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NURSE PRACTITIONERS' STRATEGIES FOR ASSESSING ADOLESCENTS' PSYCHOSOCIAL RISK FOR TOBACCO USE

By

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ABSTRACT

NURSE PRACTITIONERS' STRATEGIES FOR ASSESSING ADOLESCENTS' PSYCHOSOCIAL RISK FOR TOBACCO USE

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Thousands of adolescents are initiating the use of tobacco products each day. Nurse Practitioners (NPs) are in a position to assess psychosocial risk factors that may predispose youth to tobacco use. This Level I exploratory study included two parts. A pilot study of ten nursing graduate students determined the test-retest reliability of the investigator generated questionnaire using the phi coefficient. Part two questioned 83 practicing NPs in Michigan who see adolescents in their practice. Using the Revised Health Promotion model as a guide, the investigator examined strategies NPs are currently using to assess adolescents' psychosocial risk factors for tobacco use. The NPs questioned believed that tobacco use was a concern for NPs to address, most often use the American Lung Association approach and a personal interview to obtain client information. Personal interest and low cost promoted the use of materials, while length of time hindered use. Psychosocial risk factors were assessed by over half of the respondents but not on a consistent basis. Community involvement was also minimal.

Dedicated to my children, R.C. and Catie; my husband, Ray; and my parents, Wayne and Arlene Laursen; who all helped me to achieve this goal in my life.

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CHAPTER 1
INTRODUCTION

Statistically, tobacco use among today's youth is alarming. It is estimated that three thousand adolescents try smoking everyday (Eckhardt, Woodruff, & Elder, 1994). Nearly 750 adolescents of the three thousand who start smoking each day will die prematurely from smoking related disease (National Cancer Institute, 1992a). Annual studies conducted reveal that the average age of cigarette initiation is 10 or 11 years (U.S. Department of Health and Human Services [USDHHS], 1994). The use of smokeless tobacco among male high school students is estimated at 10% or higher, with more than half of smokeless tobacco use beginning by 13 years of age (U.S. Public Health Service, 1994). The earlier a young person begins using tobacco, the less likely he or she will be able to quit later. This is attributed to the fact that within two to three years the child or adolescent will be addicted to the nicotine of the tobacco product (USDHHS). It also has been noted that adolescents who smoke the same number of cigarettes each day tend to be addicted to the nicotine (Hansen, 1983).

Initiation of tobacco use among children and adolescents occurs in stages (Fergusson & Horwood, 1995; USDHHS, 1994). Fergusson and Horwood describe three stages of progression: nonsmoker, occasional smoker and regular use. The progression of smoking

behaviors is largely a one-way process. As the individual becomes a regular smoker it is unlikely that he/she will return to the occasional or nonsmoker stage (Fergusson & Horwood).

Tobacco use has had a major impact on health care overall. In the U.S. in 1993 approximately $50 billion was spent on smoking related medical care and lost productivity. Forfeited earnings due to smoking related disability was estimated at $47 billion per year (Agency for Health Care Policy and Research [AHCPR], 1996). In a 10 year study completed in Sydney, Australia, investigators found that adolescents as young as 14 years old had developed abnormalities attributable to smoking within one year after the initiation of smoking (Woolcock, Peat, Leeder, & Blackburn, 1984).

The difference in the incidence of respiratory illnesses for smokers versus nonsmokers is reflected by greater use of outpatient medical services and increased absenteeism from work or school by smokers (Charlton & Blair, 1989; Haynes, Krstulovic, & Bell, 1966; Johnston, O'Malley, & Bachman, 1996). Lung function tests on young adults have also revealed a higher frequency of abnormalities in smokers than nonsmokers (USDHHS, 1994).

There are several smoking prevention programs that have been implemented in school systems. However, few have been developed within the health care setting for adolescent clients and utilized by primary care health providers. One of the most beneficial programs within the health care setting incorporates assessment of tobacco use as a "new vital sign" for all clients regardless of age (Fiore, Jorenby, Schensky, Smith, Bauer, & Baker, 1995). Addressing tobacco use of clients along with temperature, pulse, respirations and blood pressure,

alerts health care providers whether the individual is or was a tobacco user. If the client is a smoker or smokeless tobacco user, the provider can then address whether the client would consider quitting. This coordinated approach enables all health care workers and providers to collaborate and address the issue of tobacco use with their clients. A study conducted at Mayo Clinic, after the expansion of the vital signs showed a marked increase in identification of clients who smoke and interventions to encourage and assist with tobacco cessation (Fiore et al.).

NPs can implement the "vital sign" strategy within the work setting or one of several other strategies to identify the youth who is at risk for using tobacco products. The statistics of adolescent tobacco use and the impact of tobacco product use on health care, clearly alert health providers that it is vital to utilize their knowledge base and counseling techniques to help deter adolescent initiation of tobacco products.

STATEMENT OF PROBLEM

Early adolescence, ages 11 to 16, is the period when most youth begin using tobacco products (Johnston, O'Malley, & Bachman, 1996; Silvis & Perry, 1987). The trend is rising for this age group in terms of initiation. According to the annual Monitoring the Future Study (MTFP) (Johnston et al.), there was a 30% increase in current smoking rates among 8th graders surveyed between 1991 and 1994 . Thirty percent of male eighth graders surveyed have tried smokeless tobacco as well (Johnston et al.). The literature clearly illustrates the importance of early identification and implementation of preventive

measures with this group of individuals (Glynn, Anderson, & Schwarz, 1991; Johnston et al.; Silvis & Perry; USDHHS, 1994).

Literature available on assessment strategies that health professionals use when caring for adolescents who are at risk for using tobacco products is sparse. Health care providers need to integrate preventive and behavioral skills into their practice if they are to have an impact on the tobacco use of today's youth (National Cancer Institute, 1992a). NPs must anticipate the risk of tobacco use or exposure in all clients no matter what developmental stage or age of the individual (Merrill, 1995).

By identifying the teenager who is at risk for initiation of tobacco use, the NP can effectively utilize strategies that may deter use of tobacco products. This study will examine strategies that NPs are using to assess adolescents' (aged 11-16 years) psychosocial risk for tobacco use.

CHAPTER 2
DEFINITIONS: CONCEPTUAL & OPERATIONAL

The purpose of the study is to examine strategies that NPs are using to assess the adolescents' psychosocial risk for tobacco use. This section will define each of the variables in the study both conceptually and operationally.

Nurse Practitioner (NP): Conceptual: A nurse specialist prepared at the master's level who delivers direct and indirect nursing services to patients in a variety of settings (Mezey, 1993).
Operational: A registered nurse who has a minimum of a bachelors degree, advanced education and training in a health care specialty area and holds Board of Nursing certification to practice in specialty area as nurse practitioner (Pearson, 1997).

Strategies: Conceptual: Health promoting approaches to prevent tobacco use in adolescents by assessing tobacco use in every client and family. Identifying the psychosocial risk factors for initiating tobacco use and becoming individually and organizationally involved as an activist in tobacco control that may prevent tobacco use (Merrill, 1995).
Operational: The assessment approaches that the NP uses to identify the adolescents who are at risk for using tobacco products, e.g., utilization of a structured assessment program, assessment of tobacco use with all families and patients, providing school based education,

and/ or member of a local tobacco coalition as measured by questions 8, 10, 11, 12, 17 and 18 on Assessment of Adolescents' Risk For Tobacco Use Questionnaire (Appendix A).

Adolescent: Conceptual: A boy or girl from puberty to adulthood; person in teens. Developing from childhood to maturity; growing up (Guralnik, 1978). Ages 10 through 18, but varies depending on research conducted (USDHHS, 1994).
Operational: Individuals between the ages of eleven and sixteen who have certain characteristics that may predispose them to using tobacco products.

Psychosocial Risk Factors: Conceptual: Factors that fall into three categories: 1) sociodemographic, 2) environmental, and 3) behavioral that are established as risk factors for initiating tobacco use (Merrill, 1996; USDHHS, 1994). Characteristics of youth at high risk for tobacco use (Glynn, Anderson & Schwarz, 1991).
Operational: Factors which include one or more of the following characteristics: previous tobacco use; parent(s) who use tobacco; sibling who uses tobacco; peer who uses tobacco; a member of a low-income and/ or a single parent home; degree of parental support; poor school performance; intention to quit school; positive attitude toward tobacco use; low self-esteem (Glynn et al., 1991; USDHHS, 1994) as measured by questions 15 and 16 on Assessment of Adolescents' Risk for Tobacco Use Questionnaire (Appendix A).

Tobacco Use: Conceptual: The experimentation (tried at least once) or daily use of tobacco products through cigarette smoking by inhaling or smokeless tobacco either as chewing tobacco or snuff (USDHHS, 1994).

Operational: Experimental (tried at least once) or daily use of cigarettes or smokeless tobacco as measured by questions 6 through 10 on Assessment of Adolescents' Risk For Tobacco Use Questionnaire (Appendix A).

CHAPTER 3
REVIEW OF LITERATURE

The review of literature presents the problem of adolescent tobacco use with cigarettes and smokeless tobacco products. The psychosocial risk factors that predispose tobacco use are then examined and are followed by the strategies that NPs can use to assess the psychosocial risk factors and tobacco use in adolescents.

Adolescent Tobacco Use

In the Surgeon General's Report (1994) on preventing tobacco use among young people, the U.S. Department of Health and Human Services (USDHHS) has compiled an extensive resource of data that emphasizes the importance of targeting teenagers in breaking a life cycle of smoking and tobacco related diseases. The report describes the health consequences of tobacco use, the epidemiology of tobacco use, the psychosocial risk factors for initiating tobacco use, the impact of tobacco advertising and efforts to prevent tobacco use among young people (USDHHS).

Several studies are currently being conducted by various organizations to look at the national data on tobacco use. One of the largest annual surveys which is conducted by the National Institute on Drug Abuse and the University of Michigan, Institute of Social Research, is the Monitoring the Future Project (MTFP) (Johnston et al., 1996; USDHHS, 1994). This study randomly sampled between

14,000 -18,500 individuals ages 17-28 years old annually from 1976 - 1994. Data collection for the MTFP occurs in the spring each year in approximately 130 public and private high schools throughout the United States (Johnston et al.). Since 1991 the study has included 8th and 10th grade students as well (Johnston et al.). Lifetime cigarette use was 44% for eighth graders in 1991 (youth 13 to 14 years of age) and 46.1% in 1994. The tenth graders (15 to 16 years of age) had similar increases from 55.1% in 1991 to 56.9% in 1994 (Johnston et al.).

In the same study, smokeless tobacco use was also analyzed. Approximately 22% of eighth graders and 28.2% of tenth graders were using smokeless tobacco in 1991. In 1994, the eighth graders had a 19.9% and tenth graders a 29.2% lifetime use (Johnston et al., 1996). Prevalence of tobacco use among high school seniors and dropouts together was approximately 25%; this replaced the adult smokers who quit or die (Glynn, 1993).

When high school seniors were asked about their beliefs about smoking, 67.6% stated they believed that smoking one or more packs of cigarettes per day was a risk to personal health (Johnston et al., 1996). Of this same group, the number of seniors who had smoked in the 30 days prior to the study (31.2%) had steadily increased (Johnston et al.).

The age when most youth begin using tobacco products on a daily basis is 11-15 years, with the highest incidence at 15 years. The initial use drops dramatically after age fifteen with few young adults starting to use tobacco after leaving high school (Cleary,

Hitchcock, Semmer, Flinchbaugh, & Pinney, 1988; Johnston et al., 1996; USDHHS, 1994;).

In New Zealand a six year longitudinal study assessed the transition to cigarette smoking during adolescence (Fergusson & Horwood, 1995). The results of this study revealed that once an adolescent became an occasional smoker they rarely returned to a nonsmoking status. The youth engage in transitions through stages in order to become a regular smoker; it was unlikely that the youth would return to an earlier stage (Fergusson & Horwood).

In another study of trends in cigarette smoking among U.S. adolescents between 1974-1991, the authors analyzed randomly collected data obtained from a) the National Household Surveys on Drug Abuse (NHSDA), b) the University of Michigan, Institute for Social Research High School Seniors Survey, and c) the National Health Interview Survey (NHIS) conducted by the National Center for Health Statistics, Centers for Disease Control and Prevention (Nelson, Giovino, Shopland, Mowery, Mills, & Eriksen, 1995). This study's results revealed that smoking prevalence among male and female teens was essentially equal by 1991 and that the rate of decline in tobacco use of this population has stopped. One difference noted was that less than five percent of Black adolescents were smoking as compared to 11% of White adolescents (ages 12-16 years old) in the 1991 NHSDA study (Nelson et al.).

Smokeless tobacco use by adolescents is increasing; this is especially true for males. The 1992 MTFP results revealed that 53.7% of males and 12.1% of females 11-18 years old had tried smokeless tobacco. Regionally, 38.6% of the North Central youth had

used smokeless tobacco with White males using more than Blacks or White females (USDHHS, 1994). The findings of the NHSDA survey were similar to the MTFP study. There was a steady increase of tobacco use by adolescents 12-18 years. Although those 17-18 years of age had a 20.9% use, the percent of use by gender and ethnicity varied, e.g. White males (28.4%), Black males (6.7%), White females (4.4%), and Black females (2.1%) (Bartecchi, MacKenzie, & Schrier, 1994; USDHHS, 1994).

Psychosocial Risk Factors That Predispose Tobacco Use

Current literature on psychosocial factors that predispose adolescents to using tobacco demonstrated that there was a correlation between the factors of peer use, family use and coming from a low-income home (Cleary et al., 1988; Eckhardt et al., 1994; Glynn et al., 1991; Hansen, 1983; McCaul, Glasgow, O'Neill, Freeborn, & Rump, 1982; Nolte, Smith, & O'Rourke, 1983; Simon, Sussman, Dent, Burton, & Flay, 1993; Sussman, Brannon, Dent, Hansen, Johnson, & Flay, 1993; USDHHS, 1994). Many of these studies were conducted with junior high and senior high school students, but did not account for those youth that had dropped out of school. According to Glynn, et al., the prevalence of smoking among dropouts is up to 75%. To effectively prevent initiation of tobacco use, efforts must address socioeconomic status, family or peer use of tobacco and adolescent attitude regarding tobacco products.

