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An examination of the differences in self-concept, self-esteem, and locus of control in adolescent female smokers and nonsmokers.

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AN EXAMINATION OF THE DIFFERENCES IN SELF-CONCEPT, SELF-ESTEEM, AND LOCUS OF CONTROL IN ADOLESCENT FEMALE SMOKERS AND NONSMOKERS

by

Kathryn J. Foley

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ABSTRACT

Despite an overall reduction in the prevalence of smoking in Canada, the rate for adolescent females continues to climb. Simultaneously, morbidity and mortality rates for women, as a result of smoking, are also rising. Theoretically, there appears to be a relationship between low self-concept, low self-esteem, an external locus of control, and cigarette smoking. The purpose of this study was to identify differences between adolescent female smokers and nonsmokers. A descriptive-comparative design was used to study females, aged 14 to 18 years who were attending secondary schools in a rural Ontario schoolboard. A stratified random sample of 263 students was obtained. Instruments used were the 40-item Children's Nowicki-Strickland Locus of Control Scale, and the 82-item Tennessee Self-Concept Scale· Second Edition. T-tests showed significant differences between the two groups, smokers and nonsmokers, $p<.001$. Smokers, compared to nonsmokers, had lower self-concept, lower self-esteem, and a more external locus of control. Pearson product moment correlation procedures identified significant relationships between smoking and the three study variables, as well as many of the demographic variables.

DEDICATION

To my husband, Larry, and my children, Nancy, Scott, Drew, and Carolyn. Without your support and patience, completion of this project would not have been possible.

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I wish to thank the students and the staff of the schools and schoolboard for their participation in this study. I would also like to thank Dr. Stephen Nowicki Jr. for allowing me to use the Children's Nowicki-Strickland Internal External Locus of Control Scale. I would like to acknowledge Dr. Lynnette Leeseberg Stamler and Dr. G. Ron Frisch for their participation on my committee, Dr. Kathryn Lafreniere for her continued statistical assistance, and Mr. Thomas Fuerth for his development of a random numbers program for me. Finally, I wish to thank Dr. Anna Temple for chairing my committee, and for first introducing me to the research process.

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CHAPTER ONE

Introduction

Background and Significance of the Problem

Cigarette smoking is the most important preventable risk factor for death, disease, and disability in Canada today (Mao, Gibbons, & Wong, 1992). Tobacco kills more people than all other addictions combined, with more than one in four cigarette smokers dying prematurely due to their addiction (Henningfield & Keenan, 1993).

The incidence of cigarette smoking in Canada among persons 15 years of age and older declined from 43% in 1969 (Mao et al., 1992) to 29% in 1993 (Pederson, 1993). In 1995, however, the Canadian Centre on Substance Abuse (CCSA) and the Addiction Research Foundation of Ontario (ARF) reported that the percentage of current smokers had again increased to 31. This rise occurred despite increasing evidence associating smoking with disease and death (Bartecchi, MacKenzie, & Schrier, 1994).

Of particular concern is the change in smoking patterns among females. For the first time in history, adolescent

females are smoking at higher rates than their male counterparts (Greaves, 1995). In the 15 to 19 year age range, 26% of females as opposed to 25% of males are reported to be smokers (Health Canada, 1995). Moreover, the initiation of female smoking is occurring at earlier ages (Basavaraj, 1993). In Windsor-Essex County, the incidence of smoking among all females exceeds the Ontario average. The provincial average is 26% while Windsor-Essex County reports 27% (Windsor-Essex County Health Unit & Essex County District Health Council, 1995).

Smokers are susceptible to smoking-related diseases such as cancers of the lung, oral cavity, esophagus, larynx, bladder, and pancreas, as well as increased risks of heart disease, stroke, emphysema, and bronchitis. In addition, females risk gynecologic and obstetrical complications as well as increased osteoporosis and premature facial wrinkling (Bartecchi et al., 1994; Ernster, 1993; Fischer, 1995; Greaves, 1990; Guba & McDonald, 1993; Iverson, 1987; Jensen, 1994).

For the Canadian population as a whole, smoking reduces life expectancy at age 35 by about 4.5 years for men and 1.5 years for women. Since the effects of tobacco use are slow to develop, the rates of smoking-related disease and death in women are still rising (Greaves, 1993). Nevertheless, tobacco use has already become the leading cause of premature death in

Canadian women, with at least 15,000 women dying a tobacco-related death each year (Greaves, 1995).

The CCSA and ARF (1995) also reported that nearly two-thirds (63%) of all daily smokers started to smoke before the age of 18 years. Persons who begin to smoke at younger ages are more likely to experience the adverse health consequences from smoking (Winkelstein, 1992). Pierce and Gilpin (1996) estimated that the adolescent female who starts smoking now will smoke for at least 20 years, and possibly 30 years or more. Thus, morbidity and mortality rates for women, as a result of smoking, will continue to rise if the current trend persists. In addition, Vernon (1991) asserted that the adolescent population is the only age group with an increasing mortality rate over the past 25 years, most often as a result of lifestyle choices. Smoking is a lifestyle choice.

It is apparent, then, that adolescent females who choose to smoke face a multitude of negative health effects as a result of that choice. Nursing's increasing role as health promoter, in conjunction with nursing's longstanding role as health care provider, makes it imperative that nurse researchers do more to determine why increasing numbers of adolescent females are choosing to smoke cigarettes. This information is critical in view of the evidence that even infrequent smoking in adolescence significantly raised the risk for adult smoking (Kelder, Perry, Klepp, & Lyle, 1994;

Sarason, Mankowski, Peterson, & Dinh, 1992). Moreover, research indicated that once smoking had begun, women were less successful at cessation than men (Bjornsen et al., 1995; Escobedo & Peddicord, 1996).

With the prevalence of cigarette smoking and its anticipated negative health consequences increasing among adolescent females, nurses must develop health promotion strategies to curb the upward trend. Better understanding of the phenomenon of smoking behaviour in adolescent females requires current research specific to this group.

CHAPTER TWO

Review of Relevant Literature

Review of the Literature

Past research has studied a multitude of factors and their suspected relationships to adolescent smoking. The following review of the literature identifies that the psychosocial factors of self-concept, self-esteem, and locus of control appeared to be of importance for females. Until recently, however, little research has been specific to females (Greaves, 1990, 1995). Furthermore, the research results concerning female smokers that do exist have not always been consistent. The following discussion describes the psychosocial factors of self-concept, self-esteem, and locus of control; explains how these concepts relate to adolescent smoking; and cites previous research investigating this phenomenon.

Rosenberg (1979) described the term self-concept as referring to the totality of one's thoughts and feelings having reference to oneself as an object. Self-concept includes three broad regions: the extant self (how one sees

oneself), the desired self (how one would like to see oneself), and the presenting self (how one shows oneself to others).

Rosenberg (1979) further described the self as being influenced by the attitudes of others towards the self. Human beings learn about themselves by comparing themselves to others. This process of social evaluation leads to positive, neutral, or negative self-ratings that are relative to the standards set by the individuals employed for comparison. One's concept of how others judge and evaluate one is one's perceived self. This perceived self is used as a basis for self-judgment and self-esteem. One's self-esteem may be damaged either because one's abilities or achievements compare unfavourably with those around one, or because one's habits or interests are different from those of other people in the environment.

Coopersmith (1967) described self-esteem as a personal judgement of self-worthiness that the individual conveys to others by verbal reports and other overt expressive behaviours. He described five categories of personal characteristics that are related to self-esteem: physical attributes; general capacities, ability and performance; affective states; problems and pathology; and personal values.

Self-concept stability is related to self-esteem. The concept of self-esteem implies self-acceptance, self-respect,

and feelings of self-worth. Individuals with high self-esteem consider themselves persons of worth. Low self-esteem, on the other hand, implies self-rejection, self-dissatisfaction, or self-contempt (Rosenberg, 1979).

Rosenberg (1979) stated that as a group, adolescents exhibited greater instability of the self-concept, slightly lower self-esteem, less favourable judgements of valued self-components, and less favourable perceived selves. Although the self-esteem of males and females differed only modestly, adolescent girls showed considerably higher instability of self-concept - their ideas about themselves tended to vary from day to day. A slightly different view was reported by the Federal/Provincial/Territorial Working Group on Women's Health (1990). They maintained that, in Canada, adolescent girls suffered from lower self-esteem and a poorer self-image than adolescent boys.

The third concept examined, locus of control, has its origin in social learning theory (Rotter, 1966). Rotter's theory said that individuals, through a learning process, come to expect that certain outcomes are a result of either their own behaviours or relatively permanent characteristics (a belief in internal control) or forces outside them (a belief in external control). Rotter further stated that this belief regarding the nature of causal relationships might affect a variety of behavioural lifestyle choices. Again, smoking is a

lifestyle choice.

