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Lycoming College  
Department of Nursing  
Honors Research Project

A Comparison of Initiation and Continuation  
of Smoking in the High School Student

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Running head: SMOKING

## Abstract

This study focuses on the initiation and continuation of smoking in the high school student and on the major role of social factors on smoking behavior. Adolescents are vulnerable to cigarette smoking because they are in the midst of seeking their identity. Adolescence is also a time when the relative importance of family and peers begins to shift.

A comparative study was completed to detect the difference in current smokers, previous smokers, and non-smokers within the high school setting. A convenience sample of 229 high school students in grades nine through twelve was used at a high school in Northern Central Pennsylvania. Subjects were given the questionnaire in their physical education class. Subject consent was obtained from all participants. The response rate was 54.6% males and 45.4% females (124 males and 103 females).

Although it was concluded that there was a significant difference due to social factors (such as friends, siblings) among current smokers, previous smokers, and non-smokers, there was no significant difference due to parental and advertising influences.

From the demographic variables, it was found that more females than males smoked in this sample population ( $p=.0200$ ). Contingency tables were formed and Chi-Square test employed to test for comparison on several factors on current smokers, previous smokers, and non-smokers.

Results also showed that curiosity initiated the smoking habit and that adolescents received their first cigarette from a friend. The two major reasons for continuation of smoking were for the enjoyment and calming effect that was derived from smoking.

Hopefully, the findings of this study will enable the nursing profession to gain additional insight into the smoking behavior in adolescents. An awareness of the social factors should help institutions, such as schools and community agencies, implement educational and smoking cessation programs for adolescents.

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A Comparison of the Initiation and Continuation  
of Smoking in the High School Student

Chapter I

Introduction

Purpose

The purpose of this study was to determine if there was a relationship between social influences (such as peer pressure, media, sibling or parental influence) and an adolescents' initiation and continuation of smoking. Adolescents are challenged to seek their identity. They rely on peers with similar problems for support, while they are learning how to make their own decisions. They want to be accepted and liked by peers and may find themselves trying to fit in in order to belong. Most adolescents choose friends who share similar lifestyles, interests, and values (Craig, 1986).

The independent variables in this research study were social influences. The dependent variables were initiation of smoking and continuation of smoking. The following two research questions were posed: 1) What were the factors that caused adolescents to initiate smoking and to continue smoking? and 2) Did social influence play a major role in the initiation and continuation of smoking?

### Significance

The significance of this research study was to enhance the knowledge base of health-care workers such as school nurses, community health agencies and programs, and the public. The information gained from this study will aid health care professionals in determining if there is a need for educational programs in the high school curriculum on living a healthier lifestyle and if there is a need to focus upon primary smoking prevention early in the students' high school years. Nurses could use this study as a means of focusing on susceptible target groups within the high school community and teaching primary prevention of smoking to these groups. Health agencies and programs could use this information as a means of determining how to set up smoking cessation programs and smoking prevention programs for teenagers. The results of this study may also provide a foundation for further research studies.

### Definition of Terms

Social influence -- Factors in the adolescents'

environment, such as media and parental or sibling influences, that affect their participation in a particular behavior. Social influences were measured through items adapted from



Oppenheim's attitude and behavior scales  
(Oppenheim, 1966).

Smoking -- The act of deeply inhaling cigarette smoke  
on a regular basis.

Non-smoking -- The act of not inhaling cigarette smoke.

Previous Smoking -- The adolescent who smoked at a time  
in the past but does not smoke now.

High school students -- Adolescent males and females  
ranging in age from 14-18 who attend a local high  
school.

Peer pressure -- Influences from friends of the same  
age on whom adolescents depend for support and  
friendship. They serve as a testing ground for  
new behaviors, which may be good or bad and in  
which adolescents may find themselves  
participating, so that they will feel a sense of  
acceptance and belonging. Peer pressure was  
measured through items adapted from Oppenheim's  
attitude and behavior scales (Oppenheim, 1966).

## Chapter II

### Review of Literature

Each year there is an increase in the number of adolescents who smoke (Evans, 1978). Many researchers have studied the factors behind why adolescents smoke cigarettes and have come to various conclusions related to social influences.

Krosnick and Judd (1982) studied the impact of peer and parental influences on adolescent and pre-adolescent smoking behavior. In their sample, they used 449 adolescents who were fourteen years old and 398 pre-adolescents who were eleven years old. Using the Pearson product-moment correlations, they compared adolescent and pre-adolescent cigarette smoking to peer and parental smoking as well as to parental attitudes. Using a structural equation model with multiple predictors, they compared the effects of peer smoking, parental smoking, and parental attitudes with the different age groups. Their results showed an increase in peer pressure and a decrease in parental influence during adolescence. During pre-adolescence, they found that parental influence and peer pressure had about an equal effect. Parental attitude showed no significant effect. Researchers in this study noted that their results were taken only from the subjects and that the

results may have changed if data had been collected directly from the peers and parents.

Mausner and Platt (1971) performed a study on smoking behavior in 30 high school adolescents and 375 college students. Their study concluded that a major source of support for their participants' smoking behavior was 'sheer unadulterated pleasure' (Mausner and Platt, 1971, p.79). They concluded that smoking is maintained because cigarette smokers have a strong, regularly reinforced expectation that pleasure, tension reduction, and fellowship would be derived from the use of cigarettes. Hence, smokers lived under a false belief that smoking would not ruin their health, threaten their self-esteem, or affect the comfort and attractiveness of their lives.

A government social survey, performed by Bynner (1969), targeted smoking among schoolboys ranging in age from 11-15. This study used attitude and behavior scales designed by Oppenheim (1966). The results of this study indicated that peer pressure led to a strong tendency for boys to smoke if they came from a family whose older brothers and sisters smoked and if their parents did not punish them for smoking (Bynner, 1969). This study indicated the main pressure for smoking comes from the need of the male adolescent to conform

with and gain status in the eyes of his group of friends (Bynner, 1969).

In 1989, Curry, Peterson, and Mann performed a study on 1,431 tenth grade students in order to investigate first opportunities to use both cigarettes and smokeless tobacco. The average age for this sample of high school students was 15.2 years. In this research study, comparisons were made separately for males and females. At the conclusion of this study, they noted that the percentage of reported regular cigarette smokers was higher in females (23%) than in males (18%), while that of smokeless tobacco conversely showed that males (20%) used more than females (3%) (Curry, Peterson Jr., & Mann, 1989). They also found that adolescents were more likely to ask for cigarettes than for smokeless tobacco. They concluded that peer influence may be indirect and mediated through other factors. They came to this conclusion because only one-third of the students experienced direct pressure to smoke.

In 1990, Breslin performed a pilot study using eighteen students ranging in age from 17-21 and attending a small liberal arts college. Her study was based upon the comparison and initiation of smoking in the smoking college student. Descriptive statistics

showed that 94% of the smoking students began cigarette smoking as a result of curiosity as compared to the 5.9% who were dared to smoke the cigarette. There were 41.2% who received their first cigarette from a friend, 29.4% found it and took it, 11.8% bought it at a shop, and 5.9% received it from a sibling. Only 18.8% of the smokers indicated that they smoked now because of their friends who smoked, but 87.5% of the smokers said they smoked because of the calmness it provided. When asked about their friends, 42.2% of the smokers indicated that a majority of their friends smoked. Interestingly enough, 76.5% answered they had no siblings who smoked and 53% had at least one parent who smoked. No significance was found when smoking status was compared to sibling smoking and parental smoking.

Palmer (1970) studied variables contributing to the onset of cigarette smoking among 3,112 junior high school students (7th, 8th, and 9th grades) ranging in age from 11-14. Smoking in junior high school students was found to be influenced by models in the same group. There was not enough evidence to determine if the presence of smokers could influence the student to smoke or not to smoke. In fact, the direct encouragement that students received from significant individuals, as well as their perception of parental

opinions and their own feelings, interacted to affect this final decision. Palmer concluded that smoking in adolescents primarily depended on whether or not their parents smoked. The data indicated that regular smokers were constantly surrounded by parents and friends who smoked and that non-smoking students reflected the smoking status of their parents and peers.