In a study conducted in Illinois, when both parents smoke there is a greater likelihood that the child would smoke; parental attitude about smoking also plays a role in whether the adolescent smoked (Nolte et al., 1983). Similarly, if the adolescent's friends smoke,

chances are the adolescent will smoke (Botvin & Eng, 1982; Coe, Crouse, Cohen, & Fisher, 1982; Gordon, 1986; Headen, Bauman, Deane, & Koch, 1991; McCaul et al., 1982). Sports figures and the media also have an impact on tobacco use (USDHHS, 1994). Adolescents watch professional baseball players chew tobacco, and thus imitate that behavior as an important part of playing sports. Smoking also is evident in many movies, as the "macho man" image or the "sophisticated lady".

In the 1988 Muscatine Study, 2,154 eleven through nineteen year olds completed a questionnaire to identify adolescents at risk for becoming habitual smokers. The questionnaire included variables associated with smoking and was designed to see if the influence of the factors differed. The results suggested that those students who were at greatest risk were those who were the least committed to school or were either very popular or the least popular in school (Spear & Akers, 1988).

Another factor that was significant in many studies was the difference in racial initiation between White and Black adolescents. Smoking initiation was assessed in 1,277 nonsmokers age 12-14. Over a two year period 24% of the White nonsmokers and 14% of the Black nonsmokers started to smoke. The White youth started smoking at 12 years of age and Black youth started at 14 years of age. Having a friend who smoked increased the incidence for the White youth more than twofold, but had no effect for Black youth (Headen et al., 1991).

It is difficult to describe the characteristics of youth at risk for using tobacco products according to a National Cancer Institute Expert

Advisory Panel (Glynn et al., 1991). The advisory panel concluded that while some high risk characteristics were specific to those youth at risk for alcohol and drug abuse, tobacco was recognized as a "gateway drug" for other addictive substances. Thus, the panel determined that all areas should be considered. "Gateway drugs" are those substances that are highly correlated to subsequent use of illicit drugs such as marijuana, cocaine and alcohol (Glynn, 1993; Johnson et al., 1996; USDHHS, 1994).

The psychosocial risk factors that are summarized in the recommendations of the National Cancer Institute Expert Advisory Panel (1991) list several other factors besides those previously described (Glynn et al., 1991). These include one or more of the following characteristics for individuals 21 or younger: a) child of a substance abuser, b) victim of physical, sexual or psychological abuse, c) mental health problems, d) attempted suicide, e) committed a violent or delinquent act, f) experienced long-term physical pain due to injury and g) experienced chronic failure in school.

In the Preventing Tobacco Use Among Young People: A report of the Surgeon General (USDHHS, 1994), 27 studies of smoking onset were analyzed with psychosocial characteristics for tobacco use identified. The overall findings concluded that sociodemographic factors, low socioeconomic status, developmental stage and male gender play a significant role in tobacco initiation. Environmental factors included a) accessibility, b) advertising, c) parental use, d) sibling use, e) peer use, f) normative expectations, g) single-parent home, h) blue-collar parent and i) social support. Behavioral factors included a) lack of academic achievement, b) intention to quit school,

c) other problem behaviors, d) constructive behaviors, e) behavioral skills, f) positive attitude toward tobacco use, g) intentions to use and h) experimentation. Personal factors for use included a) knowledge of consequences, b) functional meanings, c) subjective expected utility, d) self-esteem/self-image, e) self-efficacy, f) external locus of control, g) personality factors and h) psychological well-being (USDHHS, 1994; Glynn et al., 1991).

Strategies Used By Health Providers

Strategies that the NP can use to assess an adolescent's psychosocial risk factors for using tobacco products are varied and can include individual, group or community efforts. Much of what is written for clinical interventions is documented in medical journals and/ or distributed by the National Cancer Institute (Fiore, Wetter, Bailey, et. al., 1996; Merrill, 1995; National Cancer Institute, 1992b). The primary investigators in the studies reviewed were physicians (Cleary et al., 1988; Hunter, Webber, & Berenson, 1980; Slade, 1993).

Within the clinic, the NP can initiate a "tobacco status vital sign" that identifies clients who are current tobacco users, former tobacco users or never users (Fiore, et al, 1995). A study done at Mayo Clinic in 1995 concluded that 81% of adult clients reported that their health care provider inquired about their smoking status (Fiore, et al). Seventy percent reported that their clinician advised them to quit smoking the day of their visit, and 43% had been given specific instruction on how to stop smoking. By prompting health care providers, the issue of smoking was addressed significantly more often with the addition of the "vital sign" (Fiore et al., 1995; Fiore, Wetter,

Bailey, et al., 1996). Although this study focused on adults, it may be useful across the life span.

The National Cancer Institute (1992b) recommends interventions for children age 0-20. Each age group is described specifically with interventions geared to that age group. The providers focus on **anticipating, asking, advising, assisting, and arranging (the 5 As')** and thus ensure the care is specific to the child or adolescent seen. Some target age categories which the health care provider should target are 0-4 years, 5-12 years, and 13-20 years of age.

At ages 0-4, the provider can anticipate the child's exposure to tobacco smoke. This can include prenatal visits for tobacco use during pregnancy and emphasizing the relation to respiratory illness, chronic middle ear effusion and increased hospitalization. The provider can ask about tobacco use in the child's home, day-care, or school. Advising the parents to stop using tobacco is also encouraged (National Cancer Institute, 1992b).

Many times the child's health care provider is the only contact the family has with a health care provider, and this advice reinforces the message to stop tobacco use. If the parents are willing to stop using tobacco, the provider must identify effective tobacco cessation strategies for the parents to use. Arranging follow-up visits and asking at each follow-up visit if the parents have stopped using tobacco lets the parents know that the provider believes the tobacco prevention and cessation programs are important to the health of the child and others in the family (National Cancer Institute, 1992b).

In a study of exposure to environmental tobacco smoke in the U.S. conducted from 1988-1991, it was found that 87.9% of

non-tobacco users had detectable levels of serum cotinine, a metabolite of nicotine (Pirkle, Flegal, Bernert, Brody, Etzel, & Maurer, 1996). This further emphasizes the impact of environmental tobacco smoke and its effect on non-smokers, both children and adults.

For the children 5-12 years of age, the provider can anticipate that the children will begin experimenting with tobacco products as early as five years old. By letting the children be actively involved in their health care, they may establish health promotion behaviors that will include tobacco abstinence. Anticipatory guidance for the parents should also be enforced. Emphasizing that tobacco use begins in elementary school and that these children are being molded by what they see around them, the provider can reiterate the effects of modeling and imitating that these children will demonstrate. In this age group, the provider can ask the child if there is any harm in using tobacco, assessing the child's knowledge of health risks with tobacco use (National Cancer Institute, 1992b).

The NP can assess the child's use of tobacco products or whether any friends use tobacco. The parents can be asked if anyone in the household, i.e., caregivers, teachers or authority figures, use tobacco. It has also been found that poor academic performance is associated with tobacco use, so the child can be asked about his or her school progress or if tobacco use is discussed in school (USDHHS, 1992).

Offering advice to both children and their parents concerning tobacco use is the next step with the five to twelve year olds. Children can be taught the short-term negative effects of tobacco use, such as tobacco odors on clothes and hair, addiction, stained teeth and

fingers, bad breath, decreased stamina and athletic performance. For those children who have experimented already- advise them to stop (National Cancer Institute, 1992b).

Those who have not started should always be prepared to refuse offers of tobacco products. Parents should be advised that they are role models for their children, as are older siblings or grandparents. Children of smoking parents are twice as likely to smoke as those children who are from non smoking families (USDHHS, 1994). The children will view tobacco use as a way to deal with stress or boredom and learn to use tobacco for the same reason. The NP can vary his or her assistance of the child according to the potential risk that the child exhibits (National Cancer Institute, 1992b).

Children who are at higher risk for tobacco use or those who have already experimented with tobacco products may require help in developing specific refusal skills. Role playing "peer pressure" can help the child find a way to refuse offers for tobacco products without losing self-esteem. The provider can also utilize magazine tobacco advertisements to demonstrate the falsely portrayed image of smoking as glamorous, healthy, sex appealing and mature. This will help the child understand the misleading nature of these advertisements (National Cancer Institute, 1992b).

Again, offering tobacco cessation to the parents emphasizes the importance of this issue to them and the children. Tobacco using children may require more frequent follow-up visits to assess changes in use and success with cessation efforts. For the children who are at low risk for tobacco use and who are not experimenting with tobacco,

the NP can offer compliments and encouragement to continue their healthy behavior (National Cancer Institute, 1992b).

Adolescents who are between the ages of 13-20 are the most vulnerable to using tobacco products. Confidentiality of the discussions between the provider and adolescent must be emphasized. Questions regarding tobacco use must be tactfully addressed, including smokeless tobacco products and peer use at each visit (National Cancer Institute, 1992b). Providing insight into some of the effects of tobacco use, such as decreased athletic performance can help in deterring tobacco use (National Cancer Institute). Adolescents are more concerned with the here and now, so emphasizing the issues of tooth staining, bad breath, oral sores and foul-smelling clothes may impact them more than stressing the long term effects (Sanders et al., 1987).

Use of a previsit questionnaire can aid in eliciting information that the adolescent may not feel comfortable discussing face to face (USDHHS, 1992). One such questionnaire is the American Medical Association's Guidelines for Adolescent Preventive Services (GAPS) (Levenberg & Elster, 1995). This questionnaire has a health history form that the parent completes and a shorter history form that the adolescent also completes. Another tool is a computer-assisted detection and intervention program that adolescents utilize prior to seeing the health care provider. The computer was chosen by adolescents over a questionnaire or personal interview in regards to sensitive topics such as sociosexual issues including tobacco use (Paperny, Aono, Lehman, Hammar, & Risser, 1990).

Adolescents who do use tobacco should be advised that it is easier to stop now than later. Emphasizing the short term negative effects of tobacco products, the NP can personalize the message. Congratulating the adolescent who does not use tobacco products and advising them to continue to resist its use will send a strong message to resist pressure. Discussing magazine advertisements will help to reiterate the media's exploitation of tobacco products. Contracting with the adolescent who is not smoking or providing a letter that praises the adolescent is also a powerful reinforcer of anti-tobacco use (Silvis & Perry, 1987). Role playing with younger adolescents to say "no" to peer pressure will help the adolescent understand the NP's stand on the use of tobacco products (National Cancer Institute, 1992b).

Utilizing material from various health promotion organizations is another helpful strategy in which the NP can emphasize his/her stand against tobacco use. The brochures, Clinical Interventions to Prevent Tobacco Use by Children and Adolescents and How to Help Your Patients Stop Smoking, are available from the U.S. Department of Health and Human Services and National Cancer Institute (1992a & 1992b). Another brochure, Beat the Smokeless Habit Game Plan for Success, about smokeless tobacco use is also available from the National Cancer Institute (National Cancer Institute, 1993). The American Cancer Society, American Heart Association, American Lung Association, Michigan Advocates for Smokers Health (MASH) and the Barbara Ann Karmanos Cancer Institute of Michigan also have printed brochures and pamphlets available.

Other organizations that offer educational videos, T-shirts, posters, stickers, trading cards and other anti-tobacco propaganda to health care providers are DOC (Doctors Ought to Care) (Blum, 1992) and STAT (Stop Teenage Addiction to Tobacco) (Merrill, 1995). The DOC in Michigan has a primary objective to provide counter-advertisement and provide school-based education (Anderson, 1996). Both of these organizations are very active in the fight against tobacco use by adolescents and welcome NPs to become actively involved in their program (Merrill). In addition, the Michigan Department of Public Health has several graphic posters targeting adolescents; some show animals with cigarettes in their mouths, others provide cost comparisons of cigarettes with compact discs.

Another strategy for the NP is involvement in school prevention programs and/or community programs. As a role model in the community, the NP can act as an advocate for a particular program by working closely with the health education teachers on how to approach this topic most effectively. In the community, the NP can attend local tobacco coalition groups and find ways to promote a smoke free community (Merrill, 1995; National Cancer Institute, 1992b).

Tobacco prevention programs developed for integration in school health vary in their length, focus and method of approach. Four common approaches include informational (rational), affective educational (increase self-esteem and interpersonal skills), alternatives available (social norms), and social pressures (social reinforcement) (Bruvold, 1993). Other tobacco awareness programs are being conducted through state health departments or by other state agencies.

In these programs, the focus is not on prevention, but on identifying why the adolescents use tobacco and present interventions to stop tobacco use.

In one study of the efficacy of a 12 session multicomponent school based prevention program, a significant reduction in tobacco use onset was noted in the experimental group as compared to the control group of seventh graders (12- 13 years old) (Botvin & Eng, 1982). The program, taught by older peer leaders, provided factual information on tobacco use, self-image, self-improvement, decision making, advertising techniques, coping with anxiety, social skills, communication skills and assertiveness. At the one-year follow-up the experimental group still had fewer students who became regular tobacco users (Botvin & Eng).

Staying informed on tobacco control and state nursing views on tobacco is another avenue (Merrill, 1995). Merrill states that the American Nurses Association and State Nurse Associations strongly support efforts to decrease adolescent tobacco use. Thus, state and national involvement is also a strategy to pursue (personal communication, August 5, 1996).

Utilizing data available on the computer information highway is another avenue for NPs to be familiar with current research and related tobacco topics. The College of Nursing at Ohio State has a World Wide Web site that discusses tobacco intervention. This site is the Nursing Center for Tobacco Intervention (Nursing Center for Tobacco Intervention, 1997). Other sites that focus on health related computer assisted primary care include the Office of Disease Prevention and Health Promotion, Put Prevention into Practice,

AHCPR, the National Institute of Nursing Research and the National Health Information Center (Korn, 1996a; Korn, 1996b; Trepka & DiGuisepppi, 1997).