Wells and Marwell (1976) explained that one's level of self-esteem can influence one's behaviours. They also suggested a strong relationship between self-esteem and the locus of control personality variable. Vernon (1991) linked low self-esteem with an external locus of control when describing the development of self-destructive behaviours. He described vulnerable adolescents as being at particular risk for developing these behaviours. He further identified low self-esteem as a factor contributing to this vulnerability. The adolescent felt inadequate and was unable to resist external influences that encouraged specific behaviours such as smoking. An accumulating body of evidence suggested that adolescent girls were at special risk (Millstein & Litt as cited in Gillis, 1994; Scott and Cabral, 1988).

Until recently, most of the research regarding the issue of smoking has been generic. In common with other fields of research, generic has often meant male-oriented or gender-neutral in its orientation. Much remains to be understood about the reasons why girls begin and continue to smoke in an era of smoking's diminishing popularity and intense social prohibition. Issues concerning self-esteem and body image are deemed important to understanding the development of identity in girls. How these issues relate to smoking decisions and behaviour, however, must still be fully determined (Greaves,

1990, 1995). The effect of locus of control must also be examined since adolescence is the age when girls begin to place the control for their lives on external elements such as teachers, family, luck or faith (Greaves, 1990).

Some researchers suggested that, as a group, adolescent smokers exhibited low self-esteem (Bonaguro & Bonaguro, 1987; Dielman, Leech, Lorenger, & Horvath, 1984; Winkelstein, 1992), and an external locus of control (Clarke, MacPherson, & Holmes, 1982). Simon and Primavera (1976) were not in complete accord with these researchers. They reported no significant difference in self-esteem between smokers and nonsmokers. They also said that smokers exhibited more autonomy and rated themselves as more sociable than nonsmokers.

The Ministry of Health Ontario (1994) suggested that Canadian adolescents smoked because the activity had strong meanings that helped them craft a more powerful and engaging sense of self. Therefore, adolescents initiated smoking because they viewed the characteristics of a typical smoker as congruent with their own ideal self-concept (Barton, Chassin, & Presson, 1982; Chassin, Presson, Sherman, Corty, & Olshavsky, 1981).

Researchers identified external locus of control as figuring prominently in the decisions made by adolescent female smokers who were developing an ideal self-concept. Females were described as being more influenced by social

norms and offers/pressures (Sarason et al., 1992), parental smoking (Gritz, 1984; Williams, 1973), peer smoking (Chassin, Presson, Sherman, Corty, & Olshavsky, 1984; Clayton, 1991; Murray, Swan, Bewley, & Johnson, 1983), and advertisements (Ernster, 1985; Greaves, 1993; Jensen, 1994) than were males. Greaves and Jensen were the only researchers to report on Canadian teens.

At the same time, researchers differed in their views of adolescent female smokers. Several researchers suggested that, compared to the common view of smokers as low in self-esteem and as using cigarettes to fit in with peers or cope with social situations, "female smokers (did) not fit the usual picture" (Clayton, 1991, p.118). Clayton, as well as Yankelovich, Skelly, and White (as cited in Gritz, 1984), described adolescent female smokers as being more self-confident, socially advanced, and autonomous than nonsmokers. Compared to the adolescent male smoker, female smokers were less socially uneasy, expressed a lesser need to be popular with the opposite sex, and considered smoking less of a social asset (Yankelovich et al., as cited in Gritz). Clayton further asserted that girls at higher risk for becoming smokers demonstrated an internal locus of control. These girls made more refusal statements which were judged to be more effective when offered cigarettes, and they exhibited higher self-efficacy scores than low-risk girls. These results were

supported by Friedman, Lichtenstein, and Biglan (1985).

Hover and Gaffney (1988) disagreed, saying that adolescent female smokers were less socially adept. They described these individuals as low in levels of social skills. They concluded that because these adolescent females were less socially competent, they lacked the skills necessary to resist social pressures, and particularly peer pressure, to smoke.

Still other authors reported no apparent gender differences with regard to smoking that would explain the emerging trend for more girls to smoke than boys (McNeill et al., 1988; Pederson, Baskerville, & Lefcoe, 1981). Pederson et al. made this observation in a Canadian population.

Summary

To date, the investigation of psychosocial factors and their relationship to adolescent female smoking behaviours has been incomplete. Samples that do not adequately represent Canadian adolescent females, the existence of contradictory conclusions, and the lack of data reported since the 1980's have lead to inconclusive results. Additionally, of the research studies reported here, none were carried out by nurses, none used random sampling, only one (Pederson et al., 1981) was Canadian, only one (Simon & Primavera, 1976) studied females exclusively, and only two (Kelder et al., 1994; Sarason et al., 1992) were completed after 1990. This study

was designed to address a number of these limitations.

Purpose of the Study

The purpose of this study was to examine the differences in self-concept, self-esteem, and locus of control among smoking and nonsmoking adolescent females. The study also examined the relationships among the study variables and smoking in adolescent females.

CHAPTER THREE

Frame of Reference

Conceptual Framework

This study utilized a conceptual framework, based on the previously cited readings, that described a relationship between an external locus of control, low self-esteem, low self-concept, and cigarette smoking in adolescent females. It was assumed that gender differences existed when considering personality characteristics and behaviours.

Adolescent females are in the process of developing a concept of who they are. This self-concept encompasses how they think and feel about themselves. Once they have developed a self-concept, they choose behaviours to present to others that reflect how they view themselves and how they want to appear to the outside world. If they view themselves as unattractive (a low self-concept), and they view the act of smoking cigarettes as attractive, they may choose this behaviour to help them develop a more attractive and engaging self-concept.

In addition, stability of how they view or think about

themselves is related to how they feel about themselves. This component of self-concept, feelings about self, constitutes self-esteem. Therefore, self-esteem affects self-concept. If these teens have low self-esteem, they will have low self-concept. Low self-esteem implies self-rejection, self-dissatisfaction, or self-contempt. These teens lack a feeling of self-worth.

Both self-concept and self-esteem are influenced by the attitudes of others (external forces) towards the self. Teens who suffer from low self-esteem and low self-concept may seek to feel better about themselves by adopting the behaviours of others around them because they view these behaviours as desirable. They think that these behaviours will make them persons of worth, thus increasing their levels of self-esteem and self-concept. If the behaviour in question is smoking, they may choose to smoke cigarettes.

An external locus of control affects behavioural lifestyle choices such as smoking. Adolescent females are affected by societal norms and pressures, parental and peer smoking, and advertisements. All these inducements promote the choice of cigarette smoking if that behaviour is deemed attractive or desirable.

Therefore, a theoretical relationship exists between external locus of control, low self-esteem, low self-concept, and cigarette smoking in adolescent females. It is assumed

that the act of cigarette smoking has a strong positive meaning for some teens. An external locus of control allows their self-esteem, self-concept, and behavioural choice to smoke to be influenced by outside forces. At the same time, their low self-esteem causes them to have a low self-concept which makes them more vulnerable to smoking. Additionally, an attempt to raise their low level of self-esteem encourages them to adopt cigarette smoking. Thus, outside influences encourage these adolescent females to adopt cigarette smoking in order to increase their self-esteem, and help them develop a more powerful self-concept.

Research Hypotheses

Adolescent females who smoke cigarettes exhibit lower levels of self-concept than adolescent females who do not smoke cigarettes.

Adolescent females who smoke cigarettes exhibit lower levels of self-esteem than adolescent females who do not smoke cigarettes.

Adolescent females who smoke cigarettes exhibit a more external locus of control than adolescent females who do not smoke cigarettes.

In adolescent females, there is a relationship among self-concept, self-esteem, locus of control, and the decision to smoke cigarettes.

Operational Definitions

Adolescent females were females, aged 14 to 18 years, inclusive, who attended secondary schools in the target Board of Education.

Cigarette smoking was any smoking of cigarettes in the last six months. This definition was based on the Spiral Model of the Stages of Change (Prochaska, DiClemente, & Norcross, 1992).

Self-concept was a construct as measured by the Tennessee Self-Concept Scale: Second Edition (TSCS:2).

Self-esteem was a component of self-concept as measured by the Tennessee Self-Concept Scale: Second Edition (TSCS:2).

External locus of control was a construct as measured by the Children's Nowicki-Strickland Internal-External Locus of Control Scale (CNSIE).

CHAPTER FOUR

Methodology

Study Design

A descriptive-comparative design was implemented in a multi-sited study in the public secondary schools of eight rural Ontario communities.

Setting

The settings for this study were classrooms or cafeterias in the eight public secondary schools of a rural Ontario schoolboard.

