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The Influence of Siblings and Close Friendships

On Early Adolescent Cigarette and Alcohol Expectancies

by

Micheline Malow-Iroff

A dissertation submitted to the Graduate Faculty in Educational Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2001

UMI Number: 9997105

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This manuscript has been read and accepted for the Graduate Faculty in Educational Psychology in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

1-18-01

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ABSTRACT

The Influence of Siblings and Close Friendships

On Early Adolescent Cigarette and Alcohol Expectancies

by

Micheline Malow-Iroff

Advisor: Helen Johnson, Ph.D.

This investigation focuses on sibling and best friend relationships during pre-adolescence as an element in the social context within which expectancies about cigarette smoking and alcohol drinking develop. Elements of normative influence are investigated which include conformity, quality of interaction, and gender differences. Also aspects of similarity are investigated by examining the attitude and expectancies held toward the use of cigarettes and alcohol and the present use of cigarettes and alcohol by the pre-adolescent subject, the best friend, and an older sibling.

The study draws on self-report data collected in two public middle schools in an urban area of Massachusetts. The subject pool consisted of 159 students at the sixth grade level and 147 students at the seventh grade level. An active consent procedure was used to procure parental consent for children to participate in the study.

The items on the questionnaire addressed characteristics of the student, family beliefs and practices, peer beliefs and practices, and the student's positive and negative expectancies about smoking cigarettes and drinking alcohol. Results from this investigation support previous work that indicates that peer

influences on early adolescent cigarette and alcohol use are significant. In addition, this inquiry lends support to the body of work that has found that attitudes and the perception of approval contribute to the formation of expectancies about cigarettes and alcohol. Although it was predicted that the intimate relationships (i.e., best friends and siblings) would exert a stronger influence on the students, this was not upheld for the pre-adolescents under investigation. Results indicated that all peer relationships (i.e., friends, best friends and siblings) were influential in the prediction of positive expectancies. Results also suggest that the elements of normative influence examined in this study impact on males and females differently.

This research has important implications for school psychologists, as they are the individuals involved in substance use prevention and intervention activities in the schools and communities. School psychologists need to be informed as to the developmental changes experienced, the impact of the social-normative influences experienced, and finally the time and types of prevention that will work best for this pre-adolescent population.

Acknowledgments

When I first contemplated pursuing a doctoral degree, it was a goal that was to be achieved somewhere in the future. However, through perseverance, hard work and the encouragement of my family and friends, that goal has been achieved. Although much of the joy and frustration of attending graduate school has been solely my experience, it would not have been possible without the sacrifice and support of my husband, Marc and my two children, Dana and Erika. Throughout the years of my study they have afforded me the time and space necessary for scholarly pursuit. Although my words may not adequately express the depth of my feelings, they are straight from my heart with love.

In addition, on this journey I have been privileged to meet several special individuals. We began the arduous task of graduate study together and we have made it through the process the same way, together. Thank-you Robin Chapman, Hindi Guglielmo, and Ditza Berger for your support, encouragement, long hours of studying together and mostly for being my friends.

Also, my sincerest thanks go to Helen Johnson, not only for her feedback and support as my advisor, but also for the mentoring that she provided in all areas of my life. I could not have asked for a better role model on how to manage the many diverse areas of my academic and personal life.

Finally, I'd like to acknowledge my first role model, my mother. I watched her juggle family, school and work throughout my childhood and realized that although it was not an easy path to choose, it was a rewarding one. Thank-you for providing me with the tools I needed for the future.

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Chapter 1

Introduction

The transition from childhood to adolescence has been conceptualized in theory and documented in research as a gradual shift away from parental influence and toward peer influence (Berk, 1997; Berndt, 1979; Kandel & Andrews, 1987; Keefe, 1994). As the peer influences become increasingly important in adolescent life, the formation of friendships and peer groups becomes the focal point of social interactions. Individuals with similar interests and attributes are drawn together to form friendship pairs, cliques and crowds. Amongst these friendship groups, there is some degree of homogeneity based on lifestyle characteristics. Research has shown that this homogeneity takes place via two pathways - peer selection and peer influence (Ennett & Bauman, 1993, 1994; Rodgers, Billy, & Udry, 1984; Shilts, 1991). Selection and influence can have both desirable and undesirable effects on an adolescent's behavior and attitudes. Through these processes, an adolescent can come to try out and accept behaviors and attitudes that are not congruent with those of their parents. Substance use behaviors are one area in which this type of peer group influence has been documented. Substance use includes behaviors that are acceptable for adults, but not for adolescents, such as in smoking cigarettes and drinking alcohol.

As adolescents gain more autonomy and try on different adult roles, cigarette and alcohol experimentation and use become part of the social environment in which they function. Recent reports have shown that although it

is illegal for adolescents to purchase cigarettes and alcohol, experience with these substances in this age bracket is almost universal. The National Survey Results on Drug Use from the Monitoring the Future Study, 1975 - 1997 (Johnston, O'Malley, & Bachman, 1998) reports that for the period of 1990 -1997, there has been an increase in cigarette smoking among adolescents. This report found that the 1997 rates of current smoking, i.e. smoking any cigarettes in the past 30 days, stands at 21% of eighth graders, 30% of tenth graders, and 37% of twelfth graders. Although the statistics on cigarette usage are alarming, the data for alcohol usage show an even greater percentage of adolescents who have tried alcohol - 54% of eighth graders, 72% of tenth graders and 82% of twelfth graders. In addition, widespread binge drinking – indicated by subjects reporting five or more drinks in a row at least once in the prior two week period, was found among 15% of eighth graders, 25% of tenth graders and 31% of twelfth graders.

Social Learning Theory provides a framework within which to begin to explore why adolescents experiment with smoking cigarettes and drinking alcohol. This theory takes into account the pervasive effects of social influences on behavior and finds that aspects of social learning occur on the basis of casual or directed observation of people in everyday situations. In this way, people with whom the pre-adolescent comes into repeated contact will serve as models for acceptable social behaviors. Therefore, siblings and friends can be seen as important and influential social models (Bandura & Walters, 1963). Researchers have investigated substance use behaviors as one set of learned behaviors acquired through social forces such as imitation, modeling and reinforcement.

There are many studies in the literature which have investigated risk factors and predictors associated with the development of cigarette smoking and alcohol drinking during childhood and adolescence. Most researchers agree that the strongest of the variables impacting on adolescent substance use are the family and peer influence variables (Engels, Knibbe, Vries, Drop, & Breukelen, 1999; Hunter, Vizelberg, & Berenson, 1991; Morgan & Grube, 1991; van Roosmalen & McDaniel, 1989; Wang, Fitzhugh, Westerfield, & Eddy, 1995; Wills & Vaughan, 1989).

Most studies investigating cigarette and alcohol behaviors in adolescents target the age range 12-18 due to the increase of substance use behaviors during that time period. By eighth grade, 47% of the students have tried cigarettes, and 54% have tried alcohol (Johnston, et al., 1998). In addition, approximately 60% of smokers start by the age of 13 and 90% start before age 20 (Meier, 1991). Research has shown that early experimentation and initiation of smoking and drinking behaviors put adolescents at increased risk for the continuity of use and for the subsequent health and safety problems which ensue (Breslau & Peterson, 1996; Fergusson, Lynskey, & Horwood, 1995; Oygard, Klepp, Tell, & Vellar, 1995). Indeed, a study by McGee and Stanton (1993) found that the strongest predictor of later smoking was experimenting with smoking by age 11. To circumvent this result, it is necessary to investigate the pre-adolescent time period. By starting research at an earlier age, the mechanisms through which these behaviors are initiated can begin to be understood.

Utilizing Behavioral Intention Theory (Ajzen & Fishbein, 1973), the intentions of adolescents to engage in substance use behaviors have been shown to predict later behavior (Chassin, Corty, Presson, Olshavsky, Bensenberg, Sherman, 1981; Chassin, Presson, Sherman, Edwards, 1991; Grube, Morgan, & McGree, 1986; Iannotti & Bush, 1992). In this theory, two main factors have been shown to determine behavioral intentions: the attitudes toward the behavior and the normative influence of others. The attitudes consist of the individual's evaluation of the perceived value and consequences of engaging in an act. The normative component consists of the individual's beliefs about what others think about engaging in the act, plus the individual's motivation to comply with the standards of behavior that have been set.

Within this theory, several variables are important to investigate. First, the attitude toward the behavior can be investigated by utilizing Expectancy Theory. Expectancy Theory states that the expectation of a valued reinforcer from a given behavior will increase the likelihood of that behavior being produced. Research in regard to cigarette and alcohol related expectancies has found that expectancies can mediate the social risk factors of peer smoking and peer drinking behavior (Webb, Baer, Francis, & Caid, 1993). In addition, research has shown that it is possible to manipulate expectancies in order to change behavior (Schutte, Malouf, & O'Dare, 1990; Smith & Goldman, 1995).

With regard to the normative component of the Behavioral Intention Theory, research has shown that the family and peer influence variables are consistently the strongest predictors of adolescent substance use. Research

within peer groups has found that the use of cigarettes and alcohol by a best friend uniquely predicts smoking and drinking by the adolescent (Malow-Iroff, 1997; Morgan & Grube, 1991). This finding indicates that the interactions of different types of friends (i.e. best friends or other friends) differ in the degree of mutuality and positive exchanges. Therefore, the levels of interaction and conformity amongst best friends are greater than with other friends.

Although the research in regard to peers' influence on substance use has been prolific, information detailing sibling contributions has been scarce. Siblings can be thought of as having a dual role in the lives of pre-adolescents. Their relationships are defined as family members, however their age also defines them as peers. Those studies that have looked at sibling influence on adolescent substance use have found significant effects for both attitudes and behavior (D'Amico & Fromme, 1997; Duncan, Duncan, & Hops, 1996; McGue, Sharma, & Benson, 1996; Meir, 1991).

In addition, gender differences have been noted in regard to normative influences on substance use behavior (Bryant & Zimmerman, 1997; Downs, 1985; Urberg, 1992; Wang, et al., 1995). These studies have found that normative influences are more relevant for females than for males. It has been postulated that there is more indirect normative pressure on girls due to aspects of conformity and the greater intimacy of female relationships.

Substance use research on adolescents must stay connected to the goal of informing those working in areas of prevention. With this in mind, it is necessary to work from a developmental model, and to recognize that prevention

programs need to be aimed at reducing early experimentation with risky behaviors. Thus, this study investigated normative social influences on pre-adolescent cigarette and alcohol expectancies. Within this framework, the influence of peer and sibling attitudes and behaviors on the use of and beliefs about cigarettes and alcohol by the pre-adolescent are examined. As peer and sibling influence may be moderated by other variables, this study will also include gender, level of conformity and quality of interaction between the pre-adolescent, older sibling and friend as part of the investigation.

Review of the Literature

This literature review begins by discussing the theoretical models important in this study. These models are Social Learning Theory, the adolescent development model, the behavioral intention model and Expectancy Theory. Within the context of these models, aspects of the normative influences on behaviors are explored. These influences include peer pressure, friends, best friends and older siblings. In addition, moderating variables that impact on these normative influences are examined. These variables are conformity, quality of interaction and gender.

Chapter II

Acquiring Behaviors

Social Learning Theory

Social Learning theory was developed to explain the acquisition and modification of behavior that occurs due to processes which can be attributed to social phenomena; that is, behavior in dyadic and group situations. This theory takes into account the pervasive effects of social influences on behavior. For many aspects of behavior, there is no identifiable eliciting stimulus apart from the cues provided by others in the environment as they exhibit the behavior. Thus social learning can be said to occur based on the casual or directed observation of other people in everyday situations (Bandura and Walters, 1967). Bandura and Walters (1967) have defined observational learning as "the tendency for a person to reproduce the actions, attitudes or emotional responses exhibited by

real-life or symbolized models" (p.89). In this way, an individual tries out new behaviors by imitating the behaviors they observe others perform. During a child's early years, the family constitutes the child's predominant reference group. As the child moves out into the world, she or he is exposed to many more models of behavior, some that are consistent with those viewed in the family setting and some that are not. In this way, the individual's behavioral repertoire is expanded through increasing contact with other models of behavior.

Operant conditioning, a form of behavioral theory, recognizes that the reinforcement of a behavior is an important condition for the repetition of that behavior by the individual in the future. Social Learning Theory takes that premise and expands on it when it states that reinforcement does not have to be experienced directly by an individual in order to be effective. Thus, vicarious reinforcement becomes an important mechanism by which individuals learn behaviors. In this way, the behavior of an individual is modified through the observed reinforcement given to the model of the behavior. The effectiveness of the observational learning is dependent on many factors, a couple of which are the prestige assigned to the model and the prestige assigned to the agent issuing the reinforcement. In this way, behavior is more likely to be imitated if the model is respected or admired by the individual, and the reinforcement that is dispensed to the model is given by someone who is also valued by the individual (Bandura and Walters, 1967).

There is an abundance of accumulated evidence that social response patterns both deviant and conforming, can be readily transmitted through the

influence of a model. In a classic study by Bandura, Ross, and Ross conducted in 1961 (as cited in Bandura & Walters, 1967), the researchers exposed one group of nursery school children to aggressive adult models and a second group of nursery school children to non-aggressive adult models. In the aggressive-model group, the model exhibited unique forms of physical and verbal aggression toward a large plastic inflatable doll. In the non-aggressive-model group, the adult ignored both the doll and the items in the room that were used aggressively toward the doll in the previously stated condition. It was found that the children who observed the aggressive models displayed imitative aggressive responses, while the children who observed the non-aggressive models rarely displayed these responses. In addition, those children who observed the non-aggressive model displayed the inhibited behavior characteristic displayed by their model.

It is part of conventional wisdom that children in many cultures do not do what adults tell them to do, but instead do what they see. As Western society has exploded with many forms of visual technology over the last thirty years, Bandura and colleagues wondered if the social learning findings of human models also extended to visual media. To test this, Bandura, Ross, and Ross, 1963 (as cited in Bandura & Walters, 1967), extended their findings from the previously cited study using both videotaped human models as well as cartoon models. In this experiment, the researchers videotaped adult models acting aggressively toward a plastic inflatable doll as in the previously detailed experiment. Nursery school children were then placed into one of these observational conditions – a filmed aggressive human model, an aggressive cartoon model seen displaying

the same type of aggressive behaviors as the human model, and a non-aggressive model condition. As in the experiment with live models cited above, those children that viewed the filmed aggressive models, both human and cartoon, produced frustrated and imitative aggressive behaviors to a greater extent than those children in the non-aggressive model condition. It was concluded from these experiments that children do imitate the behaviors to which they are exposed. Furthermore, observational learning takes place and is effective in a live human model condition, in a human videotaped condition and when using cartoons as the models of behavior.

Within this context, Social Learning Theory provides a framework from which to begin to explore the social-normative aspects of why adolescents experiment with smoking cigarettes and drinking alcohol. In accord with this theory, smoking and drinking are behaviors that are acquired in a social context and result from both the social cues and the subsequent reinforcers that are the consequences of smoking and drinking. These behaviors are typically activities permitted in society for adults, but prohibited for children. However, children are likely to observe these behaviors and the subsequent reinforcing response patterns not only in their immediate environments, but also in all forms of visual media (i.e., television, films, magazines, billboards etc.). As a result, children are likely to attempt to reproduce these rewarding patterns through the imitation of smoking and drinking behaviors as it is only natural for people to do things that they find rewarding.

Cigarette and alcohol behaviors can be learned through both direct and indirect means. Direct reinforcements include the physical sensations that are experienced when smoking and drinking, as well as the social consequences experienced as a result of engaging in these behaviors. The indirect reinforcements of cigarette and alcohol behaviors include the observation of influential others engaging in these acts, the observation of the consequences that other people receive as a result of these behaviors, messages received from the mass media, and the stories about experiences with these substances as told by friends and family. Therefore, what people perceive or experience to be rewarding in regard to cigarettes and alcohol is based on socially acquired information. As a result, parents, older siblings and friends are important and influential models to children in these situations.