This literature review examined trends in adolescent tobacco use by examining results of annually conducted national surveys of adolescent tobacco use, smokeless tobacco use, and transitions of tobacco use among adolescents. It also examined current risk factors which may predispose adolescents to tobacco use, e.g., parents, siblings and/ or peers who use tobacco, single parent home, the adolescents attitude about tobacco use, lack of academic achievement, accessibility or experimentation with tobacco, and self-esteem/self-image of the adolescent. The review concluded with an examination of current strategies, including the "tobacco use vital sign" implementation, the 5 As' (anticipating, asking, advising, assisting, and arranging), previsit questionnaire use, advertisement discussion, community, state or national involvement and school-based education available which the NP can utilize in practice. Although there is considerable support for the use of the strategies by NPs there is minimal information about their use by NPs.

CHAPTER 4
THEORETICAL FRAMEWORK

For the purposes of this study, the Revised Health Promotion Model (RHPM) (Figure 1) by Nola Pender (1996) provides an appropriate framework to aid the NP who is working with adolescents at risk for using tobacco products. The RHPM proposes relationships between the individual's characteristics and experiences, behavior-specific cognitions and affect with the resulting behavioral outcome described (Pender). Pender's RHPM utilized concepts from the social cognitive theory developed by Bandura (1986) as well as the expectancy-value theory of human motivation described by Feather (1967).

Within the RHPM the individual's characteristics and experiences are divided into prior related behavior and personal factors. The behavior specific cognitions and affect area is where modification through nursing action can result. There are several variables that are of significance within this category. These include perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, norms, support, models, and situational influences. The result of the interplay within the individual characteristics and behavior-specific cognitions is the behavioral outcome. Behavioral outcome may contain immediate

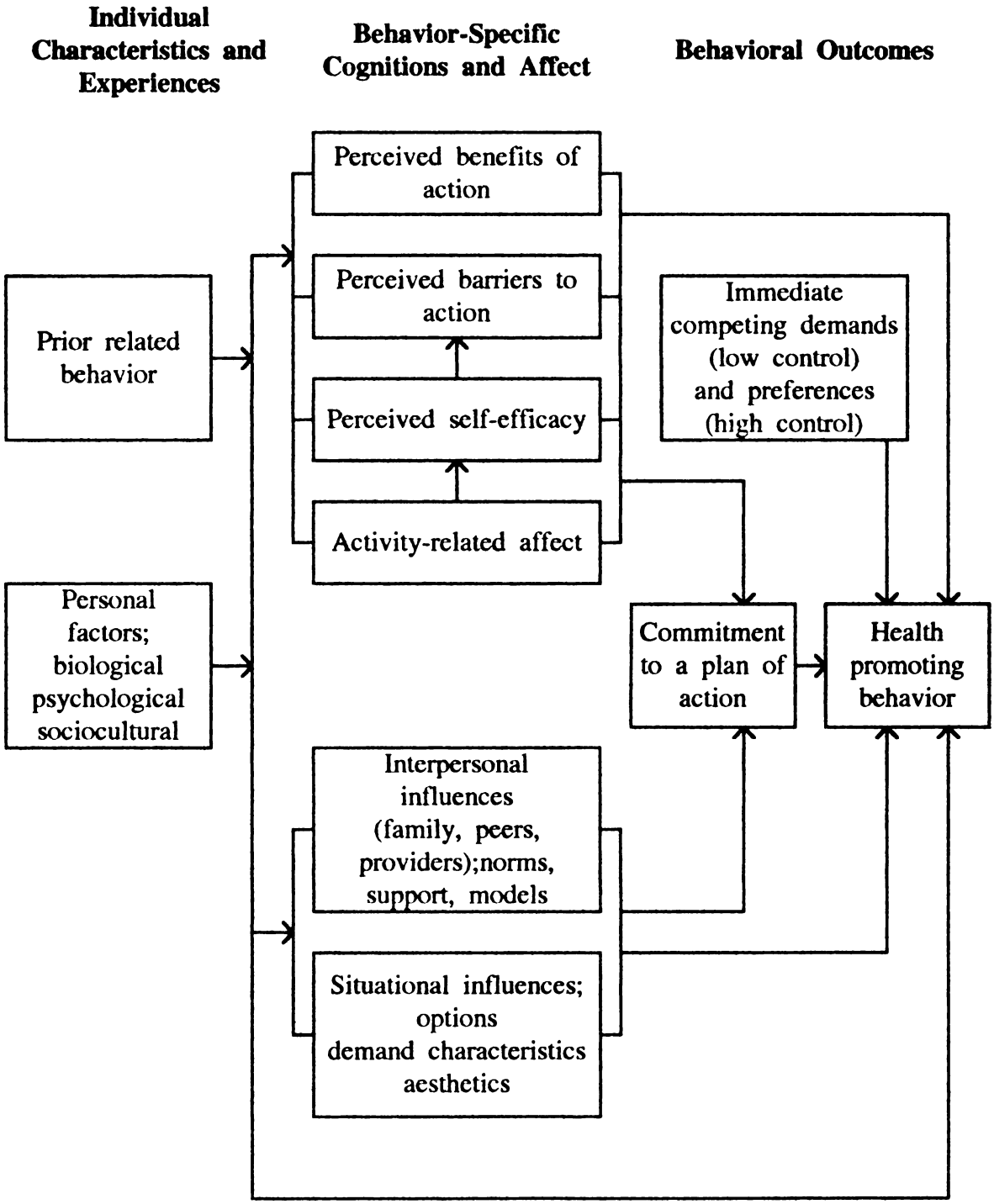

Figure 1. Revised Health Promotion Model (Pender, 1996, p. 67).

competing demands and preferences which lead to a commitment, a plan of action and health promoting behavior (Pender, 1996).

As of this date the RHPM has not been tested, however, an earlier version, the Health Promotion Model (Pender, 1975), has been utilized in several studies to predict overall health-promoting lifestyles as well as specific behaviors across the lifespan. Most of these studies were conducted with adults, however, one study examined gender and developmental differences in exercise-related beliefs and exercise behaviors of youth (Pender, 1996). This study's findings revealed that the effects of perceived health status, grade in school, self-efficacy, social support for exercise and exercise norms indirectly affected exercise through the exercise benefits and barriers differential (Pender, 1996).

In general the results of the studies indicate that the behavior-specific variables of perceived self-efficacy, benefits and barriers were supported as predictors of health behaviors (Pender, 1996). Pender (1996) states that the health-specific variables need to be reevaluated as to their centrality in predicting, protecting and promoting health behaviors.

During the planning for prevention and health promotion the individual's characteristics, experiences, behavior-specific cognitions and affect can be assessed (Pender, 1996). By completing a health assessment of individuals, the NP can focus on functional health patterns, physical fitness, nutritional assessment, health risk appraisal, life stress review, spiritual health, social support systems, health beliefs and lifestyle assessment (Pender). The outcomes of the health assessment will help the client and NP identify health assets, lifestyle

strengths, health beliefs and behaviors that put the individual at risk. It will also enable the client to determine areas to change to improve the client's quality of life (Pender).

Utilizing variables from the RHPM (Pender, 1996), the Modified RHPM for Adolescent Tobacco Use (Figure 2) concentrating on specific variables that assess psychosocial risk factors for tobacco use by adolescence was developed by this investigator. The variables include personal factors, including biological factors and psychosocial risk factors related to tobacco use, interpersonal influences, situational influences, commitment to an assessment approach/ program, competing demands/preferences and tobacco abstinence.

Personal factors. These include biologic, psychologic and sociocultural factors. Biological factors can include variables such as age, gender, puberty status, body mass index, aerobic capacity, strength, agility or balance (Pender, 1996). With the initiation of tobacco use occurring prior to 12 years of age at 14% and daily use of tobacco by age 16 for male or female youth at 24.9%, the biological factors such as age, gender and puberty status indicate that the assessment of tobacco use is an important component that a NP must address with youth ages 11- 16 years of age (USDHHS, 1994).

Psychological factors include variables such as self-motivation, personal competence, self-esteem, perceived health status, and definition of health (Pender, 1996). By assessing an adolescent's level of self-esteem and perceived health status the NP can evaluate the risk of tobacco use. The at risk youth tends to have low self-esteem, feels invulnerable to the effects of tobacco, shows poor academic

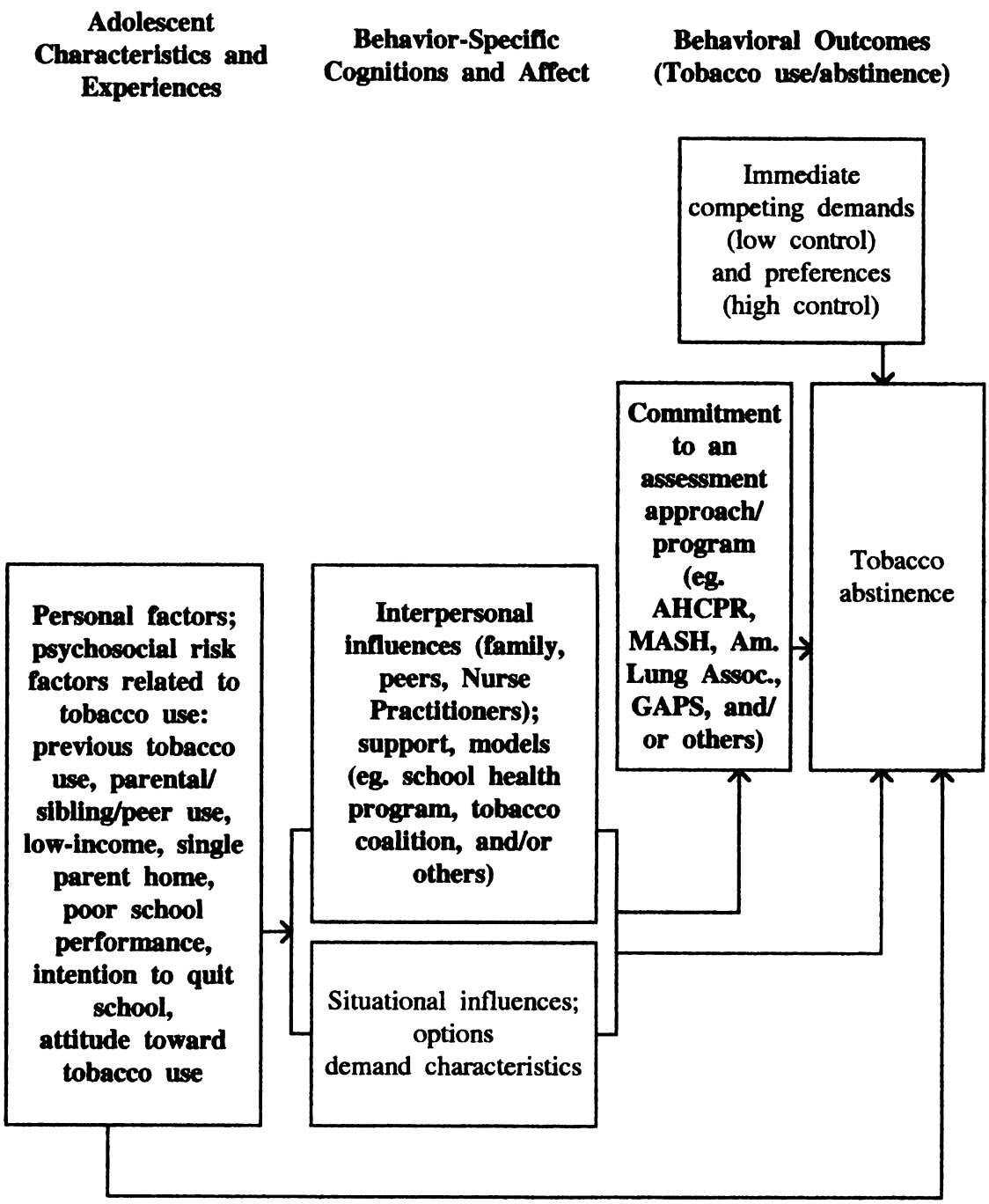

Figure 2. Modified/Revised Health Promotion Model Applied to Adolescent Tobacco Use (Adapted from Pender, 1996, p. 67).

achievement, and has a positive attitude about tobacco use (USDHHS, 1994).

Sociocultural factors can include variables such as race, ethnicity, education, acculturation and socioeconomic status (Pender, 1996). For adolescents who are at risk for using tobacco products, this category provides information that can be most helpful for the NP. At risk youth tend to be from low socioeconomic families and have poor academic achievement. The rate of initiation of tobacco use varies depending on ethnic background. White youth start using tobacco earlier than Black or Hispanic youth, but ethnic differences are eliminated when tobacco acquisition is easy (USDHHS, 1994).

Psychosocial risk factors related to this study include the following characteristics: a) previous tobacco use, b) living in a rural area, c) having a blue-collar parent, d) from a low-income home, e) from a single parent home, f) poor school performance, g) intention to quit school, h) positive attitudes toward tobacco use, and i) external locus of control (Glynn et al., 1991). They are reflected in bold print under personal factors section of the Modified/ RHPM (Figure 2).

Interpersonal influences. Families, peers and health care providers are all primary sources of interpersonal influence. As individuals view the world around them, they develop an expectation of what is "normal" behavior, adapt to the social support available and model the behavior of those they find most like them or they want to be like (Pender, 1996). This is especially true of the adolescent who is struggling with physical and social changes. Interpersonal psychosocial risk factors identified in adolescents who are at risk for tobacco use include a) families where parents or siblings use tobacco

b) peers are tobacco users and c) role models use tobacco products (Glynn et al., 1991). The media and tobacco industry's portrayal of tobacco users has a significant impact on the adolescent as well (Blum, 1992; USDHHS, 1994).

Nurse practitioners who do not use tobacco can portray a positive role model image that adolescents can imitate (USDHHS, 1994). The NP as an influential health care provider can become involved in local, state or national tobacco control issues that impact the adolescents of the United States (Merrill, 1995). This can include involvement in school health education programs, development of local tobacco coalition groups, or use of anti-tobacco posters in the office or agency (Figure 2).

