). Thirty seven (18.9%) reported being single; 114 (58.2%) were married; 29 (14.8%) were divorced; 3 (1.5%) were widowed; and 13 (6.6%) were partnered or living with someone.

One hundred and eighty-nine (96.4%) of the nurses were employed in the inpatient acute care setting, 1 (0.5%) was employed in the outpatient ambulatory care setting and 6 (3.1%) were employed in the community home care setting. One hundred and sixty five (84.2%) were employed in direct patient care; 19 (9.7%) in administration; 11 (5.6%) in education; and 1 (0.5%) in research. One hundred and seventy-three (88.3%) were employed full-time and 11.7% part-time. One hundred and seven (54.6%) are employed on the day shift, 4.1% on the evening shift, and 41.3% on the night shift. The number of years as an RN ranged from an average of 1 year to 39 years with a mean of 9.94 years ($SD = 9.24$). The number of years as an LVN ranged from an average of 1 year to 35 years with a mean of 9.21 years ($SD = 9.39$).

Research Questions

Research Question One

The first research question was: What are nurses' personal experiences with smoking? Personal experiences with smoking was determined by three items on the

ONTCS (#18, 19 and 20) which ask the respondent to indicate whether or not they have smoked at least 100 cigarettes in their lifetime, what age they began to smoke, and their current smoking status. Sixty four percent of nurses indicated that they have not smoked at least 100 cigarettes in the lifetime while 34.7% reported that they have smoked at least 100 cigarettes in their lifetime. Twenty percent of nurses indicated current smoking and 14.8% reported they do not currently smoke. The age of initiation ranged from 5 to 33 years with a mean age of 17.09 years. The median age was 17, the mode was 18 ($SD = 4.41$).

Additional descriptive information related to nurses' personal experience was collected in item number 6 of the ONTCS which asked the responded to indicate if they had a personal experience with a tobacco related illness. Two (1.0%) nurses reported a personal experience with a tobacco-related illness. One nurse began smoking at 18 years of age while in nursing school and continued to smoke an average of 20 cigarettes per day. The primary reasons for current smoking indicated on the survey included stress and nicotine dependence. This nurse was not thinking about quitting (tried to quit twice) and had a spouse who smokes. No other tobacco-related diseases were described in the family. This nurse reported "occasionally to rarely/never giving tobacco advice/education" to patients and strongly disagreed that nurses should set a good example by not smoking.

A second nurse who reported a tobacco-related illness had never smoked and did not have any family members who smoked. This nurse reported giving tobacco

advice/education every day on the unit and strongly agreed that nurses should set a good example by not smoking.

As shown in Table 1, the majority of nurses recalled learning experiences related to tobacco cessation and prevention in nursing school while 3-17% of nurses recalled no learning experiences. In order to compare current study findings with the results reported by Sarna (2000), Table 1 collapses diploma and Associate Degree education into a single category.

Table 1. Learning experiences related to tobacco “prevention” and “cessation”.

Response	LVN	AD/DIP	BSN	MSN
Prevention				
No	8 (38.8%)	13 (15.3%)	17 (19.3%)	4 (66.7%)
Yes	14 (53.8%)	60 (70.6%)	57 (64.8%)	1 (16.7%)
Can’t remember	3 (11.5%)	11 (12.9%)	12 (13.6%)	0
N/A	1 (3.8%)	1 (1.8%)	2 (2.3%)	1 (16.7%)
<i>N</i>	26	85	88	6
%	13.2	43.3	44.9	.03
Cessation				
No	9 (34.6%)	17 (20.2%)	17 (19.5%)	3 (50.0%)
Yes	13 (50.0%)	57 (67.9%)	52 (59.8%)	1 (16.7%)
Can’t remember	3 (11.5)	9 (10.7%)	16 (18.4%)	1 (16.7%)
N/A	1 (3.8%)	1 (1.2%)	2 (2.3%)	1 (16.7%)
<i>N</i>	26	84	87	6
%	13.3	42.8	44.4	.03

Respondents who indicated smoking at least 100 cigarettes in their lifetime (*N* = 68) were asked to describe their stage of smoking cessation in item number 23 of the

ONTCS. Forty eight nurses responded to this item. As shown in Table 2, 37.5% of nurses are thinking about quitting or are trying to quit, compared to 27.1% who are not.

Table 2. Stage of smoking cessation

Stage	Frequency	Percent
Current Smokers		
am not thinking about quitting	13	27.1
am thinking about quitting	14	29.2
trying to quit	4	8.3
quit smoking past 6mo but started again	4	8.3
<i>N</i>	35	72.9
Former Smokers		
quit smoking for 6 mo	1	2.1
quit smoking for more than 1 year	8	16.7
quit smoking but smoke on occasion	4	8.3
<i>N</i>	13	27.1
Total	48	100.0
Missing	20	

Item number 27 of the ONTCS asked all nurses to indicate their experiences with tobacco education in clinical practice. Fourteen to 22% of nurses

reported that charting, assessing, counseling, and advising patients on tobacco use did not apply to their position. Forty four percent of nurses however, as shown in Table 3, reported daily encounters with patients who smoke and 24.5% reported weekly encounters with patients who smoke.

Table 3. Nurses experience with tobacco in clinical practice (%)

Experience	Every day	Every Week	Occasionally	Rarely/never	N/A
Patient encounters who smoke cigarettes	43.9	24.5	10.7	4.1	14.3
Patient encounters who don't smoke	39.3	12.8	15.8	7.1	14.3
Assessed patients use of tobacco	34.2	25.5	12.2	9.2	18.4
Charted patients smoking status	27.6	24.5	19.9	12.2	15.3
Counsel patients on their tobacco use	10.7	18.4	25.0	24.0	21.9
Assessed patients interest to quit	10.2	13.3	29.6	26.5	20.4
Given tobacco cessation advice	9.2	10.7	29.6	28.6	21.9
Given info regarding second-hand smoke	7.1	10.7	19.9	43.4	18.9
N= 196					

Summary

The majority of nurses' (64.3%) indicated that they have not smoked at least 100 cigarettes in the lifetime while 34.7% reported that they have. Among the nurses who have smoked in their lifetime, 19.9% indicated current smoking and 14.8% reported they

have quit smoking. Thirty-eight percent of current smokers are thinking about quitting or are trying to quit. The age of initiation ranged from 5 to 33 years with a mean age of 17.09 years. Two nurses reported a tobacco related illness and 3 to 17% of nurses reported receiving no educational opportunities in nursing school related to tobacco cessation and prevention. Forty four percent of nurses indicated daily encounters with patients who smoke cigarettes and approximately 20% of nurses believed that tobacco counseling, assessment and education did not apply to their position.