Biglan, Severson, Bavry, and McConnell (1983) focused their study on social influence and adolescent smoking. They believed that social influence factors played a major role in the development of high risk behaviors such as smoking. These researchers performed their study on 518 adolescents ranging from sixth grade to twelfth grade and between the age of 12-17. They used questionnaires with items relating to the respondent's smoking history and current practice, as well as to the smoking practices of parents, siblings, and friends. They then correlated the rate of smoking in current smokers with the smoking practices of their parents, friends, and siblings. They found that the most important variable accounting for adolescent experimentation with cigarette smoking is the degree in which their parents, best friends, and siblings smoked. The study also concluded that most teenagers (70%)

received their first cigarette from another friend (Biglan, Severson, Bavry, & McConnell, 1983). Results indicated that 73% of the teens were with another teen at the time they actually smoked their first cigarette. Their study did not indicate or identify any specific situations or social influences that encouraged adolescents to smoke.

In Pederson and Lefcoe's study in 1985, the main focus was the variables related to cigarette smoking in late adolescence. Their research study was a cross-sectional analysis that was conducted on 4,641 young people, while they were in fourth through sixth grade and correlated with the same group when they became 16-21. The research studied smoking status (of parents, teachers, and peers), fitness and athletic participation, and attitudes and knowledge. A multivariate regression was used to conduct the analysis of this study.

Pederson and Lefcoe's study (1985) concluded that although peer smoking was an important factor in the initiation of smoking, the most frequently given reason to start smoking was to see what it was like (43.9%), followed by, friends smoking (14.8%). They found that the following were significant in prediction of smoking status: peer smoking, parental smoking, attitude,

physical condition, prediction of completing high school and current work/school status.

In conclusion, eight of these studies indicated that various social pressures played a major role of smoking. Two studies indicated that curiosity influenced smoking, while another study concluded that 'sheer unadulterated pleasure' was the major source of support for smoking behavior. It was suggested through another study that peer influence may be indirect and mediated through other factors. Only one study could not verify the motive behind smoking behavior in adolescents. Yet, this study did conclude that the first cigarette a smoker was typically received from a friend. Still, another study showed the smokers were influenced by their smoking parents and friends in comparison to non-smokers. Moreover, Bynner (1969) concluded that smoking in schoolboys was indicative of the need to conform and gain status in the eyes of their peers. Additionally, there was one study which compared adolescent and pre-adolescent smoking behavior, and concluded that adolescents tend to show an increase in peer pressure influence and a decrease in parental influence, while these influences on the pre-adolescent were about the same. The theories behind smoking behavior may provide a link to the



understanding of why smoking has become a prevalent behavior.

### Theoretical Framework

Many theories have been formulated in an attempt to explain the reason for initiation and continuation of smoking behavior in adolescents. Theories of development reflect that the pre-adolescent, adolescent, and the college student behave in different ways. According to Craig (1986), pre-adolescence is a time period where there is a need to learn the role as friend, student, sibling, athlete, etc., while adolescence is a time when there is a sorting through these roles and integrating them into one identity. In the college student, which may be considered late adolescence/young adult, the role has changed to maintaining their identities without losing intimacy. In comparing the college adolescent stage to the other two stages, more autonomy is achieved as decisions are made independently from their parents and peers.

According to Murphy and Price (1988), the average age for initiating smoking is 12-14 years old. Advertising has centered its target on the adolescent population, specifically the female population, since girls smoke at a much higher rate than boys. Tobacco companies promote cigarettes through the use of charm,

elegance, and sexiness to hook females into smoking. "Roughly one-fifth of girls in their senior year in high school smoke, and that's 25% higher than the rate among senior boys" (Waldman, 1989, p. B10). The prevalent smoking behavior of adolescents raises many questions. Theories on behavior attempt to seek a better understanding of smoking behavior in adolescents.

According to Newman (1984), "Peer pressure is one of the most potent forces in the lives of adolescents and one of the principle factors in the development of many adolescent health problems" (p. 146). In Erickson's theory (1968), the developmental task of adolescents is to seek their identity while establishing greater autonomy (cited in Craig, 1986). In seeking new identity, adolescents become aware of peer groups and significant others (such as a close friends, parents, or siblings) whom they identify with as sharing the same beliefs, moral values, and attitudes.

During adolescence, there is an increase in the importance of the peer group. There is a strong need to conform to the peer group in order to feel a sense of self-esteem and belonging. Adolescents become increasingly aware of their peer group and are

concerned with whether their group is "in" or "out" and if they have the right reputation (Craig, 1986). In order to work out their identity and accept it, they must feel accepted and liked by others.

During the search for their identity, adolescents may experience a normative crisis. Erickson (1968) refers to this as an identity crisis and considers this normal (cited in Craig, 1986). During this identity crisis, adolescents experience an increase in conflict. They may resolve this crisis through joining a group, club, or gang which functions as the basis for self-definition (Stuart and Sundeen, 1987). The need to join a gang or group may increase the adolescents' vulnerability because they may temporarily adopt the group identity.

According to Bandura's (1977) social learning theory, observations, direct experience, and socially mediated experiences can markedly influence human thought, affect, and behavior. People are capable of selecting, organizing, and transferring the stimuli around them and exercising influence over their own behavior.

Most human behavior is learned through modeling (Bandura, 1977). "Adolescence is a time when the relative importance of family and peers begin to shift"

(Wodarski, 1990, p. 169). Adolescents learn appropriate and inappropriate behavior through their parents and peers and, in turn, will model the reinforced behavior (Bandura, 1969). Certain behavioral patterns are acquired as a result of receiving or not receiving reinforcement/punishment. "They are more likely to adopt modeled behavior if it results in outcomes they value than if it has unrewarding or punishing effects" (Bandura, 1977, p. 28). In relating this to the present study, the rewarding value of smoking may be the value in belonging and being accepted as a part of a group. Knowledge of the diseases associated with smoking may not be considered at the initiation of the smoking habit.

The issue of conformity also affects human behavior. Individuals share in the group practices and norms. This is reflected in attitudinal reactions such as standing for likes and dislikes. "Psychologically, the central problems of conformity and of adolescent morality and conscience are the problems of attitudinal formation and change" (Sherif & Sherif, 1964, pg. 165). An individual's behavior in a group relies on the mutual expectations of behavior. Power in a group is initiated through the controlling of activities.

Participation in activities whether they are good or bad depends upon the support of the group members.

Thus, conformity is derived from the group standards.

In conclusion, theories indicate smoking behavior could be a result of an identity crisis, modeling behavior, and the need to conform and feel accepted. The following study was done in order to gather a further understanding of these theories as they relate to smoking behavior in high school students.

### Chapter III

#### Methodology

##### Design

The purpose of this study was to determine if there was a relationship between social influences (such as peer pressure, media, sibling or parental influences) and a high school student's initiation and continuation of smoking. The following research questions were posed: 1) What were the factors that caused adolescents to initiate smoking and to continue smoking? and 2) Did social influence play a major role in smoking?

A convenience sample was used for this research study. The plan for collecting data and using high school students in a research study was approved through the principal of an area high school. To save time, principals of three area high schools were called and given information about the study the researcher wanted to conduct. One of the school principals immediately refused, one was possibly interested, and the other school principal readily accepted. The principal that accepted was sent a formal letter (see Appendix A) with an attached copy of the parental consent form, subject consent form, and questionnaire to be used in this study (see Appendix B, C, and E).

He was offered the option of receiving a copy of the final paper and results of this study.

While on the phone, the principal and researcher discussed the technique for collecting data. The principal suggested that the researcher use the physical education classes to conduct the study. He also suggested that the researcher hand out questionnaires to all the students in hope of having 50-60 questionnaires returned. The questionnaire was designed so that all students (smokers, previous smokers, and nonsmokers) were able to participate in this study. It should be known that smoking is illegal in the high school system and so confidentiality needed to be an issue discussed with the students so that they would not feel they would get into trouble. The collection of data took two days.

The researcher spent an entire school day on a Tuesday in March in the physical education classes passing out parental consent forms to the students. The principal had arranged the time for students to gather in one room before their class. Announcements were made over the intercom on a Tuesday, Wednesday, and Thursday, in order to remind the students to bring in the consent forms. Because the physical education teachers believed in the value of this study, they

strongly encouraged participation. Two days later, the researcher collected parental consent forms from the students and passed out the questionnaires. Only 73 consent forms were returned. However, the physical education teachers allowed all students to participate because of the non-threatening type of material requested. The students were told that they did not have to participate if they choose not to or if they felt their parents would object to it. The researcher discussed the directions with the students as well as confidentiality. The process of collecting the data only took about ten minutes and was done at the beginning of the physical education classes. There was a total of 229 surveys collected and answered by the end of the day.