Situational Influences. Personal cognitions and perceptions of a situation can facilitate or impede a behavior (Figures 1 and 2). The situational influences are direct and indirect influences on health behavior and include options available, demand characteristics and aesthetic features of the environment. Individuals are drawn to situations where they feel compatible and comfortable rather than incompatible, so the individuals will conform to the environment to "fit in" (Pender, 1996). For example, a "no smoking" area creates demand characteristics for nonsmoking behavior. As more facilities become "smoke free", there is a commitment to having clean air and healthy behaviors result.

Commitment to a plan of action. In the Modified/RHPM (Figure 2) the NP's commitment to a plan of action promotes the desired behavioral outcome, i.e., tobacco abstinence by at risk adolescents. Commitment to carry out an action with a particular person or alone

and the identification of strategies to carry out the action will help to ensure that the individual is committed to the plan of action (Pender, 1996). NPs have an abundant supply of materials available for use in assessing youth at risk for using tobacco products (Merrill, 1995). By integrating one of the available assessment approaches/ materials into the primary care setting for use by health providers, the NP is implementing a commitment to carry out a plan of action that addresses tobacco use (Figure 2). The strategy of contracting between the NP and the adolescent who is wanting to stop using tobacco products or keep from using tobacco products will enhance the adolescent commitment to carry out their goal of a health promoting behavior, i.e., tobacco abstinence (Pender).

Competing demands. To achieve the goal of tobacco abstinence, there are the competing demands and preferences that intrude into the consciousness immediately prior to the intended commitment to the plan of action (Figure 2) (Pender, 1996). To inhibit competing preferences the individual must exercise self-regulation and control capabilities. The NP may do some "role playing" with the adolescent to practice to overcome pressure from peers to start or continue using tobacco products (National Cancer Institute, 1992b).

Health promoting behavior. The ultimate goal in the Modified/RHPM (Figure 2) is tobacco abstinence of the adolescent. This behavior is directed toward a positive health outcome for the individual (Pender, 1996). For the adolescent who is at risk for using tobacco products, the goal of a life without tobacco will lead to a healthier lifestyle, behavior to imitate and decreased medical costs for tobacco related health diseases.

The intent of this study is to focus on the shaded areas of the Modified/RHPM (Figure 2), i.e., the personal factors particularly the psychosocial risk factors related to tobacco use such as previous tobacco use, parental/sibling/peer use, low-income, single parent home, poor school performance, intention to quit school and adolescent attitude toward tobacco use. The study further focused on the interpersonal influences of family, peers, and more importantly the NPs who hold a commitment to an assessment approach/ program, e.g., AHCPR, MASH, GAPS, which lead to goal attainment, i.e., tobacco abstinence of the adolescent.

CHAPTER 5
METHODS

This chapter includes the study's assumptions, the research design, the target population and sample descriptions, the instrumentation process including the development of the questionnaire, the pilot study, and the NP participants. Reliability and validity methods and a description of human subjects protection are provided.

Study Assumptions

1) All respondents to the questionnaire are practicing NPs who assess adolescents' risk for tobacco use.

2) All respondents will complete the questionnaire themselves and not pass the questionnaire on to colleagues to complete.

3) Questionnaires will be returned within the time allotted for inclusion in the study.

4) The eight pilot study respondents have experience in adolescent health and are familiar with current literature available on adolescent tobacco use.

5) The eight pilot study respondents will not receive further information about adolescent tobacco use prior to retesting with the questionnaire to ensure test/retest reliability.

6) Face and content validity of the questionnaire is achieved with questionnaire review by experts on adolescent tobacco use and/or

faculty at the university who work with adolescents or health promotion.

The Research Design

This Level I exploratory descriptive study used a structured questionnaire to identify the strategies the NPs use to assess adolescents' psychosocial risk for using tobacco products. While there is a lack of information on this topic in the nursing and health literature, this flexible research approach is appropriate since it can serve as a starting point to generate a hypothesis or theory (Polit & Hungler, 1995). This study employed two samples, a graduate student sample to test the instrument and a target sample of practicing NPs to examine the strategies used.

Target Population

The target population consisted of 821 NPs who currently practice in a variety of settings within the lower peninsula of Michigan. A nurse practitioner was defined as an individual who is a registered nurse certified as a nurse practitioner in the State of Michigan and a member of the Michigan Nurses Association (MNA). The settings may include: family practice clinics, HMO organizations, school based clinics, specialty clinics, county health departments, adolescent family practice clinics, nursing centers and pediatric clinics.

The MNA supplied a map which divided the lower peninsula of Michigan into five regions (Table 1). The regions were divided according to MNA regional designations; Region 1, the upper peninsula, was exempt from this study. Region 2, the north central area included the following counties: Emmet, Cheboygan, Presque Isle, Alpena, Montmorency, Otsego, Charlevoix, Antrim, Grand

Traverse, Leelanau, Benzie, Manistee, Wexford, Missaukee, Roscommon, Ogemaw, Kalkaska, Crawford, Oscoda, and Alcona. Region 3, the west central area of the state, included Mason, Lake Osceola, Oceana, Newaygo, Mecosta, Muskegon, Kent, Ionia, and Ottawa counties. Region 4, the east central area, included the following counties: Arenac, Gladwin, Clare, Isabella, Midland, Bay, Huron, Tuscola, Lapeer, Genesee, Iosco, Saginaw, Gratiot, Shiawasee, Sanilac, St. Clair, and Macomb. Region 5, the southwestern area, included counties: Berrien, Vanburen, Allegan, Barry, Calhoun, Kalamazoo, Cass, St. Joseph, Montcalm, Clinton, Ingham, Eaton, Jackson, Hillsdale and Branch. Region 6, the southeastern area, included Washtenaw, Monroe, Livingston, Lenawee, Oakland and Wayne counties.

To determine the size of the target sample, the investigator did a conventional power analysis of the target population of NPs noted on the MNA list. Given an average correlation in nursing studies of approximately .20 (Polit & Hungler, 1995), α value of .05 and a power of .80, the sample size needed was 197. The investigator rounded up to an even 200 for this study.

The regions were analyzed for the number of NPs residing in each region. With a target sample of 200 and five districts, the investigator calculated the percent of NPs residing in each region and then determined the percent of the 200 to be selected from each region. The investigator then selected every sixth NP from each region according to their residence until 200 NPs had been selected (Table 1).

Sample

This study utilized two samples, a pilot sample of graduate students and NP study participants. The pilot sample, eight Michigan State University College of Nursing masters' students currently enrolled in the family clinical nurse specialist/ nurse practitioner tract, completed the questionnaire twice at three week intervals to test the reliability of the instrument. The study sample of 200 NPs was selected to be a representative proportional sampling based upon MNA regions of the lower peninsula of Michigan (Table 1).

Table 1.

Regional Number of NPs N = 821 n = 200

REGION	NPs N	SAMPLE NPs n	PERCENT
2	44	10	5%
3	95	24	12%
4	103	24	12%
5	152	38	19%
6	427	104	52%
TOTAL	821	200	100%

Instrumentation

This section provides a description of how the questionnaire was created and the procedures for question development included in the questionnaire. The process for the selection of the pilot sample and target NP sample is further described.

Development of questionnaire

After an extensive literature review the investigator began the development of the questionnaire (Appendix A). The questionnaire was created to examine strategies that NPs use to assess adolescent tobacco use. Each question contained one or more items that could be selected by the respondents. Questions 1-5 focus on the demographic characteristics of study participants. These were needed to ensure the respondent NP met the study's criteria for inclusion. Questions 6-11 assessed the beliefs, importance, when, how and whether brochures were given to adolescents regarding tobacco use. By assessing these areas the investigator determined whether the NPs believed that adolescent tobacco use was an area of importance in their practice and the methods of assessment approach they used.

Questions 12-14 assessed the structured assessment approach that the NPs used to address tobacco use, as well as factors that promote and/ or hinder the use of the approach. The literature review revealed the nine approaches listed on question 12. Some of these assessment approaches overlap with the assessment of tobacco use, e.g., Michigan Advocates for Smokers Health. Other assessment approaches are distinct in the way tobacco use is assessed, e.g., National Cancer Institute (5 As). To examine why the assessment approach or programs are used or not used, questions 13 and 14 were developed.

Question 15 was inserted to determine whether the NPs did assess psychosocial risk factors for initiating tobacco use. Question 16 listed psychosocial risk factors that can be assessed. Depending on the adolescent's response to these risk factors, the NP can anticipate tobacco use or experimentation. According to the literature these

factors play an important role in tobacco use initiation (Glynn, Anderson, & Schwarz, 1991; USDHHS, 1994).

The final questions, 17 and 18, were included to determine if NPs are involved in community efforts to prevent adolescent tobacco use. The areas of involvement included suggestions from content experts (Merrill, 1995). It was perceived that the questionnaire might also foster the NPs own awareness and involvement in preventing tobacco use of adolescents in their local communities. A space was then provided for any additional comments that the NPs wanted to share at the end of the questionnaire.

The Pilot Study

A convenience sample of ten College of Nursing (CON) masters' students in the family clinical nurse specialist/ nurse practitioner tract were asked to complete the questionnaire on two dates, three weeks apart. The students selected were acquaintances attending CON graduate classes with the investigator. The ten respondents were given a consent cover letter along with the questionnaire to complete (Appendix A & C). The questionnaire for this group was coded by the last 4 digits of the student's identification number in order for the investigator to compare results and analyze test-retest reliability of the instrument. The students returned the questionnaires within one week in a self-addressed envelope to the investigator's campus mailbox.

Students sent the second completed questionnaire to the investigator by mail at the end of the semester. Only eight of the ten participants returned this questionnaire, so the two participants who failed to return the questionnaire were deleted from the pilot.

Some of the student participants offered comments on the questionnaire. The type of practice setting (Question 4) did not have settings appropriate for the student participants. Listed under "other" were "walk in clinic", "poor and uninsured", "currently unemployed" and "on leave". For Question 12, approaches/ programs used to assess tobacco use, some students answered "other" with a)"discussion", b) "drug representative stop smoking, i.e. Nicoderm", and c) "instruction product info from drug reps- it's free!" Questions 13 and 14 which asked for what promoted and hindered the use of the approach/ program also received comment. Comments were "don't know where to go from there, limited number of adolescents," "required assessment" and "none".

The NP Participants

The NP participants were selected from a list of 821 labels from the MNA of the names and addresses of certified NPs living in the lower peninsula of Michigan. Of the 821 NPs, 200 were systematically selected according to the five MNA districts and thus provided a representative proportional sample of NPs. The labels were affixed to pre-packaged packets consisting of an informational letter (Appendix B), the questionnaire (Appendix A) and a self-addressed stamped envelope. The packet was then sent to each participant on a designated date.

Participants were asked to complete the eighteen question investigator developed questionnaire. Although there were eighteen questions, there were 72 items that could be selected on the questionnaire. Items on the questionnaire related to the strategies that NPs use to assess tobacco use and an adolescent's psychosocial risk

of using tobacco products. Subject characteristics were also gathered from the respondents to verify that they met the operational definition and were eligible to be included in the study. Each respondent returned the completed questionnaire to the investigator in the self-addressed stamped envelope included with the questionnaire. NPs were given two weeks to complete and return the questionnaire. Of the 200 questionnaires mailed, one hundred thirty (65%) were returned to the investigator for analysis. Those who met criteria for inclusion in the study included 83 (63.8%) of the 130 respondents.

Advantages to using a self-administered questionnaire include less cost, anonymity of the respondents, and absence of interviewer bias (Polit & Hungler, 1995). SPSS was used for data analysis; the investigator then reviewed the information and interpreted the frequency tabulations (Norusis, 1993). A descriptive summary of the data was completed as well. The next step was to develop tables and insert the frequency figures on a study questionnaire (Appendix D) to further describe and visualize the collective data (Brink & Wood, 1994).

Reliability and Validity

The instrument used has been developed by the investigator and was based upon an extensive literature review. To test the reliability of the instrument, the investigator did a test-retest of stability to ensure that using the instrument over time on the same subjects would produce the same results (Brink & Wood, 1994). The results of the first testing were correlated with the results of the second testing using an alpha coefficient reliability analysis with the SPSS computer system (Norusis, 1993). The alpha coefficient for this questionnaire was

α = 1.000 for the assessment approach/ materials used by the subjects (Question 12, Appendix A) and α = .7143 for the risk factors assessed (Questions 15 & 16, Appendix A), indicating that the instrument was reliable. Validity of the questionnaire was based upon the literature review and experts. Face validity is achieved by ensuring that the questionnaire looks as though it is measuring the appropriate construct (Polit & Hungler, 1995). This questionnaire was reviewed by Emily Merrill, author of an article on nurse practitioners' strategies to prevent tobacco use in teenagers (Merrill, 1995). The instrument was also reviewed by CON professors and a clinical preceptor who works with adolescents. By presenting the instrument to experts on adolescent tobacco use and/ or faculty at the University, the investigator assumed validation of content and face validity.

Protection of Human Subjects

This study was reviewed and approved by the University Committee on Research Involving Human Subjects (UCRIHS) at Michigan State University (Appendix E). As this was a two part study, the UCRIHS committee reviewed both the pilot and study informational letters and questionnaires (Appendices A, B & C) before data was collected.

The eight masters student participants from the College of Nursing (CON) received a letter (Appendix C) which included the purpose of the study, voluntary participation and the method of coding the questionnaire for use by the investigator. Participants were asked to keep all personal information off the questionnaire, but were asked to place the last four digits of their student identification number on the upper right corner of the questionnaire. The same eight CON

students completed the questionnaire again three weeks later to assess the reliability of the instrument (Appendix A).

All NPs who participated in this study did so voluntarily. The NPs were given a letter that explained the purpose of the questionnaire and voluntary participation (Appendix B). Participants were asked to leave all personal information off the questionnaire. Professional characteristics were asked only to assess eligibility criteria.

All information was held in strict confidence. Only the investigator had access to the list of all NPs and those selected for the sample population. All data was kept in a secure locked cabinet.