Research Question Two

The second research question was: What is the relationship between smoking and demographics? This question was answered by items numbered 1, 2, 5, 8, 13, and 15 of the ONTCS which referred to the nurses' age, gender, marital status, education, clinical area, and work shift.

Age

The age of the respondents ranged from 21 to 69 years of age with a mean age of 38.29 years ($SD = 11.28$). The mean age of nurses who smoked at least 100 cigarettes in their lifetime was 39.44 years ($SD = 11.59$). The mean age of current smokers was 37.79 years ($SD = 11.09$). The age range of current smoking is 21-69 years. Thirty-three percent of nurses who currently smoked were between the ages of 30-39 years; 31% smoked between the ages of 40-49 years; 23.0% smoke between the ages of 21-29 years; 10.4% smoke between the ages of 50-59 years; and 2.6% smoke between the ages of 60-69 years. There was no significant relationship between age and current smoking status ($n = 68, r = -.166, p = .18$) and no significant relationship between age and lifetime

smoking status ($N = 194$, $r = .073$, $p = .31$). Two nurses did not complete item 18 of the ONTCS which asked the respondent if they have smoked at least 100 cigarettes in their lifetime.

Gender

As shown in Table 4, 85.7% of the sample were female and 14.3 % were male. Results indicated that there is no relationship between gender ($p = .61$) and smoking ($p = .65$). Of the males in the sample, 39.3% indicated smoking at least 100 cigarettes in their lifetime and 25.0% continued to smoke. Of the females in the sample, 33.9% indicated smoking at least 100 cigarettes in their lifetime and 19.0% continued to smoke.

Table 4. Relationship of lifetime smoking and current smoking to gender

Smoking status	<i>N</i>	Females	Males	X^2	<i>p</i>
Lifetime smoking	68	57	11	.036	.614
Current smoking	39	32	7	.056	.651

Marital Status

As shown in Table 5, the majority of nurses were married. No relationship was found between current smoking ($X^2 = .108, p = .41$) or lifetime smoking ($X^2 = .052, p = .48$) and marital status.

Table 5. Relationship of lifetime smoking and current smoking to marital status

Marital Status	N (%)	LS		CS	
		Yes	No	Yes	No
Single	37 (18.9)	11	25	8	3
Married	114 (58.2%)	40	73	19	21
Divorced	29 (14.8%)	10	19	6	4
Widowed	3 (5.1%)	2	1	2	0
Partnered	13 (6.6%)	5	8	4	1

LS= Lifetime smoking (>100 cigarettes in lifetime)

CS= Current smoking

Education

The majority of nurses in the sample were baccalaureate prepared (See Table 6). Of the total nurses who indicated current smoking, 38% were licensed vocational nurses (LVN), 31.0% were diploma prepared, 26.4% were associate degree (AD) nurses, and 12.8% were baccalaureate prepared. No master's prepared nurses reported current smoking. The baccalaureate prepared nurses ($N = 80$) reported a lifetime incidence of

smoking of 21.2% compared to 36.2% of licensed vocational nurses and 32.4% of diploma prepared nurses. The analyses showed a significant relationship between lifetime smoking ($p= .001$) and current smoking ($p=.006$) to nursing education.

Table 6. Relationship of current smoking and lifetime smoking to nursing education

Education	N (%)	LS		CS	
		Yes	No	Yes	No
Licensed Vocational	29 (14.8%)	15	14	11	4
Diploma	29 (14.8%)	12	17	9	3
Associate Degree	53 (27%)	23	28	14	9
Baccalaureate	80 (40.8%)	17	63	5	12
Masters	5 (2.6%)	1	4	0	1

LS= Lifetime smoking (>100 cigarettes in lifetime)

CS= Current smoking

Clinical Area

The results of Table 7 indicated quitting behavior across clinical areas. No history of quit attempts was noted among those nurses employed in the emergency room or the rehabilitation unit. The three nurses who indicated lifetime smoking employed in rehabilitation all indicated current smoking. Likewise, the six nurses who indicated lifetime smoking employed in the emergency room also continued to smoke. In contrast, nurses employed in the post partum/nursery showed the greatest tendency for smoking cessation. Among the six nurses employed in post partum/nursery who indicated

smoking at least 100 cigarettes in their lifetime only one continued to smoke. Chi-square analysis of current smoking ($X^2=12.21$; $df=7$; $p=0.094$) and lifetime smoking ($X^2=14.57$; $df=9$; $p=.104$) to clinical area indicates no relationship

Table 7. Lifetime smoking and current smoking status to clinical area

Clinical Area	N (%)	LS		CS	
		Yes	No	Yes	No
Cancer center	7 (3.6)	1	6	1	0
Intensive care unit	75 (38.3)	25	50	15	10
Medical/surgical	39 (19.9)	17	21	10	7
Pediatrics	11 (5.6)	5	6	3	2
Post partum/nursery	21 (10.7)	6	15	1	5
Emergency room	7 (3.6)	5	2	5	0
Management	1 (.5)	0	1	0	0
Operating room	13 (6.6)	3	9	1	2
Rehabilitation	8 (4.1)	3	5	3	0
Other					
Bone Marrow	1 (.5)	1	0	0	1
Gastroenterology lab	1 (.5)	0	1	0	0
Orthopedics	1 (.5)	1	0	1	0
Total	195	65	125	38	27

LS= Lifetime smoking (>100 cigarettes in lifetime)

CS= Current smoking

Work Shift

As shown in Table 8, a higher percentage of nurses who currently smoked were employed on the night shift (54.7%) compared to nurses who are employed on the day shift (27.9%). The majority of the hospital setting utilized a 12 hour shift rotation; therefore only 8 (4.1%) nurses indicated working the evening shift. No nurses on the evening shift indicated lifetime smoking or current smoking. Chi-square analyses indicated no relationship between lifetime smoking and work shift ($X^2= 4.799$; $df= 2$; $p=.09$) and no relationship between current smoking to work shift ($X^2=1.195$; $df= 1$; $p=.27$).