### Instrumentation

The questionnaire that was used in this investigation was designed on the basis of a series of exploratory and pilot studies performed by Dr. Oppenheim of the London School of Economics and Political Science (Bynner, 1969). Oppenheim used Cronbach's alpha coefficient to obtain the reliability criterion for this attitude and behavior scale. This coefficient takes both the number of items and the average intercorrelation between them into account. If



the alpha coefficient exceeded .5, the scale was considered 'good' (Bynner, 1969). The alpha coefficient for the original twenty-three scales ranged from .53 to .83 (Bynner, 1969). There were some limitations to this tool. The tool was only used once and only centered on school boys age 11-15.

Questions from Oppenheim's scales were adapted to fit the language and times of today because the original sample was directed towards young school boys ranging from the ages of 11-15 in sixty schools in England. This adapted tool was used by Breslin (1990) to collect data on a pilot study with college students in the Fall. Many questions were eliminated for this present study because many of the question were not related to the topic the researcher wanted to pursue. For example, questions referring to cancer were excluded. In addition to the questionnaire was viewed too long by participants in a previous pilot study (Breslin, 1990). As a result, the survey form was reduced to a more manageable number of questions. As a result of this change, the reliability and validity may have been affected.

According to Oppenheim (1966), there is great difficulty in assessing the validity of attitude questions due to the lack of criteria. It is of

course, very difficult to measure a variables that is beneath the surface while trying to give this "variable" a more precise formulation through the sub-variables it pulls together and its relationship to other variables. It is especially difficult if the variables are attitude, perception, and behavior aspects (Oppenheim, 1966). Through comparing results across studies or by repeating a study, validity can be checked.

Demographic data was collected at the beginning of the questionnaire to obtain information regarding sex, age, race, and year in high school of those who participated in the study. The reason for collecting this data was that it provided a comparison against statistics from other studies. For example, the number of female adolescent smokers to male smokers were compared.

#### Treatment of Data

The demographic data was summarized using descriptive statistics such as the percentages and frequencies of the sexes, race, age, and year in high school. Descriptive statistics were also used for the entire questionnaire. Frequencies and percentages were calculated from the amount of true answers, false answers, yes answers, no answers, and on the multiple

choice answers.

Chi-square tests were used with contingency tables to determine if there were any significant differences between current smokers, previous smokers, and non-smokers. These tests were selected due to the categorical nature of the variables being measured. The significance level chosen for the study was .05.

## Chapter IV

### Data Analysis

This study focused on the factors that are involved in initiation and continuation of smoking. It was also concerned with the degree to which social influences play a major role in the cigarette habit. The following results and findings were from the data collected from 229 high school students. A significance level of .05 was chosen for comparing non-smokers, previous smokers, and current smokers on several variables. For each test, the null hypothesis was that there was no difference between these groups.

Descriptive statistics were used for the entire questionnaire to show the percentage of various responses for each question. Contingency tables were formed and Chi-Square tests were employed to test a variety of hypothesis. The BMDP statistical program 4F was used for both the descriptive statistics and the inferential statistics.

Responses for yes-no and true-false questions were coded respectively with 1's and 0's. Those questions that contained more than two responses were assigned a range of integer codes, 0-2 if the questions had three answers, 0-3 if the questions had four answers, and so on. Age was entered exactly as it appeared on the

questionnaire. A three digit code number was entered for each subject. The questions not answered, answered ambiguously, or not correctly answered were treated as missing data and were assigned a code of 9, 99, 999 depending on the coding scheme used for the answers.

The inferential statistic used in this study was the Chi-Square statistic in a test contingency table. Primarily, this test was used to compare responses among smokers, previous smokers, and non-smokers. The main focus was on those questions dealing with initiation and continuation of smoking, as well as social influences. The questions that focused on initiation were the following: "How did you get your first cigarette?" and "Why did you smoke it?" Then questions looking at the continuation of smoking were the following: "Why do you smoke now?" and "How or in what way do you usually get your cigarette?" All of these questions also provided some information regarding social influences on the initiation and continuation of smoking. Other questions that focused on social influences dealt with advertising and with the number of siblings, parents, and friends who smoked.

### Results

The demographic data provided interesting results

concerning sex and smoking in this study. It was significantly found that more females smoked than males ( $p=.0200$ ). Other interesting findings were the ages at which adolescents began to smoke. Fifty-one percent of the adolescents began smoking between the ages of 13-14.

When asked about how they received their first cigarette, well over half (62.5%), said they received it from a friend; 13.9% found it or took it; 9.7% bought it at a store; 5.6% received it from another family member; and 8.4% received it from a vending machine, adult (other than parent), or some other way not mentioned. These percentages are displayed in the bar graph in Figure 1.

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Insert Figure 1 about here

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Among the current smokers and previous smokers in the sample, almost all (91.4%) began smoking due to curiosity. There were 7.1% who said that they wanted to be like their friends who smoked and the remaining 1.5% stated a variety of other reasons. These responses are illustrated in Figure 2.

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Insert Figure 2 about here

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When asked why they smoked now (for previous smokers, then), well over half, (69.1%) of the previous and current smokers answered that it was not a result of friends smoking, and almost half, (41.9%) answered it was for some other reason. When combining previous smokers and current smokers, 68.6% agreed that they smoked for enjoyment and 70.1% agreed the cigarette provided a sense of calmness. However, when previous smokers and current smokers were asked if they smoked because they couldn't give up smoking, there was a statistically significant difference in response. Figure 3 displays the difference in a bar graph. The observed Chi-Square  $X^2(1) = 7.066$  was statistically significant at the .05

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Insert Figure 3 about here

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level ( $p = .0079$ ). The reason for previous smokers to believe that they could give up smoking more often than current smokers may be because they have already quit the cigarette habit.

When the previous and current smokers were asked

in what way they usually got their cigarettes, 69.6% indicated they bought them from the store, while 19.6% said that they got them from a friend. A bar graph illustrates these responses as well as the small percentage who got them some other way.

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Insert Figure 4 about here

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The Chi-Square test was also used with questions concerning the number of siblings, friends, and parents who smoked as well as the questions pertaining to advertisement beliefs. Also, questions were selected from the demographic area of the study in order to compare males and females with regard to smoking and compare different high school class years with regard to smoking.

The responses to the question concerned with older siblings who smoke were organized into a 3 x 2 contingency table to examine differences among non-smokers, previous smokers, and current smokers. Figure 5 displays the sample percentages in a bar graph. The observed Chi-Square

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Insert Figure 5 about here

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value  $X^2(2) = 7.923$  was statistically significant at the .05 level ( $p = .0190$ ). Twenty percent of the non-smokers had at least one older sibling who smokes as compared to 30.3% and 40% of the previous smokers and current smokers, respectively. Therefore, it could be suggested that older siblings do have a role modeling influence on their younger brothers and sisters.

Adolescents were asked whether their parents smoked and their responses were organized in a 3 X 2 contingency table to examine the possible differences between non-smokers, previous smokers, and current smokers. In figure 6, the observed frequency of responses are depicted in a bar graph.

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Insert Figure 6 about here

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The Chi-Square value  $X^2(2) = 5.031$  was not statistically significant at the .05 level ( $p = .0808$ ). Calculated percentages show 37.3% of the non-smokers in this sample size have at least one parent who smokes when compared to 46.1% and 56.1% of the previous smokers and current smokers, respectively. Significant results may occur with a larger sample size.

The responses to questions concerned with friends who smoke were also organized into a 3 x 2 contingency

table to examine the possible differences among non-smokers, previous smokers, and current smokers. In figure 7, a bar graph illustrates the sample percentages of the participants' responses.

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Insert Figure 7 about here

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The observed Chi-Square value  $X^2(2) = 9.715$  was statistically significant at the .05 level ( $p = .0078$ ). Results showed that 100% of the smokers answered that most of their friends smoked. Of the previous smokers 94.2% said they had at least a few friends who smoked. Of the non-smokers, 83.6% had at least a few friends who smoked.

Students responded to the advertisement questions according to their beliefs about advertising and its influence to stop students from smoking. These responses were answered by non-smokers, previous smokers, and current smokers. A 3 x 2 contingency table was formed to show the differences among these three categories within several true-false statements.

When comparing student's response to the statement, "Advertisements will not stop students from smoking because they don't take notice of the advertisements," the observed Chi-Square value  $X^2(2) =$

6.089 was statistically significant at the .05 level ( $p=.0476$ ). In figure 8, a bar graph illustrates the sample percentages of the responses. Of the previous smokers, 79.3% of them agreed with that statement in

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Insert Figure 8 about here

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comparison to 54.4% and 56.8% of the non-smokers and current smokers, respectively.