CHAPTER 6
RESULTS

The information obtained from this study revealed that most NPs use a direct personnel interview to assess tobacco use. All respondents, those in the pilot and target sample, had a strong nursing background. While, the NPs reflected more years as an RN, they generally had fewer years in practice as an NP. Approaches to tobacco use were varied, however, the American Lung Association material was most commonly used. Psychosocial risk factors were assessed by the majority of participants with some risk factors assessed more frequently than others. Community involvement was limited; only 10 of the 83 respondents indicated they participated in community efforts to combat adolescent tobacco use.

Several of the questions on the questionnaire could have elicited more than one item response, as the respondents were instructed to mark all that apply. These included questions 1, 4, 9, 10, 12, 13, 14, 16, and 18. The results indicated that pilot sample subjects gave more than eight question responses and the target sample subjects gave more than 83 question responses. A copy of the questionnaire is presented with frequency tabulations inserted of each NP response for added understanding of the results. (Appendix D).

Student Pilot Sample

Since only eight of the ten pilot study participants returned the second questionnaire, data analysis was limited to eight sets of (test-retest) questionnaires. The following text and tables describe the participants' characteristics.

Education

All pilot study participants had a BSN degree and some had more than one degree (Table 2).

Table 2

Pilot Study Participants' Degree(s) Held

DEGREE	n*	PERCENT
Associate	1	12.5
Bachelors	1	12.5
BSN	8	100.0
MSN	1	12.5

***n = # of responses from 8 subjects**

Experience

The experience of the pilot study participants was varied with 62.5% having 13 or more years of experience as an RN. All were graduate students enrolled in the Family Tract of the masters program so their response to number of years as an NP was unanimous, i.e.., 0-4 years (Table 3).

Table 3

Pilot Study Participants' Experience

YEARS	RN n*	PERCENT
0-4	0	0.0
5-8	2	25.0
9-12	1	12.5
13-16	2	25.0
17 or more	3	37.5

* n = # of responses from 8 subjects

Other findings

Although the intent of the test-retest was to assess the reliability of the questionnaire, the investigator noted the following results of the student responses. Seven of the eight pilot study participants provided information on when they assess adolescent tobacco use with 66.7% asking at every visit, and 50% at the first visit (Table 4). These values indicate that the respondents may have responded with more than one response. It is interesting to note that these results were similar to results from the NP participants.

Table 4

Ask Adolescent If Use Tobacco Products/ How

VISIT	n*	PERCENT	HOW	n*	PERCENT
First	3	50.0	**Interview**	6	85.7
Every	4	66.7	**Standard Questionnaire**	3	42.9
After 2-3 Visits	0	0.0	**Anonymous Questionnaire**	0	0.0

***n = # of responses from 8 subjects**

The NP Sample

The NPs who returned the questionnaires were from a variety of backgrounds and experience. One hundred thirty of the 200 questionnaires were returned, a return rate of 65%. Of the 130 who responded, eighty three (63.8%) were included in the study as they had a minimum of a bachelors degree and cared for adolescents in their practice. Again some respondents gave more that one response to a question; this led to the numbers of responses being greater than the total amount of respondents for the study. To aid in the interpretation of this data, a questionnaire has been included which reflects the frequencies of responses for each of the 72 items on the questionnaire (Appendix D).

Education

Consistent with the pilot study, some of the NP respondents had more than one educational degree (Table 5). Those who met the

criteria for inclusion in this study had a minimum of a bachelors degree, certification as a NP and currently assessed adolescents in their practice. There were seven respondents who listed their degree as a Masters in Science in the "other" response to question one, but had no other degree listed. They were added to the list of those who were included in the study. The respondents were instructed to mark all degrees that applied to them, so respondents listed more than one degree, making the number of responses greater than 83.

Table 5

NP Degree Characteristics (Question 1)

DEGREE	n*	PERCENT
Associate	7	8.4
Diploma	10	12.0
Bachelors	14	16.9
BSN	48	57.8
MS	7	8.4
MSN	64	77.1
PhD	3	3.6
EdD	1	8.4
DNS	0	0.0

***n = # of responses from 83 respondents**

Experience

Respondents' experience as an RN and NP was also varied. Fifty-nine percent (49) had more than 17 years experience as an RN. This data reflects that this population had been in nursing and practicing for a substantial time. However, the years as an NP were

considerably less. In other words, the role of NP was relatively new compared to the role of RN. NP experience was 53% (44) for those with eight years or less (Table 6).

Table 6

NP Experience (Questions 2 & 3)

YEARS	RN n*	PERCENT	NP n*	PERCENT
0-4	1	1.2	17	20.5
5-8	3	3.6	27	32.5
9-12	12	14.5	20	24.1
13-16	17	20.5	10	12.0
17 or more	49	59.0	8	9.6
Missing Data	1	1.2	1	1.2

***n = # of responses from 83 respondents**

Work Setting

The NPs who responded to the questionnaire and were included in this study worked in a variety of settings. Those who listed their place of employment as "other" included those working at HMOs, Internal Medicine/ Pediatric ambulatory settings, hospital based clinics, and homeless primary care settings. The majority of the NPs worked in "other" facilities (30 or 36.1%) or family practice clinics (27 or 32.5%). As with other questions, respondents marked more than one response as to their place of employment. This suggested some respondents worked at more than one facility, or felt that the clinic they worked at did not fall into one specific category (Table 7).

Table 7

Work Setting (Question 4)

SETTING	n*	PERCENT
Family Practice	27	32.5
County Health Dept.	11	13.3
Pediatric	11	13.3
School Based	2	2.4
Adolescent Family Practice	1	1.2
Specialty Clinic	10	12.0
Nursing Center	0	0.0
Other	30	36.1
Missing Data	1	1.2

***n = # of responses from 83 respondents**

Adolescents Seen

The number of adolescents seen by the NPs was a criteria for participant selection. The percent of NPs who saw one through ten adolescents was 33.7% (28) while 28.9% (24) saw 11 through 20 adolescents each month. Eleven (13.3%) saw 21 through 30 adolescents every month and eight (9.6%) saw 31 through 40 adolescents. There were 12 (14.5%) who saw more than 40 adolescent clients a month (Table 8). These results indicate that the majority (62.7% or 54) of the NPs saw one through twenty adolescents every month in their practice (Table 8).

Table 8

Number of Adolescents Seen (Question 5)

ADOLESCENTS SEEN	n*	PERCENT
1-10	28	33.7
11-20	24	28.9
21-30	11	13.3
31-40	8	9.6
> 41	12	14.5

*n = # of responses from 83 respondents

Belief/ Assessment of Tobacco Use (Questions 6 through 11)

To determine whether the respondents had a concern about tobacco use with adolescents, the questionnaire included six questions that analyzed the degree of interest, importance and type of assessment the NPs used. As with other questions, some participants gave more than one response, thus resulting in more than 83 responses.

Eighty-two (98.8%) of the 83 respondents responded that tobacco use in adolescence is a concern for a NP. To determine the importance of assessing an adolescent's risk for using tobacco products a Likert scale was used. One (1.2%) respondent marked little importance, 13 (15.7%) assigned some importance, and 68 (81.9%) rated the importance of assessing adolescent risk of tobacco products use as very important.

NPs' assessment of adolescent tobacco use was then analyzed to see when NPs assessed tobacco use and how it was assessed (Table 9). Approximately 63% (52) assessed the use of tobacco by

adolescents at the first visit, 53% (44) assessed at every visit and 7.2% (6) waited until the 2nd or 3rd visit to inquire about tobacco use.

The most common technique used to assess tobacco use was the personal interview (92.8% or 77). Standardized questionnaires were also used, but not as frequently (31.3% or 26). The least used assessment approach was the anonymous questionnaire with only 4.8% or four using this type of instrument. As with other questions, the responses for this question were more than one, so the sum was greater than 83 responses.

When asked whether the NP provided educational brochures regarding tobacco use to their clients, 67.5% (56) said that they did and 31.3% (26) said they did not. Comments received from participants included "not sure they (brochures) work" and "I don't think adolescents read many brochures."

Table 9

Assessment of Adolescent Tobacco Use X Time & Method

(Questions 9 & 10)

WHEN	n*	PERCENT	HOW	n*	PERCENT
First	52	62.7	**Personal Interview**	77	92.8
Every	44	53.0	**Standard Questionnaire**	26	31.3
After 2-3 Visits	6	7.2	**Anonymous Questionnaire**	4	4.8
Missing Data	3	3.6		2	2.4

***n = # of responses from 83 respondents**

Approaches to tobacco use

Various approaches to assessing tobacco use were found in the literature. Of those listed, respondents identified the material from the American Lung Association most frequently used (43.4% or 36) (Table 10). The materials listed as "other" included: smoking cessation material from drug representatives, Prochaska's Change Theory, ACOG information for smoking women and the prison program. The most common response to the "other" item of question 12 was "having a discussion" or "using one's own handout".

The responses suggested that the programs fell into three groupings: the first grouping includes those that were used minimally, i.e., NPs who didn't address (1.2%) the issue, the American Medical Associations' GAPS (4.8%), the Michigan Advocates for Smokers

Health (MASH) (4.8%), and the Agency for Health Care Policy and Research (2.4%).

The second or moderate category included the American Academy of Pediatrics and the US Preventive Services Task Force (10.8%), the US Department of Health & Human Services (14.5%), the National Cancer Institutes' - the 5 A's (18.1%), the American Heart Association (26.5%) and development of their own approach (27.7%). The third grouping or the most likely used approach/ program to assess tobacco use included "other sources" (36.1%) and the American Lung Association (43.4%). As with other questions, this question could generate more than a one item response, so the number of responses was greater than 83 or 100%.

Table 10

Approach/ Program Utilized to Assess Tobacco Use (Question 12)

ASSESSMENT APPROACH/PROGRAM	NP USE n*	PERCENT
Don't Address	1	1.2
American Academy of Pediatrics	9	10.8
US Preventive Services Task Force	9	10.8
American Medical Association (GAPS)	4	4.8
Agency for Health Care Policy & Research	2	2.4
MASH (Michigan Advocates for Smokers Health)	4	4.8
US Dept. of Health & Human Services	12	14.5
American Lung Association	36	43.4
American Heart Association	22	26.5
National Cancer Institute (The 5 A's)	15	18.1
Develop Own Handout/ Program	23	27.7
Other	30	36.1
Missing Data	1	1.2

***n = # of responses from 83 respondents**

Reasons for Use/nonuse of Assessment Approaches/Programs

Analysis of why the NP used or did not use some of the assessment materials/approaches on tobacco use further enhanced the interpretation of these findings (Table 11). The personal interest response was the most frequent at 51.8% (43) and the cost at 49.4% (41) followed a close second.

There were three responses identified above 25% that hindered the use of the assessment approaches/programs. The length of time (30.1% or 25), not geared to adolescents (28.9% or 24), and lack of interest from the patient (27.7% or 23) were factors identified as not conducive to their work settings.

Table 11

Factors That Promote/Hinder Use of Assessment Approach

(Questions 13 & 14)

	PROMOTE		HINDER	
FACTOR	n*	PERCENT	n*	PERCENT
Personal Interest	43	51.8	5	6.0
Time / Lack of Time	26	31.3	25	30.1
Staff Interest	9	10.8	10	12.0
Patient Interest	21	25.3	23	27.7
Useful with	26	31.3	24	28.9
Lack of Knowledge	18	21.7	11	13.3
Cost	41	49.4	8	9.6
Other	16	19.3	10	12.0
Missing Data	3	3.6	14	16.9

***n = # of responses from 83 respondents**

Psychosocial Risk Factors Assessed

Nurse practitioners were asked if they assessed psychosocial risk factors for initiating tobacco use (Table 12). Fifty-six (67.5%) answered that they assessed psychosocial risk factors, 27 (32.5%) answered that they did not. Question 16 listed several psychosocial risk factors that could be assessed and 13 (15.7%) of the 83 study respondents left this question blank. This data reveals that respondents may not have understood the definition of psychosocial risk factors, or that they do assess the psychosocial risk factors for initiating tobacco use but are not aware of it.

When asked what psychosocial risk factors the NPs assessed during their client visit, 63.9% (53) said that they assessed parent, sibling, or peer use and 51.8% (43) said that they assessed socioeconomic status. Another 50.6% (42) looked at the self-esteem or self-image of the adolescent when assessing risk factors. Other risk factors were assessed but not as frequently. The least often assessed psychosocial risk factor was adolescent's skills to resist tobacco use at 31.3% (26).

Table 12

Psychosocial Risk Factors Assessed (Questions 15 & 16)

PSYCHOSOCIAL FACTOR	n*	PERCENT
Psychosocial Risk Factors	56	67.5
Family Socioeconomic Status	43	51.8
Tobacco Access	30	36.1
Adolescents' Perception	34	41.0
Parent/Peer/Sibling Use	53	63.9
Parental Support	40	48.2
Academic Achievement	38	45.8
Skills to Resist	26	31.3
Experimental Use	39	47.0
Self-esteem/ Self Image	42	50.6
Tobacco Positive Function	38	45.8
Missing Data	13	15.7

***n = # of responses from 83 respondents**

Community Involvement

Only 12.2% (10) of those completing the questionnaire participated in any community effort to stop adolescent tobacco use, while, 72 (87.8%) answered that they were not involved in any community effort to stop adolescent tobacco use (Table 13). Of those who did, five (6%) attended local tobacco coalitions, one (1.2%) taught at a local school based program and those who listed "other", (4.8% or four) included starting up a school health program initiative, participating in lobby groups against smoking, being involved in research from 1993-1994 and volunteering through AHA for youth.