Sample

The sample was drawn from the target population of 2715 adolescent females who were attending eight rural Ontario secondary schools. A required sample size of 341 was identified using a table developed by Krejcie and Morgan (1970). Their calculations for determining sample size from a given population used a formula published by the research division of the National Education Association (as cited in

Krejcie & Morgan). To compensate for a possible reduction in sample size due to refusals to participate, the required sample size was further increased by 10%. Consultation with a statistician verified the adequacy of the identified sample size for the prospective study.

To achieve equal representation across the eight rural communities, stratified random sampling was used. The percentage of the total population was calculated for each school. Based on that calculation and the rounding of numbers, a random numbers program, using Visual Basic, was employed to select a total of 380 names from student lists. The sample size from each school was based on that school's proportion of the total population.

Criteria for inclusion in the study included: female; 14 to 18 years of age, inclusive; the ability to read and write English; current enrolment in a secondary school in the target rural Ontario schoolboard; and submission of a signed written consent form.

Data Collection

In February 1996, a letter was sent to the Board of Education Chairperson, outlining the purpose and nature of the research being proposed (see Appendix A). Permission to conduct the study in the Board's secondary schools was requested. Board approval, with three provisions, was received

in March, 1996 (see Appendix B). The three provisions were that students' anonymity must be protected; there would be no cost to the student, teacher, school or Board with respect to the completion and return of the questionnaire; and the Board would receive a copy of the final report.

In September 1996, the author met with the Board Superintendent in charge of research to discuss the mechanics of conducting the study. The author then met with the principals of the eight schools in September, 1996 to schedule the conduct of the study within their schools. The nature and purpose of the study, as well as the methodology of implementation was discussed. A copy of the abstract was given to each principal, and a copy of the research proposal was made available to the Superintendent and principals.

Lists of student names meeting the study criteria were obtained from the principals, and samples were selected. Two copies of a single paged letter of consent/assent (see Appendix C) were given to each subject two weeks prior to the study. The consent included information on the investigator, the purpose of the study, activities involved, and the potential benefits and risks to the subjects. The consent stated that information obtained would be used to assist in improving the present and future health of adolescent females. Subjects were told that the 40 minutes of class time required for completion of the questionnaires would be arranged in

cooperation with the school. They were assured that any costs associated with the conduct of the study would be paid by the investigator. Subjects were also informed how they were selected. They were told the study was examining personality characteristics and their relationship to smoking in adolescent females. The specific variables were not identified until after completion of the study, as this could have confounded the results. The author spent one day at each school for completion of the questionnaires.

Instrumentation

Three instruments were used in this study. Permission to use the CNSIE was obtained from Dr. Stephen Nowicki Jr. by telephone and in writing (see Appendix D). This scale was a paper and pencil measure of external locus of control. It consisted of 40 questions that were answered by marking either yes or no next to the question. The tool's construction was based on Rotter's definition of the internal-external control of reinforcement dimension. Items on the scale described reinforcement situations across interpersonal and motivational areas such as affiliation, achievement, and dependency. Items were scored in terms of external responses. A higher score yielded a more external score. This tool has been determined to be appropriate for children ages 9 through 18 years (Nowicki, n.d.).

Reliability and validity of the tool was reported by Dr. Nowicki (n.d.). Internal consistency via the split-half method, corrected by Spearman-Brown was reported as r=.74 for grades 9, 10 and 11, and r=.71 for grade 12. Since the test is additive and items were not comparable, the split-half reliabilities tended to underestimate the true internal consistency of the scale. Test-retest reliabilities were reported as r=.71 for tenth graders and r=.76 for twelfth graders.

Discriminative validity of the tool was determined with nonsignificant correlations found between locus of control scores and social desirability, intelligence scores and gender. Construct validity was determined with data showing significant correlations between this tool and other measures of locus of control.

Permission to purchase and use the TSCS:2 was obtained from Western Psychological Services (see Appendixes E1 and E2 for associated letters). The tool was a paper and pencil Likert scale composed of 82 descriptive statements. Subjects circled the response for each statement that best described them as they saw themselves. The tool gave a multi-dimensional description of self-concept which included physical self, moral self, personal self, family self, social self, and academic/work self, as well as identity, satisfaction, and behaviour.

The TSCS:2 authors (Fitts & Warren, 1996) stated that individual scores and combinations of scores should be inspected along with the total self-concept score. They also said that the personal self and identity scores have proven to be the best global measures of the judgmental or evaluative portion of self-perception. Therefore, these two sub-scores were used to measure self-esteem. Persons with high total self-concept scores were expected to also obtain high personal self-concept and identity scores, according to the authors. If unusual scores had been reported, it would have indicated specific areas of difficulty for the individual. The TSCS:2 has been determined to be appropriate for individuals 13 years of age or older.

Reliability and validity of the tool was reported by the authors (Fitts & Warren, 1996). Internal consistency, estimated by calculating Cronbach's alpha, was reported as r=.93 for total self-concept, r=.76 for personal self, and r=.85 for identity. Test-retest reliabilities were reported as r=.82 for total self-concept, r=.73 for personal self, and r=.69 for identity. Construct validity was determined with data showing significant correlations between this tool and other measures of self-concept.

The third tool, a demographic questionnaire (see Appendix F), was developed by the author and included age in years, grade level, and work status. Adapted questions from the

Ontario Health Survey (Ministry of Health, 1989) were used to determine subjects' culture, including country of birth, ethnic identity, and primary language. Tobacco use was assessed by self-report as described by Bonaguro and Bonaguro (1987). Additional questions determined subjects' smoking history (adapted from Pederson et al., 1981), attempts at cessation, and perceived stress and health, as well as parental, sibling, and peer smoking. Socioeconomic status and educational level of parents were determined using questions based on Hollingshead's (1975) four factor index. A blank sheet of paper was also given to each student. Subjects were asked to write about anything not yet discussed that may have contributed to their decision to smoke or not to smoke cigarettes. Any information gathered from this source may be used in a future paper.

Data Analysis

Upon completion of all data collection, questionnaires were hand-scored by the author. Subjects were sorted into two groups based on their smoking or nonsmoking status. All data was formatted for data analysis. SPSS for Windows computer software was used to analyze the data. Categorical demographic data was examined using descriptive statistics such as frequency distributions and measures of central tendency. Demographic variables and their relationships with smoking

were examined. Independent t-tests were used to determine whether significant differences (alpha .05) existed between the two groups for self-concept, self-esteem, and locus of control. Correlations between each of the variables and cigarette smoking were determined using Pearson product moment correlation procedures.

Data collection was completed in October, 1996 and data analysis in March, 1997.

Protection of Human Rights

Ethical approval for the conduct of this study was obtained from the University of Windsor School of Nursing Research Committee (see Appendix G). Approval, with the three provisions previously cited, was also obtained from the target Board of Education. There were no negative risk factors anticipated for the subjects.

Written consent was obtained from the participants and their parents/guardians. Subjects were given an explanation about the research, and were advised to take home the consent form and read it with their parents/guardians. They were asked to sign one copy, have a parent/guardian sign it, and return it to the school at least one week prior to the study. They were advised to retain the second copy for reference purposes. Participants were advised to leave their name and phone number with the School of Nursing if they had any questions about the

study. The author would return their calls. All subjects were assured that choosing not to participate in the study would not jeopardize their schooling in any way. They were also informed that they could choose not to answer particular questionnaire items, and could withdraw from the study at any time.

Confidentiality and anonymity were assured in the consent form. This was achieved by assigning a number to each subject. The list of names and numbers was destroyed following completion of the questionnaires. Until then, it was placed in a sealed envelope, to which only the author had access. Questionnaire data was stored and identified by code number only.

CHAPTER FIVE

Results

Sample Characteristics

The population for this study consisted of the 2715 female students, aged 14 to 18 years, who attended secondary schools in a rural Ontario schoolboard. In October 1996, 380 students were selected using stratified random sampling. Two hundred and sixty three students completed the three questionnaires for a return rate of 69.2%.

One hundred and twenty eight students (48.7%) identified themselves as smokers, as defined by the study criteria, while 135 (51.3%) were nonsmokers. The number of smokers and nonsmokers in each age group and grade is outlined in Table 1. The median age for smokers was 17 years and for nonsmokers 14 years. The largest number of smokers were in grade 11, and the largest number of nonsmokers were in grade 9.

Table 1

Age and Grade by Smokers and Nonsmokers (N=263)

	Age in Years					
Groups	14	15	16	17	18	Total
Smokers	21	30	31	33	13	128
Nonsmokers	38	27	37	19	14	135
	Grade					
	9	10	11	12	OAC	Total
Smokers	22	26	38	27	15	128
Nonsmokers	36	26	32	26	15	135

Table 2 outlines the continent of birth, as determined by all students' reports of their country of birth. Data was collapsed into continents due to the small numbers cited in some country groups. Also outlined is the language spoken at home by both smokers and nonsmokers. The majority of smokers and nonsmokers spoke English at home and were born in North America.