Responses to a statement regarding "students don't believe advertisements will stop students from smoking" was organized into a 3 x 2 contingency table and comparisons were made from the three categories. The observed Chi-Square value  $X^2(2) = 5.508$  was not significant at the .05 level ( $p=.0637$ ). This can be seen in Figure 9.

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Insert Figure 9 about here

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The last few advertising questions provided some interesting descriptive data. Non-smokers, previous smokers, and current smokers were in agreement (95.5%) "that students will make up their own minds about the smoking, whatever the advertisements may say." Figure 10 shows the overwhelming number of affirmative

responses to this question in the form.

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Insert Figure 10 about here

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The response to the statement that "Advertisements are not enough to make the student stop smoking" was divided fairly evenly among the three categories (an average of 55.8% True, 44.2%False). In figure 11, a bar graph illustrates the students' response.

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Insert Figure 11 about here

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Responses to the statement that "advertisements will not stop students from smoking because students' can't quit smoking once they started" leaned towards false for all the groups. At least 65.3% of the participants believed that students could stop smoking once they started. A bar graph shows these findings.

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Insert Figure 12 here

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The final question on advertisement centered on the statement "telling students not to smoke just makes them smoke all the more." The response showed the combined percentage of 68.4% non-smokers, previous

smokers, and current smokers answered this statement as being true.

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Insert Figure 13 about here

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In conclusion, the null hypothesis was that there would be no relationship between initiation and continuation of smoking in non-smokers, previous smokers, and current smokers. It was accepted in part by some of the results while at the same time rejected in others.

The null hypothesis was rejected in part by some of the results of this study. It was significant that more smokers reported not being able to give up smoking with regard to previous smokers. A significantly greater percentage of sibling smokers were found among the previous and current smokers than among non-smokers. Also, current and previous smokers had significantly more friends who smoked than non-smokers. Another significant difference was that more previous smokers disagreed with the advertising statement, "Advertisements will not stop students from smoking because they don't take notice of the advertisements" in comparison with non-smokers and previous smokers.

The null hypothesis was accepted in part by

several of the results. There was no significant difference found concerning the influence of parental smoking, and there was no significant difference found concerning the influence of advertisements to stop students from smoking.

## Chapter V

### Discussion

The findings of this investigation have provided information about the initiation and continuation of smoking in the high school student. The study was designed to answer the following research questions: 1) What were the factors that caused adolescents to initiate smoking and to continue smoking? and 2) Did social influence play a major role in the initiation and continuation of smoking?

The findings of this study indicated that the initiation of smoking in this group of adolescents was more the result of curiosity (91.4%) than that of peer pressure (7.1%) when adolescents were asked why they smoked the first cigarette. On the other hand, this study showed that peer influence did have a significant effect on the initiation of cigarette smoking. This was illustrated by the number of smokers and previous smokers who received their first cigarette from a friend. It could be possible that the students do not always acknowledge or realize peer pressure.

When comparing these conclusions to previous research studies, there were some similarities concerning the initiation of smoking. In the research study by Biglan, Severson, Bavry, and McConnell (1983),

the results indicated that most teenagers received their first cigarette from a friend. Two studies, one performed by Pederson and Lefcoe (1985) and the other by Breslin (1990), found that the most frequently indicated reason to start smoking was to see what it was like. Therefore, it is questionable on whether peer influence was indirect and mediated through other factors.

With regard to the continuation of smoking, adolescents in this study answered that they did not continue to smoke as a result of friends, but, because of the pleasure and calmness that they derived from smoking. In comparing current smokers, previous smokers, and non-smokers, social influences showed significant findings for the number of friends ( $p=.0078$ ) and the number of older siblings ( $p=.0190$ ). In Palmers' study (1970), it was indicated that smokers were constantly surrounded by friends and parents who smoke and that non-smokers reflected the status of their parents and peers. In Biglan, Severson, Bavry, and McConnell's (1983) study, it was concluded that the most important factor accounting for adolescent experimentation with cigarette smoking is the degree in which their parents, best friends, and siblings smoked.

Palmer's results (1970) differ from this present



research study in that this particular research study did find parental influence to be a significant factor ( $p=.0808$ ). Interestingly enough, conclusions from this study may have demonstrated the shift from parental influence to peer influence as indicated by Wodarski's (1990) quote that, "Adolescence is a time when the relative importance of family and peers begins to shift (p. 169).

The demographic data provided significant results concerning sex and smoking in this study. It was found that more females smoke than males ( $p=.0200$ ). This concurs with the national trend that more females are smoking than males (Waldman, 1989). However, this study did not show any significant findings when comparing only male and female smokers in their senior year of high school ( $p=.1529$ ). A government research study indicated that at least one-fifth of girls in their senior year of high school smoke, and that this is 25% higher than the rate among senior boys (Waldman, 1989). Limitations of this research study include a small sample size of seniors who participated ( $n=52$ ), and this may have been the reason no significant results in the senior class smokers.

One interesting finding was the average age adolescents began to smoke. Fifty-one percent of the

adolescents began smoking between the ages of 13 and 14. This range corresponds with the average age (12-14) for initiating smoking as cited earlier by Murphy and Price (1988). Unfortunately, adolescents are a susceptible target for smoking and apparently more so at these ages than any other age group.

There were limitations regarding the validity and reliability of the instrument used in this study. The instrument was adopted from a study on young school boys and was only used once. Then specific questions were taken from the original tool in order to derive a new instrument to perform this study. The validity can only be checked if this study was performed numerous times.

In conclusion, it can be seen that adolescents feel a strong need to conform to their particular peer group. According to Bandura's (1977) social learning theory, observations, direct experience, and socially mediated experiences can markedly influence human behavior. Most human behavior is learned through modeling (Bandura, 1976). In Palmer's study (1970), it was indicated that smokers were constantly surrounded by friends and parents who smoke and that non-smokers reflected the status of their parents and peers. It was found in this present research study that friends

and older siblings had an influence on smoking behavior when comparisons were made between smokers, previous smokers, and current smokers. Older siblings, parents, and peers were considered role models in this research study.

According to Erickson (1968), adolescents continue to search for their identity. During this process of searching, adolescents are vulnerable to smoking and may temporarily adopt the group identity as their own. "Psychologically, the central problems of conformity and of adolescent morality and conscience are the problems of attitudinal formation and change" (Sherif and Sherif, 1964, pg.165). Participation in activities whether they are good or bad depends upon the support of the group members. Apparently, peer pressure has an influence on smoking behavior as seen when adolescents received their first cigarette from a friend.

#### Implications for Nursing

With the findings of this and other research studies in mind, the nursing profession will hopefully gain an insight on the smoking behavior in adolescents. This research may also help them become more aware of the social factors influencing this behavior within the adolescent population. An awareness of these social factors will help institutions such as schools and

community agencies implement seminars on smoking among adolescents. It should also heighten their sense of awareness about their smoking behavior since teachers, agency personnel, and health-care professionals (such as the school nurse) are role models for adolescents.

The development of prevention programs that focus on coping with peer pressure, advertising, and familial pressure is one method of educating adolescents. Prevention programs will serve to help adolescents come to understand their vulnerability to smoking. This focus should begin as early as elementary school and continue throughout the educational process.

Another approach is to use social factors as a means of helping the adolescent quit smoking. Through the use of peer pressure, advertising, and familial pressure, adolescents will gain new role models as well as a new insight on their smoking behavior. If negative peer pressure is responsible for initiating the smoking habit then positive pressure can help peers to break the habit. This positive pressure to quit smoking and remain a non-smoker can come in the form of encouragement and support to help the adolescent through this difficult period of readjustment.

#### Future Research

Future research needs to be done on a larger

sample size to determine if parental smoking does have an influence adolescents' smoking behavior. Also, further research needs to be done to study sibling smoking behavior influence on adolescent smoking behavior, as well as the effect of advertisement influence on smoking behavior, since there is little research on these social factors in current literature.

Additional research is necessary to study why many adolescents, (41.9%), said they smoked for some other reason. It would be interesting to see what the other reason for their smoking is besides enjoyment, calming effect, and result of friends. Possibly, this question would be better approached as an open-ended question where adolescents would answer it in the way they want. In approaching the question this way, there would be a more detailed answer.