Table 8. Smoking status to work shift

Employment Shift	<u>Lifetime Smoking</u>		<u>Current Smoking</u>	
	No	Yes	No	Yes
Days N (%)	69 (35.6)	37(19.1)	18 (26.5)	19 (27.9)
Evenings N (%)	8 (4.1)	0	0	0
Nights N (%)	49 (25.3)	31 (16.0)	11 (42.6)	20 (54.7)

Summary

There was no relationship between the demographic variables of age, gender, marital status, clinical area, and work shift to lifetime smoking. There was also no relationship between age ($p=.18$), gender ($p=.65$), marital status ($p=.41$), clinical area ($p=.09$), and work shift ($p=.27$) to current smoking. There was a trend toward significance among the variable clinical area to current smoking ($p= 0.09$) and work shift to lifetime smoking ($p=.09$). There was a positive correlation among the level of nursing education in both the current smoker and lifetime smoker groups ($p=.006$, $p= .001$)

Research Question Three

The third research question was: What is the relationship between smoking and socio-psychological influence? Socio-psychosocial influence was measured by item number 22 of ONTCS which asked the respondent to rank the level of importance (1=not important; 2= possibly very important; not sure; possibly very important; very important.) between 3 variables; stress, social influence, and addiction to describe their reasons for current smoking. This item was analyzed by examining the degree to which subject rated of the three socio-psychological variables as an important influence on their smoking. using descriptive statistics. Table 11 describes the frequencies of the scores and Table 12 describes the average mean of scores. Stress was ranked most important ($X=4.26$; $SD 1.09$), then addiction was ranked middle importance ($X=3.32$; $SD 1.42$), and social influence was ranked least importance ($X= 2.68$; $SD= 1.42$).

Table 9. The importance of stress, social influence and addiction on smoking behavior

	Not Important	Possibly Not Important	Not Sure	Possibly Important	Very Important
Stress	2(5.1)	1(2.6)	4(10.3)	10(25.6)	22(56.4)
Social Influence	10(26.3)	10(26.3)	5(13.2)	8(21.1)	5(13.2)
Addiction	7(18.4)	2(5.3)	11(28.9)	8(21.1)	10(26.3)
<hr/>					
<i>N</i> (%)					

Table 10. Mean scores of stress, social influence and addiction

	Stress	Social Influence	Addiction
Mean	4.26	2.68	3.32
Median	5.00	2.00	3.00
Mode	5.00	1.00	3.00
Std. Deviation	1.09	1.42	1.42
Variance	1.20	2.01	2.01

Multiple modes exist. The smallest value is shown

Item number 24 of the ONTCS provided additional descriptive information related to social influence by asking the respondents to indicate if any members of their household smoke. Seventy- two percent of all nurses do not and 27.5% do have members in the household who smoke. A Chi-square analysis was performed between those nurses

who have a household member who smokes to lifetime smoking. A positive relationship was noted in this analysis ($r = 3.856$, $df = 1$, $p = .05$). Seventy-one percent of current smokers indicated having a household member who smokes compared to 47.5% of non-smokers who do not.

In addition, Chi-square analysis between current smoking and lifetime smoking to family experience with a tobacco related illness was performed. Among non-smokers, 44.4% responded “no” and 55.6% responded “yes” to having a family experience with a tobacco related illness. Among those who have smoked at least 100 cigarettes in their lifetime, 56.1% have not experienced a tobacco related illness in a family member compared to 43.9 % who have. No relationship was found among these variables ($X^2 = 2.340$, $p = .13$). Among current smokers, 64.9% have not had an experience with a tobacco related illness in a family member compared to 35.1% who have. No relationship was found among this group of current smokers ($X^2 = 2.650$, $p = .10$).

A correlational analysis between age of smoking initiation to amount smoked per day revealed a positive relationship ($r = .324$, $p = .04$). The mean number of cigarettes smoked per day was 11.79 ($SD = 10.51$) with a range of 1-60 cigarettes per day. Thirty-one percent of nurses indicated smoking less than 5 cigarettes per day.

Summary

The mean number of responses indicated that stress ($X = 4.26$; $SD = 1.09$) was the most important influence followed by addiction ($X = 3.32$; $SD = 1.42$) and social influence ($X = 2.68$; $SD = 1.42$) to explain nurses current smoking behavior. A correlational analyses between those nurses who have a household member, or members, who smoke to lifetime

smoking was performed and a positive correlation was found ($p=.05$). A correlational analyses between lifetime smoking and current smoking to experiences with a tobacco related illness in a family member revealed no relationship ($p=.13$). A correlational analyses between age of smoking initiation to amount smoked per day revealed a positive relationship ($p=.04$).

Research Question Four

The fourth research question was: What is the relationship between smoking and the nurses' perceived role in health promotion? This question was answered using 2 items on the ONTCS. Item 34 asked respondents to indicate to what degree they agree or disagree with 4 statements related to nurses and tobacco control. These statements include; 1) nurses should set an example by not smoking; 2) nurses should actively encourage patients to stop smoking; 3) nurses can and should be involved in actively helping patients to stop smoking; 4) nurses need additional training/skills in tobacco control. Item 35 asked the respondent to estimate how many patients out of 100 would be smoke-free after one year following nursing intervention.