Table 2

Continent of Birth and Language Spoken at Home by Smokers (N=128) and Nonsmokers (N=135)

Variable	Groups	
	Smokers	Nonsmokers
Continent of birth		
North America	123 (96.1%)	126 (93.3%)
Europe	2 (1.6%)	5 (3.7%)
Asia	1 (0.8%)	4 (3.0%)
Africa	1 (0.8%)	
Australia	1 (0.8%)	
Language spoken at home		
English	121 (94.5%)	126 (93.3%)
Portugese	1 (0.8%)	3 (2.2%)
Polish	1 (0.8%)	
German	1 (0.8%)	1 (0.7%)
Arabic	1 (0.8%)	
Other		4 (3.0%)
No answer	3 (2.3%)	1 (0.7%)

The educational level and work status of mothers and fathers of smokers and nonsmokers is outlined in table 3. The modes for all mothers and fathers of both groups were high school graduate and blue collar work status.

Table 3

Educational Level and Work Status of Fathers and Mothers by Smokers (N=128) and Nonsmokers (N=135)

Variable	Groups			
	Smokers		Nonsmokers	
Educational level	Father	Mother	Father	Mother
No answer	8(6.3%)	3(2.3%)	3(2.2%)	
Less than grade 7	2(1.6%)	4(3.1%)	4(3.0%)	3(2.2%)
Grade 7 or 8	2(1.6%)	1(0.8%)	5(3.7%)	1(0.7%)
Grade 9	3(2.3%)	5(3.9%)	4(3.0%)	4(3.0%)
Grade 10 or 11	25(19.5%)	20(15.6%)	22(16.3%)	12(8.9%)
High school grad	38(29.7%)	33(25.8%)	30(22.2%)	44(32.6%)
Partial college	12(9.4%)	24(18.8%)	14(10.4%)	14(10.4%)
College/university graduate	23(18.0%)	27(21.1%)	25(18.5%)	35(25.9%)
Graduate degree	15(11.7%)	11(8.6%)	28(20.7%)	22(16.3%)
Work status				
No answer	6(4.7%)	15(11.7%)	3(2.2%)	9(6.7%)
Unemployed	5(3.9%)	3(2.3%)	1(0.7%)	2(1.5%)
Blue collar	51(39.8%)	38(29.7%)	60(44.4%)	45(33.3%)
White collar	21(16.4%)	37(28.9%)	14(10.4%)	32(23.7%)
Skilled trade	31(24.2%)	7(5.5%)	34(25.2%)	6(4.4%)
Professional	14(10.9%)	19(14.8%)	23(17.0%)	32(23.7%)
Homemaker		9(7.0%)		9(6.7%)

The number of smokers and nonsmokers who reported having fathers, mothers, brothers, and sisters who smoked cigarettes

is outlined in Table 4. More smokers than nonsmokers reported having parents and siblings who smoked. Also outlined are the number of cigarette smoking friends as identified by both smokers and nonsmokers. The majority of smokers stated that most of their friends smoked, while nonsmokers said that only a few of their friends smoked.

Table 4

Number of Parents, Siblings, and Friends Who Smoke Cigarettes by Smokers (N=128) and Nonsmokers (N=135)

	Groups	
Variable	Smokers	Nonsmokers
Father who smokes	50 (39.1%)	39 (28.9%)
Mother who smokes	43 (33.6%)	32 (23.7%)
Brother who smokes	37 (28.9%)	22 (16.3%)
Sister who smokes	44 (34.4%)	9 (6.7%)
Number of smoking friends		
All	22 (17.2%)	
Most	53 (41.4%)	17 (12.6%)
About half	29 (22.7%)	29 (21.5%)
A few	23 (18.0%)	72 (53.3%)
None	1 (0.8%)	15 (11.1%)
No answer		2 (1.5%)

Fewer smokers than nonsmokers reported working at a job outside of school. Sixty three smokers (49.2%) and 87

nonsmokers (64.4%) said that they had a job after school.

Smoking behaviour, current health status, and life stress level, as described by smokers and nonsmokers, are outlined in Table 5. On smoking behaviour, the majority of smokers said that they smoked on a daily basis, while nonsmokers said that they had never smoked. At the same time, more than half of the smokers described their health as only fair or good, while over three quarters of nonsmokers described their health as very good or excellent. For life stress level, less than one third of smokers, but over half of nonsmokers reported that their lives were not at all or not very stressful.

Table 5

Smoking Behaviour, Health Status, and Life Stress Level by Smokers (N=128) and Nonsmokers (N=135)

Variable	Groups	
	Smokers	Nonsmokers
Smoking behaviour		
Never smoked		97(71.9%)
Smoked few times/not now	25(19.5%)	29(21.5%)
Smoked everyday/not now	7(5.5%)	8(5.9%)
Smoke occasionally	29(22.7%)	1(0.7%)
Smoke daily	67(52.3%)	
Health status		
Excellent	13(10.2%)	36(26.7%)
Very good	45(35.2%)	69(51.1%)
Good	59(46.1%)	26(19.3%)
Fair	10(7.8%)	4(3.0%)
Poor	1(0.8%)	
Life stress level		
Very stressful	22(17.2%)	16(11.9%)
Fairly stressful	66(51.6%)	50(37.0%)
Not very stressful	34(26.6%)	65(48.1%)
Not at all stressful	6(4.7%)	4(3.0%)

To further investigate this phenomenon, students who

smoked were asked to describe their smoking behaviour. Their reports about the age at which they began to smoke, the number of cigarettes they smoked each day, and their opinions about the likelihood that their smoking would lead to health problems for them are outlined in Table 6. Most smokers began to smoke when they were 10 to 13 years of age, and most described themselves as light smokers (1 to 10 cigarettes daily). Nearly two thirds conceded that it was very or somewhat likely that their smoking would lead to health problems. The other third, however, said it was somewhat or very unlikely. In addition, nearly two thirds (63.3%) of smokers reported that they had tried to quit smoking in the past 12 months.

Table 6

Age of Smoking Initiation, Number of Cigarettes Smoked Daily, and Likelihood of Smoking Leading to Health Problems as Described by Smokers (N=128)

Variable	Smokers
Age smoking began	
No answer	2(1.6%)
9 years or younger	2(1.6%)
10-13 years	67(52.3%)
14-17 years	57(44.5%)
Number of cigarettes smoked daily	
No answer	6(4.7%)
0	34(26.6%)
1-10 (light)	60(46.9%)
11-20 (moderate)	24(18.8%)
21-30 (moderately heavy)	4(3.1%)
Likelihood of health problems	
No answer	4(3.1%)
Very likely	23(18.0%)
Somewhat likely	58(45.3%)
Somewhat unlikely	25(19.5%)
Very unlikely	18(14.1%)

Differences Between Smokers and Nonsmokers on Self-Concept, Self-Esteem, and Locus of Control

Independent t-tests were used to examine differences between smokers and nonsmokers in self-concept, self-esteem, and locus of control. Means, standard deviations, and ranges for the three study variables are presented in Table 7. Twenty-two CNSIE questionnaires were discarded due to incorrect completion of the tool. For at least one question, these students failed to meet the requirement of selecting a single yes or no response.

Table 7

Means, Standard Deviations, and Ranges for Self-Concept, Self-Esteem, and Locus of Control

Variable	Cases	Mean	SD	Range
Self-concept	263	278.33	33.20	0-370
Self-esteem	263	132.91	17.17	0-165
Locus of control	241	13.61	4.58	0-40

$p<.001$

There was a significant affect of self-concept, $t(249.34)=-7.04$, $p<.001$. Smokers (n=128) showed a lower level of self-concept (M=264.68) compared to nonsmokers (n=135) (M=291.27). Standard deviations were 32.94 for smokers and 27.93 for nonsmokers.

There was a significant affect of self-esteem, $t(227.34)=-5.50$, $p<.001$. Smokers (n=128) showed a lower level of self-esteem (M=127.20) compared to nonsmokers (n=135) (M=138.33). Standard deviations were 18.88 for smokers and 13.33 for nonsmokers.

There was a significant affect of locus of control, $t(239)=5.86$, $p<.001$. Smokers (n=119) showed a more external locus of control (M=15.25) compared to nonsmokers (n=122) (M=12.02). Standard deviations were 4.61 for smokers and 3.95 for nonsmokers.

Relationships Between All Variables and Smoking

Pearson product moment correlation procedures were used to evaluate the degree of association of all variables in the study with smoking.

There were no significant correlations between smoking and continent of birth, language spoken at home, grade, father's level of education, father's work status, mother's work status, and having brothers or sisters who smoked.