Generalization of these findings are limited only to the high school studied due to the fact that they were only taken from one high school. Additional studies with a larger sample size that utilizes a variety of school systems needs to be performed in order to generalize findings to the population addressed.

These findings will hopefully generate interest in the health-care profession and in the community about

the role of social influences on smoking behavior. A copy of this study is being sent to the principal of the local area high school that participated in this study as well as to an instructor who teaches a smoking cessation program for adolescents.

**Appendices**

## Appendix A

Letter to Principal Little

Jeannie Breslin  
Lycoming College  
Box 303  
Williamsport, PA 17701  
March 7, 1991

Mr. C. Little, Principal  
Loyalsock Township High School  
1801 Loyalsock Drive  
Williamsport, PA. 17701

Dear Mr. Little,

I am a senior nursing student at Lycoming College. I am currently working on my scholar's program independent studies honor's project and would like your permission to use Loyalsock Township High School students in my study. The study is on the initiation and continuation of smoking behavior in the high school student. I am comparing the reason why students start smoking and am looking for the reason why they are continuing. I want to see if there are factors (such as peer pressure and social pressure) which have a major impact on smoking behaviors.

The students will only need to fill out a brief questionnaire that should not take any longer than 10 minutes. The questionnaire does not ask for student identification. Student participation in this study is voluntary. I would like to get the questionnaires out sometime in March so I could have time to work on the statistics and draw my conclusions for this study. I would like to follow through with your suggestion to come on a Tuesday and hand out the parental consent forms and then, that Thursday, I could pass out the questionnaires to all physical education students. My goal is to at least collect 50-60 questionnaires for this study. I have a meeting with my Honors committee on Monday, March 18 and will call you on Tuesday as to the final dates I can do my study.

I am inserting a parental consent form and a sample questionnaire with this letter so you know the questions I am asking. You are welcome to a copy of my final results and study. If you have any questions, please don't hesitate to call me at 321-4428. The chairperson for my Honor's committee is Dr. Kathleen Pagana at 321-4228 if you prefer to speak with her. I



appreciate your time in reviewing this consideration.

Sincerely,

Jeannie Breslin  
Senior Nursing Student  
Lycoming College

## Appendix B

Parental Consent

Your child is invited to participate in a nursing research study performed by Jeannie Breslin, a nursing student, on the social influences of smoking. This research is part of an independent honors project study.

The purpose of this study is to provide health-care workers, community agencies, and the public with a knowledge base that can be used for smoking prevention programs, cessation programs, and programs about living a healthier lifestyle.

The questionnaire will be given at the beginning of their physical education classes sometime during the month of March and will only take a few minutes to complete. Your child's identity will not be revealed in any way.

Thank-you for your consideration.

Sincerely,

Jeannie Breslin  
Senior Nursing Student  
Lycoming College

I permit my child to participate in this research study.

---

Guardian Signature

---

Date

## Appendix C

Subject Consent

You are invited to participate in a nursing research study performed by Jeannie Breslin, a nursing student, on the social influences of smoking. This project is part of a course requirement.

The purpose of this study is to provide health-care workers, community agencies, and the public with a knowledge base that can be used for smoking prevention programs, cessation programs, and programs about living a healthier lifestyle.

Your participation in this study is voluntary. You may withdraw from the study at any time.

Your identity will not be revealed in any way. Completing the following questionnaire is your consent to participate in this research study.

The questionnaire is self-explanatory and takes only several minutes to complete. If you have any questions pertaining to the questionnaire please ask me personally. Thank-you very much for your help.

Sincerely,

Jeannie Breslin  
Senior Nursing Student  
Lycoming College

## Appendix D

Directions

Smokers answer all questions in questionnaire.

Previous Smokers answer all questions. For question #2, please think in past tense to when you use to smoke.

Non-smokers answer front page and questions beginning with #3.

Please check the appropriate box below:

Non-smoker..... 67.0%

Smoker..... 18.1%

Previous Smoker.. 15.1%

## Appendix E

Questionnaire on Smoking Behavior

Sex: Male 54.6% Code \_\_\_\_\_

Female 45.4%

Age: 14 years: 8.6% 17 years: 27.9%  
15 years: 28.4% 18 years: 12.6%  
16 years: 22.5%

Race: White..... 92.5%  
Black..... 0.9%  
Asian..... 3.1%  
Hispanic... 0.9%  
Other..... 2.6%

Year in High School: Freshman.... 30.1%  
Sophomore... 26.5%  
Junior..... 20.4%  
Senior..... 23.0%

1 a) How old were you when you smoked your first cigarette? (CHECK ONE)

Younger than 5 ..	<u>0%</u>	12 ..	<u>9.7%</u>
5 ..	<u>0%</u>	13 ..	<u>33.3%</u>
6 ..	<u>0%</u>	14 ..	<u>18.1%</u>
7 ..	<u>5.6%</u>	15 ..	<u>8.3%</u>
8 ..	<u>2.8%</u>	16 ..	<u>4.2%</u>
9 ..	<u>4.2%</u>	17 ..	<u>0%</u>
10 ..	<u>2.8%</u>	18 ..	<u>1.4%</u>
11 ..	<u>9.7%</u>	19 ..	<u>0%</u>

1 (b) How did you get your first cigarette? (CHECK ONE ONLY)

I bought it at a shop .. 9.7%

I was given it by my father or mother .. 1.4%

I was given it by my brother or sister.. 4.2%

I was given it by a grown-up .. 1.4%  
(not my mother or father)

I was given it by a friend .. 62.5%

I got it from a vending machine .. 1.4%

I found it or took it .. 13.9%

I got it some other way .. 5.6%

1 (c) Why did you smoke it? (CHECK ONE ONLY)

I wanted to know what smoking was like ... 91.4%

I was dared to smoke it ... 1.4%

I was showing off ... 0%

I wanted to be like my friends who smoked ... 7.1%

- 2 (a) Why do you smoke now?  
(CHECK EACH ONE EITHER TRUE OR FALSE)

	TRUE	FALSE
Because my friends smoke ...	<u>30.9%</u>	<u>69.1%</u>
Because I enjoy smoking ....	<u>68.6%</u>	<u>31.4%</u>
Because I can't give up smoking .....	<u>37.7%</u>	<u>62.3%</u>
Because smoking calms me down .....	<u>70.1%</u>	<u>29.9%</u>
Because smoking makes me feel big .....	<u>7.4%</u>	<u>92.6%</u>
I smoke for some other reason .....	<u>41.9%</u>	<u>58.1%</u>

- 2 (b) How or in what way do you usually get your  
cigarettes? (CHECK ONE ONLY)

I buy them at the store...	<u>69.6%</u>
I get them from my father or mother .....	<u>5.4%</u>
I get them from my brother or sister.....	<u>0%</u>
I get them from a grown-up (not my father or mother).	<u>0%</u>
I get them from friends...	<u>19.6%</u>
I get them from a vending machine.	<u>1.8%</u>
I find them or take them .....	<u>1.8%</u>
I get them some other way .....	<u>1.8%</u>

2 (c) When do you smoke?  
(CHECK EACH ONE EITHER YES OR NO)

	YES	NO
1. At parties.....	<u>90.1%</u>	<u>9.9%</u>
2. At the movies .....	<u>21.5%</u>	<u>78.5%</u>
3. In restaurants.....	<u>31.8%</u>	<u>68.2%</u>
4. In parks .....	<u>85.3%</u>	<u>14.7%</u>
5. In the street.....	<u>83.6%</u>	<u>16.4%</u>
6. At the mall.....	<u>76.1%</u>	<u>23.1%</u>
7. At home.....	<u>65.2%</u>	<u>34.8%</u>
8. In a friend's home.....	<u>89.9%</u>	<u>10.1%</u>
9. When I feel bored.....	<u>69.7%</u>	<u>30.3%</u>
10. When I am nervous.....	<u>79.4%</u>	<u>20.6%</u>
11. When I am offered a cigarette..	<u>82.4%</u>	<u>17.6%</u>
12. When I want to concentrate.....	<u>19.4%</u>	<u>80.6%</u>
13. In my room.....	<u>46.3%</u>	<u>53.7%</u>
14. In my car.....	<u>50.7%</u>	<u>49.3%</u>
15. In my friend's car.....	<u>86.8%</u>	<u>13.2%</u>

2 (d) Would you say you smoke more when you are with  
other students or when you are alone?  
(CHECK ONLY ONE)