One aspect of Social Learning Theory discussed by Bandura and Walters (1967) is the concept of social power. Social power has been defined as the ability of a person to influence the behavior of others by controlling or mediating positive and negative reinforcements. The use of social reinforcements such as love, acceptance, and friendship, place an individual's parents, older siblings, friends and other idolized individuals in a position of social power. These influential individuals may provide early images of typical smokers and drinkers. Through their overt behaviors, these individuals send messages that may endorse smoking and drinking. In addition, their position as powerful referents may increase an individual's motivation to comply with the social norms presented, thus facilitating the behavior. Indeed, cognitive beliefs and

expectancies about cigarettes and alcohol learned from the social environment mediate these cues, as well as influence the attitudes, beliefs and behaviors of the individual. As Bandura and Walters (1967) point out, the social learning history of an individual may modify the individual's susceptibility to social influences that are exerted through modeling and reinforcement.

Adolescent Development

The widespread treatment of certain forms of social behavior as emergent age specific phenomena is found in the adolescent literature. The adolescent time period has been characterized in theory as a search for identity. Adolescents are typically characterized as passing through a period of storm and stress in an effort to emancipate themselves from their parents. Erik Erickson described this quest as *the* major personality achievement of adolescence and an important step towards becoming a productive adult. The construction of an identity is a process by which adolescents try on different roles in search of defining who they are, what they believe and what goals they will be committed to in the future (Berk, 1997). The adolescent strives for independence by resisting dependence on adults. The search for identity that Erickson has postulated coincides with a natural transitional process of children spending more time away from their parents and family. Starting at around age five, children spend a large part of their day in a structured school environment surrounded by peers, and then many children spend time after school either socializing with friends in unstructured activities, or moving on to organized activities with peers. The

amount of time spent with peers outside of the home environment therefore contributes to the increasing importance of peers in the child's life.

The adolescent exists in a state of transition – neither child nor adult. The change then from childhood to adulthood is characterized by an increase in the frequency of peer interaction. Thus, the transition from childhood to adolescence has been traditionally documented in theory and research in Western cultures as a gradual shift away from parental influence and toward peer influence. It is during this time period that adolescents are forming alliances to peer groups to which they will conform.

Berndt (1979) documented the developmental change in level of conformity from parents to peers in a study that utilized children in grades 3, 6, 9, 11, and 12. This research asked children to respond to hypothetical situations in which a friend suggested a specific course of action. The questionnaire included items of either anti-social or pro-social conformity to peers, and pro-social or neutral conformity to parents. In these hypothetical situations, a scenario has been set up which states that either a friend or the parent has asked the child to participate in an activity or an act. The anti-social behaviors included enticing the child to engage in acts such as cheating, stealing, trespassing and minor destruction of property. The neutral items included participating in sports, hobbies, entertainment activities, and going someplace to eat. The pro-social items involved engaging in behaviors such as performing charitable acts, helping new children to get acquainted with others, and teaching other children something new. Berndt found that conformity to parents on measures of pro-social and

neutral behavior decreased with age, although girls showed more conformity to parents on neutral behavior than boys. He interpreted this to indicate that girls have less behavioral independence from parents than boys do. In addition, anti-social conformity to friends showed significant linear and curvilinear trends with conformity increasing up to ninth grade and then declining. The results of this investigation lend support for and are consistent with the stereotypic view of adolescent relationship development – parental influence decreases and peer influence increases steadily up to ninth grade, when it peaks, and then begins to decline after that.

As the evidence in the literature suggests that there may be developmental changes during adolescence in the relative strength of social influences impacting on an adolescent's behavior, the investigation of the influences on experimentation with cigarette and alcohol behaviors during this time period is important. Cigarette and alcohol research has found that initial experimentation with these substances typically takes place during early adolescence (Chassin, et al., 1991; Keefe, 1994; Meier, 1991; Presti, Ary, Lichtenstein, 1992; Quine & Stephenson, 1990; Wang, et al., 1995). Therefore, researchers have investigated the social influences on adolescent substance use from a developmental perspective. However, the results of these studies have not produced consistent findings.

In a study of normative social pressures and attitudes associated with alcohol use, Keefe (1992) found results that support previous research findings of developmental changes in autonomy during adolescence. Keefe had 7th, 9th and

11th graders complete a questionnaire on alcohol use, attitudes and intentions. As part of the questionnaire, adolescents rated a series of statements on a seven-point scale in regard to their parents' and best friends' opinions toward adolescents engaging in drinking behaviors. The results indicated that parents were perceived as against alcohol use at all three grade levels, while friends were perceived as more tolerant of alcohol use with advancing age. In addition, the results showed support for past findings on developmental changes in autonomy during adolescence. It was found that adolescents become more independent of parental influence in their alcohol use with increasing age.

In a study by Wang, Fitzhugh, Westerfield and Eddy (1995) which investigated predictors of smoking, it was found that the magnitude of peer influence was great over the entire adolescent period. This study found that peer influences were high across the 14 -18 year old age span studied. In addition, the effects of parental influence on smoking were found to be non-significant.

While Keefe (1992) found an age related linear increase in independence from parents on alcohol use, and Wang and colleagues. (1995) found a consistently high influence from peers over the adolescent age range investigated, other studies have found that peer conformity behavior increases from childhood to early adolescence for substance use behavior and then declines in later adolescence. This corroborates the curvilinear pattern that Berndt (1979) reported in regard to peer influences on pro-social, neutral and anti-social acts. Morgan and Grube (1989) also found this kind of curvilinear relationship between peer influences and age in regard to smoking by

adolescents. In their study of 13 –17 year old adolescents in Dublin, it was found that peer influences and peer approval of smoking increased up to the age of 15 or 16 years and then declined thereafter. Throughout the years between 13 and 17, parental influences were found to be stable, yet the developmental pattern reflected a changing susceptibility to peer influences.

The developmental results from these studies indicate that there may be confounding issues to be investigated. It should be noted that the type of influence, the type of substance use, and the stage of substance use (i.e. initiation, maintenance etc.) under investigation might play a role in the developmental path found (i.e. from increasing, stable or curvilinear peer influences to stable or decreasing parental influence). In addition, it is important to look at the age at which each experiment has investigated the shifting influence. It may be that those studies that do not include an early adolescent (11 – 13 years of age) time frame miss a critical shift in orientation from parents to peers. However, it is evident from these studies that there is a changing pattern of influence impacting on the adolescents. Although it is apparent from the literature that attachment to peers is strong at this developmental stage, the role of parental influence is inconclusive. Indeed, this time period has been typically thought of as a stage of moving away from parental influence, however, this may not necessarily be the case.

Recent studies have acknowledged that when investigating the importance of parent and peer influences, the behavior in question must be specified (i.e. smoking, drinking, etc.) and the phase of the behavior (i.e. initiation,

maintenance, etc.) must also be specified. The importance of these distinctions was demonstrated in research which found that peer influence is more important for issues pertaining to immediate lifestyle concerns – such as drugs, music and clothing, and that parental influence is limited to future goals – such as education and vocation (Kandel & Andrews, 1987).

Kandel and Andrews (1987) conducted an investigation into basic processes of socialization by parents and peers in regard to adolescent substance use. In this study, a causal model was estimated for initiation into alcohol use and initiation into marijuana use based on a sample of adolescent-parent-best school friend triads. Kandel and Andrews assumed that adolescent drug use was caused by parental and peer influences, as well as by the adolescent's own attitudes. Questionnaires were administered in five randomly selected secondary schools in New York State to the adolescents and then were mailed home two to three weeks after the school was surveyed in order to collect the parental responses. The resultant sample consisted of 1,110 students who could be matched to a parent and best school friend to form the triad necessary for the path and regression analysis. One general conclusion drawn from this study is that peer influences on drug use are much stronger than parental influences. However, the impact of significant others as role models and sources of reinforcement vary with the source of influence, with the particular drug, and for initiation as compared to frequency of use. In particular, it was found that the direct imitation of peers occurs over and above the indirect effects (i.e. the influence on values and attitudes) of the friends' behaviors. Furthermore, it was

found that the indirect effects were channeled through the adolescent's perceptions of the friends' behaviors and how those perceptions influenced the adolescent's attitudes.

Substance Use Development

In addition to the developmental changes being experienced throughout adolescence in regard to the changing orientation of influences, there is evidence to suggest that both the beliefs about substances and the process of initiation into substance use is also a developmental process (Ferguson, et al., 1995; Hirschman, Levanthal & Glynn, 1984; Johnson & Johnson, 1995; Oygard et al., 1995). First, there is a preparatory stage during which attitudes are formed and modified. Next there is an experimental stage during which early experiences may influence subsequent use. Finally, there is a stage at which the adolescent comes to use the substance regularly and then may pass into addiction.

In support of this developmental model, Hirschman and colleagues (1984) investigated the process of moving from experimentation with cigarettes to becoming a regular smoker. The study found that the proportion of children who tried cigarettes increased from 17.1% in second grade to 77.3% in 10th grade. The number of children who experimented with cigarettes and progressed from trying a first cigarette to having a second cigarette increased across the grade levels. In addition, along the developmental path from smoking experimentation to becoming a regular smoker, other variables were found to be correlated with smoking behavior. One variable that showed particular significance for the progression from experimentation to regular use was having a best friend and/or

a majority of friends who smoke regularly. This indicates that the social meaning of the act of smoking is important. Morgan and Grube (1991) found that the normative influences of several good friends are important in the earlier stages of initiation but that a best friend becomes more of a factor in the maintenance of smoking behavior. It can be postulated that the same developmental path applies to the developmental process of alcohol use behavior as well: from experimenter to user to abuser.

CHAPTER III

Normative Social Influences

Peer Groups

The peer group is an important aspect of social maturation for adolescents. Its significance is comparable to that of the family and the school in the socialization process. At adolescence, the peer group performs the functions previously performed by the family and becomes a significant agent in promoting independence from the family. In this way, peer group affiliations are important to healthy identity development in adolescents (Clasen & Brown, 1985). Socialization takes place through the identification with the peer group leader and the incorporation of the group's norms. The entrance to the peer group is dependent on conformity to group standards, while the cohesiveness of the group is maintained through peer pressure. Through the peer pressure that the adolescent experiences within the group, the behaviors and the norms of the majority are enforced (Clasen & Brown, 1985).

As peers become increasingly important in an adolescent's life, the formation of friendships becomes the focal point of social interactions. Groups of friends with similar interests and attributes come together. There have been two types of peer groups identified by researchers – cliques and crowds (Dunphy, 1963). Cliques are small groups, generally consisting of three to nine members, and are cohesive in nature. The small number in a clique provides for intimacy, like in the family, and it facilitates the transfer of security and allegiance from the family to the clique (Dunphy, 1963). In Dunphy's research on cliques, it was

found that cliques center around talking as a primary activity; they disseminate information, they prepare their members for larger social activities and they evaluate these activities. Cliques move from unisexual in pre-adolescence to heterosexual in late adolescence.

Research has shown that adolescents organize themselves into broad, homogeneous social groups known as crowds (Clasen & Brown, 1985; Downs & Rose, 1991). Crowds are larger groups consisting of between 15-30 members. They may consist of several cliques, although not all cliques are associated with a crowd. The crowd is heterosexual in nature and is the center of organized social activities. This facilitates interaction between boys and girls within the crowd. A crowd label is put on students who act the same way, even if they don't spend a lot of time together. Crowds are generally homogeneous in the types of activities that they prefer to engage in both at school and at home. In addition, members of crowds generally report having most of their friends within the same crowd. It is noted in the literature that the self-labeling process, in which adolescents engage, is consistent across schools. A name is given informally to the crowd, the adolescent accepts this label and then this label associates the individual with different lifestyle characteristics. Labels for some of the crowds are positive and promote the development of a constructive social identity. These labels indicate intellectual skills, status in the schools or the normality of the individuals in these groups. In contrast, the label for at least one of the crowds is seen as negative and may contribute to the formation of a destructive social identity. In this case, the label may call attention to a low status position in

the school, and the participation in drug use or delinquent activities (Downs & Rose, 1991). Research has identified the three or four most prominent crowds identified by adolescents as: brains/smart ones, jocks/populars/preps, average/normal kids, and druggies/toughs/burnouts/ heads/losers/rejects (Clasen & Brown, 1985; Downs & Rose, 1991; Urberg, 1992).

Homogeneity of Peer Groups

Researchers have determined that there are two processes that account for similarity among peers: peer selection and peer influence (Ennett & Bauman, 1994; Fergusson, et al., 1995; Fisher & Bauman, 1988; Rodgers, et al., 1984; Urberg, 1992). The first process, peer selection, implies that similar or initially dissimilar adolescents choose each other as friends based on lifestyle characteristics and personality variables. The second process, peer influence, plays a role when those who are already in a clique are socialized via direct and indirect pressure to become and remain more similar. Influence can incorporate verbal pressure and modeling as well as perceptions of peer approval. In this way, peer influence can lead to stability in the attitude and behavior of friends who were originally similar, or it can lead to change in the attitude or behavior of friends who were originally dissimilar. These two processes move the friendships to become more similar in attitude and behavior. However it is important to note that selection and influence are not mutually exclusive, they may both contribute to a peer group's homogeneity. Research has shown that selection can provide an explanation for similarity among friendships in the same way that influence

does. Additionally, selection of friends has often gone overlooked as a variable of study. As a result, peer influence as a process that contributes to homogeneity among friends may be less influential than commonly assumed due to the role that friendship selection plays in the process of friendship similarity (Ennett & Bauman, 1994; Fisher & Bauman, 1988).

The social environment has a profound effect on the etiology of adolescent substance use. In particular, research has shown that the association with drug-using peers is among the strongest predictors of adolescent substance use. This finding has been strong for both smoking cigarettes (Ennett & Bauman, 1993; Hundleby & Mercer, 1987; Ionotti & Bush, 1992; Morgan & Grube, 1991; Oygard, et al., 1995; Stanton, Lowe & Silva, 1995; Urberg, 1992; van Roosmalen & McDaniel, 1989; Wang, et al., 1995; Wills & Vaughan, 1989) and for drinking alcohol (Grube, Morgan, & Seff, in press; Hundleby & Mercer, 1987; Morgan & Grube, 1991; Shilts, 1991; Wills & Vaughan, 1989).

In a study by Shilts (1991), those adolescents who reported themselves as users of alcohol and drugs also reported almost twice as much time spent with friends than the non-using adolescents. This indicates that these adolescents utilize their free time in non-structured alcohol/drug related activities as opposed to being involved in extracurricular activities and/or having a strong family involvement. Consequently, those who use and abuse drugs tend to associate with peers who do the same. Stanton, Lowe, and Silva (1995) also found that selective association had some bearing on adolescent substance use. In this study, the best predictor of continued smoking status was maintaining friends

who smoked. Those adolescents that continued to smoke over a two year period had friends that smoked, and those that stopped smoking had no friends that smoked. Stanton et al. concluded that these results suggested that once adolescents tried smoking, their choice of friends was a function of their smoking status. However, it could also be interpreted the other way around, indicating that their smoking status was a function of their choice of friends.

Morgan and Grube (1991) also found that for smoking and drinking behaviors, having friends that engaged in those behaviors maintained smoking and drinking in the adolescent. In addition, having a best friend that engaged in smoking and drinking was even more strongly predictive in the maintenance of those behaviors in the adolescent.

Peer Pressure

Pressure from friends can be felt either directly or indirectly. Peer pressure exerts influence on adolescents through modeling, direct verbal pressure, the dispensing of social reinforcers, and the perceptions of peer approval (Urberg, Shyu, & Liang, 1990; van Roosmalen & McDaniel, 1989).

Individuals assimilate social experiences into their existing attitude structures. When there is a discrepancy between attitudes, beliefs, and social experiences, individuals must go through a process of accommodation in order to adapt their own cognitions. Thus it is the individual's attitudes and beliefs that are ultimately the basis for behavior; however, they have been formed in part through the assimilation and accommodation of their peers' attitudes and beliefs. As a result, the individual's perception of the attitudes and behaviors of peers will

be a good index of behavior. This is considered a normative influence of peer pressure. Normative influence has been found to be related to the intention to smoke cigarettes and drink alcohol in adolescents (Chassin, et al., 1981; Urberg et al., 1990).

In a study which investigated smoking among Canadian adolescents conducted by van Roosmalen and McDaniel (1989), it was found that adolescents engage in behaviors due to attitudes favoring those behaviors from significant others – most often peers. The normative group influences determined the acceptable behaviors in the group. If adolescents wanted to stay in the group, they were susceptible to these group norms. As smoking is learned and reinforced through interactions with those who smoke, having best friends, parents, or siblings who smoke increases the adolescent's chances of smoking. Thus through the indirect pathways of modeling and normative pressure, an adolescent is influenced to conform to smoking behavior.