Smoking was significantly, $p<.05$, related to age ($r=.12$), job ($r=.15$), mother's level of education ($r=-.14$), mother's smoking ($r=-.15$), and level of life stress ($r=-.15$). As age increased, so did the incidence of smoking. Fewer smokers than nonsmokers reported having an afterschool job. Mothers of smokers were described as having attained a lower level of

education than mothers of nonsmokers. In addition, more smokers than nonsmokers said that their mothers were also smokers. Finally, students who smoked reported their lives to be more stressful than did nonsmokers.

Smoking was also significantly, $p<.01$, related to father's smoking ($r=-.19$). More smokers than nonsmokers reported that their fathers also smoked cigarettes.

Additionally, smoking was significantly, $p=<.001$, related to friends who smoke ($r=-.51$), health status ($r=.33$), and the frequency of their smoking ($r=.83$). Smokers reported having a greater number of friends who also smoked. Students who smoked described themselves as being less healthy than did nonsmokers. In addition, more smokers than nonsmokers reported occasional or daily smoking behaviour.

Finally, smoking was significantly, $p=<.001$, related to the continuous study variables of self-concept ($r=-.40$), self-esteem ($r=-.32$), and locus of control ($r=.35$). As levels of self-concept and self-esteem decreased, the locus of control score increased, meaning it became more external. More smokers than nonsmokers exhibited these personality traits.

Significant relationships were also found among the three study variables. Self-concept was significantly, $p<.001$, related to self-esteem ($r=.95$), and locus of control ($r=-.52$). Self-esteem was also significantly, $p<.001$, related to locus of control ($r=-.49$). As levels of self-esteem decreased, so

did self-concept. As self-concept and self-esteem decreased, the locus of control score increased, meaning it became more external.

CHAPTER SIX

Discussion

The purpose of this study was to examine the differences in levels of self-concept, self-esteem, and locus of control between adolescent female smokers and nonsmokers. Relationships between the study variables and smoking were also examined.

The research hypotheses were as follows: (1) Adolescent females who smoke cigarettes exhibit lower levels of self-concept than adolescent females who do not smoke cigarettes; (2) adolescent females who smoke cigarettes exhibit lower levels of self-esteem than adolescent females who do not smoke cigarettes; (3) adolescent females who smoke cigarettes exhibit a more external locus of control than adolescent females who do not smoke cigarettes; and, (4) in adolescent females, there is a relationship among self-concept, self-esteem, locus of control, and the decision to smoke cigarettes.

Study results supported all four research hypotheses. Independent t-tests confirmed that differences did exist

between the two groups of smoking and nonsmoking students on self-concept, self-esteem, and locus of control. Furthermore, smokers did exhibit lower levels of self-concept and self-esteem and a more external locus of control than did nonsmokers. These findings were consistent with conclusions drawn by other researchers (Bonaguro & Bonaguro, 1987; Chassin et al., 1981; Clarke et al., 1982; Dielman et al., 1984). In addition, correlation procedures verified that a relationship did exist between cigarette smoking and the three study variables. Relationships were also found to exist between cigarette smoking and many of the demographic variables.

The conceptual framework for this study described a theoretical relationship between an external locus of control, low self-esteem, low self-concept, and cigarette smoking in adolescent females. Results supported this relationship. As self-esteem decreased, so did self-concept. As self-esteem and self-concept decreased, the locus of control became more external. Students who smoked cigarettes were more likely to demonstrate these personality traits. These results indicated that those young women who demonstrated low levels of self-concept and self-esteem were more vulnerable to developing the habit of cigarette smoking as a result of outside influences. These findings corroborated statements made by Vernon (1991) and Wells and Marwell (1976).

Stratified random sampling of this population yielded a

sample of 48.7% smokers and 51.3% nonsmokers. Since Health Canada (1995) reported that 26% of females in this age group smoked, it was assumed that the sample would be more representative of the population. The outcome achieved may have been due to several schools referring to the study as the 'smoking study'. This may have deterred nonsmokers from participating. On the other hand, the prevalence of smoking may have been higher within this population of adolescent females. MacPherson, Jones, and Clarke (as cited in Clarke et al., 1982) found that smoking was related to rurality. In particular, smoking was related to smaller population, lower population density, lower income, and greater percentage of the adult work-force employed in agriculture. Many of these factors existed in this population.

The incidence of smoking increased with the age of the student, corroborating Pederson et al.'s (1981) findings. Since there was a relationship between smoking and locus of control, it was possible that older students who demonstrated lower levels of self-concept and self-esteem were at higher risk due to prolonged exposure to external influencing factors. One factor may have been friends who smoked since more smokers than nonsmokers reported having friends who also smoked cigarettes. Hover and Gaffney (1988) and Pederson et al. reported similar findings.

Additional factors that were identified included mothers

and fathers who smoked. Again, more smokers than nonsmokers reported parental smoking, a finding corroborated by other studies (Chassin et al., 1984; Hover & Gaffney, 1988; Pederson et al., 1981). Murray et al. (1983) and Williams (1973) stated that the effect of mother's smoking was most critical for daughters. In the present study, the relationship with father's smoking was found to be more significant.

It was surprising to find that fewer smokers than nonsmokers reported having a job. The author assumed that teens needed money to purchase cigarettes, unless they borrowed from friends. Possibly, parents were supplying their daughters with cigarettes because they considered tobacco to be less dangerous than other addictive chemicals such as cocaine. The fact that working teens reported less smoking behaviour may also have been a result of changes that have occurred in the workplace. Many workplaces have banned smoking. Therefore, these teens may have smoked less because it was not permitted at work.

Smokers were more likely to describe their mothers as having attained a lower level of education. Thus, teens from lower socioeconomic status were at greater risk for smoking, as also described by Murray et al. (1983) and Pederson et al. (1981). However, due to a lack of knowledge indicated by some students when answering questions about parental work status and educational level achieved, these results must be

considered with caution.

Smokers described their lives as being more stressful than did nonsmokers, a finding corroborated by Bonaguro and Bonaguro (1987). These teens may have been using smoking as a coping mechanism to deal with stress. Jensen (1994) described how nicotine caused the release of B-endorphins, "a natural feel-good, made-in-the-body morphine-like hormone that calms and relaxes during periods of stress and anxiety" (p.31).

Smokers also described themselves as being less healthy than nonsmokers. This could have been due to shortness of breath, and the initial effects of pulmonary and other disease processes (Bartecchi et al., 1994). Fifty two percent of smokers reported that they smoked on a daily basis, an indication that they may have developed an addiction to nicotine (Kelder et al., 1994; Sarason et al.,1992).

When describing their smoking behaviour, most smokers said they began to smoke when they were 10 to 13 years of age. This indicates that the problem of cigarette smoking must be addressed long before young women reach secondary school. Since most smokers described themselves as light smokers, with over one quarter denying daily smoking, it appears that smoking is a social activity for these teens. This was confirmed by their increased reporting of friends who also smoked cigarettes.

Though the majority of smokers agreed that it was

somewhat likely that their smoking would lead to health problems, only 23 (18%) said it was very likely. In addition, 18 (14.1%) said it was very unlikely. These results could have been due to the teenage psyche which believes problems will never happen to them. It could also be due to denial or a lack of attention to reports about the health hazards of smoking.

Nearly two thirds of smokers reported unsuccessful attempts to quit smoking in the past 12 months. These attempts may have been prompted by social pressure or information on smoking's negative health effects. However, as Kelder et al. (1994) said, "once students become weekly smokers, they are unlikely to give up cigarettes" (p.1124). Sarason et al. (1992) blamed this failure at cessation on an addiction to nicotine.

Limitations

There were several limitations identified, most of which related to the demographic questionnaire. The non-demographic items will be dealt with first.

The findings from this study have limited generalizability because the study was conducted in a single schoolboard in rural Ontario with a limited number of subjects. Moreover, all study participants were attending a secondary school. Members of the target population not attending school were not represented. Greaves (1990)

identified women's low educational achievement as a risk factor for smoking.

The Pearson r correlation coefficients were low for many of the demographic variables and smoking. Significance may have been achieved due to the large sample size.

At the same time, the Pearson r correlation coefficient was very high for self-concept and self-esteem. This may have occurred because self-esteem was a combination score of two sub-scales of self-concept on the TSCS:2. These results would have been more strongly supported if an additional tool had been used to measure self-esteem.

Several weaknesses were identified in the demographic questionnaire. Students should have been asked to simply state their current age in years. Questions about parents failed to consider divorced families and step-parents. Students should have been asked for their primary cultural identity. More information should have been asked about mothers' work status. Finally, more options regarding number of cigarettes smoked should have been offered. A number of students defined as smokers said they smoked zero cigarettes because they did not smoke on a daily basis.