Table 13

Community Involvement (Questions 17 & 18)

COMMUNITY INVOLVEMENT	n*	PERCENT
Community Involvement	10	12.2
Teach School Based Program	1	1.2
Tobacco Coalition Member	5	6.0
Member of STAT	0	0.0
Member of DOC	0	0.0
Other	4	4.8
Missing Data	73	87.8

***n = # of responses from 83 respondents**

Other findings

Many of the respondents provided comments on the questionnaire. The comments reflected the importance that the NPs placed on assessing tobacco use with adolescents or their concerns about the questionnaire. It was noted that the geriatric focused respondents (not included in sample of 83) also had insightful comments and some are included here. The comments fell into three categories. Educational comments were provided by those NPs who had more experience working with adolescents and they offered suggestions on what worked for them. Others had inquiry questions, noted ways to improve their practice or indicated the questionnaire triggered their use of materials and approaches to assess psychosocial risk factors. There were also a couple negative comments which were related to the questionnaire. Selected comments follow by the identified categories.

Educational Comments

1) "Many of those seen started as teenagers or preteen."

2) "Primarily use discussion and apply to adolescent."

3) "I tell all my patients who smoke to stop smoking."

4) "It is always accessible if they want it. I am not convinced that anything we say can undo what society is modeling concerning smoking tolerance. I encourage sport participation which seems most effective in decreasing cigarette use."

5) "Very important topic as adolescents are still starting to smoke inspite of all we know of the dangers of smoking."

6) "I believe by continuing to allow the person to come back when they are ready to quit through open discussion is the best tool. Like discussing BCM, STD, sex, or death, the NP must always initiate this discussion so there are no "taboo" topics."

7) "The role the media, i.e., TV, movies, magazines, billboards play is a very significant role in the use of cigarettes in adolescents. Helping them recognize this connection is the approach I generally use. I encourage them not to be victimized by the tobacco companies who are specifically targeting young people in their campaigns."

8) "Prioritize this in my care, ask each client to quit smoking. I understand that when a health care provider personally addresses this she may have great impact. No matter how many packs a kid smokes per day, I address the topic positively, You ARE thinking about quitting aren't you?? One big motivator to get teens to quit, is if they have genital warts, instructing on the relationship of smoking proliferates the warts due to nicotine constricting blood vessels,

impairing circulation and thus enabling the virus to spread. Kids will do anything even quit smoking to rid themselves of ugly warts."

9) "When I ask about tobacco use, I usually combine it with drugs, ETOH, sex. The parent cannot be present for honest responses. I always ask about smoking if I am treating an URI."

Inquiry Comments/ Questionnaire Comments

1) "I would be interested in learning more about teaching adolescents about tobacco use. A training session for NPs would be very helpful."

2) "I don't believe I assess this as thoroughly as I should- thanks for the incentive!"

3) "Would like pamphlet/ approach you recommend with adolescents."

4) "This questionnaire was a helpful reminder to me of more that I could be doing."

5) "I have been involved in the public health dept. 15 years & never have heard of over half the programs & resources you listed- that's sad; they need to inform us & make their resources available to us the grassroots!"

Negative comments about questionnaire.

1) "This questionnaire is not very clear- you need to rethink what it is you want to know."

2) "Questions 12 & 13 are awkward questions."

These statements are indeed valuable and offer insights about addressing this problem. Further analysis follows in both the discussion of Chapter 7 and implications of Chapter 8.

CHAPTER 7
DISCUSSION

This study examined the strategies that NPs use to assess adolescents' psychosocial risk for tobacco use. An 18 question questionnaire was developed by the investigator and completed by 130 NPs residing in the lower peninsula of Michigan. Eighty-three of the 130 respondents met criteria for inclusion in the study. Eighty-one or 97.6% of the NPs agreed that tobacco use is a concern for a NP and that assessment of adolescent tobacco use is important.

These NPs utilized a variety of strategies to assess tobacco use, however personal interview (95.1% or 77), their own approach (36.6% or 30) and the American Lung Association approach (43.9% or 36) were the three most utilized approaches they used when asking adolescents if they use tobacco products.

Although the NPs were generally aware of some of the approaches and programs that are available for tobacco use assessment, there were also those who were not as familiar with the current literature and assessment approaches available as evidenced by one respondent's comment, "I have worked in the public health dept. for over 15 years and never have heard of over half the programs & resources you listed- that's sad; they need to inform us and make their resources available to us- the grassroots!"

Examination of why the assessment approach was used or not used provided additional reasons for the use of the various approaches identified. Personal interest (43 or 51.8%) and the low cost of some materials (41 or 49.9%) were the two most likely factors to promote the use of materials. Taking too long (30.1% or 25), lack of interest from clients/ parents (27.7% or 23) and not geared to adolescents (24 or 28.9%), were identified as hindering the use of materials.

The psychosocial risk factors were assessed by 67.5% (56) of the respondents included in the study. Ten factors identified from the literature review and comments from content experts were listed on question 16. These NPs did not assess every psychosocial risk factor, but some assessed more factors than others. The most often assessed factor was the adolescent's parent/s, peers and or sibling/s use or approval of tobacco use (63.9% or 53). All other factors were assessed by NPs but not as frequently, i.e., 26 responses (31.3%) to 43 responses (51.8%).

Community involvement was the final section assessed. Ten (12.2%) of the NP respondents were involved in community activities to stop adolescent tobacco use. This was a small percentage of those surveyed. As one respondent commented, "I am just starting to encounter adolescents as patients again. This questionnaire was a helpful reminder to me of more that I could be doing".

Nurse practitioners can play an important role in addressing tobacco use in adolescents (Merrill, 1995). The above comment suggests that this questionnaire may have increased NPs awareness of assessment approaches/ programs available and which psychosocial risk

factors can be assessed to determine the risk of tobacco use in adolescents.

Practices and Beliefs

As stated earlier, respondents worked in a variety of settings and utilized various approaches or programs to assess adolescent tobacco use. Approximately 99% of those questioned believed that tobacco use was a concern for NPs and 82.9% (68) believed it was very important to assess adolescent risk for tobacco use. However, only 12.2% (10) are involved in community efforts to stop adolescent tobacco use.

The fact that 30.1% (25) thought that the length of time to assess tobacco use was a hindrance to using the assessment approach/ programs available (Table 12) suggests that perceived time constraints in practice may prevent the NP from assessing these psychosocial risk factors. Comments made by another respondent provides support, i.e., "Be realistic with time constraints for visits and willingness of patients and families to fill out questionnaires."

This study also suggests that most of the respondents were knowledgeable about assessing certain psychosocial risk factors. While 67.5% (56) stated they actually assessed psychosocial risk factors, they may not have documented assessing the risk factors that were listed on the questionnaire (Table 13). Comments by the respondents suggested their increased awareness upon completing the questionnaire.

Another area that respondents commented on, but was not included in the study was the role that the media and tobacco companies play in targeting adolescents to start smoking or using smokeless tobacco (USDHHS, 1994).

Relationships of Study Findings to the Modified/Revised Health Promotion Model

The Modified/ Revised Health Promotion Model (Pender, 1996) (Figure 2) is based on the assumption that the health care provider offers an interpersonal influence to clients seen, including adolescents. Being a primary source of interpersonal influence on health-promoting behavior, the NP can provide social support to the adolescent. Building a rapport that the adolescent perceives as comfortable and being able to speak freely can aid the NP in assessing the psychosocial risk factors that may contribute to tobacco use.

The NP can further display health promoting behavior by setting an example for adolescents to observe (Pender, 1996). This would be a perfect opportunity for the NP to become involved with the local tobacco coalition or assist with school based educational programs that address psychosocial risk factors and how parental, peer, and sibling use impact adolescent use (Cleary et al., 1988; Eckhardt et al., 1994; Glynn et al., 1991; Merrill, 1995). Only 12.2% of those who responded participated in community programs to decrease tobacco use. Six percent (five) attended local tobacco coalition meetings and one taught at a local school based program. These responses indicate that many NPs are not actively modeling an anti-tobacco use program within their community.

Norms or expectations of significant others are other interpersonal influences that the NP can exhibit. This was commented on by a NP respondent who stated, "I understand that when a health care provider personally addresses this she may have a great impact.

No matter how many packs a kid smokes per day, I address the topic positively, You ARE thinking about quitting, aren't you?"

Limitations

The limitations of this study are varied. Little is written in the nursing or allied health literature about this topic. The investigator did not know what educational degree(s) the NP respondents had or if they worked with adolescents prior to receiving the completed questionnaires, so 47 of the 130 questionnaires returned were excluded from the study. The NPs in the sample may be atypical of the target population in terms of the strategies used (Polit & Hungler, 1995). Those who responded may be more interested in the preventive care of adolescents than the average NP. Many of the adolescents who are seen in primary care clinics are there for sport physicals or acute illness; consequently, those adolescents who are tobacco users or are contemplating tobacco use are not seen on a regular basis in these clinics until they have developed an addiction to the nicotine.

With no established questionnaire to use, the investigator had to develop one, which may have lead to selection bias of questionnaire items. The amount of time needed and required to develop a questionnaire was also a limitation; it required a considerable amount of time for the review of literature, review by experts and the pilot study. An organization that could have been added to the questionnaire was the American Cancer Society, which offers several educational pamphlets. One question that was not asked was whether the NP uses tobacco or had used tobacco in the past. In modeling an appropriate behavior for youth, an NP who does not use tobacco

should have more influence on the adolescents than one who does (USDHHS, 1994).

When the questionnaire was tested on the graduate students, responses varied from one testing to the other on a few questions. One possible reason was that the informational letter provided was not clear in how the graduate students should answer the questionnaire. Some respondents answered according to their current RN position and others according to their advanced practice clinical placement. The questionnaire was also given to the students late in the semester, leading to confusion on how to answer the questions about the clinical site as they were completing the course related clinical experience. Some questions were answered differently, because respondents had used a different assessment approach/ program at different sites.

Other concerns include clarity and depth of questions, missing information, the ordering of questions, and the respondent passing the instrument on to a colleague rather than completing it themselves. (Polit & Hungler, 1995). For place of employment (Question 4) some selected the "other" response. Perhaps this was related to a lack of information given in the instructional letter or their misinterpretation of the question. NPs also listed "other" as their place of employment with 36.1% (30) responding here. The questionnaire had many questions which elicited more than one item response and thus resulted in a larger set of items (72 total) and more extensive data analysis for interpretation.

Another limitation may be that the participants provided data that they believed the investigator wanted rather than what they really believed or practiced. They may have overestimated the psychosocial

risk factors they assessed, or did not recall the organizational name of the assessment approach/ program utilized. The generalizability of the results would be of concern as the NPs decided voluntarily whether to to participate in the study (Polit & Hungler, 1995). Only through chart review and/ or client interview could one discern the extent of this bias.

CHAPTER 8
NP IMPLICATIONS

This chapter examines educational, practice and research implications for NPs and all advanced practice nurses to determine effective ways to assess the psychosocial risk factors and prevent tobacco use by adolescents. It takes an effort by all advanced practice nurses to become involved in health promotion initiatives within the allied health and local community to address this issue.

Education

This investigator believes that this study suggests that NPs have a lack of awareness of assessment approaches/ programs which they can utilize. The most commonly used approach was the American Lung Association material, but as this investigator compared this approach with other approaches, some of the other material offered a more complete approach to assessing tobacco use and psychosocial risk factors in adolescents.

The material presented by the U.S. Department of Health and Human Services (1994) was very helpful in the literature reviewed, as was the Michigan Health Council's Michigan Advocates for Smokers' Health (1997) (MASH) information. Both are free when requested. The investigator requested material from each of these organizations and those listed on the questionnaire; only one fee was required e.g. American Medical Association (GAPS).

Presentations in undergraduate and graduate level nursing programs could include more information on free material available on health promotion topics or tobacco cessation pamphlets. The psychosocial risk factors that are assessed could also be reviewed with nursing students within health assessment courses to increase their awareness of the impact of the risk factors on the overall health of the individual adolescent. The two most critical psychosocial risk factors would be whether parents, siblings, or peers use tobacco and how well the adolescent is doing in school.

Information could also be available at NP conferences to provide practicing NPs with an updated review of the latest information on tobacco use or tobacco cessation for implementation with clients. Presentations at NP conferences on ways to assess tobacco use with adolescents could also be implemented. Involvement in community efforts to educate and promote health awareness to the public on adolescent tobacco use would further emphasize the importance that NPs believe are needed.

NP Practice

Within the variety of practice settings and given the varied experience of the respondents, the primary reasons for not assessing adolescent tobacco use was time constraints, the material was not geared to adolescents, and lack of interest from the client. The interpersonal influence of the NP on the adolescent in promoting tobacco abstinence includes a responsibility to assess tobacco use among adolescents and the other psychosocial risk factors that can predispose the adolescent to tobacco use. Adolescents begin using tobacco products on a daily basis by 11-15 years of age, with the

highest incidence at 15 years. After age 15 the initial use drops dramatically with few young adults starting to use tobacco after leaving high school (Cleary et al., 1988; Johnston et al., 1996; USDHHS, 1994). Utilization of a previsit questionnaire while the client is in the waiting room, or in the examination room can provide an opportunity to address issues that may not be addressed due to time constraints.

Another simple solution is to address tobacco use with every client, young or old, as they are prescreened prior to examination by the NP. By addressing tobacco use with all clients, the adolescent can see that the primary care setting promotes health promotion awareness and is important for all clients seen (Fiore, et. al., 1995). As a role model, nurse practitioners can project a positive image to adolescents about health behaviors that eliminate the use of harmful substances, such as tobacco (Sanders, Beach, Brookman, Brown, Greene, McAnarney, & Schonberg, 1987; USDHHS, 1994).

This study revealed that NPs claim to be assessing adolescent risk for tobacco use during the first (65% or 52) or every (55% or 44) visit. Not all of the respondents view tobacco use a very important part of the visit with adolescent clients. One (1.2%) respondent marked little importance, 13 (15.7%) assigned some importance, and 68 (81.9%) rate the assessment of adolescents risk of tobacco products very important.

The most widely utilized information came from the American Lung Association (43.9% or 36). By presenting this questionnaire to NPs, the investigator may have increased the awareness of the participants to other materials that are available and the psychosocial

factors to assess for tobacco use in adolescents. Comments by some respondents alluded to this. "I would be interested in learning more about teaching adolescents about tobacco use. A training session for NP's would be very helpful." or "This questionnaire was a helpful reminder to me of more that I could be doing."