In a study by Urberg and colleagues(1990) which investigated the multidimensionality of peer pressure, it was also found that indirect pressure to smoke via pathways of modeling and normative pressure was a significant variable impacting on adolescents. Direct verbal pressure to smoke was not found to have a significant effect in this study. However, direct pressure not to smoke was found to be marginally related to smoking. The relationship between these variables was that the more direct pressure not to smoke the adolescents experienced, the more likely they were current smokers. Urberg et al. found that adolescents who were current smokers did not feel their peer group was either

encouraging or discouraging of their smoking behavior. Rather, friends were perceived as neutral toward their smoking behavior. As peer pressure was experienced differently between smokers and non-smokers, the results of this study imply that the causes that initiate smoking behavior may be different than those that maintain it.

In Clasen and Brown's (1985) study of peer pressure within crowds, it was found that peers are capable of discouraging as well as encouraging misconduct behavior. Results of this investigation revealed that friends were seen more often as discouraging rather than encouraging cigarette smoking, alcohol use and sexual experimentation behaviors. However, an important aspect of the results was that there was a shift across grade levels in pressures toward conformity to peer norms and in pressures toward misconduct behaviors. Adolescents in this study reported that pressure to conform to peer norms diminished in late high school, while pressure to engage in misconduct increased in late high school. Misconduct pressures moved from a position of discouraging participation at the lower grades to a neutral or encouraging position with increasing age. Clasen and Brown postulate that this finding may be representative of the idea that activities such as smoking, drinking, and engaging in sexual intercourse are acceptable activities for adults and that this is an effort by adolescents to take on adult norms.

In a study by Fergusson, Lynskey and Horwood (1995), the continuity of early smoking experimentation and later smoking at age 16 was investigated with a birth cohort of New Zealand children. This study found that substance use

behavior could be explained in three ways. First there was the tendency to associate with like-minded peers. Pre-adolescents, who had intentions to smoke, associated with peers who smoked. Through this association, they were reinforced to begin and continue the smoking behavior. Second, there were variables that pre-adolescents with intentions to smoke had in common. Those factors included social, individual and contextual forces such as socioeconomic status, early behavioral tendencies, family dysfunction, and smoking behavior engaged in by family members. Finally there was the continuity in the individual behavior as a result of learning processes. The results of this study demonstrate that relatively strong continuities exist between experimenting with smoking during childhood and the development of smoking behaviors in adolescence. Pre-adolescents with early dispositions to smoke tend to associate with peer groups whose members smoke and these peer groups then reinforce cigarette-smoking behaviors.

Peer Processes Summary

Establishing affiliations with peer groups are important to healthy identity development in adolescents (Clasen & Brown, 1985). Individuals come together to form cliques and crowds and entrance into these affiliations is dependent on conformity to the group's standards. An individual may join a clique or crowd based on similar interests or goals and thus be similar to the group they are associating with due to a selection process, or they may become more similar to the group they are associating with due to peer pressures or influence (Ennett & Bauman, 1994). Peer pressures can incorporate modeling, verbal pressure or

the perception of peer approval. The result of the two processes at work – selection and influence, is that friendship associations become more similar in attitude and in behavior. This similarity has been documented in research in regard to substance use behavior (Clasen & Brown, 1985; Urberg et al., 1990; van Roosmalen & McDaniel, 1989). Although associating with substance using peers has been found to be one of the strongest influence on substance use in adolescents (Morgan & Grube, 1991), peer influence also has the capability of discouraging substance use by the adolescent (Clasen & Brown, 1985).

Best Friends

Research has found that social influence varies with the closeness of peer relationships. Granovetter (1973) hypothesized that the stronger the bond or tie that connects individuals, the more similar the individuals would be. As a result, close friends should be more similar in behavior and attitudes than casual friends. Granovetter's investigation found that the strength of the interpersonal tie between individuals is a combination of the amount of time spent together, the emotional intensity of the relationship and the level of intimacy that characterizes the relationship. Those individuals who are weakly tied are more likely to move in different friendship cliques. Adolescents in different cliques will have access to different information, different normative influences and different behaviors. In this way, it can be suggested that mutual best friends are more influential on each other's behavior because these relationships involve more contact and intimacy (Clasen & Brown, 1985; Downs, 1985; Morgan & Grube, 1991; Urberg, 1992; van Roosmalen & McDaniel, 1989; Wills & Vaughan, 1989).

Best friends can be defined as one or more peers who interact and associate with each other frequently. The term generally implies a high amount of contact between those involved, therefore, best friendships may have the opportunity to be more influential due to the strong ties of attachment (Urberg, 1992). As a result, the opinions, beliefs and behaviors of a best friend are held in high regard. Thus, the label 'best friend' signals a degree of attachment that carries a great potential for influence. A possible moderator of this effect is whether or not the best friendship is mutual. In a friendship pair where both individuals do not apply the 'best friend' label, there may be more pressure to change on the individual who wants the best friendship. This implies that there may be some degree of power asymmetry in friendship pairs (Urberg, 1992).
A striking feature in much of the substance use research is the extent to which the use of a substance by a best friend predicted later use by the adolescent. The evidence in the literature suggests that best friends are the strongest social environmental risk factor for smoking cigarettes (Clasen & Brown, 1985; Downs, 1985; Ennett & Bauman, 1993; Hunter et al., 1991; Malow-Iroff, 1997; Morgan & Grube, 1991; Urberg, 1992; van Roosmalen & McDaniel, 1989; Wang et al., 1995; Wills & Vaughan, 1989) and for drinking alcohol (Downs, 1985; Hunter et al., 1991; Malow-Iroff, 1997; Morgan & Grube, 1991; Quine & Stephenson, 1990). This finding has held in the research across all age levels of adolescence (12 - 18 years of age).

In Ennett and Bauman's (1993) study which investigated the structure of peer relationships and their impact on smoking behavior, a strong relationship

between adolescent's smoking behavior and their friend's smoking behavior was found. The authors utilized social network theory to classify ninth graders into one of three categories – clique member, liaison and isolate. The results found that within each school examined, higher percentages of isolates (i.e. those that have few or no links to other adolescents in the network) were current smokers than those classified as clique members or liaisons. This finding is particularly interesting as it contrasts with other studies that have found that smoking is a peer group phenomenon. As a result of this finding, the authors postulated that isolates must have more friends who smoke than clique members and liaisons. The data analysis indicated that this was indeed the case. Although isolates named fewer friends overall in this investigation, proportionally, more of their friends were smokers. One of the conclusions Ennett and Bauman offer from this investigation is that smoking impacts friendship patterns, either by selection or influence. Adolescents who are non-smokers tend to associate with non-smokers, and those who do smoke, associate with adolescents who do smoke.

Urberg (1992) also found that having a best friend who smoked was very influential. The study compared the influence of best friends to social crowds on smoking behavior, and found that having a best friend who smoked was a major source of influence in the eleventh grade students investigated. Additionally, Urberg found evidence for mutual contributions of selection and influence. The mutual contributions indicated that although members of the same social crowd have behavioral similarities, these similarities do not necessarily mean that influence has occurred. Most often, best friends are members of the same social

crowd and the influence from the best friend is erroneously attributed to the social crowd instead of to the best friend.

Additionally, a study by van Roosmalen and McDaniel (1989) found that the strongest influence on smoking behavior came from adolescents who are best friends. When a best friend was reported as a regular smoker, adolescents also reported themselves as smokers. Indeed, it was found that having a best friend that had tried smoking influenced the adolescent to try smoking. However, they were less likely to maintain the smoking behavior if the best friend was not a regular smoker.

In a longitudinal study of smoking, drinking and other drug use among Irish adolescents, 13 – 17 years old, Morgan and Grube (1991) tested the hypothesis that social influence varies with the closeness of peer relationships. The purpose was to distinguish between the influences of same aged peers, best friends, and other good friends. The results of this investigation corroborated other work in the field and supported their hypothesis. Indeed, best friend relationships were more strongly related to the reported use by the adolescent than use by other good friends or by same age peers. A second finding in this investigation was that perceived use by a best friend was a much stronger predictor of substance use in the adolescent than perceived peer approval of use. The results of this study support other research findings indicating that there may be differences in the initiation and maintenance stages of substance use. In this investigation, best friendships were the strongest predictors of maintenance; however for initiation into substance use, best friends and other good friends are equally strong

predictors. These findings were shown to hold for all three substances investigated - cigarettes, alcohol, and other drug use, across the entire age range investigated.

Malow-Iroff (1997) also investigated the best friend relationship in regard to the use of cigarettes and alcohol and the perceived approval of the use of these substances by the best friend. In this examination of sixth graders from the greater New York City area, the results were found to support previous research. Results of this investigation indicated that the best predictor of smoking and drinking in early adolescence was having a best friend who smokes and drinks. In addition, it was found that the perception of peer approval was a significant predictor of drinking in both male and female respondents and a significant predictor of smoking for males.

Best Friends Summary

The influence of normative pressures on the adolescent has been found to vary with the closeness of peer relationships. Therefore, the influences that impact on peers in general such as modeling, verbal pressure and perceived peer approval, are even more significant in a best friend relationship because the friendship involves more contact and intimacy (Downs, 1985; Morgan & Grube, 1991; Urberg, 1992). Evidence from research suggests that best friendships are the strongest environmental risk factor for smoking cigarettes and for drinking alcohol (Ennett & Bauman, 1993; Hunter et al., 1991; Malow-Iroff, 1997; Wills & Vaughan, 1989; Quine & Stephenson, 1990). This is not to imply that best friend relationships are a hazard to adolescents, but that when an adolescent is

involved in a best friendship and one of the individuals is engaged in substance use, the other member of the pair is likely to also engage in the behavior.

Siblings

Although family influences have been consistently found to impact on adolescent substance use (Chassin, L & DeLucia, C., 1996; Wang et al., 1995), only recently have researchers begun to tease out the various influences within the family structure. In this regard, the impact of siblings as influential models on adolescents' attitudes and behavior has begun to be investigated. Although sibling influences on substance use have not been researched as extensively as peer and family variables, the research that has been done shows a consistent link between adolescents' and their siblings in regard to cigarette smoking (Botvin, Baker, Goldberg, Dusenbury, & Botvin, 1992; Krohn, Naughton, & Lauer, 1987; Meier, 1991;Wang et al., 1995), to alcohol drinking (Ary, Tildesley, Hops & Andrews, 1993; McGue, et al., 1996) and to health risk behaviors in general (Brook, Whiteman, Brook, & Gordon, 1991; Bryant & Zimmerman, 1997; D'Amico & Fromme, 1997; Duncan, et al., 1996 ; Needle, McCubbin, Wilson, Reineck, Lazar, & Mederer ,1986; Quine & Stephenson, (1990).

Relationships with siblings are a unique blend of both family and friend. Intimacy and conflict, advice and assistance can characterize these relationships. As siblings are generally close in age to the other children in the family, attitudes and beliefs of the siblings may be more similar to each other than to those of the parents. In addition, it has been postulated that affiliating with an older sibling

may expose a child to more mature attitudes and behaviors, thereby influencing his behavior (Harton & Latane, 1997).

Harton and Latane (1997) investigated social influence and adolescent lifestyles utilizing data from a 2-year panel study. The premise of their investigation was that as children age, they become more responsive to influence from older more mature peers. As part of a larger study, students in the fourth through eighth grades were surveyed in regard to their lifestyle choices and sociometric status (i.e. popularity). This study found that those individuals, who scored high on popularity, held more mature attitudes (i.e. a greater approval of adult-like activities) and that these attitudes were then adopted by a majority of students as they aged. Although this research was specifically directed at more mature peers, the authors presumed that the results would also apply to older siblings. As older siblings would possess more mature attitudes, their younger siblings would be exposed to their more mature attitudes and be influenced by them.

This is the relationship that Brook , Whiteman, Brook, and Gordon (1991) found in their study which investigated the sibling influence of older brothers on younger brothers in regard to substance use. This investigation examined white, middle-class college students and their older brothers. These authors investigated the relationship from a mediational perspective and found that the pathway that best fit the data was that the older sibling's personality influenced the younger sibling's personality that in turn affected drug use. The author's suggest that this influence is due to modeling and identification. This

identification is postulated to lead to common values, attitudes and behavioral orientation.

In a study by Needle, McCubbin, Wilson, Reineck, Lazar, and Mederer (1986) the role of older siblings, parents and peers were investigated in regard to adolescent substance use. The substances investigated included cigarettes, alcohol and marijuana. The importance of older sibling's substance use attitudes and behaviors were examined in relationship to the younger sibling's substance use. Families with children aged 11-13 who had older siblings aged 14 –18 were invited to participate in this longitudinal study. Results of this investigation found that older siblings not only made substances available, but also used the substances with the younger sibling. This investigation also supported previous research findings that concluded that peers are the primary source from whom adolescents obtain the various substances and with whom most adolescents use those substances. The authors conclude that those adolescents with older siblings have an additional source from whom to obtain drugs and learn about substance using practices. In addition, when the authors compared groups of adolescents and older siblings, those adolescents who had older siblings that engaged in substance use were more likely to also engage in substance use. Needle et al. also concluded that older sibling's substance use was more highly correlated with younger sibling's substance use than parental use. Older siblings play an important role in influencing substance use patterns of adolescents. Peer behavior had the greatest influence, followed by sibling behavior while parental use was the least important influence in this study.

Other researchers have found similar results when investigating sibling influences on substance use. Krohn, Naughton and Lauer (1987) and Wang et al. (1995) both found that sibling smoking status had a stronger influence on an adolescent's smoking behavior than the parental smoking status. In addition, Meir (1991) and Fergusson, Lynskey and Horwood (1995) investigated processes that contribute to the continuities between early and later smoking. In these investigations, they postulated that there are three processes that contribute to these continuities – individual learning, peer influences and common contextual factors. One aspect of the common contextual factors associated with increased risk of early and later smoking was coming from a family whose parents or siblings smoked.

In studies investigating sibling similarity among alcohol use, the findings are similar. McGue et al. (1995) used a sample of 653 adopted families in order to investigate parent and sibling influences on alcohol use. In this study, the sibling pairs are non-biological pairs and as a result the authors were able to ascertain the environmental influence without any genetic component influencing the results. In addition, McGue et al. note that although peer influence is the best predictor of alcohol use, the co-occurrence of peer selection and peer influence makes the basis of this association uncertain. In this study, sibling similarity can not be attributed to selective association and the correlations reflect environmental influences. The authors found significant correlations between non-biological sibling pairs. The correlations were significantly greater for those pairs who were similar in age than for those who were dissimilar in age. From

this study, McGue et al. concluded that there is a significant environmental effect of siblings in the use of alcohol.

Sibling Summary

In keeping with the view that the influence of normative pressures on the adolescent has been found to vary with the closeness of the relationship, researchers have begun to investigate the influence of older siblings on adolescents. Siblings may very well add a unique contribution to the influences on an adolescent, as they are close in age and a member of the immediate family. As a result, attitudes and beliefs of siblings may be more similar to each other than to the parents. In addition, older siblings may expose their younger family members to more "mature" attitudes and behaviors, thereby facilitating these new attitudes and behaviors (Harton & Latane, 1997). Indeed, research has found similarity between siblings on both cigarette smoking and alcohol drinking behaviors (Ary et al., 1993; Krohn et al., 1987; McGue et al., 1996; Meir, 1991; Needle, 1986).

Gender Effects

An area of special concern to those involved in the research, design and implementation of substance use and prevention programs are gender factors associated with smoking cigarettes and drinking alcohol. One reason for the concern is because smoking rates among adolescent girls has been on the rise for the last two decades (Charlton, Minagwa, & While, 1999; Chassin, et al., 1981; Johnston et al., 1998).

However, the literature has been plagued with inconsistency in regard to gender differences, peer factors and substance use. In a study by Wills and Vaughan (1989) investigating the relationship between peer support and substance use in two cohorts of seventh and eighth grade urban adolescents, it was found that peer support processes are more relevant for females than for males. For both cigarette and alcohol use, there was found to be a strong positive relationship between peer support and substance use. Wills and Vaughan postulated that this occurred because females are more frequently involved in social activity and may be more prone to adopt peer values regarding substance use.