Conclusions

For this population of adolescent females, differences in self-concept, self-esteem, and locus of control were found to

exist between smokers and nonsmokers. Smokers exhibited lower levels of self-concept and self-esteem, and a more external locus of control than did nonsmokers. Additionally, a relationship was found to exist among self-concept, self-esteem, locus of control, and the decision to smoke cigarettes. As self-concept and self-esteem decreased, the locus of control became more external. More smokers than nonsmokers demonstrated these personality characteristics.

Implications for Practice

Nurses and other individuals who develop prevention or cessation programs for this group must first consider the individual and her insecurities. Interventions aimed at increasing taxes, banning advertisements, and diminishing the influence of outside smokers have little impact if the young woman's thoughts and feelings about herself are not considered. Ultimately, it is these thoughts and feelings that make her vulnerable to developing the habit of smoking cigarettes. Therefore, programs must first be designed to increase the level of self-confidence in adolescent females. This will help them resist smoking.

Since the majority of teenaged smokers reported having begun between the ages of 10 to 13 years, smoking intervention programs must begin in elementary schools. These programs must help young girls develop personal life/social skills to resist

outside pressures. The programs must be age and gender specific. In addition, booster programs on prevention and cessation must be provided until age 18 for these young women. Booster programs have proven effective in sustaining health promotion effects (Elder et al., 1993), and few adult smokers reported having begun after age 18.

Girls who are at risk must be identified and provided with opportunities to learn stress management techniques and to participate in interventions aimed at promoting positive self-esteem. Exercise programs would help them look and feel better, and would serve as an alternative to cigarettes when dealing with stress.

Nurses must also teach educators, parents, and other influential adults who interact with teens about the relationship between specific personality traits and smoking. These individuals must be made aware of the effect of their own smoking on vulnerable teens.

At the same time, nurses must lobby public policy makers for the development and/or continuance of the laws prohibiting cigarette advertising, and banning sponsorship of sporting and cultural events by tobacco companies. The low self-concept and self-esteem of these teens place them at risk from the external influence of advertising which presents cigarette smoking as a positive activity carried out by attractive individuals. Adolescence is a critical period for nurses to

promote health through smoking prevention and cessation. Making it even more critical was the report that lung cancer in Canada killed 6000 women in 1996 - 700 more than breast cancer. Worsening the outlook were studies showing that women appeared more vulnerable to tobacco's deadly effects than men (Papp, 1997). Amos (1996) declared that tobacco companies have identified women as a key target group, and so particular attention was given to ways to reach women through advertising and other marketing strategies. In addition, the tobacco company, Liggett, conceded not only that the industry knew tobacco was an addictive substance that caused cancer and other diseases, but also that tobacco companies deliberately targeted teens as young as 14 in advertising (Beltrame, 1997). These reports further highlight the increased risks confronting adolescent females, and intensify the need for interventions. Nurse researchers must act now to reduce and eliminate this health hazard, and thus save countless numbers of young women from a life that is shortened, unnecessarily, as a result of smoking cigarettes.

Recommendations for Future Research

Nurse researchers must confirm these study results in other groups of adolescent females, including those no longer in school. Additional differences due to gender, age, and ethnicity must also be identified. The investigation of

smoking must continue since the incidence of cigarette smoking in this population continues to rise. Nursing based qualitative research is needed to further increase the understanding of this phenomenon in adolescent females.

Future studies must investigate the problem of smoking, and develop effective interventions for implementation in elementary schools. By the time many of these young women reach high school, it is too late. Studies must also ensure that results are not compromised due to an inappropriate sample size or overuse of a measurement tool.

Smoking is lethal and addictive. Young women face an epidemic of cancer and heart disease in the future if they continue to smoke cigarettes. Nurse researchers must intervene now to prevent this tragedy.

References

Amos, A. (1996). Women and smoking. British Medical Bulletin, 52, 74-89.

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

Barton, J., Chassin, L., & Presson, C. (1982). Social image factors as motivators of smoking initiation in early and middle adolescence. Child Development, 53, 1499-1511.

Basavaraj, S. (1993). Smoking and loss of longevity in Canada. Canadian Journal of Public Health, 85, 341-345.

Beltrame, J. (1997, March 21). Tobacco firm admits smoking causes cancer. The Windsor Star, p.A12.

Bjornsen, W., Rand, C., Connett, J., Lindgren, P., Nides, M., Pope, F., Buist, A., Hoppe-Ryan, C., & O'Hara, P. (1995). Gender differences in smoking cessation after 3 years in the lung health study. American Journal of Public Health, 85(2), 223-230.

Bonaguro, J., & Bonaguro, E. (1987). Self-concept, stress symptomatology, and tobacco use. Journal of School Health, 57, 56-58.

Canadian Centre on Substance Abuse, & Addiction Research Foundation of Ontario. (1995). Canadian profile: Alcohol, tobacco & other drugs (HV 5000.C3S46 1994 C95-900283-9E). Ottawa: Canada's Drug Strategy Secretariat, Health Canada.

Chassin, L., Presson, C., Sherman, S., Corty, E., & Olshavsky, R. (1981). Self-images and cigarette smoking in adolescence. Personality and Social Psychology Bulletin, 7, 670-676.

Chassin, L., Presson, C., Sherman, S., Corty, E., & Olshavsky, R. (1984). Predicting the onset of cigarette smoking in adolescents: A longitudinal study. Journal of Applied Social Psychology, 14, 224-243.

Clarke, J., MacPherson, B., & Holmes, D. (1982). Cigarette smoking and external locus of control among young adolescents. Journal of Health and Social Behavior, 23, 253-259.

Clayton, S. (1991). Gender differences in psychosocial determinants of adolescent smoking. Journal of School Health, 61, 115-120.

Coopersmith, S. (1967). The antecedents of self-esteem. San Francisco: W. H. Freeman.

Dielman, T., Leech, S., Lorenger, A., & Horvath, W. (1984). Health locus of control and self-esteem as related to adolescent health behavior and intentions. Adolescence, 19, 935-950.

Elder, J., Wildey, M., de Moor, C., Sallis, J., Eckhardt, L., Edwards, C., Erickson, A., Golbeck, A., Hovell, M., Johnston, D., Levits, M., Molgaard, C., Young, R., Vito, D., & Woodruff, S. (1993). The long-term prevention of tobacco use among junior high school students: Classroom and telephone interventions. American Journal of Public Health, 83, 1239-1244.

Ernster, V. (1985, July). Mixed messages for women: A social history of cigarette smoking and advertising. New York State Journal of Medicine, 335-340.

Ernster, V. (1993). Women and smoking. American Journal of Public Health, 83, 1202-1203.

Escobedo, L., & Peddicord, J. (1996). Smoking prevalence in US birth cohorts: The influence of gender and education. American Journal of Public Health, 86(2), 231-236.

Federal/Provincial/Territorial Working Group on Women's Health. (1990, April). Working together for women's health: A framework for the development of policies and programs. Ottawa: Author.

Fitts, W., & Warren, W. (1996). Tennessee self-concept scale TSCS:2 second edition manual. Los Angeles: Western Psychological Services.

Fischer, D. (1995, January 31). Women's lung cancer rate quadruples. The Windsor Star, p.A1.

Friedman, L., Lichtenstein, E., & Biglan, A. (1985). Smoking onset among teens: An empirical analysis of initial situations. Addictive Behaviors, 10, 1-13.

Gillis, A. (1994). Determinants of health-promoting lifestyles in adolescent females. Canadian Journal of Nursing Research, 26(2), 13-28.

Greaves, L. (1990). Background paper on women and tobacco (1987) and update (1990) (Cat. H39-216/1991E). Ottawa: Health and Welfare Canada.

Greaves, L. (1993). Taking control: An action handbook on women and tobacco. Ottawa: Canadian Council on Smoking and Health.

Greaves, L. (1995). Chapter eight: Women & health: A feminist perspective on tobacco control. In S. Burt & L. Code (Eds.), Changing methods: Feminists transforming practice (pp.195-216). Peterborough: Broadview Press.

Gritz, E. (1984). Cigarette smoking by adolescent females: Implications for health and behavior. In S. Golub (Ed.), Health care of the female adolescent (pp.103-115). New York: Haworth Press.

Guba, C., & McDonald, J. (1993). Epidemiology of smoking. Health Values, 17(2), 4-11.

Health Canada. (1995, June). Survey on smoking in Canada Smoking status of Canadians-February 1995. Ottawa: Author.

Henningfield, J., & Keenan, R. (1993). The anatomy of nicotine addiction. Health Values, 17(2), 12-19.

Hollingshead, A. (1975). Four factor index of social status. Working paper.

Hover, S., & Gaffney, L. (1988). Factors associated with smoking behavior in adolescent girls. Addictive Behaviors, 13, 139-145.