Only with other students....	<u>11.6%</u>
More with other students....	<u>27.5%</u>
About the same.....	<u>50.7%</u>
More on my own.....	<u>10.1%</u>
Only on my own.....	<u>0%</u>



3. How many older brothers and sisters do you have  
altogether who smoke? (CHECK ONE)

None .. <u>74.2%</u>	3... <u>1.9%</u>	More than 5.. <u>2.3%</u>
1... <u>16.4%</u>	4... <u>2.3%</u>	
2... <u>1.9%</u>	5... <u>0.9%</u>	

4. Are there usually packets of cigarettes or tobacco  
lying around in your home? (CHECK ONE)

Yes Often ... 16.1%  
 Yes..... 14.2%  
 Sometimes.... 8.3%  
 No..... 61.5%

5. Do your parents smoke? (CHECK ONLY ONE)

Both my parents smoke 9.8%  
 Only my father smokes 21.3%  
 Only my mother smokes 11.1%  
 Neither of my parents  
 smoke..... 57.8%

6. What about your friends? How many of them smoke?  
(CHECK ONE)

All of them..... 3.1%  
 Most but not all.. 20.7%  
 Half and half..... 19.8%  
 Only a few..... 44.5%  
 None of them  
 smoke..... 11.9%

7. Would you say that there is too much or too little fuss being made about the dangers of smoking?  
(CHECK ONE)

Too much fuss..... 13.3%  
Too little fuss..... 34.7%  
About the right amount..... 52.0%

8. Some famous sportsmen and sportswomen have said that smoking is bad for you. Do you believe what they say or not? (CHECK ONE)

I believe them..... 88.8%  
I don't believe them... 8.1%  
I am not sure..... 3.1%

- 8(a) Have you seen any advertisements either on television or in magazines which try to stop people from smoking? (CHECK ONE)

YES.. 73.0%  
NO... 27.0%

- (b) Have you seen any advertisements in magazines, comics, or newspapers for students, which try to stop them from smoking? (CHECK ONE)

YES.. 59.8%  
NO... 40.2%

- (c) i) Do you think these advertisements in magazines, comics, or newspapers will stop students from smoking? (CHECK ONE)

Yes definitely.. 1.3%

Yes perhaps..... 23.7%

No..... 75.0%

- ii) If you don't think these advertisements will stop students from smoking, please tell why.  
(CHECK EACH ONE TRUE OR FALSE)

a) Because students make up their own minds about smoking, whatever the advertisements say.....	TRUE	FALSE
	<u>95.5%</u>	<u>4.5%</u>
b) Because the advertisements are not good enough to make students stop smoking.....	<u>55.8%</u>	<u>44.2%</u>
c) Because students don't take notice of the advertisements.....	<u>58.6%</u>	<u>41.4%</u>
d) Because students can't stop smoking once they started .....	<u>34.7%</u>	<u>65.3%</u>
e) Because students don't believe the advertisement.....	<u>50.8%</u>	<u>49.2%</u>
f) Because telling students not to smoke just makes them smoke all the more.....	<u>68.4%</u>	<u>31.6%</u>

## Appendix F

Figure Captions

- Figure 1. Bar graph indicating how students received their first cigarette.
- Figure 2. Bar graph indicating the reason why students smoked the cigarette.
- Figure 3. Bar graph showing the results of why adolescents smoked the first cigarette.
- Figure 4. Bar graph indicating how/what way adolescents usually get their cigarettes.
- Figure 5. Bar graph depicting the different responses among non-smokers, previous smokers, and current smokers concerning siblings who smoke.
- Figure 6. Bar graph showing the different responses among non-smokers, previous smokers, and current smokers concerning whether or not their parents smoke.
- Figure 7. Bar graph illustrating the different responses among non-smokers, previous smokers, and current smokers who have friends who smoke.
- Figure 8. Bar graph indicating adolescents from all three categories and their responses to the belief that students don't take notice of advertisements.
- Figure 9. Bar graph showing adolescents from the three categories and their responses to the idea that

students don't believe advertisements.

Figure 10. Bar graph indicating adolescent beliefs on whether students make up their own mind about smoking despite what these advertisements say.

Figure 11. Bar graph illustrating adolescent beliefs that advertisements are not good enough to make students stop smoking.

Figure 12. Bar graph depicting adolescent beliefs that students can't stop smoking once they started.

Figure 13. Bar graph showing adolescent beliefs on being told not to smoke just makes them smoke all the more.