As shown in Table 16, significantly more nurses who currently smoked strongly disagreed that nurses should set an example by not smoking compared to nurses who have never smoked. A positive correlation was noted among current smoking and the level of importance of nurses to set an example by not smoking ($r= .364$, $df= 4$, $p=0.01$).

Table 11. Frequency responses nurses should set an example by not smoking.

Smoking Status	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
CS (n=39)	7 (10.3)	13 (19.1)	4 (5.9)	8 (11.8)	7 (10.3)
NS (n=126)	96 (49.5)	18 (9.3)	7 (3.6)	4 (2.1)	1(.5)
LS (n=68)	23 (11.9)	21 (10.8)	4 (2.1)	12 (6.2)	8 (4.1)
<i>N</i> (%)					

N= 194

CS= Current smoker

NS= Never smoked

LS= Smoked 100 cigarettes in lifetime

The majority of respondents strongly agreed that nurses should set an example by not smoking and actively encourage patients to stop smoking. The frequencies of responses to item 34 are shown in Table 17. In addition, the majority of nurses agreed that they needed additional training and skills related to tobacco control.

Table 12. Frequency table nurses response to tobacco control activities N (%).

Activity	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
Nurses should set example by not smoking N= 196 X= 1.75 SD= 1.16	119 (60.7)	39 (20.9)	11 (5.6)	16 (8.2)	9 (4.6)
Nurses should actively encourage patients to stop smoking N= 196 X= 1.80 SD= .94	90 (45.9)	72 (36.7)	22 (11.2)	8 (4.1)	4 (2.0)
Nurses should be actively involved to help patients stop smoking N=196 X= 1.93 SD= .99	74 (37.8)	83 (42.3)	23 (11.7)	10 (5.1)	6 (3.1)
Nurses need additional training and skills N=196 X= 2.04 SD= 1.12	72 (36.7)	79 (40.3)	23 (11.7)	10 (5.1)	12 (6.1)

The mean number of patients, out of 100, expected to be smoke free after one year following nursing intervention is 29.33 ($SD= 23.43$) Twenty two respondents did not answer item 35 of the survey. The range was 1-100 patients. A chi-square analysis between the number of patients expected to be smoke-free to lifetime smoking revealed no correlation ($X^2= 28.38, p=.20$). As well, a chi-square analysis between the number of patients expected to be smoke free to current smoking revealed no correlation ($X^2=12.86, p= .68$).

Summary

A positive correlation was noted among the variables current smoking and the level of importance of nurses to set an example by not smoking ($r= 13.364, df= 4, p=0.01$). Thirty-eight percent of current smokers disagreed to strongly disagreed that nurses should set an example by not smoking compared to 4% of nurses who have never smoked. The mean number of patients, out of 100, expected to be smoke free after one year following nursing intervention is 29.33 ($SD= 23.43$). No correlation was found between the number of patients expected to be smoke free to current smoking and lifetime smoking ($p=.683$, and $p= .20$).

Conclusion

The study was conducted to describe nurses' experiences with smoking as well as describe their smoking behavior in relation to demographics (age, gender, marital status, education, clinical area, and work shift) and socio-psychological influence (social influence, stress, and addiction). The relationship between smoking and the nurses' perceived role in health promotion was also described. Four research questions were

addressed using data collected on the Oncology Nurses and Tobacco Control Survey (Sarna, 2000). Statistical analysis focused on the general description of study variables and the use of correlational analysis to address the research questions.

CHAPTER V
DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

The purpose of this descriptive correlational analysis was to better understand the relationships between smoking behavior and nurses' experiences, demographics, sociopsychological influence, and perceived role in health promotion. In this chapter the findings of this study will be examined and compared to findings of previous studies. Research findings of the current study will be discussed as they related to the theoretical framework. Conclusions and recommendations for practice and further research will also be presented

Discussion

Smoking is the most serious risk factor for morbidity and mortality worldwide and the efforts of all healthcare professionals are needed to confront this epidemic. The valuable contributions of nurses in particular should be recognized. Nurses are the largest group of healthcare professionals and are considered the most trusted profession (Readers Digest Survey, 2003). Yet despite their influence, nurses jeopardize their role as health promoters by smoking. The findings of this research, as well as other studies, determined that nurses who smoke do not place the same value of their role as health promoters compared to non-smokers. Given the numbers of nurses who smoke, this finding poses a serious health concern and warrants additional study into factors which threaten the health promoting behavior of nurses.

Conclusions

Nurses experiences with smoking

There were many comparisons noted in this current study to other studies as it relates to nurses experiences with smoking. For example, the majority of nurses in this current study began smoking in adolescence, mean age 17.09 years ($SD= 4.41$). Sarna (2000) noted that 57% of nurses in her sample began smoking when they were less than 18 years of age with a average age of 17.1 years ($SD= 4.7$).

Similarities were also noted in this current study with regard to educational experiences and smoking cessation patterns. There were a significant number of nurses in this current study who reported no learning experiences in nursing school which relate to tobacco cessation and prevention. As well there were a significant number of nurses who indicated trying to quit or are thinking about quitting. What was also interesting to note in this current study is that although the majority of nurses reported daily to weekly encounters with patients who smoke very few of these same nurses indicated assessing their patients' interest to quit and even fewer nurses have indicated giving tobacco cessation advice. It is apparent given these responses in this current study that nurses as a profession, for reasons unknown, miss valuable educational opportunities which can positively impact their patients' health. These findings compare with other studies noted in the review.

It was noted in this current study that fewer nurses in this sample (19.9%) smoked in comparison to the general population in the city of Lubbock (23.2%) (Community Status Report Lubbock County, 2004). Comparing this sample of nurses to the general

population of the United States also showed less smoking prevalence to the general population (26.0%),(American Cancer Society, 2003).

The Relationship Between Smoking and Demographic Variables

The demographic findings in this current study compared to findings noted in the literature. For example, in this current study the highest percentage of current smokers (44%) was in the 40 and older age group. The literature review noted also a higher prevalence of current smoking in the age category 45-54 (Knobf and Morra, 1983; Rausch et al., 1987; Becker et al.,1986). The current study showed that the pattern of smoking prevalence today, when accounting for age, was similar to smoking patterns evident among nurses in the 1980's.