The NP could also stay informed of current tobacco legislation and tobacco company efforts to change current practices in tobacco use among adolescents. Currently 40 states have filed suits against the tobacco industry for the industry's knowledge that tobacco use is addictive and that the states should be reimbursed for public funds used to treat tobacco-linked illnesses (Sewell, 1997). While Congress is raising the tobacco tax in an effort to target adolescents who smoke, the tax will raise the cigarette tax by 10 cents per pack in the year 2000 and another nickel in 2002 (Meckler, 1997). This, along with tougher U.S. Food and Drug Administration regulation of cigarettes are efforts to decrease adolescent tobacco use but the impact will not be evident for several years (Meckler).

Research

With the limited research available on assessment of adolescent tobacco use in the nursing and allied health literature, this study presents an array of options for further research. It is important to examine the latest assessment approaches and programs available to address tobacco use with adolescents and to emphasize the need for NP review of risk factors for tobacco use. After a presentation of the various material available, another questionnaire could be sent to NPs to see if they are utilizing materials.

Further development of the questionnaire could include revisions that ask the respondent to list the most important or significant item in each question instead of marking all that apply and updating the assessment approaches or programs that are available for use. Providing more employment options would also be needed with revisions of the questionnaire. The questionnaire could be used with other NPs to assess their use of current approaches and psychosocial risk factors as well. Studies which examine the actual impact of provider assessment and counseling is another area that can be investigated. Replicating the Mayo Clinic study (Fiore et al., 1995) to assess tobacco use by adding the "Tobacco Use Vital Sign" to the initial assessment form when clients are seen, triggers all health care providers to assess tobacco use and targets those that need further counseling and intervention. Using the American Medical Association (GAPS) structured questionnaire to assess psychosocial risk factors and determine the impact of the questionnaire is another avenue.

Assessing the special needs of at risk youth in a tobacco use prevention program and investigating the characteristics of this group could also be done. Efforts of local tobacco coalitions can also be studied to determine what effect the coalition has on tobacco use within a given community and whether the presence of health care providers has an impact on the efforts.

CHAPTER 9
CONCLUSION

Literature about the strategies that health professionals use to assess adolescents' psychosocial risk factors for using tobacco products is sparse. By identifying the adolescent who has psychosocial risk factors for the initiation of tobacco products, the NP can implement strategies that may deter his/ her use of tobacco products. The purpose of this study was to identify the strategies NPs use to assess adolescents' psychosocial risk for tobacco use.

This was a two part study. The first part was a survey of eight Michigan State University CON graduate students. The students received an investigator developed questionnaire on strategies they use to assess adolescent tobacco use on two occasions at three week intervals. The responses were then compared for test-retest reliability of the instrument. Reliability and validity was established.

The questionnaire was then sent to 200 NPs in the lower peninsula of Michigan who were believed to assess adolescents ages 11 to 16 years. Of the 200 surveyed, 130 responded, with 83 eligible for inclusion in the study. The investigator then analyzed the data using SPSS for frequency of responses.

With the belief by 99% of respondents that adolescent tobacco use was a concern for NPs, the investigator found the majority used personal interview to assess tobacco use and psychosocial risk factors.

The assessment approach most commonly used was one offered by the American Lung Association. Personal interest and low cost were reasons for using the assessment approaches, but lack of time was the primary reason for not following an assessment approach. Psychosocial risk factors were assessed by over half of the respondents, but not on a consistent basis. Community involvement was minimal; only a few participated in community efforts to combat adolescent tobacco use.

Although the NPs believed that adolescent tobacco use was a concern of practicing NPs, the actual use of developed materials to assess tobacco use or psychosocial risk factors was somewhat limited. Lack of community involvement and inclusion of assessment of tobacco use with clients can be attributed to lack of knowledge of available assessment approaches and materials, the lack of interest from clients and the limitations of time.

The information obtained from this Level I exploratory descriptive study can be useful to increase NPs awareness of assessment approaches and programs that are available to assess adolescent tobacco use in primary care settings. The importance of this information in preventing life long health problems for our youth of today and adults of the future is evident in the literature. As one respondent stated "Very important topic as adolescents are still starting to smoke in spite of all we know of the dangers of smoking." Another commented: "Good luck with your interest and motivation to address this critically important subject, the consequences of which are far reaching and enormously expensive from many perspectives."

This topic is of primary interest in this country from all levels- the President, media, concerned providers and special interest groups. NPs can be instrumental in assessing the youth for psychosocial risk factors that lead to tobacco use and implementing one or more appropriate strategy to prevent tobacco use in the 11-16 year olds of today.

Implementing a simple strategy recommended by AHCPR (1996) such as adding a "tobacco use vital sign" or using the techniques outlined by the National Cancer Institute (1992b) can enable NPs to lead the way in tobacco use prevention. As an interpersonal influence on youth, the NP can prevent tobacco use today thus promoting positive health habits and a commitment to a plan of action of tobacco abstinence.

APPENDICES

APPENDIX A

Appendix A

Questionnaire

ASSESSMENT OF ADOLESCENTS' RISK FOR TOBACCO USE

Please make a check on the appropriate line: *(mark all that apply)*

1. Degrees currently held: ___ Associate ___ Diploma ___ Bachelors ___BSN ___ MSN

   ___ PhD ___ DNS ___ EdD ___ Other (_____) *please specify*

2. Number of years as RN: ___0-4 ___5-8 ___9-12 ___13-16 ___17 or more

3. Number of years as certified Nurse Practitioner: ___0-4 ___5-8 ___9-12 ___13-16 ___17 or more

4. Type of practice setting where employed: *(mark all that apply)*

   ___ Family practice ____ School based ___ Specialty clinic

   ___ County health department ____ Adolescent family practice ___ Nursing center

   ___ Pediatric ____ Other (_____) *please specify*

5. Number of adolescents seen per month: ___0 ___1-10 ___11-20 ___21-30 ___31-40 ___41 or more

6. Do you believe tobacco use in adolescence is a concern for a Nurse Practitioner? ___Yes___No

7. How would you rate the importance of assessing an adolescents' risk for using tobacco products?

   ___ Not important ___ Little importance ___ Some importance ___ Very important

8. Do you assess adolescent use of tobacco products? (*If no go onto number 11, if yes continue*) ___Yes ___No

9. When do you ask adolescents if they use tobacco products? *(mark all that apply)*

   ___ Ask at first visit ___ Ask at every visit ___ Ask after 2-3 visits

10. How do you assess for tobacco use? *(mark all that apply)*

    ___ Personal interview ___ Standardized questionnaire ___ Anonymous questionnaire

11. Do you provide educational brochures regarding smoking? ___Yes ___No

12. Select the following approaches/ programs you use when addressing tobacco use with adolescents? (*mark all that apply*)

    ___ Don't address ___ US Dept. of Health & Human Services

    ___ American Academy of Pediatrics ___ American Lung Association

    ___ US Preventive Services Task Force ___ American Heart Association

    ___ American Medical Association (GAPS) ___ National Cancer Institute (The 5 A's)

    ___ Agency for Health Care Policy & Research ___ Develop own handout/program

    ___ MASH (Michigan Advocates for Smokers Health) ___ Other (_____) *please specify*

RETURN BY APRIL 30, 1997 IN ENCLOSED SELF-ADDRESSED STAMPED ENVELOPE.

13. Which factor (s) promote your use of the approaches/ programs identified in #12? *(mark all that apply)*

___ Personal interest ___ Interest from patient/parents ___ Lack of knowledge patient/parents/staff

___ Takes little time ___ Usefulness with adolescents ___ Has little cost

___ Interest from staff ___ Other (_____) *please specify*

14. Which factor (s) hinder your use of the approaches/ programs identified in #12? *(mark all that apply)*

___ Lack of personal interest ___ Takes too long ___ Lack of interest from patient/parents

___ Not geared to adolescents ___ Cost too much ___ Lack of interest from staff

___ Lack of knowledge patient/parents/staff ___Other (_____) *please specify*

15. Do you assess psychosocial risk factors for initiating tobacco use? ___**Yes**___**No**

16. What information do you obtain when assessing adolescent psychosocial risk factors? *(Mark all that apply)*

___ Family socioeconomic status.
___ Tobacco accessibility of the adolescent.
___ Adolescent perception that tobacco use is normal.
___ Adolescents' parent(s). peers and/or sibling(s) use and/ or approval of tobacco use.
___ Degree of parental support and involvement as the adolescent faces the challenges of growing up.
___ Level of academic achievement/ school involvement.
___ Adolescents' skills used to resist tobacco use .
___ Adolescent experimentation with any tobacco products.
___ Adolescent self-image and self-esteem .
___ Adolescents' belief that smoking has positive function (bonding with peers. being mature. looking more attractive or more popular)

(From Emily Merrill. RN, MS, CS, FNP article "Preventing Tobacco Use in Young People: Strategies for the Nurse Practitioner" *Nurse Practitioner Forum, Vol. 6, No 1, March, 1995: 34-39.)*

17. Are you involved in community efforts to stop adolescent smoking? ___**Yes**___**No**

18. If yes, what are you doing?

___ Assist/teach at local school based programs ___ Attend local tobacco coalition meetings
___ Member STAT (Stop Teenage Addiction to Tobacco) ___ Member DOC (Doctors Ought to Care)
___ Other (_____) *please specify*

If there is anything else you would like to add please include it here:

_____

_____

_____

Thank you for completing this questionnaire.

Pamela S. Nethery. RN. MSN Candidate
Michigan State University

APPENDIX B

Appendix B

Cover Letter to Pilot Study

Dear Michigan State University Graduate Student,

I am a graduate student in the College of Nursing at Michigan State University and invite you to participate in a study which will help me to meet my thesis requirement. This study aims to identify the strategies used by Nurse Practitioners (NPs) to assess adolescents' risk for tobacco use. The literature suggests that most tobacco use begins at age 11-16 years on a regular basis. I have developed a questionnaire and am asking you to complete it so that I may establish its reliability. I will be presenting you with the questionnaire to complete now and again in three weeks. I will then ask NPs who care for adolescents to complete it. You indicate your voluntary agreement to participate by completing and returning this questionnaire in the enclosed self-addressed envelope to my campus mailbox. The questionnaire will take you approximately 10 minutes to complete. Please do not write your name on the questionnaire, but **include the last four digits of your campus identification number** for comparison of your results. Please complete this questionnaire and return it by **April 18, 1997**.

Your completion of the questionnaire is greatly appreciated.

Pamela S. Nethery, RN, BSN
Graduate Student, College of Nursing
Michigan State University
East Lansing, Michigan 48824
Telephone: (616) 527-7706

APPENDIX C

Appendix C

Cover Letter to NP

Dear Michigan Nurse Practitioner,

I am a graduate student in the College of Nursing at Michigan State University and invite you to participate in a study which will help me to meet my thesis requirement. This study aims to identify the strategies used by Nurse Practitioners (NPs) to assess adolescents'(aged 11-16) risk of tobacco use. The literature suggests that this is the age when most teenagers do begin using tobacco products on a regular basis. The results of this study may aid NPs by increasing awareness of what is available for assessing teenage tobacco use.

You indicate your voluntary agreement to participate by completing and returning this questionnaire in the enclosed self-addressed stamped envelope. The enclosed questionnaire will take you approximately 10 minutes to complete. Please do not write your name on the questionnaire. All personal information you provide will remain anonymous in published reports. Only I, as the researcher will have access to the questionnaire data. Please complete this questionnaire and return it by **April 30, 1997**.

A summary of the study results and a copy of a very practical article which summarizes some strategies that Nurse Practitioners can use "Preventing Tobacco Use in Young People: Strategies for the Nurse Practitioner" by Emily Merrill, RN, MS, CS, FNP will be forwarded to you, if requested. If you have any further questions about the study, please feel free to call me at (616) 527-7706 or Joan E. Wood, RN, PhD., my advisor; at (517) 353-8682.

Thank you for your consideration.

Pamela S. Nethery, RN, BSN
Graduate Student, College of Nursing
Michigan State University
East Lansing, Michigan 48824
Telephone: (616) 527-7706

APPENDIX D

Appendix D

Frequency Tabulation Questionnaire

ASSESSMENT OF ADOLESCENTS' RISK FOR TOBACCO USE

Please make a check on the appropriate line: *(mark all that apply)*

1. Degrees currently held: 7 Associate 10 Diploma 14 Bachelors 48 BSN 64 MSN

   3 PhD 0 DNS 1 EdD 16 Other 7 **Masters (Part of other)**

2. Number of years as RN: 1 0-4 3 5-8 12 9-12 17 13-16 49 17 or more

3. Number of years as certified Nurse Practitioner: 17 0-4 27 5-8 20 9-12 10 13-16 8 17 or more

4. Type of practice setting where employed: *(mark all that apply)*

   27 Family practice 2 School based 10 Specialty clinic

   11 County health department 1 Adolescent family practice 0 Nursing center

   11 Pediatric 30 Other (_____) *please specify*

5. Number of adolescents seen per month: ___0 28 1-10 24 11-20 11 21-30 8 31-40 12 41 or more

6. Do you believe tobacco use in adolescence is a concern for a Nurse Practitioner? 82 Yes 0 No

7. How would you rate the importance of assessing an adolescents' risk for using tobacco products?

   0 Not important 1 Little importance 13 Some importance 68 Very important

8. Do you assess adolescent use of tobacco products? *(If no go onto number 11, if yes continue)* 81 Yes 1 No

9. When do you ask adolescents if they use tobacco products? *(mark all that apply)*

   52 Ask at first visit 44 Ask at every visit 6 Ask after 2-3 visits

10. How do you assess for tobacco use? *(mark all that apply)*

    77 Personal interview 26 Standardized questionnaire 4 Anonymous questionnaire

11. Do you provide educational brochures regarding smoking? 56 Yes 26 No

12. Select the following approaches/ programs you use when addressing tobacco use with adolescents? *(mark all that apply)*