FIGURE 1

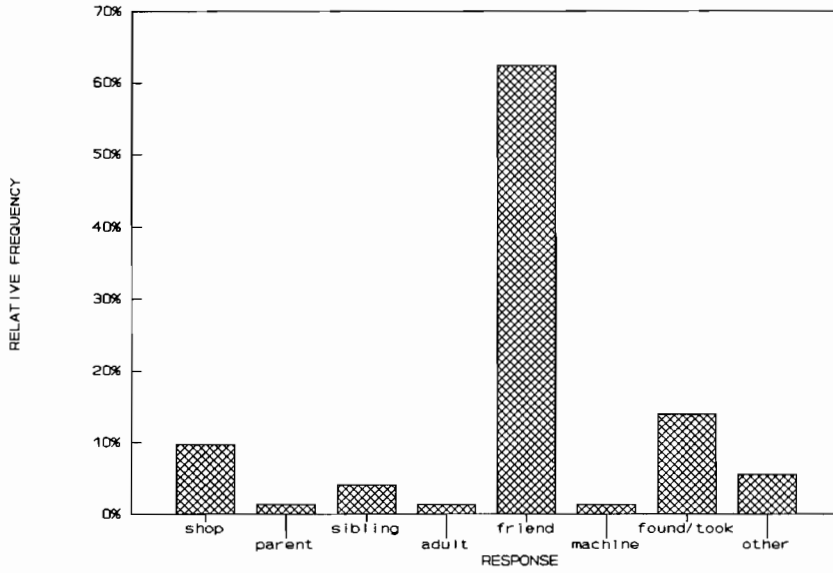


FIGURE 2

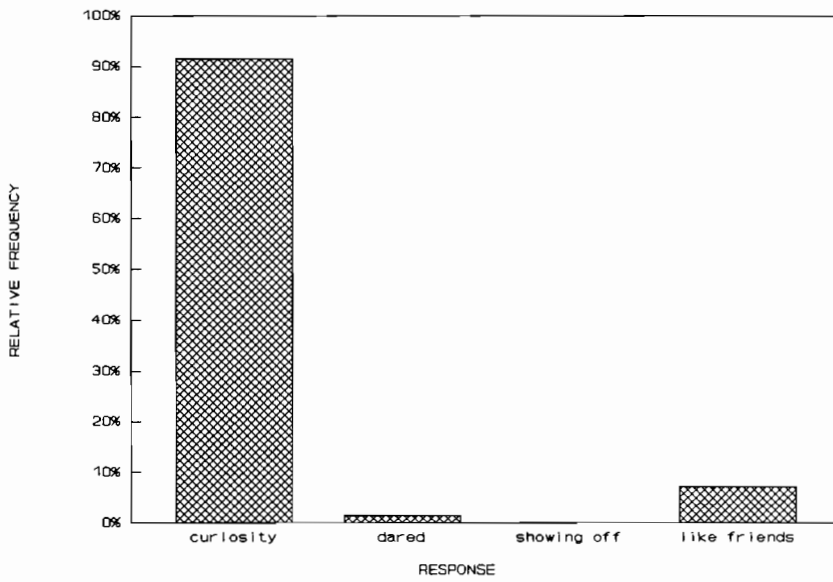


FIGURE 3

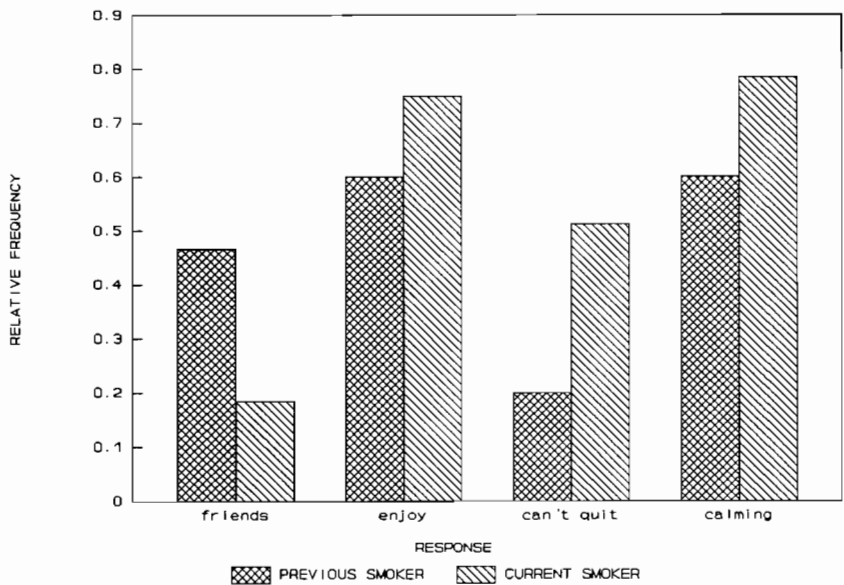


FIGURE 4

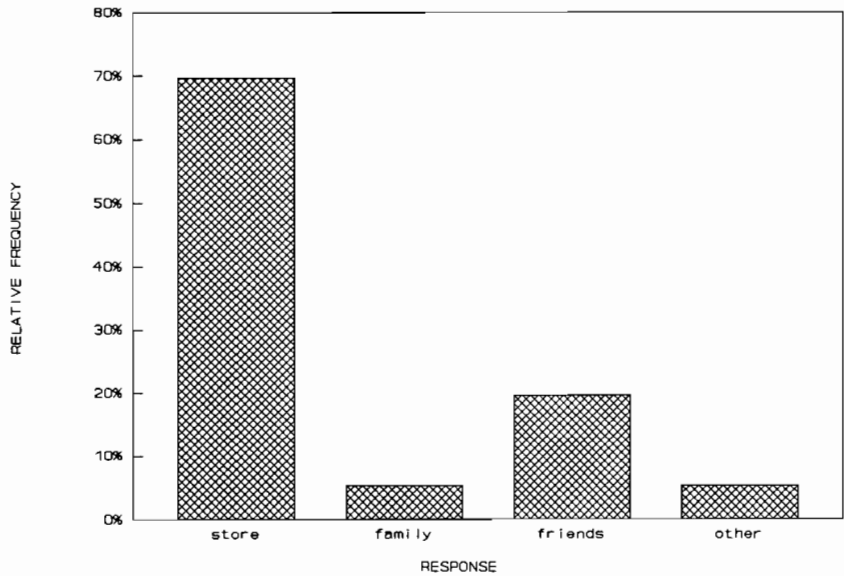


FIGURE 5

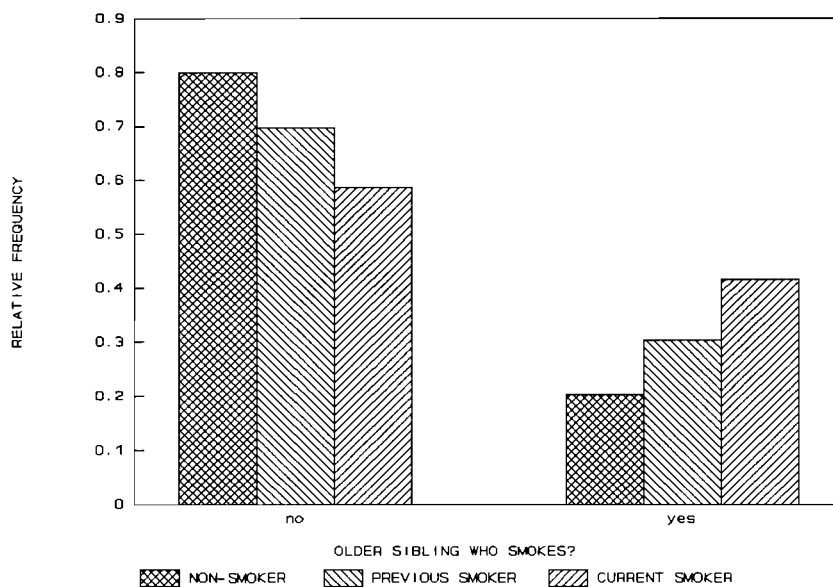


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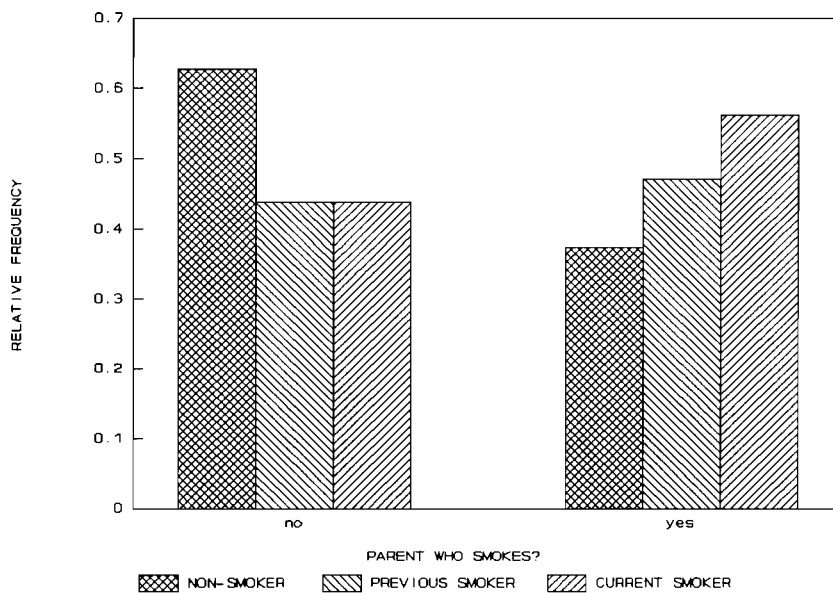