Although the majority of demographic variables (age, gender, marital status, clinical area, and work shift) showed no relationship to lifetime smoking and current smoking, there was much learned descriptively about this sample of nurses. For example, with respect to clinical area, no pattern of smoking cessation was noted among those nurses employed in rehabilitation and the emergency room. All of the nurses in these clinical areas who indicated smoking at least 100 cigarettes in their lifetime continue to smoke. In contrast, nurses employed in post-partum/nursery showed a tendency to stop smoking. Of the total six nurses who indicated smoking at least 100 cigarettes in their lifetime, only one continued to smoke. A study of postpartum nurses may be helpful in eliciting rationale for why these nurses quit smoking and could yield information on motivators for other nurses.

Education was positively correlated in this current study with both current smoking and lifetime smoking which was similar to previous findings (Gritz et al., 1988; Knobf & Morra, 1983; Nelson et al., 1994). These findings suggest the promotion of nursing education, as it relates to smoking prevention and cessation, is an important methodology to reduce smoking.

The Relationship Between Smoking and Socio-psychological Variables

The sample of nurses in this current study indicated that stress was the most important factor influencing their current smoking. These findings compare to several other studies which found that the majority of nurses smoked whenever they felt anxious or under pressure, (Jacobson et al., 1981; Rowe & Clark, 1999). The conclusions from these studies indicated difficulty in establishing stress as a true causal influence due to the fact that the majority of nurses commenced smoking prior to entering the health care field. These same difficulties in establishing a relationship between stress and nurses smoking was also found in this current study as the majority of the sample (72.1%) began smoking prior to 18 years of age. In the current study respondents completed the survey at their place of employment, possibly during a stressful day or moment; it is possible that respondents would have answered this item differently in an environment other than their workplace.

In addition, several studies analyzed the demographic variable of clinical area to the concept of stress and found more smoking in clinical areas that might be considered more stressful; intensive care units and the emergency room, for example (Dore' & Hoey, 1988). However, in the current study, these findings do not explain the pattern of

smoking noted among those nurses employed in the rehabilitation clinical setting. Other studies found similar difficulties in establishing a relationship between stress and clinical area due to the fact that, once again, the majority of nurses established a pattern of smoking prior to entering the healthcare field (Hawkins et al., 1982; Tagliacozzo & Vaughn, 1982;). These differences in findings may relate to the increase in stress felt by nurses because of the nursing shortage. Staffing rates were not collected in the current study. This would be an important variable to include in future studies.

In the current study addiction was reported to be an important influence on current smoking. Comparing these reports to the stage of smoking cessation, the age of smoking initiation and to the amount of cigarettes smoked per day provides additional support for addiction as an influence. The majority of nurses in this current study indicated trying to quit or thinking about quitting. One respondent also added that she attempted to quit twice and failed. The mean age of smoking initiation is 17.07 years and the majority of current smokers (56%) indicated smoking an average of 10-20 cigarettes per day. A correlational analysis between age of smoking initiation to amount smoked per day revealed a positive relationship. These findings suggest that the earlier nurses' start smoking the more likely they are to smoke more cigarettes.

In the current study social influence was reported to be the least important of the three socio-psychological variables. These findings concur with other studies that analyzed potential social influences of smoking among nurses (Carmichael & Cockcroft, 1990; Rowe, 1998; Sarna, et al., 2000). These studies found that social influence may have been the primary reason for smoking initiation during adolescence but it was not the

most important influence among adults to explain current smoking. Additional information related to social influence provided on the ONTCS, however, differs from these findings. For example, in this current study, significantly more nurses who currently smoked indicated having a household member who smoked compared to non-smokers. More non-smokers described having a personal experience with a tobacco related illness in a family member compared to current smokers. These findings suggest two things; current smokers may be influenced by other smokers in the home and a personal experience in a family member may be a potential motivator to reduce or quit smoking. These conclusions may suggest that nurses in this current study may not be aware of the impact of social influence in their daily living. This finding poses important implications for the design of smoking cessation strategies for nurses.

Nurses perceived role in health promotion

In the current study, the attitudes of health promotion were found to be more positive among non-smokers and former smokers than among current smokers. These findings concur with the findings of other studies noted in the literature review (Dore & Hoey, 1988; Sarna et al., 2000). In the current study, significantly more smokers disagreed or strongly disagreed that nurses should set an example by not smoking compared to non-smokers. Several studies found that nurses who smoked indicated that they lack credibility as an advocate for non-smoking behavior due to their own tobacco use. Reasons noted in the literature review to explain the lack of nursing intervention in smoking education include: nurses feel they may be nagging the patient, they do not want to appear judgmental toward the patient, they do not want to add stress to the patient, and

nurses feel hypocritical giving advice due to their own behavior and experiences. In addition current smokers indicated in this current study fewer numbers of patients quitting smoking after one year following nursing intervention compared to non-smokers. These findings suggest that nurses do not give advice to patients as often as they could and nurses who smoke have less confidence in the outcomes of their health promotion efforts compared to non smokers.

Conceptual Model

The Health Promoting Self-Care System Model was a useful guide for the assessment of demographic and socio-psychological factors related to nurses smoking behavior. Several potential influences exist between nurses smoking and their perception of the importance of health promoting lifestyles. The model emphasizes the multidimensionality of the concept of health promotion and related it appropriately to the interactive potential smoking influences.

According to the model, the HPSCSM can help synthesize and expand upon the attitudinal and behavioral patterns of an individual's health. In this current study the model helped guide and describe patterns among factors that influence health-promoting lifestyles. The model stresses that it is not just one factor that determines patterns of health promoting behavior, but it is rather a cumulative interactive concept. This model served as a useful tool in identifying and describing relationships of tobacco use among licensed nurses.