Iverson, D. (1987). Smoking control programs: Premises and promises. American Journal of Health Promotion, 1, 16-30.

Jensen, P. (1994). A history of women and smoking. Canadian Woman Studies, 14, 29-32.

Kelder, S., Perry, C., Klepp, K., & Lyle, L. (1994). Longitudinal tracking of adolescent smoking, physical activity, and food choice behaviors. American Journal of Public Health, 84, 1121-1126.

Krejcie, R., & Morgan, D. (1970). Determining sample size for research activities. Educational and Psychological Measurement, 30, 607-610.

Mao, Y., Gibbons, L., & Wong, T. (1992). The impact of the decreased prevalence of smoking in Canada. Canadian Journal of Public Health, 83, 413-416.

McNeill, A., Jarvis, M., Stapleton, J., Russell, M., Eiser, J., Gammage, P., & Gray, E. (1988). Prospective study of factors predicting uptake of smoking in adolescents. Journal of Epidemiology and Community Health, 43, 72-78.

Ministry of Health. (1989). Ontario health survey. Ottawa: Ministry of Health.

Ministry of Health Ontario. (1994). Toward a communications strategy: Research summary: Ontario tobacco strategy. Toronto: Queen's Printer for Ontario.

Murray, M., Swan, A., Bewley, B., & Johnson, M. (1983). The development of smoking during adolescence--The MRC/Derbyshire smoking study. International Journal of Epidemiology, 12, 185-192.

Nowicki, S. (n.d.). Children's Nowicki-Strickland internal-external locus of control (Brochure). Atlanta, GA: Author.

Papp, L. (1997, March 3). Lung cancer 'epidemic' hits Canadian women. The Toronto Star, p.A1.

Pederson, L. (1993). Smoking. In T. Stephens & D. Fowler Graham (Eds.), Canada's health promotion survey 1990: Technical report (Catalogue No. H39-263/2-1990E, pp.91-101). Ottawa: Minister of Supply and Services.

Pederson, L., Baskerville, J., & Lefcoe, N. (1981). Multivariate prediction of cigarette smoking among children in grades six, seven and eight. Journal of Drug Education, 11, 191-203.

Pierce, J., & Gilpin, E. (1996). How long will today's new adolescent smoker be addicted to cigarettes? American Journal of Public Health, 86(2), 253-256.

Prochaska, J., DiClemente, C., & Norcross, J. (1992). In search of how people change: Applications to addictive behaviors. American Psychologist, 47, 1102-1114.

Rosenberg, M. (1979). Conceiving the self. New York: Basic Books.

Rotter, J. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs: General and Applied, 80(1), 1-28.

Sarason, I., Mankowski, E., Peterson, A., & Dinh, K. (1992). Adolescents' reasons for smoking. Journal of School Health, 62, 185-190.

Scott, H., & Cabral, R. (1988). Predicting hazardous lifestyles among adolescents based on health-risk assessment data. American Journal of Health Promotion, 2(4), 23-28.

Simon, W., & Primavera, L. (1976). The personality of the cigarette smoker: Some empirical data. The International Journal of the Addictions, 11, 81-94.

Vernon, M. (1991). Life-style, risk taking, and out-of-control behavior. In W.R. Hendee (Ed.), The health of adolescents (pp.162-180). San Francisco: Jossey-Bass.

Wells, L., & Marwell, G. (1976). Self-esteem: Its conceptualization and measurement. Beverly Hills, CA: Sage Publications.

Williams, A. (1973). Personality and other characteristics associated with cigarette smoking among young teenagers. Journal of Health and Social Behavior, 14, 374-380.

Windsor-Essex County Health Unit, & Essex County District Health Council. (1995). A Picture of Health: The 1995 Health Profile of Windsor-Essex County Residents. Windsor, Ont: Windsor-Essex County Health Unit.

Winkelstein, M. (1992). Adolescent smoking: Influential factors, past preventive efforts, and future nursing implications. Journal of Pediatric Nursing, 120-127.

Appendix A

February 21, 1996

Chairperson,
Public School Board,
Ontario,

Dear Sir, Madam

This letter is a preliminary inquiry as to whether I would be allowed permission to conduct a research study within the secondary schools of the Public Board during the 1996/1997 school year.

I am a Master of Science in Nursing student at the University of Windsor. I am presently completing a thesis proposal investigating adolescent females and their initiation of cigarette smoking.

Cigarette smoking is identified as the most important preventable risk factor for death, disease, and disability in Canada today. Despite a general decline in the smoking rates of Canadians, a 1995 report by the Canadian Centre on Substance Abuse and the Addiction Research Foundation of Ontario indicates that this decline is not occurring in females age 15 to 19 years. In fact, the incidence of smoking continues to increase in this age group, and for the first time, adolescent females are now smoking at higher rates than their male counterparts.

Since persons who begin to smoke at younger ages are more likely to experience the adverse health consequences from smoking, morbidity and mortality rates for women, as a result of smoking, will continue to rise if this trend continues. The reason for the upward spiral in smoking prevalence must be determined in order to develop effective strategies to curb it. Past studies have linked psychosocial factors with behavioural lifestyle choices such as cigarette smoking. Until recently however, little research has been specific to female adolescents. Accordingly, I intend to examine the relationship between self-concept, self-esteem, locus of control, and cigarette smoking in adolescent females.

Completion of the two questionnaires for this study will require approximately 40 minutes of class time. Students who participate will be identified by a number code only, in order to ensure confidentiality. Participants will be adolescent females, age 14 to 18 years inclusive.

I hope that you will permit me to implement this research study

Appendix B

Board of Education

. ONTARIO

1996 03 21

Kathryn J. Foley
School of Nursing
University of Windsor
401 Sunset Avenue
Windsor, Ontario
N9B 3P4

Dear Ms. Foley:

In reply to your letter dated 1996 02 21, your request to conduct the proposed study has been approved providing:

1. students' anonymity must be protected;

2. there will be not cost to the student, teacher, school or Board with respect to the completion and return of this questionnaire; and

3. the Board will receive a copy of your final report.

Best wishes with your research proposal.

Sincerely yours

Senior Superintendent of Education/Program

JRB:kw

Appendix C

CONSENT FORM

You are being asked to participate in a research study. The study will investigate personality characteristics and their relationship to cigarette smoking. The research is being conducted by a Registered Nurse as a partial requirement for a Master of Science in Nursing degree.

The investigation will provide health care professionals with valuable information about why young women choose to smoke. This information will be used to improve the present and future health of women. Your contribution is greatly appreciated.

Your name was randomly selected from the population of young women, age 14 to 18 years of age, who attend secondary schools in the _____ Board of Education. Both smokers and nonsmokers are being asked to participate.

You will be asked to fill out three questionnaires to provide information about yourself. This will take approximately 40 minutes of class time and has been arranged in cooperation with the school principal.

There are no risks to your well-being as a result of your participation in this study. Any costs associated with the conduct of the research will be paid by the researcher. All information shared with the researcher will be treated as confidential and only the researcher will have access to it. Names of the participants will be destroyed after the questionnaires are completed. Questionnaire data will be identified and stored by code number. Only group results will be reported once the data are analyzed, and the school board and school will not be identified.

Your participation is on a voluntary basis, and you are free to refuse to participate. You may also choose not to answer particular questions, and may withdraw from the study at any time. Your decision to participate, or not, will have no effect on your schooling or how you are evaluated.

This study has received ethical clearance from the University of Windsor School of Nursing and the _____ Board of Education, and will be conducted in accordance with the strict confidentiality policies of both institutions.

Please read this letter with your parent/guardian. Return one copy of the signed consent form to the school office at least one week prior to the following study date. (October _____, 1996)

If you have any questions or require further information about this study, please contact the phone number below, and leave your name and number. The researcher will return your call.

Thank you for considering participation in this study.

Kathryn J. Foley Reg.N., B.Sc.N., M.Sc.(Nursing) Candidate
School of Nursing
University of Windsor
253-4232 ext. 2258

I have read the above and understand the nature of the study.

I agree to participate in this study.

Signed: Student:_____ **Date:**_____

Parent/Guardian:_____ **Date:**_____

Appendix D

Dear Fellow Locus of Control Researcher:

I appreciate your interest and hope these materials will be of use to you. Please send $10 to offset the cost of producing these manuals. Checks can be made payable to *Emory University Department of Psychology* and mailed to the above address, attention: Steve Nowicki. Also, I would be interested in any information concerning the results of the research you are doing in this area.

Thank you

Stephen Nowicki, Jr., Ph.D.
Professor of Psychology

Appendix F

Demographic Questionnaire

Please answer the following questions.