    1 Don't address

    9 American Academy of Pediatrics

    9 US Preventive Services Task Force

    4 American Medical Association (GAPS)

    2 Agency for Health Care Policy & Research

    4 MASH (Michigan Advocates for Smokers Health)

    12 US Dept. of Health & Human Services

    36 American Lung Association

    22 American Heart Association

    15 National Cancer Institute (The 5 A's)

    23 Develop own handout/program

    30 Other (_____) *please specify*

13. Which factor (s) promote your use of the approaches/ programs identified in #12? *(mark all that apply)*

4 Personal interest 21 Interest from patient/parents 18 Lack of knowledge patient/parents/staff

26 Takes little time 26 Usefulness with adolescents 41 Has little cost

9 Interest from staff 16 Other (_____) *please specify*

14. Which factor (s) hinder your use of the approaches/ programs identified in #12? *(mark all that apply)*

5 Lack of personal interest 25 Takes too long 23 Lack of interest from patient/parents

24 Not geared to adolescents 8 Cost too much 10 Lack of interest from staff

11 Lack of knowledge patient/parents/staff 10 Other (_____) *please specify*

15. Do you assess psychosocial risk factors for initiating tobacco use? 56 Yes 27 No

16. What information do you obtain when assessing adolescent psychosocial risk factors? *(Mark all that apply)*

43 Family socioeconomic status.
30 Tobacco accessibility of the adolescent.
34 Adolescent perception that tobacco use is normal.
53 Adolescents' parent(s), peers and/or sibling(s) use and/ or approval of tobacco use.
40 Degree of parental support and involvement as the adolescent faces the challenges of growing up.
38 Level of academic achievement/ school involvement.
26 Adolescents' skills used to resist tobacco use .
39 Adolescent experimentation with any tobacco products.
42 Adolescent self-image and self-esteem .
38 Adolescents' belief that smoking has positive function (bonding with peers, being mature, looking more attractive or more popular)

(From Emily Merrill, RN, MS, CS, FNP article "Preventing Tobacco Use in Young People: Strategies for the Nurse Practitioner" *Nurse Practitioner Forum, Vol. 6, No 1, March, 1995: 34-39.)*

17. Are you involved in community efforts to stop adolescent smoking? 10 Yes 72 No

18. If yes, what are you doing?

1 Assist/teach at local school based programs 5 Attend local tobacco coalition meetings
0 Member STAT (Stop Teenage Addiction to Tobacco) 0 Member DOC (Doctors Ought to Care)
4 Other (_____) *please specify*

If there is anything else you would like to add please include it here:

_____

_____

_____

Thank you for completing this questionnaire.

Pamela S. Nethery, RN, MSN Candidate
Michigan State University

APPENDIX E

Appendix E

Approval Letter From UCRIHS

MICHIGAN STATE
UNIVERSITY

April 3, 1997

TO: Joan E. Wood
A-230 Life Sciences Bldg.

RE: IRB#: 97-227
TITLE: NURSE PRACTIONERS' STRATEGIES FOR ASSESSING ADOLESCENTS' RISK FOR TOBACCO USE
REVISION REQUESTED: N/A
CATEGORY: 1-C
APPROVAL DATE: 04/01/97

The University Committee on Research Involving Human Subjects (UCRIHS review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project and any revisions listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)432-1171.

Sincerely,

David E. Wright, Ph.D.
UCRIHS Chair

DEW:bed

cc: Pamela S. Nethery

OFFICE OF
RESEARCH AND GRADUATE STUDIES
University Committee on Research Involving Human Subjects (UCRIHS)
Michigan State University
246 Administration Building
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LIST OF REFERENCES

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Agency for Health Care Policy and Research (AHCPR). (1996, October). AHCPR guidelines for smoking cessation. In Nursing center for tobacco intervention [On-line] Available: http://www.con.ohio-state.edu/tobacco/.

Anderson, K. (1996). Chapter spotlight: Michigan DOC. The Journal of Medical Activism, 11(1), 4.

Bandura, A. (1986) Social foundations of thought and action. A social cognitive theory. Englewood Cliffs, NJ: Prentice Hall.

Bartecchi, C.E., MacKenzie, T.D., & Schrier, R.W. (1994) The human costs of tobacco use. The New England Journal of Medicine, 330(13), 907-912.

Blum, A. (1992). Role of the health professional in ending the tobacco pandemic: Clinic, classroom, and community. Journal of the National Cancer Institute Monographs, 12, 37-42.

Botvin, G.J. & Eng, A. (1982). The efficacy of a multicomponent approach to the prevention of cigarette smoking. Preventive Medicine, 11, 199-211.

Brink, P.J. & Wood, M.J. (1994). Basic steps in planning nursing research from question to proposal. (4th ed.). Massachusetts: Jones and Barlett Publishers.

Bruvold, W.H. (1993). A meta-analysis of adolescent smoking prevention programs. American Journal of Public Health, 83(6), 872-880.

Charlton, A. & Blair, V. (1989). Absence from school related to children's and parental smoking habits. British Medical Journal, 298(6666), 90-92.

Cleary, P.D., Hitchcock, J.L., Semmer, N., Flinchbaugh, L.J. & Pinney, J.M. (1988). Adolescent smoking: Research and health policy. The Milbank Quarterly, 66(1), 137-171.

Coe, R.M., Crouse, E., Cohen, J.D., Fisher, E.B., Jr. (1982). Patterns of change in adolescent smoking behavior and results of a one year follow-up of a smoking prevention program. The Journal of School Health, 52, 348-353.

Eckhardt, L., Woodruff, S.I., & Elder, J.P. (1994). A longitudinal analysis of adolescent smoking and its correlates. Journal of School Health, 64(2), 67- 72.

Feather, N.T. (1967) An expectancy-value model of information seeking behavior. Psychological Review, 74(5), 342-360.

Fergusson, D.M. & Horwood, L.J. (1995). Transitions to cigarette smoking during adolescence. Addictive Behaviors, 20(5), 627-642.

Fiore, M.C., Jorenby, D.E., Schensky, A.E., Smith, S.S., Bauer, R.R. & Baker, T.B. (1995). Smoking status as the new vital sign: Effect on assessment and intervention in patients who smoke. Mayo Clinic Proceedings, 70, 209-213.

Fiore, M.C., Wetter, D.W., Bailey, W.C. et al. (1996). The Agency for Health Care Policy and Research smoking cessation clinical practice guideline. JAMA, 275.(16), 1270-1280.

Glynn, T.J. (1993). Improving the health of U.S. children: The need for early interventions in tobacco use. Preventive Medicine, 22, 513-519.

Glynn, T.J., Anderson, D.M. & Schwarz, L. (1991). Tobacco-use reduction among high-risk youth: Recommendations of a National

Cancer Institute Expert Advisory Panel. Preventive Medicine, 20, 279-291.

Gordon, N.P. (1986). Never smokers, triers, and current smokers: Three distinct target groups for school-based antismoking programs. Health Education Quarterly, 13(2), 163-180.

Gravetter, F.J., & Wallnau, L.B. (1992). Statistics for the behavioral sciences a first course for students of psychology and education (3rd ed.). St. Paul, MN: West Publishing Company.

Guralnik, D.B. (Ed.). (1978). Webster's new world dictionary of the American language (2nd ed.). USA: William Collins & World.

Hansen, W.B. (1983). Behavioral predictors of abstinence: Early indicators of a dependence on tobacco among adolescents. The International Journal of the Addictions,18(7), 913-920.

Haynes, W.F., Krstulovic, V.J., Bell, A.L.L. (1966). Smoking habit and incidence of respiratory tract infections in a group of adolescent males. American Review of Respiratory Disease, 93(5), 730-734.

Headen, S.W., Bauman, K.E., Deane, G.D., Koch, G.G. (1991), Are the correlates of cigarette smoking initiation different for black and white adolescents? American Journal of Public Health, 81(7), 854-857.

Hunter, S.M., Webber, L.S., Berenson, G.S. (1980). Cigarette smoking and tobacco usage behavior in children and adolescents: Bogalusa Heart Study. Preventive Medicine, 9, 701-712.

Johnston, L.D., O'Malley, P.M., & Bachman, J.G. (1996). National survey results on drug use from the monitoring the future study, 1975-1994. NIH Publication No. 96-4027.

Korn, K. (1996a). Computer-assisted primary care: Health promotion on the information superhighway. Journal of the American Academy of Nurse Practitioners, 8 (9), 429-430.

Korn, K. (1996b) Nursing research on the information superhighway. Journal of the American Academy of Nurse Practitioners, 8, 12, 587-588.

Levenberg, P.B. & Elster, A.B. (1995). Guideline for adolescent preventive services (GAPS) implementation and resource manual. Chicago, IL: American Medical Association.

McCaul, K.D., Glasgow, R., O'Neill, H.K., Freeborn, V., & Rump, B.S. (1982). Predicting adolescent smoking. The Journal of School Health, 52, 342-346.

Meckler, L. (1997, Aug 4). Sin tax targets teenagers who smoke. Sentinel- Standard, pp. 6A, 7A.

Merrill, E. (1995). Preventing tobacco use in young people: Strategies for the nurse practitioner. Nurse Practitioner Forum,6(1), 34-39.

Mezey, M. (1993). Preparation for Advanced Practice. In M.D. Mezey, & D.O. McGivern (Eds.), Nurses, nurse practitioners evolution to advanced practice (pp. 46-47). New York: Springer.

Michigan Health Council. (1997). MASH Michigan advocates for smokers' health: Health care professionals concerned about their patients who use tobacco. [Brochure]. Bennett, S.G. Director.

National Cancer Institute. (1992a). How to help your patients stop smoking: A National Cancer Institute manual for physicians. NIH Pub. No. 92-3064. (2nd ed.) [Brochure]. Glynn, T.J. & Manley, M.W.: Authors.

National Cancer Institute. (1992b). Clinical interventions to prevent tobacco use by children and adolescents: A supplement to how to help your patients stop smoking: A National Cancer Institute manual for physicians. [Brochure]. Epps, R.P. & Manley, M.W.: Authors.

National Cancer Institute. (1993). Beat the smokeless habit game plan for success NIH Pub. No. 94-3270. (3rd ed.) [Brochure]. Orleans, C.T., Connolly, G.N., & Workman, S.: Authors.

Nelson D.E., Giovino, G.A., Shopland, D.R., Mowery, P.D., Mills, S.L., & Eriksen, M.P. (1995). Trends in cigarette smoking among US adolescents, 1974 through 1991. American Journal of Public Health, 85 (1), 34-40.

Nolte, A.E., Smith, B.J., O'Rourke, T. (1983). The relative importance of parental attitudes and behavior upon youth smoking behavior. Journal of School Health, 53(4), 264-271.

Norusis, M.J. (1993). SPSS for windows base system user's guide release 6.0. Chicago, Illinois. SPSS Inc.

Nursing Center for Tobacco Intervention. (1997). Information on tobacco use. Nursing Center for Tobacco Intervention [On-line]. Available: http://www.con.ohio-state.edu/tobacco/.

Paperny, D.M., Aono, J.Y., Lehman, R.M., Hammar, S.L., & Risser, J. (1990). Computer-assisted detection and intervention in adolescent high-risk health behaviors. The Journal of Pediatrics, 116(3), 456-462.

Pearson, L.J. (1997). Annual update of how each state stands on legislative issues affecting advanced nursing practice. The Nurse Practitioner, 22 (1), 18-86.

Pender, N.J. (1975). A conceptual model for preventive health behavior. Nursing Outlook,23(6), 385-390.

Pender, N.J. (1996). Health promotion in nursing practice (3rd ed.). Stamford, Connecticut. Appleton & Lange.

Pirkle, J.L., Flegal, K.M., Bernert, J.T., Brody, D.J., Etzel, R.A., & Maurer, K.R. (1996). Exposure of the U.S. population to environmental tobacco smoke. JAMA, 275 (16), 1233-1240.

Polit. D.F. & Hungler, B.P. (1995). Nursing research principles and methods (5th ed.). Philadelphia, Pennsylvania: J.B. Lippincott Company.

Sanders, J.M., Beach, R.K., Brookman, R.R., Brown, R.R., Greene, J.W., McAnarney, E., Schonberg, S.K. (1987). Tobacco use by children and adolescents. Pediatrics,79 (3), 479-481.

Sewell, D. (1997, July 7). Tobacco industry faces big losses in Florida. Sentinel- Standard, p. A8.

Silvis, G.L. & Perry, C.L. (1987). Understanding and deterring tobacco use among adolescents. Pediatric Clinics of North America, 34 (2), 363-379.

Simon, T.R., Sussman, S., Dent, C.W., Burton, D., & Flay, B.R. (1993). Correlates of exclusive or combined use of cigarettes and smokeless tobacco among male adolescents. Addictive Behaviors,18, 623-634.

Slade, J. (1993). Adolescent nicotine use and dependence. Adolescent Medicine: State of the Art Reviews, 4 (2), 305-320.

Spear, S.F. & Akers, R.L. (1988). Social learning variables and the risk of habitual smoking among adolescents: The Muscatine Study. American Journal of Preventive Medicine, 4 (6), 336-342.

Sussman, S., Brannon, B.R., Dent, C.W., Hansen, W.B., Johnson, C.A., & Flay, B.R. (1993). Relations of coping effort, coping strategies, perceived stress, and cigarette smoking among adolescents. The International Journal of Addictions, 28 (7), 599-612.

Trepka, M.J. & DiGuiseppi, C. (1997, January 24). Counseling to prevent tobacco use. In Guide to Clinical Preventive Services [On-line]. Available: http://www.ahcpr.gov.

U.S. Department of Health and Human Service. (1994). Preventing tobacco use among young people: A report of the surgeon general. Atlanta, GA: U.S. Department of Health and Human Services,

Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

U.S. Public Health Service. (1994). The clinician's handbook of preventive services put prevention into practice (pp. 106-109). Alexandria, VA. International Medical Publishing.

Woolcock, A.J., Peat, J.K., Leeder, S.R., Blackburn, C.R.B., (1984). The development of lung function in Sydney children: Effects of respiratory illness and smoking. A ten year study. European Journal of Respiratory Diseases, 65, 1-97.