The Interaction Model of Client Health Behavior (IMCHB) is one component of the HPSCSM that experienced difficulty with application to this current study. The

IMCHB is a component of the HPSCSM that incorporates the interaction of the nursing system to client health outcomes. In this current study the nursing system was also the client therefore interactions were not possible.

Limitations

There are several limitations of this study that must be addressed. The study sample was a convenience sample and as such was limited to those who were willing to participate. Self-report tools rely on truthful and accurate responses from subjects. The findings of this study may have been influenced by smokers who may have reluctant to participate. Subjects may provide responses that they consider socially desirable rather than true responses. This is a descriptive correlational study. Six demographic variables and three socio-psychological variables were analyzed. Other demographic and socio-psychological variables that were not included may have also been used and provided additional insight into factors contributing to smoking behavior in nurses.

The setting of the study should also be considered. All of the nurses included in this study were from the same hospital in one West Texas geographic area. The hospital setting lacked specific psychiatric services therefore this clinical setting was not included in this study. Due to these limitations the current study can not be generalized to the entire population of nurses.

Recommendations for Nursing Education and Practice

Based upon study outcomes, the following recommendations for nursing education and practice are offered to all healthcare professionals. Education of student nurses at all levels of preparation should be made a priority. Nurses should be reminded

of their professional role as health promoters as well as instructed on the influence they have in health care settings and communities. Emphasis of nurses as role models and exemplars of health should be described. As well, efforts to support smoking prevention programs directed at youth are also very important, as it is this population from which student nurses are drawn.

The establishment of smoking cessation programs in the employment setting which specifically suit nurses needs would benefit nurses found in this current study who indicated they are thinking about quitting, trying to quit or have unsuccessfully attempted to quit. Support from employers and co-workers is essential to help nurses overcome the addictive qualities of tobacco.

A National Quit line specifically suited for nurses has gone into effect this past November (2004). This is an example of one intervention available to nurses that can be used to help them in their efforts to quit smoking. This quit line can be accessed 24 hours a day through the world wide web; www.tobaccofreenurses.org.

Recommendations for Research

Based upon study outcomes, the following recommendations for research are offered to all healthcare professionals and researchers. Research should continue to further assess tobacco use influences among nurses. Larger samples that represent a variety of geographic areas would help identify patterns of tobacco use influences. The development of instruments which assess the methodology of smoking cessation and barriers to smoking cessation among nurses would help guide the development of future smoking cessation tools and programs. Also, further research which compares outcomes

between those nurses who received tobacco education in nursing school to those who did not would help better assess the impact of smoking education in nursing schools. The current study found that the majority of all nurses (90.8%) failed to give smoking cessation advice to their patients despite 44% of nurses reporting encountering patients who smoke every day. Further research should be conducted to determine why nurses miss potential opportunities to educate their patients. Finally, more research should be conducted to evaluate more specifically the influence of occupational stress and social support on smoking. Determination of why nurses choose to continue to smoke when it's harmful effects are so well known would be of tremendous benefit for future research and practice.

Summary

This was a descriptive correlational study that described the problem of smoking among nurses as well as offered further insight into some potential patterns and influences. Among the demographic variables, education showed a positive relationship to smoking. More nursing education was related to a lower prevalence for smoking. Among the socio-psychological variables, stress was reported by current smokers to be the primary influence. Non-smokers and former smokers felt more positively about nurses as role models by not smoking.

Nurses represent the concept of health, are the most trusted profession and have the potential to impact change in a variety of settings. Yet nurses have taken a passive approach with respect to health promotion, particularly as it relates to smoking and have placed these attributes at risk. Collaborative efforts from nursing and healthcare

organizations would help address the problem of smoking among nurses in a variety of ways. Professional nursing organizations for example, have the capacity to address the problem of smoking, make tobacco control efforts a priority, and perpetuate awareness of the nursing role through education at all levels of nursing preparation.

Specialty nursing organizations also have opportunities to make a positive impact. Tapping into nursing expertise through various care settings would provide a creative venue to meet specific nursing and patient care needs. For example, community health nurses could develop strategies to target smoking education among youth. Pediatric nurses could develop education strategies which educate patients about the influence of peer pressure and smoking; and newborn nursery nurses could develop strategies to educate patients about the harmful effects of second hand smoke. Healthcare organizations could also address the needs of nurses through structured smoking cessation and support programs. Utilization of various strategies which encourage nurses to model exemplary behavior will not only benefit the health of patients and communities but nurses themselves.

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APPENDIX A
REVISED ONCOLOGY NURSES TOBACCO CONTROL SURVEY

Dear Colleague,

As part of my master's program I have chosen to conduct a research project which will assess tobacco use patterns and influences among nurses.

The following survey includes questions about your personal experiences with tobacco use as well as personal and clinical demographics. Your responses will be used to help better understand future needs for nursing education, necessary changes in clinical practice and direct future research activities. Both smokers and non-smokers can participate in this survey.

There are no right or wrong answers and you do not have to answer any question you do not wish to, but complete answers will help with interpretation of the results. Participation, or non-participation, in this survey is voluntary and will in no way affect any aspect of your employment with University Medical Center.

As well, the results of this survey will be kept anonymous. The researcher will not participate in any aspect of the distribution or collection of the surveys. Following completion of the survey, there will be no contact by the researcher.

The survey will take approximately 15 minutes to complete.

Thank you for your assistance.