Downs (1985) also found that the direction of peer factors on attitudes toward alcohol use differed across gender. The author found that the two processes of selective association and peer influence impacted on males and females differently. Males were found to have normative structures that were causally prior to peer alcohol use, and they were found to select their peer groups based on this normative structure. In contrast, Downs found that close friendships were particularly important for adolescent females. Specifically, the drinking of a close friend was found to be causally prior to self-drinking in females. Females were found to adjust their own level of alcohol use to match those of their close friends, so that the drinking behavior of a close friend was a significant predictor of future drinking. Downs postulated that females are more susceptible to peer influence because they are more attentive to interpersonal relationships. In addition, Downs suggests that a stereotypic view of gender roles

were in place in regard to peer pressure and alcohol use. However, the results of the study indicated that the effect of peer pressure on females was limited to close friendships. The social crowd was found to have no effect on the alcohol use of females.

Gender differences were also seen in van Roosmalen and McDaniel's 1989 study of adolescent smoking. It was found that best friends play a highly significant role in the smoking habits of all adolescents, but again, particularly with adolescent girls. This study concluded that there was more indirect pressure on girls to smoke exerted by a best friend, by a group of friends and by a close male friend. However, another interpretation may be that girls respond more readily to the indirect pressure that is exerted. This result is interpreted as an indication that females are more likely to yield to peer pressure within friendships. The authors postulated that friendships among females are based more on mutuality and affiliation that tends to promote conformity among the best friends. In addition, van Roosmalen and McDaniel feel that sexual stereotypes in society still teach young girls that interpersonal relationships are very important. The study found that females adolescents who do not smoke but that have many friends that do, are exposed to a combination of attitudes and behaviors favorable to smoking which increase the probability of their engaging in the behavior. Although males are exposed to the same favorable messages toward smoking that females are, due to male/female differences in conformity, the female is more likely to yield to peer pressure. The indirect pressure to smoke was significant in

all three areas investigated in this study – by a best friend, by a group of friends, and by a close male friend.

Peer support processes were also seen to be more relevant for females in a study by Wills and Vaughan (1989). It was postulated that this may occur because females tend to have higher levels of confidant support and thus may be more prone to adopt peer values regarding substance use issues, such as whether or not to smoke or drink.

Although some of the literature shows that females experience greater peer group influences, a study by Chassin et al. (1981) found a lack of gender differences in factors that predicted behavioral intentions to smoke. In this study, males were found to be more at risk than females on many of the predictor variables investigated, however the data showed that females smoked as often as males. These authors concluded that it may not be gender factors which account for the rising rates of female smoking cited in the literature. Instead, they feel that it may just be reflective of the loosened prohibitions experienced by females due to changing gender roles within western culture.

Gender Summary

Gender differences have been noted in the research in regard to adolescent substance use. Research has found substance use in females to be on the rise (Charlton et al., 1999; Chassin et al., 1981; Johnston et al., 1998), and therefore is an area of special concern. It has been postulated that the peer influence factors may be more relevant for females than for males because females are more attentive to interpersonal relationships (Downs, 1985; Wills &

Vaughan, 1989; van Roosmalen & McDaniel, 1989). Indeed, as research has postulated that interpersonal relationships are more important for females, this would indicate that social normative influences might impact on females more than on males. As behavior is strongly affected by individuals who are highly susceptible to these normative influences, it becomes important to delineate why some individuals are more susceptible than others are. As a result, this investigation has included the variables of conformity and quality of interaction as one avenue to investigate the differences in susceptibility to normative influences.

Conformity

Conformity to others can be thought of as an outcome of the socialization process. Individuals may act in agreement or take on a degree of similarity with others in order to carry on sustained social interaction. Therefore, individuals conform at an interpersonal behavioral level to the attitudes and expectations of significant others out of a desire to be accepted or a fear of being rejected (Thomas & Weigert, 1971). Initially, these significant others are an individual's parents or primary caregivers. The unique parent-child relationship that each child experiences allows for a level of conformity that will fall along a continuum from high to low. Sociological research in this area has identified the parental variable of support as being important in the development of conformity within a child (Thomas & Weigert, 1971). Research conducted by Thomas and Weigert (1971) investigated levels (i.e. high and low) of the parental variables of control and support on the development of conformity in children coming from both urban and rural areas as well as from two different ethnic cultures – Latino and Anglo.

The variable of control was operationalized in this study as a quality of interaction that constrained the child so that the child did what the parent wanted. The variable of support was operationalized as the quality of interaction that establishes a positive affective relationship. The investigation was conducted in Catholic boys and girls high schools and utilized the variables of ethnicity and gender in examining conformity. In this study, the authors found that support from parents was significantly related to conformity to the parents, but not to the best friend. This indicates that those adolescents who felt a high level of support from their parents did not conform to their best friends. In addition, Thomas and Weigert found evidence of gender differences in level of conformity. Males were found to be consistently less conforming to parents than girls in all of the schools used in this investigation. In addition, the ethnicity of the child did not exert an impact on the conformity level of the students in this investigation over and above that of gender.

Although those adolescents who had supportive parents in Thomas and Weigert's (1971) study were not high on conformity to their best friend, research has found that most adolescents experience a shift in conformity, away from their parents and toward their peers, that varies depending on the situation. Berndt (1979) documented the developmental change in level of conformity from parents to peers in two studies utilizing children in grades 3, 6, 9, 11, and 12. As was described previously in this paper (refer to adolescent development section), Berndt asked children to respond to hypothetical situations of either an anti-social, neutral or pro-social nature. The situations involved a parent or a friend

either asking the child to participate in an activity or an act, or giving an opinion about the child engaging in activities of the child's own choice. The anti-social behavior questions were only asked in regard to friends and included enticing the child to engage in acts such as cheating, stealing, trespassing and minor destruction of property. The neutral items were directed at both parents and friends and asked about participating in sports, hobbies, entertainment activities, and going someplace to eat. The pro-social items also included both parents and friends and involved engaging in behaviors such as performing charitable acts, helping new children to get acquainted with others, and teaching other children something new. Berndt found that the age change in conformity levels for peers was quadratic in nature. The age of peer conformity peaked in the sixth grade for pro-social behaviors and in the ninth grade for neutral and antisocial behavior. However, the trend was stronger for the behaviors that involved antisocial acts than for those involving pro-social or neutral behaviors. Additionally, a significant linear trend was also found, with an increase with age in antisocial conformity to friends and a decrease with age in pro-social conformity to parents. It was also found that the children's evaluation of the act impacted on their level of conformity. Specifically, those children, who rated the acts less negatively, were more likely to conform to the peers who suggested them. Berndt also found that boys conformed to peers in the area of antisocial acts more than girls did. Berndt interpreted this finding to mean that although girls are equally sensitive to peers' influence, they are not as willing to follow peers into antisocial acts.

Overall, Berndt found that parent influence and peer influence followed a developmental trend. In the third grade, parent conformity was greater, but between the third and sixth grades parent and peer conformity were largely unrelated to each other; suggesting an isolation of the worlds in pre-adolescence, one sphere of influence for parents and another for peers. Moving on toward the ninth grade, peer conformity reached its peak and the opposition of peers and parents emerged as a source of conflict. However, toward the end of high school, peer conformity began to decrease and the acceptance of conventional standards increased.

As the studies by Thomas and Weigert (1971) and Berndt (1979) illustrate, conformity is part of the social environment in which children and adolescents function. In addition, these studies point to a number of conclusions in regard to conformity. First, the studies show that feelings of support from a significant other can impact on the level of conformity exhibited. In Thomas and Weigert's (1971) study the parents were the significant others investigated. However, due to the developmental shift away from parents and towards peers that was documented by Berndt (1979), it could also be postulated that a significant other could also be a best friend. As a second point, it was seen that the evaluation of the situation by the adolescent impacts on the level of conformity displayed. Those adolescents who don't see a problem with a particular behavior are more likely to conform to the standards of the significant other. As a third point, both studies indicated gender differences in regard to conformity. In both studies, males were seen to conform less to parents and in the study by Berndt (1979)

were more willing to follow peers into antisocial acts. Finally, these studies illustrate the need to include an investigation of the variable of conformity when studying various adolescent problem behaviors (Berndt, 1979; Jacobs, 1998). Adolescent problem behaviors would also include the area of adolescent substance use, and substance use has been shown to be a social phenomenon in adolescence with friends, best friends and older siblings influencing the attitudes and behavior of the adolescent (Clasen & Brown, 1985; Downs, 1985; Ennett & Bauman, 1993; Hunter et al., 1991; Malow-Iroff, 1997; Morgan & Grube, 1991; Needle et al., 1986; Quine & Stephenson, 1990; Urberg, 1992; van Roosmalen & McDaniel, 1989; Wang et al., 1995; Wills & Vaughan, 1989).

As research has shown that feelings of support impacts on an adolescent's level of conformity to others, Wills and Vaughan (1989) investigated the possible relationship between social support and substance use in early adolescence. This investigation utilized survey data from two cohorts of sixth and seventh graders in Manhattan, New York. The survey questions that encompassed the measures of support as operationalized in this study were derived from two standardized inventories - a behavior based coping inventory and an intention based coping inventory. The questions from the behavior based inventory asked students to indicate the frequency with which they engaged in certain behaviors when they experienced a problem. The questions from the intention based coping inventory asked students to indicate the frequency with which they pursued a particular coping goal when they experienced a problem. The variables investigated in this study were cigarette and alcohol usage, peer and

parental support, gender and race. Results from both cohorts found that overall females had higher levels of general support and peer support at all measurement points. In addition, the results indicated that high levels of peer support predicted cigarette and alcohol use over time. Wills and Vaughan concluded from this investigation that peer support processes were more relevant for females than for males. However, they also make the point that peer support processes do not necessarily have a negative effect. The relationship between high peer support and substance use is present only when the adolescent's peer group contains many smokers and drinkers, and when those adolescents' experience low adult support.

Other studies investigating the relationship between substance use and levels of conformity have obtained similar results. A study by Urberg (1992) utilized the variable of conformity (i.e. doing what friends want them to do) in a study which examined the influence of best friends and social crowds on cigarette smoking. In this study, questionnaires were administered to 11th grade students in a Midwestern, suburban high school. Students were asked to identify their two best friends in the school on the questionnaire, and then names of social crowds in the school were gathered by individually interviewing twenty 11th graders. A shortened version of the questionnaire was then administered to students the following year (i.e. 12th grade) in order to follow their response across time. The results of this investigation indicated that best friends, rather than the social crowd was the major source of influence in cigarette smoking. In addition, Urberg found that when the variable of conformity was evaluated, the results differed for

social crowds and best friends. The burnout crowd was found to be lower on measures of conformity, yet smoked almost four times as much as the other social crowds. This result indicates that peer influence may differ by social crowd. However, conformity was also seen to affect best friends. Those adolescents who were high on conformity measures were more susceptible to peer influence from their best friends. This study found that only the influence of the best friend was able to predict a change in adolescent smoking behavior over a one-year period. This indicates that closer and more intimate relationships may be more influential than more casual ones. Therefore, conformity is positively related to the susceptibility of peer influence.

Conformity Summary

Research has found that individuals conform to the attitudes, expectations and behavior of others in order to be accepted by that other person or persons, or out of the fear of being rejected by them (Thomas & Weigert, 1971). Therefore, the adolescent time period is one that can be thought of as a period when conformity issues peak. Children are forming friendships, cliques and crowds in order to be accepted by others and maintain the feeling of belonging that they experienced in their nuclear families. Indeed, as forming relationships are key at this developmental point, the social normative forces peak. Research has not fully investigated the impact of these forces on personality variables. The literature has suggested that females may be more susceptible to these pressures due to the greater intimacy of their interpersonal relationships, however, it has not delineated what personality traits make them more

susceptible. Research has shown that children conform more to peers than to parents on lifestyle issues (Kandel & Andrews, 1987), however it has not detailed whether this trait manifests differently within and across genders and age groups. Substance use in adolescence is a lifestyle decision. Consequently, how the personality variable of conformity contributes to the normative social influences that adolescent's experience is necessary to investigate. If those individuals who have a low susceptibility on conformity to peers issues make different substance use decisions, then prevention and intervention programs can utilize this information in designing effective programs.

Quality of Interaction

Research on various aspects of communication skills has found that there is a developmental trend evident in children's ability to communicate with each other (Reisman & Shorr, 1980). This developmental trend in communication parallels the development of friendships during childhood. Researchers have suggested that the quality of interaction between individuals indicates the closeness or intimacy level of the relationship (Dunphy, 1963). Dunphy (1963) found that cliques, small groups of individuals who frequently interact, center around talking as a primary activity. Individuals in cliques are thought to share activities, information and ideas, as well as make decisions about and evaluate these activities. As the relationship between best friends is greater in intimacy level than the relationship among friends in a clique, the quantity and quality of the interaction among the pair could be postulated to be greater than what takes place in the clique. Indeed, the intimate relationship that best friends are thought

to share would imply that the level of interaction between the pair would be high (Clasen & Brown, 1985; Downs, 1985; Morgan & Grube, 1991; Urberg, 1992; van Roosmalen & McDaniel, 1989; Wills & Vaughan, 1989). Best friendships imply that the pair involved would be sharing thoughts, values and opinions about subjects of importance to them. The level of sharing inherent in the relationship could also be postulated to add to the level of conformity in the pair and increase the individual's motivation to comply with social norms.

Although there is not a body of literature that has investigated the impact of the quality of interaction among friends or best friends, the implication from the understanding of these relationships implies that it may affect the individual's behavior. Research on interaction has shown that the interaction acted as a mediator of the intention to perform a behavior in a laboratory experiment (Fishbein, Ajzen, Landy & Anderson, 1970 as cited in Ajzen & Fishbein, 1973). Fishbein et al.'s work was a series of three studies that investigated the link between intentions and behavior. The studies involved a task paradigm in which a three-person group had to balance a board in the shape of an equilateral triangle. The members of the team were allowed to communicate with each other in a written form for the purpose of altering the team mates behavior. The authors computed the intentions of the team members to communicate with each other and the intention to comply with the communication. Results from this investigation indicated significant contributions were made in the prediction of behavior as a result of these variables. Fishbein et al. found that the subjects changed their behavioral intentions as a result of their interactions on the task. In

addition, the communication of a team member was modified by the other individual's intentions to comply with the request. In this way, the results from these studies showed that the change was bi-directional. Not only did the communication impact on the behavior, but also the intent to comply with the communication impacted on the communication that took place.

Quality of Interaction Summary

Researchers have suggested that the quality of the interaction between individuals indicates the closeness or intimacy level of the relationship (Dunphy, 1963). From this perspective, individuals who are siblings and best friends then must have a significant intimacy and quality of interaction. In addition, as the strength of the normative influences is impacted by the closeness of the relationship, it would follow that both siblings and best friendships would not only share a strong quality of interaction, but also would feel the normative influences more strongly. As research has shown that communication in a laboratory setting acted as a mediator to perform a behavior (Azjen & Fishbein, 1973), it would follow that communication in a close relationship would also affect the behavior of the individuals within that relationship – pulling them to be more similar. Therefore, it is important to investigate the interactional quality within close relationships in order to determine whether the communication increases the similarity between the pair on lifestyle issues in general and substance use issues in particular. Specifically, quality of interaction can be thought of as the variable that encompasses the verbal pressure that adolescent's experience from close

relationships to become and remain more similar on issues of cigarette and alcohol use.

CHAPTER IV

Assigning Value to Behavior

Behavioral Intention Theory

Ajzen and Fishbein's (1973) Behavioral Intention Model is a theory that deals with the prediction of a specific behavior under a given set of circumstances. It is based on the concept that the best predictor of an act is the intention to engage in that act. This model predicts intention from two components, a personal factor – the attitudes toward the behavior, and a social factor – the normative influence of others. The normative component includes an individual's beliefs about what others think about that individual engaging in a particular act plus the individual's motivation to comply with these external standards of behavior.