FIGURE 7

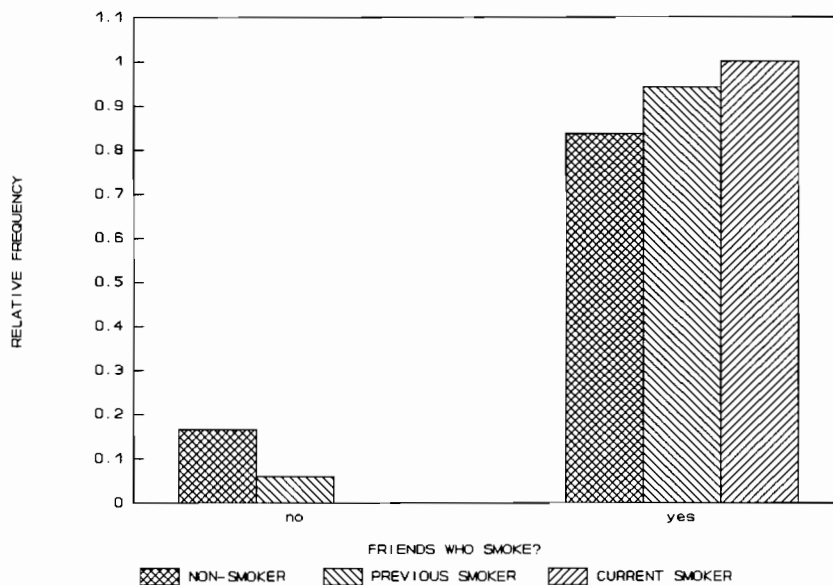


FIGURE 8

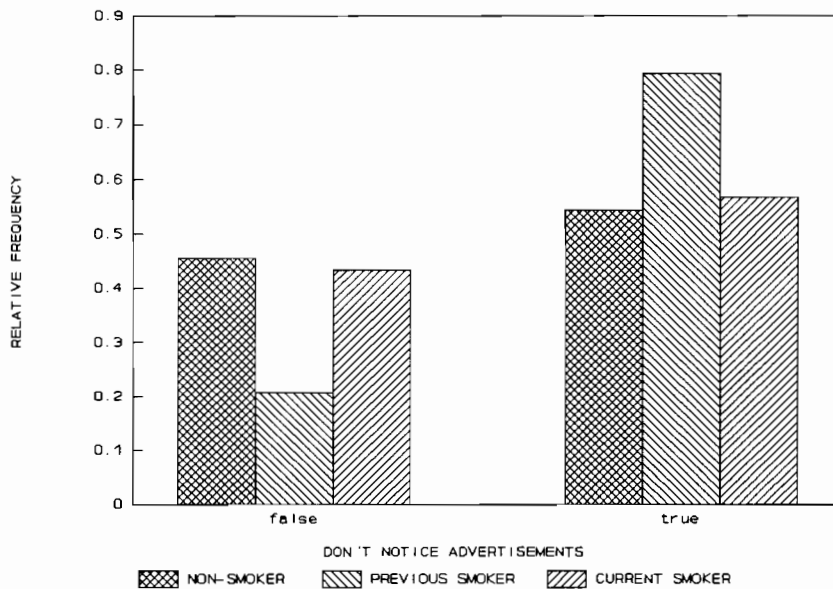


FIGURE 9

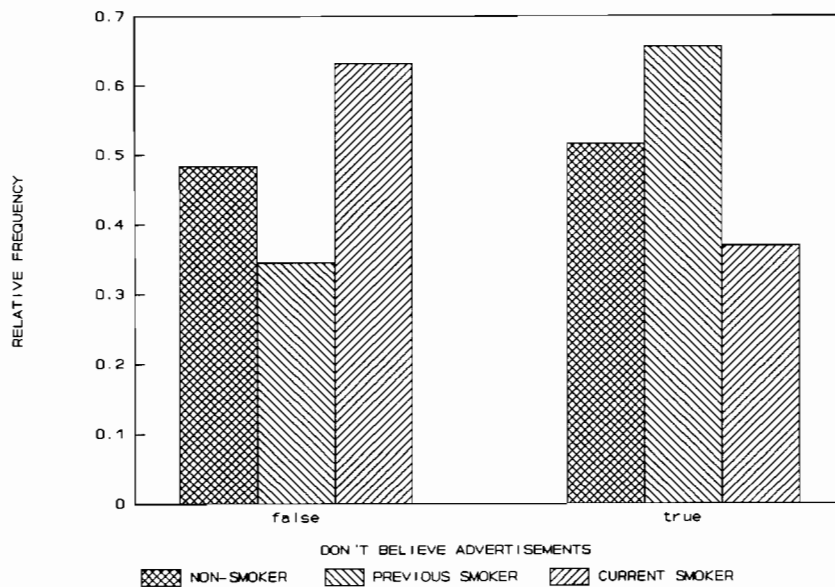


FIGURE 10

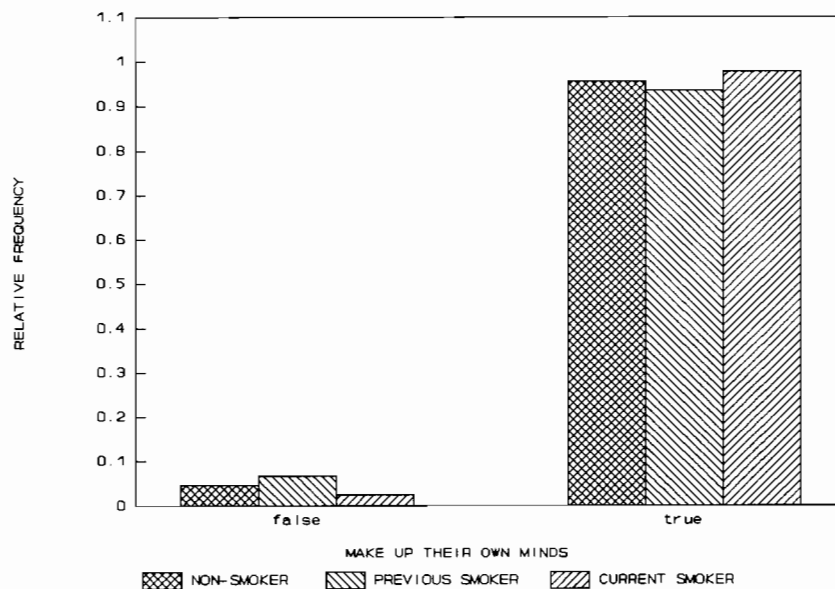


FIGURE 11

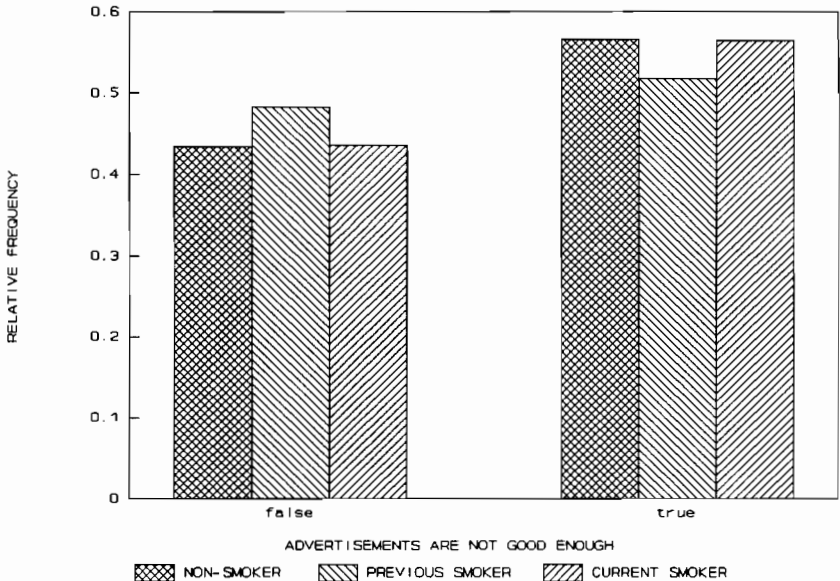


FIGURE 12

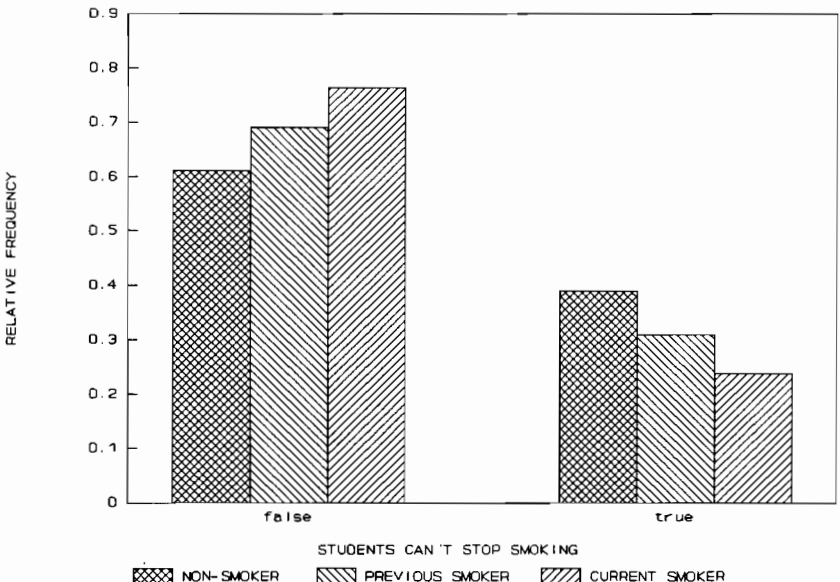
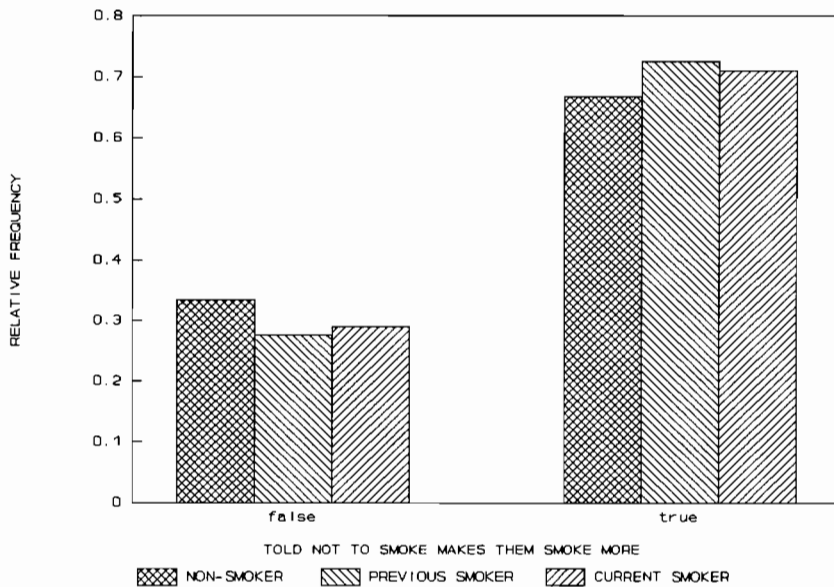


FIGURE 13



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