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Please check or fill in the blank

Today's Date / /
 D M Yr

Section I	These questions provide us with some personal information about you
------------------	--

1. What is your date of birth? / /
 D M Yr
2. What is your gender? female male
3. How would you describe your ethnic group: **Please check one**
 Caucasian, African American, Hispanic,
 Asian (specific type, e.g. Chinese), Native American,
 Other (Describe).
4. What is your current height? ft in, and weight? pounds.
5. How would you describe your marital status/living situation?
 Single, Married, Divorced, Widowed, Partnered/Living with someone
6. Have you experienced a serious tobacco-related disease (eg. heart disease, emphysema, lung cancer)? yes no

Section II	These questions provide information about your professional background.
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7. How many years have you been a registered nurse?
- 7a How many years have you been a licensed vocational nurse?
8. What is your highest educational background in nursing? **(Please check one)**
 a) Licensed Vocational Nurse, b) Diploma, c) Associate
 d) Bachelor, e) Masters, f) Doctorate

9. How would you describe your primary functional area **(Please circle one)**

- a) administration b) education
c) patient care d) research e) other (specify) _____

10. How would you describe the majority of patients in your clinical setting?

____ adult ____ pediatric

11.. What is your primary position? **(Please circle one)**

- a. staff nurse e) clinical nurse specialist i) consultant
b. head nurse f) nurse practitioner j) educator
c. supervisor g) research nurse k) case manager
d. director/assist.dir. h) researcher l) other, describe _____

12. Which best describes your work setting **(Please circle one)**

- a) inpatient/acute care b) outpatient/ambulatory care
c) community/home care d) other, describe _____

13. What is your primary practice setting? **(Please circle one)**

- a) Out-pt cancer center e) Pediatrics i) Management
b) Public health/comm. nursing f) Post partum/nursery j) Operating room
c) Intensive care unit g) Labor and delivery k) Rehab
d) General med/surgical unit h) Emergency room l) Other, please specify

14. How would you describe your current employment status? **(Please circle one)**

- a) full time b) part time

15. How would you describe your current employment shift?

- a. days _____ b) evenings _____ c) nights _____

16. As a nursing student, did you learn about **prevention** of tobacco use?

(Check all that apply)

	Yes	No	Can't Remember	N/A
Associate Degree	_____	_____	_____	_____
Bachelor's Degree	_____	_____	_____	_____
Master's Degree	_____	_____	_____	_____
Other (describe) _____				

17. As a nursing student, did you learn about tobacco **cessation**?

(Check all that apply)

	Yes	No	Can't Remember	N/A
Associate Degree	_____	_____	_____	_____
Bachelor's Degree	_____	_____	_____	_____
Master's Degree	_____	_____	_____	_____
Other (describe)	_____			

Section III	These questions provide information about your personal experiences with smoking.
--------------------	--

18. Have you smoked at least 100 cigarettes in your lifetime? ___yes, ___no **(if no skip to question #24)**

19. At what age did you begin to smoke? _____

20. Do you currently smoke? ___yes___no **(if no, skip to question #24)**

21. How many cigarettes (20 per pack) do you smoke on an average day? _____

22. How important do you feel each of the following factors are in determining why you smoke? (Please circle)

	Not Important			Very Important	
Psychological (stress)	1	2	3	4	5
Social	1	2	3	4	5
Nicotine Dependence	1	2	3	4	5

23. Which ONE of the following statements BEST describes your smoking behavior right now? **(Please circle the best answer)**
- a. I am smoking now and am **not** thinking about quitting
 - b. I am smoking now and I **am** thinking about trying to quit
 - c. I am smoking now and I am also trying to quit
 - d. I quit smoking in the past 6 months but started to smoke again
 - e. I quit smoking in the past 6 months and **have not** started to smoke again
 - f. I quit smoking more than 6 months ago and **have not** smoked for at least 6 months
 - g. I quit smoking and have not smoked for a year or more
 - h. I quit smoking, but once in a while I have a cigarette
24. Do any members of your household smoke? ___yes, ___no **(if no, skip to question #26)**.
25. Please circle the description of all household members who smoke?
- a) roommate(s)
 - b) son(s)
 - c) daughter(s)
 - d) spouse
 - e) partner
 - f) other relative(s) Describe _____
26. Has one of your family members or close friends experienced a serious tobacco-related disease (e.g. heart disease, emphysema, lung cancer)? ___yes ___no

Section IV	These questions relate to your experiences with patients and tobacco use in clinical practice.
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In the following questions, please circle the number that most closely relates to your experiences using the scale below.

1 = Every day 2 = Every week 3= Occasionally 4 = Rarely/Never 5 = N/A

27. In the past month, how often have you:

- | | | | | | |
|---|---|---|---|---|---|
| a. Encountered patients who: | | | | | |
| smoked cigarettes | 1 | 2 | 3 | 4 | 5 |
| used chew tobacco | 1 | 2 | 3 | 4 | 5 |
| smoked cigars | 1 | 2 | 3 | 4 | 5 |
| don't smoke | 1 | 2 | 3 | 4 | 5 |
| b. Assessed a patient's use of tobacco? | 1 | 2 | 3 | 4 | 5 |
| c. Noted a patient's smoking status/tobacco use on the chart? | 1 | 2 | 3 | 4 | 5 |
| d. Provided counseling to patients on their tobacco use? | 1 | 2 | 3 | 4 | 5 |
| e. Assessed if patients are interested in stopping tobacco use? | 1 | 2 | 3 | 4 | 5 |
| f. Given tobacco cessation advice? | 1 | 2 | 3 | 4 | 5 |
| g. Taught coping skills for avoiding relapse? | 1 | 2 | 3 | 4 | 5 |
| h. Provided recommendations for nicotine replacement? | 1 | 2 | 3 | 4 | 5 |
| i. Referred patients to smoking cessation specialist? | 1 | 2 | 3 | 4 | 5 |
| j. Recommended the use of support groups for cessation? | 1 | 2 | 3 | 4 | 5 |
| k. What types of groups do you recommend? | | | | | |

1 = Every day 2 = Every week 3 = Occasionally 4 = Rarely/Never 5 = N/A
In the past month, how often have you:

l)	Recommend the methods to relieve nicotine withdrawal?					
	nicotine patch	1	2	3	4	5
	nicotine gum replacement	1	2	3	4	5
	nicotine nasal spray	1	2	3	4	5
	bupropion (Zyban)	1	2	3	4	5
	other method, describe _____	1	2	3	4	5
m)	Referred a tobacco user to another practitioner for cessation advice?	1	2	3	4	5
n)	Routinely given information about second-hand tobacco smoke to your patients?	1	2	3	4	5
o)	Given information about tobacco cessation to family members of cancer patients?	1	2	3	4	5
p)	Assisted other nurses in quitting smoking?	1	2	3	4	5

Please read each statement below and circle your response.