As noted, several factors determine an individual's behavioral intentions, and Ajzen and Fishbein have proposed that they work in an additive fashion. First, the personal factor, which is the expectancy value of the act, is proposed to be a function of the perceived consequences and values of the act to the person. This factor is then added to the social factor, which is the normative influence of the social environment. The normative factor includes the individual's perception of other people's expectations of the behavior of the individual and other people's attitude toward engaging in the behavior. It also incorporates an individual's motivation to comply with people's expectations. Ajzen and Fishbein felt that the motivation to comply with people's expectations influenced the normative factor in a multiplicative fashion. In this way, if the motivation to comply with others is

high, then the social influence experienced is increased. Therefore, individuals that have more intimate relationships, such as best friends and older siblings, may have greater normative influence on an individual's behavior than less intimate friends or other people in an individual's life. Personality and situational variables can be considered to mediate the influence of social-normative factors as these variables contribute to the individual's motivation to comply with normative factors. These variables may include the degree to which an individual conforms, and the quality of the interaction that an individual has with significant others.

Azjen and Fishbein's (1973) behavioral intention model can be represented symbolically as in the following equation:

$$B \sim BI = (Aact)W1 + (NB(Mc))W2$$

In this equation, B = overt behavior; BI= behavioral intention; Aact= attitude toward the act; NB= normative belief; Mc= motivation to comply with the normative belief; and W1 and W2 are the empirically derived weights. As the equation illustrates, behavioral intentions are a function of the weighted sum of the two variables. In this model, Ajzen and Fishbein allow for overt behavior and behavioral intentions to have an imperfect relationship. They postulate that there is always the possibility that intentions may change, after they have been measured, but before the behavior has been observed, due to new information and/or a long interval of time between the measurement of the intention and the observation of the behavior.

A 1986 investigation by Grube, Morgan, and McGree sought to test Ajzen and Fishbein's notion that the factors involved in the prediction of behavioral intentions were independent of each other and that they worked in an additive fashion. In this study, Grube et al. compared the behavioral intention model, as proposed by Ajzen and Fishbein, to two variations of the model, proposed by the authors, in the ability to predict smoking intentions. Their investigation hypothesized that the factors involved in the model would be interactive rather than additive as Ajzen and Fishbein's (1973) original model had proposed. In addition, Grube et al. included the variable of behavioral norms in this study. Behavioral norms were defined for this investigation as the perceived behavior of others. This variable was thought to be important to include because of the tremendous impact that Social Learning Theory (Bandura & Walters, 1963) has had on all areas of behavioral research. The models were tested utilizing data from two very different samples - primary school students in Dublin, Ireland and first year student teachers from St. Patrick's College also in Dublin, Ireland. Both populations were given questionnaires to fill out anonymously. Smoking intentions were measured on the questionnaire by an item that asked for the approximate number of cigarettes the individual thought they would smoke each day during the next month. In addition, subjective norms, behavioral norms, behavior, and attitude toward smoking were all measured in this study by questions on the survey. All questions were measured on Likert scales that provided the respondent with a range of response options. Results from regression equations designed to predict smoking intentions found that for both

samples the variables of attitude, peer approval, and peer smoking significantly predicted smoking intentions. The results from these investigations supported Grube et al.'s addition of behavioral norms to the model tested and found that behavioral norms contributed independently to both intentions and behavior. In particular, the behavioral norm of perceived peer smoking emerged as an important predictor of both behavior and intention. In addition, the results suggested that Azjen and Fishbein's theory be modified to also include interactive effects between attitude and normative beliefs. Grube et al. postulated that the failure to consider behavioral norms in previous research might have led to an underestimation of the contributions that normative influences make toward the determinants of behavior.

The idea that the perceived behavior of others is more important than actual behavior for behavioral norms (in the model under investigation) was investigated in a study by Iannotti and Bush (1992). In this study, questionnaires were administered to fourth and fifth graders in a school setting. Anonymity of the subjects in the study was explained to students prior to administering the questionnaires and was maintained throughout the duration of the study. Results of the investigation found that a majority of the subjects in the study had already used cigarettes, alcohol or marijuana. Furthermore, it was found that perceived use by a friend was more important than actual use. This finding supports Grube et al.'s (1986) finding for the inclusion of behavioral norms (i.e. the perception of another's behavior) into the behavioral intention model as proposed by Ajzen and Fishbein (1973).

Research has shown that the intention to use a substance is associated with the subsequent initiation of the behavior (Aas, Klepp, Laberg & Edvard, 1995; Chassin et al., 1981; Chassin, Presson, Sherman, & Edwards, 1991; Grube et al., 1986; Quine & Stephenson, 1990). However, the prevalence of smoking and drinking behavior is quite low at young age groups and often hard to detect, thus the identification of the intention to smoke or drink is an important variable for investigation. The literature has shown that the intention to engage in an activity is a function of attitudes toward the activity and related subjective norms. Chassin et al. (1981) found in their middle school and high school sample that specific attitudes and normative beliefs about smoking distinguished nonsmoking adolescents who had the strongest intentions to smoke.

Furthermore, the idea that smoking and drinking initiation was predictable from behavioral intentions was supported in a cross-sectional study of 10, 11, and 12 year olds by Quine and Stephenson (1990). In this investigation, non-teaching health personnel read questions out loud to the classes of children, and the students answered them anonymously. Two smoking intention questions and one drinking intention measured the variable of intention. The smoking intention questions included whether 'To smoke when older' and whether 'To take a cigarette from a friend'. The drinking intention was measured by the question of whether 'To take a glass of alcohol from a close friend'. The results of this investigation found that the significance of peer influence as a predictor for both behaviors and behavioral intentions varied for smoking and drinking. For while the intention to take a cigarette from a close friend was a significant predictor of

behavior, the intention to take a glass of alcohol from a close friend was not. Quine and Stephenson felt that this result might indicate that in regard to alcohol use, parents retain a strong influence at this early adolescent age. However, overall the results of the investigation did show that the models utilized in this study (i.e. parent, sibling, and friend) were predictors of both behavior and intentions. The authors concluded that the results suggest that the strength of the influence of family, siblings and peers may vary with the substance investigated.

Behavioral Intention Summary

The literature has shown that the intention to engage in a behavior is a function of the attitudes toward the activity and the related subjective normative influences of others (Ajzen & Fishbein, 1973; Morgan & Grube, 1986;). Therefore, this model incorporates the individual's attitudes and behavior as well as the perception of other's attitudes and behavior of engaging in an activity. In relating this to substance use in adolescents, it is apparent that an adolescent will engage in substance use behaviors if: they think the activity is something that will be approved of by significant others, they want to be accepted by significant others, is something that they believe the significant others are doing, and as a result have come to believe the act is something worth doing. In fact, research investigating behavioral intention in regard to smoking and drinking behaviors has found this theory to be useful in predicting the onset of substance use (Aas et al. 1995; Chassin et al., 1981; Cassin et al, 1991; Ionatti & Bush, 1992; Quine & Stephenson, 1990).

Expectancy Theory

Expectancy theory is a memory-based, cognitive learning theory. It has as its focus the cognitive mechanisms by which early learning experiences influence behavioral choices made at a later point in time. It states that through the repeated pairings of the perceptions of a behavior and its consequences, associations are stored in memory in the form of behavioral expectancies. The stored associations then influence decisions made at future choice points. The expectation of a valued reinforcer from a given behavior will then increase the likelihood of that behavior occurring in the future (Smith & Goldman, 1995).

The acquisition of smoking and drinking expectancies does not necessarily involve direct experience with the substances. Research has found that attitudes toward smoking and drinking and peer use of these substances are causally prior to smoking and drinking behaviors (Smith, 1994). The literature on modeling or vicarious learning indicates that children can form expectancies before they begin to smoke or drink based on these mechanisms (Gustafson, 1992; Johnson & Johnson, 1995, 1996; Miller, Smith, Goldman, 1990; Smith, Goldman, Greenbaum & Christiansen, 1995; Zucker, Kincaid, Fitzgerald & Bingham, 1995). The theory holds that pre-use expectancies for positive outcomes from smoking and drinking lead to more positive initial experiences which in turn will lead to increased positive expectancies in a reciprocal, positive feedback mechanism. Therefore, these experiences influence the adolescents' cognitions of smoking and drinking. Consequently, if an adolescent expects smoking cigarettes and drinking alcohol to have positive effects and they perceive the consequences of

those effects to be desirable, then they are likely to smoke cigarettes and drink alcohol (Bauman, Fisher, Bryan, & Chenoweth, 1984; Brown, Christiansen & Goldman, 1987; Gustafson, 1992; Howard, Boyd, & Zucker, 1995; Leigh, 1989-a; Smith, 1994; Smith & Goldman, 1995; Smith et al., 1995; Wagenaar & Perry, 1995; Webb et al., 1993).

In regard to alcohol related expectancies, research has shown that they form early in life and that they become increasingly more positive in nature with age (Johnson & Johnson, 1995; Zucker & Fitzgerald, 1991; Zucker et al., 1995). Findings from Johnson and Johnson (1995) indicate that children's alcohol related cognitions are present as young as first grade, although the findings illustrated that children this young had negative expectancies about the effects of alcohol. Johnson and Johnson (1995) investigated the preparatory stage, in which attitudes are formed and modified. This research investigated alcohol beliefs in a young Catholic school population representing grades 1, 4, and 7. In this study, the 60 participants were individually presented a task that asked them to identify a behavior or a feeling associated with consuming one of a number of substances that had been placed on a table in front of them. The substances that were displayed for the child to choose from included a carton of milk, a can of soda, a can of beer, and a bottle of cough syrup. Utilizing this type of task paradigm, this investigation was able to illustrate children's beliefs about how they perceive alcohol to affect adult behavior. The results indicated that there were developmental trends for the children's beliefs about alcohol effects. The children's responses in this study revealed an increase in positive expectancies

toward alcohol with age; however, the majority of expectancies expressed toward alcohol were negative in nature.

In a study of Swedish adolescents, aged 12 –15, Gustafson (1992) also found that alcohol related expectancies become increasingly more positive as children age. The results from this investigation found that by 12 years of age, Swedish adolescents had already formed alcohol related expectancies. As the adolescents progressed in age from 12 to 15, they expected more global positive changes including more positive changes in social behavior, more increased positive arousal and an increased relaxation; all due to the use of alcohol.

Indeed, because research has shown that positive expectancies increase with age, it is important to understand what leads to the increased positive expectancies during childhood and adolescence. Cigarette and alcohol expectancies are the cognitive channels through which important sources of social influence, such as parents, siblings, peers and modeling effects of use can have an impact (Smith, 1994). Since expectancies are learned socially, children and adolescents tend to view cigarette and alcohol effects in similar ways. It is noted by Hirshman et al. (1984), that in the developmental process of becoming a smoker, young children tend to react with disgust to smoke in the air. However, these attitudes may diminish if one or both of the children's parents smoke. This erosion of negative attitudes can affect the factors leading to later smoking and drinking, such as the selection of smoking and drinking peers. In their investigation of pathways into smoking, Chassin, Presson, Sherman and Edwards (1991) found that the adolescents in their study who smoked initially had

more positive, personally relevant beliefs about the social consequences of smoking. The literature documents similar findings in regard to alcohol. Alcohol expectancies have also been shown to correlate with adolescent drinking behavior and to predate and predict subsequent use (Aas et al., 1995; Smith et al., 1995).

Research has also shown that expectancies may mediate the social risk factors of peer smoking and peer drinking behavior (Smith, 1994; Webb et al., 1993). This idea implies that the memories relating the anticipated consequences of smoking and drinking are available to an individual in the present as part of their learning history. It is in this way that expectancies are thought to be a mediator of the early learning history on later cigarette smoking and alcohol drinking behavior. A study by Webb, Baer, Francis, and Caid (1993) found that expectancies did mediate the social risk factors of drinking alcohol in the seventh grade students under investigation. In this study, students completed substance use questionnaires before and after the regular conduction of a school district wide drug prevention program. In analyzing the data, the authors found that expectancies did mediate the risk factors investigated of social risk and intra-personal risk, however, they also found that social risk and intra-personal risk also exerted a direct impact on usage, independent of expectancies.

The concept of social risk, as defined in the experiment by Webb and colleagues (1993) incorporates the variables of peer influence and attitudes as well as that of parental attitudes. Previous studies have investigated the idea that pre-adolescents perceive adolescent smokers and drinkers as having desirable

characteristics that are deemed to be social assets (McGee & Stanton, 1993; Sharp & Getz, 1996; Wagenaar & Perry, 1995). These characteristics include looking "cool", appearing more adult like, being less self conscious, and becoming more outgoing in social settings. The desire for these social assets may lead adolescents to associate with friends who smoke and drink, thereby exposing them to the combination of peer attitudes and behavior that are favorable to substance use (Ennett & Bauman, 1993; Hundleby & Mercer, 1987; Morgan & Grube, 1991, Oygard et al., 1995; Shilts, 1991; Wang et al., 1995). In a pre-adolescent sample, where substance use has not been initiated, positive and negative attitudes toward usage are being formed, modified and stored in the form of expectancies based on the attitudes exhibited by influential peers. Indeed, research has found that in the initiation phase, when an adolescent is experimenting with the use of cigarettes and alcohol, the friend's approval of the behavior was as important as the friend's use of the substance (Morgan & Grube, 1991).

Perceived approval consists of the individual's belief that engaging in a behavior will elicit positive reinforcement from others. This in turn increases the positive beliefs that the individual holds about engaging in the behavior. Peer approval is incorporated into an adolescent's cognitions about substance use, thereby contributing to the formation of expectancies that the adolescent holds in regard to substance use and impacts on the initiation of the behavior. Morgan and Grube (1991) found that for the initiation phase of substance use, a friend's approval of use was as important as the friends' actual use.

Not only has substance use expectancies been shown to predict intention and behavior, but research has also shown that expectancies can be manipulated (O'Neill, Glasgow, & McCaul, 1983; Schutte et al., 1990; Smith & Goldman, 1995). A study by Schutte, Malouff, and O'Dare (1990) indicated that information presented in a study regarding the negative social consequences of smoking lead to a change in beliefs about the social consequences of smoking among young adolescents. This type of information may make it less likely for adolescents to plan to start smoking, as beliefs about smoking are one of the factors that influence the decision to smoke. In a subsequent study, negative beliefs about smoking at age 13 in a study by McGee and Stanton (1993) were found to be predictive of non-smoking at age 15. In addition, Smith and Goldman (1995) have shown that the experimental manipulation of alcohol expectancies can significantly reduce heavy drinking among college students. Thus, expectancies have the potential for manipulation for the purpose of preventing or reducing substance use.

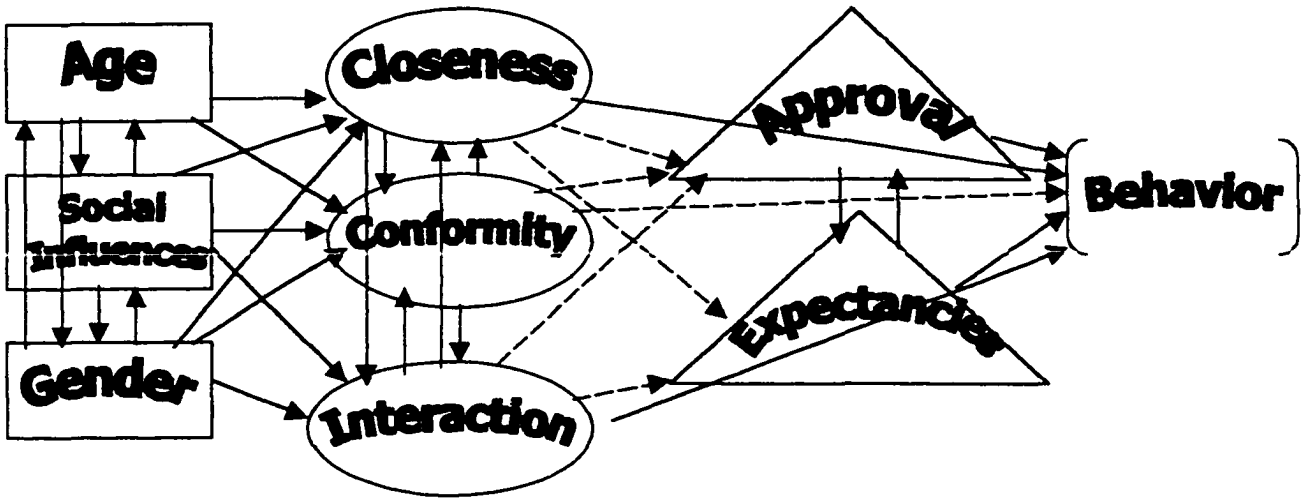
Expectancies Summary

Expectancies are the result of repeated pairings of the perceptions of a behavior and it's consequences. It is a cognitive process where the learned associations are stored in memory for future reference at later decision points. Therefore, if an individual has formed positive expectations of the consequences that they will receive by performing a behavior, the chance that they will perform that behavior at a future point is increased (Smith & Goldman, 1995). Expectancies are the first part of the equation in Azjen & Fishbein's (1973) model

of behavioral intentions. Therefore, the expectancies that the adolescent holds about substance use will combine with the normative influences to produce the behavior at a future point. In fact, research has found that expectancies form very early in life, prior to any decision making point (Johnson & Johnson, 1995, 1996; Zucker et al., 1995). Therefore, environmental information gained throughout childhood and pre-adolescence contributes to the formation of the substance use expectancies that adolescents will utilize to make decisions about whether they will smoke cigarettes or drink alcohol.