1. What was your age at your last birthday?_____years

2. In what grade are you currently enroled? **(circle your answer)**

1 Grade 9	4 Grade 12
2 Grade 10	5 OAC
3 Grade 11	

3. In what country were you born? **(circle your answer)**

1 Canada	13 India
2 United Kingdom	14 Sri Lanka
3 Italy	15 Hong Kong
4 France	16 Vietnam
5 United States	17 Philippines
6 Portugal	18 Hungary
7 Poland	19 Yugoslavia
8 Germany	20 Holland
9 Greece	21 El Salvador
10 Jamaica	22 China
11 Korea	23 Other (specify country)
12 Lebanon	_____

4. What is your ethnic or cultural identity? **(circle all that apply)**

1 French	13 East Indian
2 English	14 Hungarian
3 German	15 Polish
4 Scottish	16 Portugese
5 Irish	17 North American Indian
6 Italian	18 Metis
7 Ukrainian	19 Inuit
8 Dutch	20 Canadian
9 Chinese	21 Vietnamese
10 Jewish	22 Other (specify country)
11 Korean	_____
12 Lebanese	

5. What language do you speak most often at home? **(circle one)**

1 English	9 Greek
2 French	10 Spanish
3 Italian	11 Hungarian
4 Portugese	12 Chinese
5 Polish	13 Vietnamese
6 German	14 Tamil
7 Dutch	15 Other (specify)
8 Arabic	_____

6. Do you have a job outside school? **(circle one)**

1 Yes 2 No

7. Please list your father's work status:

Present job:_____

Please describe your father's occupation. (If retired or disabled, describe his occupation before retirement or disability)

Title:_____
Type of work:_____
Type of company or business:_____

8. If applicable, please describe your mother's occupation. (If retired or disabled, describe her occupation before retirement or disability)_____

9. What is the highest level of education that your father and mother have completed? **(circle number of choice in each column; if a single parent family, leave one column blank)**

	Father	Mother
Less than grade 7	1	1
Grade 7 or 8	2	2
Up to grade 9	3	3
Partial high school (grade 10 or 11)	4	4
High school graduate	5	5
Partial college (at least 1 year specialized training)	6	6
Standard college or university graduation	7	7
Graduate professional training (graduate degree)	8	8

10. How would you describe your smoking behaviour? **(circle one)**

1 I have never smoked cigarettes
2 I have smoked cigarettes a few times, but do not use them now
3 I used to smoke cigarettes just about everyday, but I do not smoke now
4 I smoke cigarettes once in a while
5 I smoke cigarettes daily

11. Have you smoked a cigarette in the last 6 months? **(circle one)**

1 Yes 2 No

If No, please skip to question #16.

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

13. How many cigarettes do you smoke each day now?_____

Please circle your answers for the following questions.

14. How likely do you think it is that your smoking will lead to health problems for you?

    1 Very likely
    2 Somewhat likely
    3 Somewhat unlikely
    4 Very unlikely

15. Have you tried to quit smoking in the past 12 months?

    1 Yes 2 No

Please circle your answers for the following questions.

16. How many of your friends smoke cigarettes?

    1 All
    2 Most
    3 About half
    4 A few
    5 None

17. Do your parents smoke cigarettes?

    1 Father 1 Yes 2 No
    2 Mother 1 Yes 2 No

18. Do you have brothers?

    1 Yes 2 No

    If yes, do any of your brothers smoke?

    1 Yes 2 No

19. Do you have sisters?

    1 Yes 2 No

    If yes, do any of your sisters smoke?

    1 Yes 2 No

20. In general, compared to other persons your age, would you say your health is:

    1 Excellent
    2 Very good
    3 Good
    4 Fair
    5 Poor

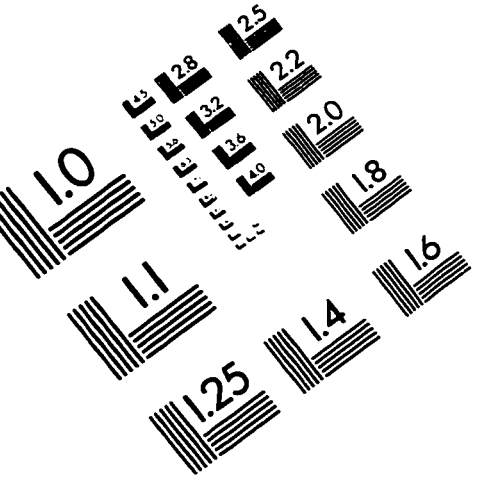
21. As a whole, would you describe your life as:

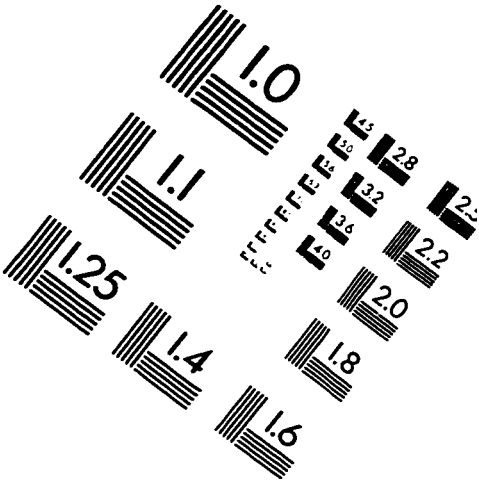
    1 Very stressful
    2 Fairly stressful
    3 Not very stressful
    4 Not at all stressful

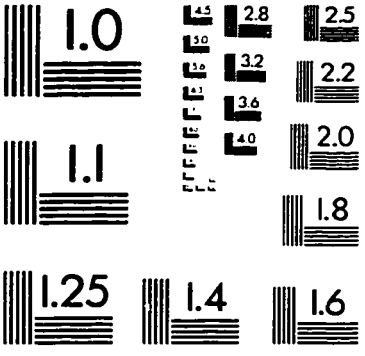
VITA AUCTORIS

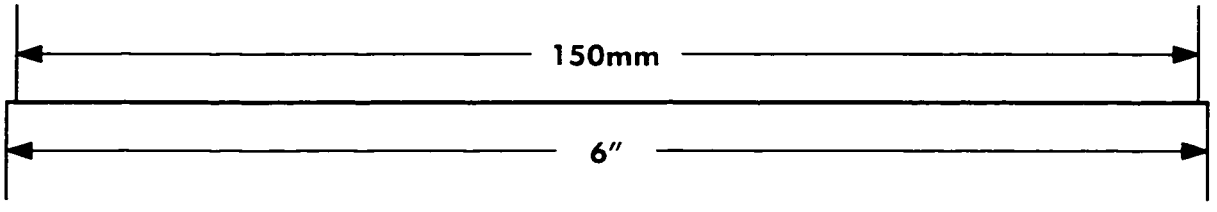
NAME	Kathryn Janet Foley (nee Learmonth)
PLACE OF BIRTH	Windsor, Ontario
YEAR OF BIRTH	1948
EDUCATION	Vincent Massey Collegiate Institute, Windsor 1961-1966
	Grace Hospital School of Nursing, Windsor 1966-1969 Diploma in Nursing
	University of Windsor, Windsor, Ontario 1984-1990 B.Sc.N.
	University of Windsor, Windsor, Ontario 1994-1997 M.Sc.

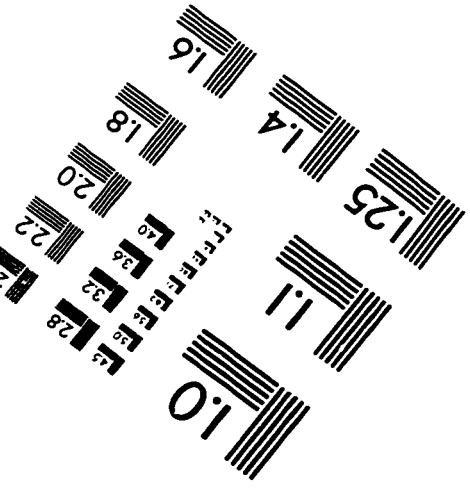
IMAGE EVALUATION TEST TARGET (QA-3)

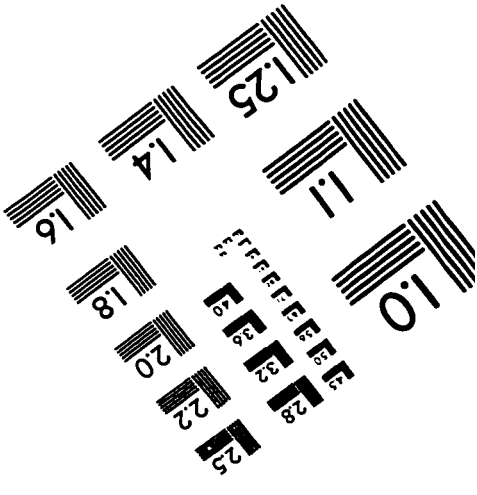












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