1 = strongly agree 2 = agree 3 = not sure 4 = disagree 5 = strongly disagree

34. Please tell us to what degree you agree/disagree with each of the following statements about nurses and tobacco control.

a)	nurses should set a good example by not smoking	1	2	3	4	5
b)	nurses should actively encourage patients to stop smoking	1	2	3	4	5
c)	nurses can and should be involved in actively helping patients to stop smoking	1	2	3	4	5
d)	nurses need additional training/skills in tobacco control	1	2	3	4	5

35. If you helped 100 patients stop smoking, how many do you think would be smoke-free after one year? _____

Thank you for your participation!

APPENDIX B
INSTITUTIONAL REVIEW BOARD MEMORANDUM

To: Donna C. Owen, Janice G. Marchildon
Subject: Meeting Review Letter: Exempt from formal IRB review
Date: 12/07/2004

E-mail Address: donna.owen@ttuhsc.edu, **Send E-mail**
janice.marchildon@ttuhsc.edu

Content:

**TTUHSC LUBBOCK/ODESSA IRB
CLASSIFICATION OF STUDY AS
EXEMPT FROM FORMAL IRB REVIEW**

Date: December 07, 2004

To: Primary Investigator

Dr. Donna C. Owen

3601 4th St. TX

Lubbock TX 79430

Subinvestigators/Coordinators

Janice G. Marchildon

IRB Number: L05-036-This is an Lubbock number that should be used on all consent forms and correspondence.

Protocol Number: L-NURS-601104

Study Title: Factors Related to Nurses Smoking Behavior

Date Classified as Exempt: 12/07/2004

Applicable Federal Regulation: 45CFR46.101[2]

HIPAA Waiver of Authorization reviewed and found to be in compliance with TTUHSC Policy? N/A

IRB Comments: 1. The PI has adequately addressed all the stipulations. The study may now be approved at the Exempt Category 45 CFR46 101(2).

IRB Recommendations: Recommend approval at the Exempt Category 45 CFR46 101(2).

This application was screened for exempt status according to TTUHSC policies and the provisions of applicable federal regulations. The study was found not to require formal IRB review because the research falls into one of the categories specifically designated as exempt per 45CFR46.101.

Do not use any subject names or identifiers when presenting or publishing the study results.

There is no expiration date for studies which have been classified as Exempt from formal IRB review. However you are asked to report to the IRB any changes to the protocol which might change the classification of exempt status. You are also asked to notify the IRB (through iRIS) when this study is completed.

Reporting: Modifications to this research proposal which may change the exempt status of the research project must be submitted

to and approved by the IRB prior to the implementation of the modification. You must report to the IRB any serious problem, adverse effect, or outcome that occurs in conjunction with this project. You are also requested to report changes in study personnel to the IRB. The Texas Tech University Health Sciences Center Institutional Review Board is duly constituted (fulfilling FDA requirements for diversity) allows only those IRB members who are independent of the investigator and sponsor of the study to vote/provide opinion on the study, has written procedures for initial and continuing review, prepared written minutes of convened meetings, and retains records pertaining to the review and approval process; all in compliance with requirements defined in 21 CFR (Code of Federal Regulations) Parts 50 and 56 and ICH (International Conference on Harmonization) guidance relating to good clinical practice.

APPENDIX C
INSTITUTION LETTER OF PERMISSION

March 25, 2004

To Whom it May Concern:

Janice Marchildon, a graduate student at the Texas Tech School of Nursing has informed us of her intention to conduct a research project in the Fall of 2004. The research will be focusing on tobacco use among professional nurses and will involve the use of a survey. The title of her project is "Factors related to nurses smoking behavior". Gathering of this information should not involve any incriminating or sensitive questions that might place the subjects at risk. All participants will be kept anonymous to the researcher and the participation in the survey will be voluntary.

University medical Center is committed to the pursuance of higher education and the promotion of health in the community. Janice has our permission to implement her survey among our nursing population as part of her research project. We wish her luck in the pursuance of her academic endeavors.

Thank you very much for your attention in this matter.

Sincerely,

Kim Judd, RN, MSN
Vice President Nursing Services
University Medical Center

APPENDIX D
PERMISSION LETTER TO USE TOOL

Hi Janice, Yes, you have my permission to use the revised questionnaire. I look forward to reading the results of your findings. Best wishes with your study,
PS You might want to consider adding referral to a telephone quitline as one of the interventions that nurses use. A national quitline will go into effect this November

Linda Sarna, RN, DNSc, FAAN
Professor
UCLA School of Nursing
700 Tiverton Ave, Box 95-6918
Los Angeles, California, 90095-6918
Phone (310) 825-8690
FAX (310) 206-9695
www.tobaccofreenurses.org
At 08:07 AM 10/25/2004, you wrote:

Dr. Sarna, I would like to revise your survey and use it as part of my thesis entitled "Factors related to nurses smoking behavior". Your reply will be attached to an IRB application which is required to complete my thesis.

Please find attached a copy of the revised survey for your review. If you have any questions please do not hesitate to contact me. I will be certain to reference your work in my thesis project. (FYI: I had contacted you before regarding this and you had given permission but I had made further revisions to the survey and changed my thesis title).

Thank you once again

Janice
jmarchildon@cox.net

PERMISSION TO COPY

In presenting this thesis in partial fulfillment of the requirements for a master's degree at Texas Tech University or Texas Tech University Health Sciences Center, I agree that the Library and my major department shall make it freely available for research purposes. Permission to copy this thesis for scholarly purposes may be granted by the Director of the Library or my major professor. It is understood that any copying or publication of this thesis for financial gain shall not be allowed without my further written permission and that any user may be liable for copyright infringement.

Agree (Permission is granted.)

Janice G. Marchildon RNC, BSN, OCN

5/5/2005

Student Signature

Date

Disagree (Permission is not granted.)

Student Signature

Date