As smoking cigarettes and drinking alcohol is not present to a significant degree in an early adolescent population, it is important to investigate the expectancies that this population holds about the use of these substances. In this way, prevention programs can begin to target the developmental point when expectancies shift in balance from predominantly negative to increasingly positive by utilizing programs designed to modify positive expectancies held toward smoking and drinking.

Figure 1. Conceptual Model of Social Normative Influences on the Development of Cigarette and Alcohol Expectancies



Age – Looking at adolescent development. Will compare sixth graders to seventh graders to examine the difference in positive to negative cigarette and alcohol expectancies held.
Influences – Normative social influences includes peers, peer groups, and peer pressure. Part of normal adolescent development to form these affiliations and to experience the pressure of being part of a group.
Gender - Normative social influences and age may impact on males and females differently.
Closeness – It is hypothesized that the closeness of the relationship will exert stronger influences over the pre-adolescent. Closeness incorporates best friendships and older siblings.
Conformity – Individuals in a close relationship will conform to the expectations and behavior of the significant others.
Interaction – Quality of interaction will impact on the amount of verbal pressure that the pre-adolescent feels from a close relationship.
Approval – Incorporates the approval that the pre-adolescent perceives from significant others and their own approval of smoking cigarettes and drinking alcohol.
Expectancies – Utilizes stored memories that influence behavioral choices about cigarettes and alcohol. They are influenced by social normative pressures and perceived approval, but research has shown they can be changed.
Behavior – Actual use of cigarettes and alcohol by the pre-adolescent. This is a decision impacted on by the preceding variables.

Chapter V

Summary

As Social Learning Theory posits explanations for behavior acquired in social settings (Bandura & Walters, 1963), it provides an understanding of the mechanisms utilized in acquiring attitudes and behaviors from others. Indeed, imitation, modeling, vicarious learning and reinforcement principles have proved to be powerful tools in children's learning histories. As children approach adolescence, they spend an increasing amount of time away from their parents and with their peers. Research has shown that with this shift in orientation the individuals that serve as role models and sources of influence change (Berndt, 1979; Kandel & Andrews, 1987; Keefe, 1994). Specifically, research has found that in adolescence, peer influences on issues of substance use are much stronger than parental influences (Kandel & Andrews, 1987).

Research has documented various peer processes that exert influence on an adolescent's attitudes and behaviors. These processes include group pressures that move members of cliques and crowds to become and remain more similar. The literature describes these processes as selection and influence (Ennett & Bauman, 1994; Urberg et al., 1990). The process of selection impacts on an adolescent as they make choices as to which friendship groups they want to belong to. The process of influence impacts on an adolescent as the group exerts pressure on its members to become or remain similar in attitudes and behaviors. This influence can be direct, as in direct verbal pressure, or it can be indirect, as in vicarious learning processes. In either case, it is the strong desire

of the adolescent to be accepted and popular within the group that makes the influence so powerful. In fact, research has shown that peers exert a strong influence on substance use attitudes and behavior (Clasen & Brown, 1985; Urberg et al., 1990; van Roosmalen & McDaniel, 1989). It is important to note however, that although associating with substance using peers has been found to be one of the strongest influences on substance use in adolescents (Morgan & Grube, 1991), peer influence also has the capability of discouraging substance use by the adolescent (Clasen & Brown, 1985).

As in group settings there is the general effect of many friends, in closer relationships there is the more intimate effect of one or two individuals. Research has investigated the impact of best friendships on substance use attitudes and behavior. Indeed, research has found that the most significant influence on substance use attitudes and behavior come from a best friend ((Hunter et al., 1991; Malow-Iroff, 1997; Wills & Vaughan, 1989; Quine & Stephenson, 1990). However, within the concept of close relationships, the influence of an older sibling can also be investigated. An older sibling is generally close in age to the adolescent and also has a high level of contact with the adolescent. Therefore, it can be postulated that an older sibling may have the same strong influence on substance use attitudes and behavior as a best friend. Although this area has not been thoroughly investigated, those studies which have been conducted have shown that older siblings exert an influence on the adolescent's attitudes and behaviors (Needle, 1986). Therefore it can be concluded that social influence varies with the closeness of the relationship and that both best friends and

siblings are two components that can comprise close relationships. It is important to note that although best friendships and siblings exert a strong influence on substance use attitudes and behavior, these relationships are not to be thought of as hazardous to adolescents. These close relationships are a healthy part of adolescent development and it is only when the individuals involved in the relationship are engaging in substance use behaviors do these relationships become a concern.

Within these close relationships of best friends and older siblings, other variables have been found to impact on the strength of the social influence that is exerted. One of the variables that have been found to impact on the strength of the social influence is gender. Specifically, research has found peer influence variables to be more relevant for females due to the greater intimacy and attention females give to interpersonal relationships (Downs, 1985; Wills & Vaughan, 1989; van Roosmalen & McDaniel). Additionally, the variables of conformity and quality of interaction are postulated to impact on males and females differently. For the purposes of this investigation, conformity can be defined as doing what your best friend or sibling wants you to do. Research has shown that children will conform more to peers than to parents on lifestyle issues (Kandel & Andrews, 1987), and that females may be more susceptible to conformity issues due to the greater intimacy in their interpersonal relationships (Urberg, 1992). Quality of interaction impacts on conformity and closeness in that within these relationships, individuals generally have more open communication and are more likely to exert direct verbal pressure on one another to conform.

Therefore, within these social normative influences of closeness, gender, conformity and quality of interaction, it is important to delineate the impact of the relative strength of these variables on the adoption of substance use attitudes and behaviors by an adolescent.

Although research has found that these social normative influences impact on substance use attitudes and behavior, in a pre-adolescent population the actual use of cigarettes and alcohol is low. However, it is at this time that attitudes about these substances are being formed and modified. Behavioral Intention Theory has shown that the intention to perform a behavior is related to actually performing the behavior at a future point (Azjen & Fishbein, 1973). This theory has been investigated in regard to substance use behaviors and it has been found that the intention to smoke cigarettes and drink alcohol predicts the behavior (Aas et al., 1995; Ionatti & Bush, 1992; Quine & Stephenson, 1990). Within Behavioral Intention Theory, the attitudes of the adolescent about cigarettes and alcohol are key components in the prediction of the behavior. The attitudes the adolescent holds are investigated in research as expectancies.

Expectancies are learned associations of behavior and it's consequences. In this way, adolescents have stored in memory the expectations of what will occur if they engage in cigarette and alcohol use. As pre-adolescents are not yet engaging in these behaviors to a significant degree, it is important to investigate the positive and negative expectancies that they hold in regard to smoking cigarettes and drinking alcohol. This makes it possible to begin to understand whether or not they expect positive consequences from engaging in substance

use.

The purpose of understanding substance use expectancies is to be able to effect a change on them in order to put off or avoid the subsequent use of cigarettes and alcohol. In fact, research has shown that expectancies have the potential to be manipulated and modified (O'Neil et al., 1983; Schutte et al., 1990; Smith & Goldman, 1995). Therefore, it is possible to conduct interventions with the purpose of modifying expectancies about cigarettes and alcohol. With this in mind, it is essential to detail the influences impacting on the formation of expectancies, such as age, gender, closeness of relationships, conformity and quality of interaction, in order to design and implement effective programs whose aim is to modify the positive expectancies held toward substance use and abuse.

Chapter VI

Research Objective

This study focused on best friend and sibling relationships during adolescence as key elements in the social context of the development of cigarette smoking and alcohol drinking expectancies. Research has found that direct pressure from peers is less important than the powerful indirect pressure that operates through close relationships to induce adolescents to begin smoking and drinking. These indirect influences include normative group pressures that determine acceptable behavior in a given relationship. Normative social pressure can be defined as one's perception of others' expectations to conform to their norms. It is important to note that this normative social pressure needs to be distinguished from coercive social pressure that involves threats or sanctions. Such normative influences may impact through defined forms of behavior or through a desire to belong to a particular friendship group. An individual who wants to be in or stay in a relationship will be more susceptible to the influences coming from the relationship, and will be willing to conform to the rules that the relationship sets up. The peers in these relationships can be thought of as role models, and through the observation of these influential others, individuals are likely to acquire similar attitudes and behaviors. It is also important to note, that this normative pressure may exert itself differently on males and females and on the different substance use behaviors in question (i.e. smoking and drinking).

However, not only social factors but also personal attitudes contribute to behavior (Grube et al., 1986). As children become older, their own personal

attitudes may play an increasing role in determining their behavior. Attitudes can be defined as expectations of the costs and benefits of the behavior (Ajzen & Fishbein, 1973). Researchers have shown that both perceived social pressure and personal attitudes are good predictors of adolescent substance use behaviors such as smoking and drinking (Chassin et al., 1991; Morgan & Grube, 1989; Grube et al., 1986; Keefe, 1994; Smith & Goldman, 1995).

This study investigated normative influences and friendship and sibling similarity in substance abuse related expectancy, approval and behavior among best friends and older siblings in a pre-adolescent population. With a young population, it was hypothesized that the substance use behaviors of smoking and drinking would either not be present at all or would be present to such a small degree that statistical analysis may not permit an accurate indication of the relationship. However, it is at this point that cigarette and alcohol expectancies may be forming in preparation of future experimentation and/or use. In addition, research has shown that expectancies can be influenced and changed. Therefore, this research investigated a pre-adolescent population as research has indicated that this is a sensitive period for the modification of expectancies, before behavior is initiated. In this way, future interventions can be targeted directly at the optimal developmental point to make those interventions successful.

Hypotheses:

Based on the findings of previous research, the following hypotheses are proposed:

Expectancy(Exp) Hypotheses- Expectancies are the stored early-learned associations of consequences and/or anticipated valued reinforcers. Research has found that peer attitude/approval is incorporated into an adolescent's cognitions about substance use and contributes to the formation of expectancies (Leigh, 1989; Morgan & Grube, 1991).

#1.a. An approving attitude toward smoking and drinking will correlate with positive expectancies that the subject holds toward these substances.
See Table 1.

Approval will be evaluated utilizing the following variables:

Subject's(Subjt) approval- pre-adolescent's reported feelings toward smoking and drinking.

Friend' s(Frnd) approval - pre-adolescent's perception of friend's feelings about smoking and drinking by friends their age.

Best Friend's(BF) approval – pre-adolescent's perception of their best friend's feelings about smoking and drinking.

Older Sibling's(Sib) approval- pre-adolescent's perception of older sibling's feelings about smoking and drinking by kids their age

#1.b. As smoking cigarettes and drinking alcohol are part of a larger spectrum of substance use, it is hypothesized that across these domains there will be significant correlations between approval and expectancies.
See Table 1.

#1.c. As a special case within the correlation of positive expectancies and approval, it is hypothesized that the closeness of the relationship between individuals will mediate the strength of the relationship. The correlations between expectancies and approval will be stronger in best friendship and sibling pairs than in general friendship pairs. See Table 1.

#2. Because expectancies follow a developmental path, starting out negative and increasing in the proportion of positive expectancies as children age, it is predicted that the sixth grade sample will adhere to more negative expectancies than the seventh grade sample for both cigarettes and alcohol.

Gender Hypotheses- Research has shown different gender effects in the normative social influences in regard to the acquisition of substance use attitudes and behaviors (Bryant & Zimmerman, 1997; Downs, 1985; Urberg, 1992). Some of these gender effects have been attributed to differences in quality of interaction (Q of I) and conformity(Cnfrm).

#3. It is hypothesized that scores for female subjects will show stronger correlations on the variables of closeness, quality of interaction, conformity, positive expectancies and approval than the male subjects.

Conformity Hypotheses- The concept of conformity has been postulated in the literature in regard to gender differences, best friendships and in adolescent development (Berndt, 1979; Downs, 1985; Urberg, 1992). It is an important variable to investigate as it may contribute to the motivation to comply with social normative influences(Azjen & Fishbein, 1973).

#4. It is predicted that those pre-adolescents who score higher on the conformity measure will be highly correlated on the variables of smoking and drinking approval and expectancy with their best friend and sibling.

Quality of Interaction Hypotheses- The quality of interaction between individuals has been postulated to indicate the closeness or intimacy level of the relationship. Best friends are thought to share an intimate relationship, which would imply that the level of interaction in the relationship would be high. In addition, this type of relationship would imply that the pair would be sharing thoughts, values and opinions about subjects of importance to them. Research on interaction has shown that the interaction acted as a mediator of the intention to perform a behavior in a laboratory experiment (Ajzen & Fishbein, 1973). Interactional

quality will help to delineate whether patterns of intimate verbal interaction mediate the transmission of social normative pressures.

#5. It is predicted that those pre-adolescents who score higher on the quality of interaction measure with their best friends and siblings will show strong correlations on the variables of approval of smoking and drinking and smoking and drinking expectancies.

In addition to the previous correlational hypotheses, the following hypotheses will be made in regard to the prediction of positive expectancies held toward cigarette smoking and alcohol drinking by the pre-adolescent subject. These hypotheses will be investigated utilizing multiple regression.

#6. The variable of approval among best friendship pairs and siblings will predict positive expectancies for smoking and drinking in the pre-adolescent subject.

#7. The variables of gender, closeness, conformity and quality of interaction will mediate the prediction of positive expectancies for smoking and drinking in the pre-adolescent subject.

#8. Although the use of cigarettes and alcohol by this pre-adolescent group will be low, exploratory analyses will be conducted. It is predicted that those pre-adolescents who are engaging in cigarette and alcohol behaviors will hold

positive expectancies toward those substances and will have close relationships with best friends and siblings who approve of and are also engaging in the use of those substances.

Table 1

Significant Correlations Expected for Expectancy and Approval Hypotheses

	Positive Expectancies		Negative Expectancies		Subject Approval	
	Smoking	Drinking	Smoking	Drinking	Smoking	Drinking
Friend's – Approval of Smoking	X	X			X	X
Best Friend's – Approval of Smoking	XX	XX			XX	XX
Sibling's – Approval of Smoking	XX	XX			XX	XX
Friend's – Approval of Drinking	X	X			X	X
Best Friend's – Approval of Drinking	XX	XX			XX	XX
Sibling's – Approval of Drinking	XX	XX			XX	XX

X indicates variables that will be significantly correlated; XX indicates strongest correlations

Chapter VII

Methods

Sample

This study was part of a larger panel study that followed public school and Catholic school sixth, seventh and eighth graders in New York City and in an urban area of Massachusetts. The panel study, known as the Teen Attitude Study, began in the fall of 1997 with the intent of following middle school students across grades to monitor changes in attitudes and beliefs in regard to lifestyle questions. The present investigation used a sub-sample of the panel study that came from Massachusetts. The community is a small urban center approximately three hours north of New York City and two and one half-hours west of Boston, Massachusetts. The public school district utilized for this study consists of eight elementary schools, two middle schools and two high schools. The school district serves a community that is comprised of a range of economic levels and is predominantly Caucasian. The racial breakdown of the study population is 89% Caucasian, 7% African American, 2.9% Hispanic, 1% Asian and .1% American Indian. The sample data was collected from two different middle schools in the same school district with both middle schools being composed of students in sixth, seventh and eighth grades. The middle school population was split almost equally on gender with 43% male and 57% female students represented. The utilized sample consists of a subject pool of 159 sixth graders and 147 seventh graders. The mean age of the sixth grade students was 12 and the mean age of the seventh grade students was 13. Although 89% of the students reported

having a brother or sister, only those students who had an older sibling were considered in the analysis of the sibling data. In the sixth grade, 90 students or 56% of the sixth grade sample had older siblings at home and in the seventh grade, 94 students or 64% of the seventh grade sample had older siblings at home.

Procedure

This cross-sectional investigation draws on self-report data. Questionnaires were administered to sixth and seventh grade students during their regularly scheduled school day by trained researchers who went into the classroom settings. An active consent procedure was used to procure parental consent for children to participate in the study. The two middle schools sent the consent forms home with the students for the parents to indicate whether or not they would like their child to participate in the study. The students were asked to return the signed forms to the school. Upon receiving the signed consent forms, testing arrangements were made with the school principals. Prior to the administration of the questionnaire, students were informed about the intent and purpose of the study, the procedures used to guarantee anonymity and confidentiality, and of their rights as a participant in a research study. In addition, at this time students were informed that if any of the questions made them uncomfortable they could leave those questions blank.

Measures

The measure being used in this investigation is a questionnaire that has been compiled by the directors of the Teen Attitude Study (Johnson &

Johnson,1996). The questions are based on items from other longitudinal studies investigating attitudes and lifestyle choices and on items from standardized questionnaires used in this field of study. The questionnaire had been piloted on two middle school populations. The items on the questionnaire address characteristics of the student, family beliefs and practices, peer beliefs and practices, and the student's positive and negative expectancies about smoking cigarettes and drinking alcohol. The questionnaire consists of 152 items and takes students approximately one hour to complete. Appendix A lists the questionnaire items used in the data analysis. The questions are measured as either dichotomous variables or continuous variables (i.e. a Likert type scale). The question sets are then summed and averaged to produce a score that can be used in the data analysis. The variables in this investigation and their derivations are as follows:

Smoking and Drinking Expectancies: This measure refers to the outcomes, both positive and negative, that the student expects from smoking and drinking. It incorporates items concerned with body sensations experienced e.g. "I feel good", personality alterations that will occur e.g. "I am more outgoing" and the expectations of the consequences that the act will elicit from friends e.g. " I am more accepted by others." The expectancy items on the questionnaire have been derived from the Adolescent Alcohol Expectancy Questionnaire (Brown, Christiansen & Goldman, 1987) and from the Effects of Drinking Alcohol scale (Leigh 1989-b). The questionnaire used items from both scales because the former addresses only positive effect expectancies. Previous research has

shown that alcohol expectancies in young children are primarily negative in nature (Johnson & Johnson, 1995) and become more positive as they mature (Gustafson, 1992). The alcohol expectancy items have been extended to the smoking domain in order to assess comparable smoking expectancies. Expectancy items from the Teen Attitude Questionnaire have been used with two previous samples. Factor analysis for both previous samples' smoking and alcohol expectancies found that positive and negative expectancies emerged as distinct variables (Johnson & Johnson, 1996). Therefore, the positive expectancy items will be summed and averaged to get an overall positive expectancy score and the negative expectancy items will be summed and averaged to obtain an overall negative expectancy score. As this study is investigating a population that primarily has not begun to engage in the behaviors in question, it is important to look at both positive and negative expectancies. Investigating both positive and negative expectancies is important as research has shown that the shift to increasingly positive expectancies is a precursor to the initiation of substance use behaviors.

Behavioral Similarity: Behavioral similarity among the students, their reported best friend and their closest sibling will be measured by items on the questionnaire which ask if the student smokes cigarettes and drinks alcohol and whether or not the friend and sibling also does the same. It should be noted here that this measure is using the adolescents' report of the perceived use of the substance by the best friend. Although some research has investigated the difference between the perceived and actual substance use by a best friend, in

this investigation the perceived use is more important as it contributes to the cognitions that the pre-adolescent holds in regard to peer and sibling use.

Approval: Perceived approval consists of the positive beliefs that the pre-adolescent holds in regard to how other people feel about them engaging in smoking and drinking behavior. As research has shown that perceived approval is incorporated into an individual's beliefs and thereby contributes to the formation of expectancies (Morgan & Grube, 1991), it is an important variable to have in the investigation. The variable of approval is examined from four different perspectives – the pre-adolescent's feelings toward smoking and drinking, the pre-adolescent's perception of their friends' approval of smoking and drinking, the pre-adolescent's perception of their best friends' approval of smoking and drinking, and finally the pre-adolescent's perception of their older siblings' approval of smoking and drinking.

Conformity: The concept of conformity has been examined in the literature in regard to antisocial acts (Berndt, 1979), gender differences (Downs, 1985) and best friend relationships (Urberg, 1992). In this investigation, it is conceptualized as an additional source of motivation to comply with the normative beliefs of others. The questions that make up the conformity component of the questionnaire are derived from an investigation by Jacobs (1998) which utilized a "Conforms to Friends" scale. For Jacobs' investigation, this scale consisted of five questions. The internal consistency of the scale was evaluated in Jacobs' study and an alpha = .64 was obtained. In the present study, four questions on conformity are used – two for friends and two for siblings.

Quality of Interaction: The quality of interaction has been shown to act as a mediator in the intention to perform an act in a laboratory experiment(Ajzen & Fishbein, 1973). For this investigation, interactional quality is investigated as a mediator in the transmission of social normative pressures. Two questions are utilized to examine this effect – one for the best friend and one for the older sibling. These two questions are derived from a measure of perceived parental nurturance as conceived by Barnes, Farrel and Windle (1987). Barnes and colleague's work indicated an internal consistency of alpha = .80 for this scale.

Data Analysis

On the questionnaire, subjects are asked to respond to how their friends, best friends, and siblings feel and how they themselves feel about smoking or drinking on a five point Likert scale. In addition, expectancy items, use of the substances, conformity items and quality of interaction items are also measured utilizing a Likert type scale. As these variables are measured on a continuous basis, the questionnaire items were summed and means were obtained for use in the data analysis. In the analysis of the data, descriptive statistics, independent samples t-tests, correlations, and regression statistics were used. Smoking and drinking measures were examined separately to look for differential effects and they were also examined across measures to investigate whether smoking and drinking operate as a general category of substance use. For the different hypotheses, the data was examined in several ways; as a total group, separated into sixth and seventh grades or separated into male and female groupings. In addition, the variables of closeness, conformity and quality of interaction were

entered into the regression equations to investigate any mediating effects that these variables exerted on expectancies.

Chapter VIII

Results

This chapter presents data analyses and results. Specifically, frequencies and percentages of normative influence variables, attitude variables and use variables for sixth and seventh grades are reported. In addition, various investigations utilizing correlation coefficients to relate the previously stated variables, expectancy variables, closeness variables, quality of interaction variables and gender are given. Also, results of T-tests are given which were performed to examine difference scores and to calculate effect size. Finally, a series of regression analyses were performed in order to isolate best predictors of positive expectancies.

To understand the frequency of responses given on the questionnaire, descriptive statistics were run first. As this investigation is concerned with a variety of variables, frequencies and percentages were run for sixth and seventh grades on normative influence variables, attitudes held toward smoking and drinking, and the actual reported use of cigarettes and alcohol. These frequencies and percentages are presented in Table 2. It is apparent that for all the attitude variables, there is greater reported approval of both smoking and drinking in seventh grade than in sixth grade. This pattern also holds true for the actual behaviors engaged in. Specifically, more seventh graders than sixth graders report experimenting with smoking and drinking. Also, more seventh graders than sixth graders report that their best friends and siblings use these substances. However, a reverse trend is noted for the normative influence

Table 2

Frequencies and Percentages of Attitudes, Influences and Behaviors of Sixth and Seventh Grade Students

Variable Measured	Sixth Grade		Seventh Grade	
	Frequency	%	Frequency	%
Attitudes				
Smoking is good	9	5.6	16	10.9
Drinking is good	11	6.9	36	24.5
Friends feel smoking is good	13	8.2	22	15.0
Friends feel drinking is good	14	8.8	24	16.3
Best friend feels smoking is good	16	10.0	27	18.4
Best friend feels drinking is good	17	10.1	36	24.5
Sibling feels smoking is good	8	5.0	18	12.2
Sibling feels drinking is good	12	7.5	29	19.7
Influences				
Would change decision if friend said to	37	23.3	26	17.7
Opinions of friends are important	96	60.4	93	63.3
Can discuss anything with best friend	110	69.2	90	61.2
Would change decision if sibling said to	30	18.9	30	20.4
Opinions of sibling is important	71	44.7	52	35.4
Can discuss anything with sibling	79	49.7	45	40.5
Behaviors				
Experimented with smoking	33	20.8	68	46.3
Smokes cigarettes	7	4.4	24	7.8
Drinks alcohol	7	4.3	28	10.7
Best friend smokes	22	13.8	31	21.1
Best friend drinks	10	6.3	30	20.4
Sibling smokes	18	11.3	23	15.7
Sibling drinks	25	15.7	45	30.6

Note. Sixth grade N=159; Seventh grade N=147

variables, with seventh graders reporting less direct influence than sixth graders from their best friends and siblings.

Hypothesis 1a states that approving attitudes toward smoking and drinking will correlate with the positive expectancies that the subject holds toward those substances. For this analysis, summing and obtaining a mean score for both the positive and negative expectancy items listed in Appendix A created four general variables. The four new variables are: positive expectancies for smoking, negative expectancies for smoking, positive expectancies for drinking and negative expectancies for drinking. The positive smoking and drinking expectancy variables were then used to examine the correlations between positive expectancies and the attitudes as shown in Table 3. As predicted, attitude and expectancies within each domain (i.e. smoking and drinking) were significantly correlated at the $p \leq .001$ level indicating that there is a strong relationship between these variables.

Table 3

Significant Correlations Between Self-Approving Attitudes and Positive Expectancies

Positive Expectancies	Positive Smoking Attitude	Positive Drinking Attitude	Positive Smoking Expectancy
Smoking	-.39**	-.24**	
Drinking	-.35**	-.42**	.57**

Note. N varied between 266 and 296.
Negative correlations are reflective of inverse scoring on questionnaire.
**$p \leq .001$

Hypothesis 1b then posits that across the domains of smoking and drinking there will be significant correlations between attitude and positive expectancies. Table 3 also shows the correlations across the domains to be significant at the $p \leq .001$ level, indicating that an approving attitude and positive expectancies toward one of these substances is likely to indicate an approving attitude and positive expectancies toward the other substance.

Hypothesis 1c predicts that the closeness of the relationship between individuals is likely to mediate the strength of the correlation between attitudes and expectancies. Specifically, it is predicted that the correlation between approval and expectancy will be stronger among best friendship and sibling pairs than with the general friendship pairs. The results of this analysis are displayed in Table 4. Contrary to the predicted results, all four of the closeness variables, self, friend, best friend and sibling, were significantly correlated with both positive and negative expectancies for smoking and drinking. For the 24 variables that encompass the self, friend and best friend variables, all correlations fell within a range between .22 and .42 with both the lowest and highest correlation being found within the self-variable. For the eight postulated closeness variables of sibling attitudes, the correlations fell within a range between .18 and .28. The lower correlation coefficients in the sibling domain indicate that the sibling relationship does not impact on the pre-adolescent's expectancies, either positively or negatively. This would indicate that for this investigation, the

Table 4

Significant Correlations Between Closeness Variables and Positive and Negative Expectancies

	Positive Expectancies		Negative Expectancies	
Closeness Variable	Smoking	Drinking	Smoking	Drinking
Self				
smoking attitude	-.39**	-.35**	.27**	.22**
drinking attitude	-.24**	-.42**	.30**	.31**
Friend				
smoking attitude	.33**	.33**	-.32**	-.28**
drinking attitude	.29**	.39**	-.28**	-.27**
Best Friend				
smoking attitude	-.38**	-.35*	.34**	.29**
drinking attitude	-.30**	-.38**	.29**	.30**
Sibling				
smoking attitude	-.18*	-.18*	.24**	.19*
drinking attitude	-.22**	-.28**	.26**	.25**

Note. N varied between 266 and 296.
Negative correlations are reflective of inverse scoring on questionnaire.
*p ≤.01; **p ≤.001

closeness of the relationship with the subject did not mediate the strength of the correlations as predicted.

Hypothesis 2 predicts that for both smoking and drinking, sixth graders will adhere to more negative expectancies than seventh graders. A new variable was constructed to investigate this change. For both smoking and drinking variables, a difference score was calculated for each individual by subtracting the positive expectancy score for each substance from the negative expectancy score in the two grades. Then utilizing this difference score, an independent samples t-test was performed to evaluate the difference in means between the two grades. The results of this analysis are presented in Table 5. Positive mean differences were obtained for both smoking and drinking. This indicates that sixth graders hold more negative expectancies in regard to both smoking and drinking than their seventh grade counterparts. This corroborates the prediction of a developmental shift occurring between sixth and seventh grades. Thus sixth graders hold more negative expectancies, while seventh graders articulate more positive expectancies toward smoking and drinking. The independent samples t-test indicated that for both smoking and drinking, the means between the two grades were significantly different. An effect size was computed for both domains utilizing the formula:

d= the square root of N(1) + N(2) divided by N(1) X N(2).

For both smoking and drinking, a medium effect size was obtained.

Table 5

Independent Samples T-Tests of Expectancy Difference Scores Between Sixth and Seventh Grades

Variable	mean difference	t	d.f.	2-tail sig.	effect size
Smoking	.98	3.87	293	.00	.45
Drinking	.95	4.02	292	.00	.47

Note. Sixth grade N = 148; Seventh grade N= 146
Difference scores calculated by subtracting positive expectancy scores from negative expectancy scores.
Effect size (E) was calculated using the formula $E = t [(N1 + N2)/ N1N2]^{1/2}$

Hypothesis 3 predicts that the variables of closeness, quality of interaction and conformity would show stronger correlations with approval and expectancies for the female sub-group than for the male sub-group. This investigation is intended to look for patterns within and between genders on the relationships specified between variables. In order to investigate the prediction of gender differences in this sample, correlations were run separately for males and females utilizing all the variables investigated in this study. For ease of comparison, the results are presented as proportions for the general variables of closeness, quality of interaction, and conformity in Table 6.

Table 6

Proportion of Significant Correlations for Males and Females on Expectancies

	Positive Expectancy		Negative Expectancy	
Closeness				
Males	15/16	94%	11/16	69%
Females	16/16	100%	16/16	100%
Quality of Interaction				
Males	0/4	0%	4/4	100%
Females	1/4	25%	0/4	0%
Conformity				
Males	0/8	0%	2/8	25%
Females	2/8	25%	0/8	0%

Note. Significance defined as $p \leq .05$.
Conformity variables (FI = Friend Influence; PP = Peer Pressure; SI = Sibling Influence; SP = Sibling Pressure).
Quality of Interaction variables (SD = Sibling Discussion; BFD = Best Friend Discussion).
Closeness variables (SA = Positive Smoking Attitude, DA = Positive Drinking Attitude; FAS = Friend's Approval of Smoking; FAD = Friend's Approval of Drinking; BFAS = Best Friend's Approval of Smoking; BFAD = Best Friend's Approval of Drinking; SAS = Sibling's Approval of Smoking; SAD = Sibling's Approval of Drinking).
Positive Expectancy variables (PES = Positive Expectancy of Smoking; PED Positive Expectancy of Drinking).
Negative Expectancy variables (NES = Negative Expectancy of Smoking; NED = Negative Expectancy of Drinking).

As indicated in Table 6, the quantity of significant correlations for both positive and negative expectancies on the closeness variables was high for both males and females. Overall, the correlations indicate that females did not emerge to show greater strength in the relationship between the variables of conformity and interaction. Therefore, the prediction that the female sub-group would emerge to show a more important relationship amongst the variables of closeness, quality of interaction, conformity, approval and expectancies was not found. However, some gender differences begin to emerge when looking at the

quality of interaction variables and the conformity variables (i.e., influence and pressure). For males, more interaction and conformity variables were significantly correlated with negative smoking and drinking expectancies; while for females, more of these variables were correlated with positive expectancies. Specifically, for males the two interaction variables (i.e., quality of interaction with a best friend and quality of interaction with a sibling) show a significant relationship with negative expectancies for both smoking and drinking. Significance levels for both males and females on all variables are shown in table format in Appendix B. The data indicates that males show significant correlations between negative drinking expectancies and both the friend and sibling influence variables that are part of the conformity general variable. These results indicate that normative influence variables and interaction variables may help to maintain a male's negative expectancies. Given the importance of attitudes about smoking and drinking as a precursor to the formation of expectancies, it is also of interest to note that the data in Appendix B indicates significant correlations between sibling interaction and male drinking attitude, as well as between both peer pressure and sibling influence and male smoking attitude.

Conversely, for females more normative variables were related to positive expectancies for smoking. Specifically, females show significant correlations in positive expectancies for smoking with friend and sibling influence variables, and with the best friend interaction variable. Additionally for females, the sibling influence variable significantly correlates with the subject's smoking and drinking attitudes. Overall, these findings suggest that some of the normative influences

investigated in this study may operate differently in males and females. Specifically, it appears that for males, the significant normative influences may help to maintain negative smoking and drinking expectancies, while for females, the significant normative influences are encouraging the transition to positive smoking expectancies.

In addition to the correlations run to investigate gender differences, an additional analysis was performed to examine whether the balance of positive to negative expectancies held was different for males and females in both the sixth and seventh grades. Utilizing the expectancy difference scores calculated for hypothesis 2, independent sample t-tests were run and effect sizes were calculated for males and females in the two grades. Table 7 shows the results of this analysis. This analysis indicates no significant difference between the genders in the balance of negative to positive expectancies held. Both males and females show a medium effect size, with sixth graders holding more negative expectancies than seventh graders. Therefore, in general, the males and females in this sample show a similar pattern of development and adherence to expectancies.

Table 7

Independent Samples T-Tests of Expectancy Difference Scores Between Sixth and Seventh Grade by Gender

Variable	t	d.f.	2-tail sig.	effect size
Smoking				
Male	2.59	123	.011*	.46
Female	2.71	165	.007*	.42
Drinking				
Male	2.18	124	.031*	.39
Female	3.37	163	.001**	.53

Note. Difference scores calculated by subtracting positive expectancy scores from negative expectancy scores.
Effect size (E) was calculated using the formula $E = t [(N1 + N2)/ N1N2]^{1/2}$
Sixth grade males N= 59, Seventh grade males N= 66
Sixth grade females N= 86, Seventh grade females N= 79

To examine the conformity hypothesis, the raw data was transformed to create a conformity variable. During the data collection, two questions about conformity were asked in regard to both best friends and siblings (see Appendix A for specific question items). The results from these questions were summed and averaged to obtain a total conformity score. For this analysis, only those pre-adolescents who received a score ≥ 5, indicating a high level of conformity to best friends and siblings, were included. Hypothesis 4 predicts that those individuals who had a high level of conformity to best friends and siblings would be significantly correlated on the variables of smoking and drinking approval (i.e. with self, friend, best friend, and sibling) and with positive expectancies for

smoking and drinking. It is important to reiterate here that the variables that involve the friend, the best friend and the sibling's approval of smoking and drinking reflect the student's perception of their approval. Results from this analysis indicated that the hypothesis was not upheld; all correlations failed to reach significance. Therefore, conformity did not emerge as a variable that indicated strong relationships with any smoking or drinking attitudes or with positive expectancies for those substances.

To further investigate this lack of relationship, an agreement variable was constructed. Those questionnaires that indicated agreement on the attitude variable for self–friend, self-best friend, and self-sibling for smoking and drinking were compiled to indicate a percentage of agreement table for descriptive purposes. Table 8 has the result of that compilation.

An interesting phenomenon emerges when the data is viewed in this way. In contrast to the prediction of closeness mediating conformity, the strongest percentage of agreement on attitudes toward smoking and drinking comes from the general friend variable. While agreement with siblings and best friends on attitudes toward smoking and drinking ranged from 3.3% to 9.8%, agreement with friends in general hovered around the 50% mark. This indicates that the pre-adolescent may be more responsive to the more global feelings of their general peer group than to the specific feelings of the more intimate relationships. Based on the literature, this may be due to the shifting friendship patterns that are occurring at this time, and the natural peer selection and peer influence processes that are occurring on this global level. It also may represent the

different influences responsible for the initiation and maintenance stages of substance use. Research has suggested that best friendships are important for the maintenance stage while both best friendships and other friends are equally important in the initiation stage.

Table 8

Percent Agreement Utilizing Closeness Variables on Smoking and Drinking Attitudes

Variable	Siblings	Best Friends	Friends
Smoking			
Agreement	3.3%	6.5%	50.2%
No Agreement	96.4%	92.8%	49.5%
Drinking			
Agreement	6.2%	9.8%	49.2%
No Agreement	93.5%	89.9%	50.5%

Hypothesis 5 predicted that those pre-adolescents whose score on a measure of quality of interaction with best friends and siblings was strong would show significant correlations on the variables of attitude toward smoking and drinking (i.e. with self, friend, best friend, and sibling) and with positive expectancies. In order to accomplish this analysis, only those individuals who scored $\geq$4 on the quality of interaction measure were used in the analysis to

indicate a high level of quality of interaction (see Appendix A for specific question items). Results of this analysis showed that quality of interaction failed to emerge as a variable with a strong relationship to attitudes and expectancies, all correlations failed to reach significance. Although quality of interaction appeared to have the potential to be a strong variable based on the literature, the single item used to measure this variable in the questionnaire may have limited its ability to show any relationship present.

For the next three hypotheses, regression analysis was used to examine the relative contributions of different variable sets to positive expectancies for both smoking and drinking. Hypothesis 6 stated that an approving attitude toward smoking and drinking held by the best friend and the sibling would predict positive expectancies in the pre-adolescent subject. The result of this analysis is presented in Table 9. As indicated, both a best friend's approval and a sibling's approval of smoking and drinking significantly predicted positive expectancies held toward those substances by the pre-adolescent.

Hypothesis 7 looked to investigate the mediating effects of the variables of gender, closeness of relationship, conformity and quality of interaction on the prediction of positive expectancies for smoking and drinking. Multiple regression analyses were run separately for sixth and seventh grade males and females to determine if the variables left in the equation were different for each group. The variables that were entered into the regression equation were sibling conformity, best friend conformity, sibling interaction, best friend interaction, sibling approval,

Table 9

Regression Analysis Utilizing Best Friend's and Sibling's Approval in Predicting Positive Expectancies for Smoking and Drinking

Variable	Rsq.	B	SE B	Beta
Best Friend's Approval				
Smoking (N=278)	.14	-.52	.08	-.38**
Drinking (N=279)	.14	-.50	.07	-.38**
Sibling's Approval				
Smoking (N=261)	.03	-.27	.09	-.18*
Drinking (N=260)	.08	-.36	.08	-.28**

Note. *$p \leq .05$; **$p \leq .001$
Negative numbers are reflective of inverse scoring on questionnaire.

friend approval, best friend approval and self-approval for the variables of smoking and drinking. Results from this analysis are listed in Table 10. As indicated in the table, for each group of pre-adolescents, their own unique best predictor emerged for positive expectancies. In general, for both male and female sixth graders, the approval variables were the ones that were most significant in predicting positive expectancies toward those substances. Specifically, for sixth grade males the best predictor of positive expectancies for smoking was a best friend's approving attitude; for drinking it was the more global peer index of other friend's approving attitudes. For sixth grade females the best predictor of positive expectancies for smoking was their own approving attitude toward smoking; for drinking it was both their own approving attitude toward

Table 10

Multiple Regression Analysis Utilizing the Full Model to Predict Positive Expectancies for Smoking and Drinking for Sixth and Seventh Grade Males and Females

Expectancy Variables	Variables in Equation / Rsq	B	SE B	Beta
Sixth grade males (N=46)				
Smoking	BFAS / .14	-.32	.12	-.37*
Drinking	FAD / .14	.36	.14	.37*
Sixth grade females (N=64)				
Smoking	SA / .21	-.81	.20	-.46**
Drinking	DA / .23	-.60	.19	-.39*
	BFAD / .30	-.37	.18	-.25*
Seventh grade males (N=56)				
Smoking	CF / .11	.21	.08	.33*
Drinking	DA / .27	-.54	.15	-.42**
	SAD / .37	-.41	.14	-.33*
Seventh grade females (N=63)				
Smoking	SA / .28	-.90	.17	-.55**
	BFD / .35	-.27	.11	-.27*
Drinking	BFAD / .14	-.52	.17	-.37*

Note. *p < .05; **p < .001; BFAS = Best Friend's Approval of Smoking; FAD = Friend's Approval of Drinking; SA = Self Approval of Smoking; DA = Self Approval of Drinking; BFAD = Best Friend's Approval of Drinking; CF = Conformity to Friends; SAD = Sibling's Approval of Drinking; BFD = Best Friend Discussion. Variables entered in equation for full model included: sibling conformity, friend conformity, sibling discussion, best friend discussion, sibling approval of smoking and drinking, friend approval of smoking and drinking, best friend approval of smoking and drinking, and self approval of smoking and drinking. Negative numbers are reflective of inverse scoring on questionnaire.

drinking and their best friend's approving attitude toward drinking. However, for the seventh graders surveyed, there is no consistent variable that surfaces as the best predictor. Instead, along with the approval variable, conformity to friends, interaction with a best friend, and use become important in the prediction equation. For seventh grade males, the best predictor of positive smoking expectancies was conformity to their friends; and for positive drinking expectancies it was both their own attitude toward drinking and a sibling's approving attitude toward drinking. For seventh grade females, the best predictor of positive smoking expectancies was both their own attitude toward smoking and their interaction with a best friend; for positive drinking expectancies, it was their best friend's approval of drinking. Although no variable consistently predicted positive expectancies for sixth grade and seventh grade males, some consistency emerged in the predictor variables for sixth and seventh grade females. Specifically, for females personal attitude towards smoking was an important predictor of smoking expectancies in sixth and seventh grades, and best friend's approval was an important predictor of drinking expectancies in both grades.

For hypothesis 8, actual smoking and drinking behavior was used to predict positive expectancies for smoking and drinking. Table 11 presents the results of this regression analysis. All three measures of use – by the pre-adolescent, by the best friend, and by the sibling, showed a significant contribution to positive expectancies toward smoking and drinking. However, the variable of sibling smoking indicated only a trend toward significance in the

prediction of positive smoking expectancies, while for other variables investigated in this analysis, a much higher level of significance was obtained, $p \leq .001$.

Table 11

Regression Analysis of Smoking and Drinking Behavior Utilizing Closeness Variables in Predicting Positive Expectancies

Variables	Rsq	B	SE B	Beta
Smoking				
Self Use (N=289)	.11	.25	.04	.32**
Best Friend Use (N=283)	.09	.95	.18	.31**
Sibling Use (N=221)	.01	.38	.22	.12+
Drinking				
Self Use (N=290)	.22	.42	.05	.46**
Best Friend Use (N=292)	.06	.21	.05	.25**
Sibling Use (N=222)	.09	.79	.17	.31**

Note. +p < .10; *p < .05; **p < .001
Negative numbers are reflective of inverse scoring on questionnaire.

The final analysis of this investigation utilized a multiple regression analysis to evaluate which variables were the best predictors of expectancies from the following variables – self-use, self-attitude, friend attitude, best friend use, best friend attitude, sibling use, and sibling attitude. Table 12 presents the results of this analysis. For smoking, the best predictors of positive expectancies emerged as a self-approving attitude and the best friend's smoking. For drinking,

the best predictors emerged as a self-approving attitude, friend's approving attitude, self drinking and sibling drinking.

Table 12

Multiple Regression Analysis Utilizing Closeness Variables of Approval and Use to Predict Positive Expectancies for Smoking and Drinking

Positive Expectancies	Variables in Equation / Rsq	B	SE B	Beta
Smoking (N=183)	SA / .16	-.49	.11	-.31**
	BFSB / .21	.81	.23	.25**
Drinking (N=190)	DB / .24	.22	.07	.25*
	DA / .27	-.26	.11	-.17*
	FAD / .29	.15	.07	.16*
	SDB / .31	.36	.18	.14*

Note. SA = Self Approval of Smoking; BFSB = Best Friend's Smoking Behavior; DA = Self Approval of Drinking; FAD = Friend's Approval of Drinking; DB = Self Drinking Behavior; SDB = Sibling's Drinking Behavior.
Negative numbers are reflective of inverse scoring on questionnaire.
*p < .05; **p < .001

Chapter IX

DISCUSSION

This study investigated whether the relative closeness of normative influences (i.e. friends, best friends, or siblings) affected their impact on the attitudes, beliefs and behaviors held toward cigarettes and alcohol by a pre-adolescent population. Ten hypotheses were posed to examine this relationship. Mediating variables of conformity and quality of interaction were also investigated. The results of correlational analyses, t-tests and multiple regression analyses support six of the ten hypotheses. A general discussion of the results, along with limitations of the study, ideas for future research and implications for school psychology are presented below.

General Discussion

The results of this investigation indicate that peer influences on early adolescent cigarette and alcohol expectancies and use are significant. Through the mechanisms of imitation, modeling, vicarious learning and reinforcement principles, an individual's beliefs, attitudes and expectancies are modified by those individuals with whom they spend a great deal of time and hold in high esteem – their peers. The findings detailed in this study support previous work which has also indicated that on issues of substance use, peer influences are strong (Clasen & Brown, 1985; Kandel & Andrews, 1994; Urberg et al., 1990; van Roosmalen & McDaniel, 1989).

Peer influences can operate in many ways. This influence can be direct, such as in verbal pressure, or it can be indirect, such as in vicarious learning

processes. However the pre-adolescent experiences it, it is the desire to be accepted within a chosen group that makes the influence so strong.

This study lends support to the body of research that has found that the attitudes held by the individual as well as the perception of approval from significant others contributes to the formation of expectancies about cigarettes and alcohol (Gustafson, 1992; Leigh, 1989; Morgan & Grube, 1991). Expectancies are the stored memories of the perceptions of a behavior and its consequences. These social consequences are stored and then acted on by the individual at a future point in time. As a result, the perceptions of approval for smoking and drinking that a pre-adolescent holds about friends, best friends and siblings begin to modify the expectancies that the pre-adolescent holds about this behavior. It is noted that expectancies are forming gradually, over time. Initially, children may possess predominantly negative beliefs about cigarettes and alcohol (Johnson & Johnson, 1995), but the composition of these beliefs changes during the grade school years. Exposure to others with different behaviors and beliefs may begin to loosen negative attitudes and allow a more neutral stance to take hold in regard to these substances. After all, many children's parents, relatives and friend's parents engage in the use of these legal substances. As exposure to acceptable models that smoke and drink increases, children begin to adopt a more positive stance on whether or not the use of these substances is okay. It is at this point that the global attitudes of acceptance begin to form and lay the basis for the positive expectancies.

This developmental perspective on the acquisition of positive expectancies was supported by the current investigation. Results indicate that children in sixth grade hold more negative attitudes and expectancies toward cigarettes and alcohol than children in seventh grade.

The literature on attitudes and approval has indicated that approving attitudes and positive expectancies about cigarettes and alcohol are closely related (Azjen & Fishbein, 1973; Miller, Smith & Goldman, 1990; Morgan & Grube, 1991). This was corroborated by the current study, as the variables of approval consistently predicted positive expectancies for smoking and drinking. Researchers investigating expectancies have found that if the perceived consequences of using a substance are desirable, then the individual is likely to use that substance (Brown, Christiansen & Goldman, 1987; Howard, Boyd & Zucker, 1995; Smith & Goldman, 1995; Wagenaar & Perry; 1995). Morgan and Grube (1991) found that in the experimentation phase of cigarette and alcohol use, the friend's approval of the behavior was as important as the friend's actual use of the substance. In this investigation, approval of smoking and drinking by the student, by friends, by best friends and by siblings was important in predicting positive expectancies held toward these substances. In addition, smoking and drinking behaviors by the student, by the best friend and by the sibling were also important in predicting positive expectancies.

The findings from this investigation also support the body of literature that has found that positive expectancies about cigarettes and alcohol form prior to the use of the substances and lead to the experimentation and use of these

substances at some future point (Gustafson, 1992; Smith, Goldman, Greenbaum & Christiansen, 1995). Results from this study indicated that the percentage of reported positive attitudes was greater in the seventh grade students surveyed, as was the reported smoking and drinking behavior engaged in by these pre-adolescents, by their best friends and by their siblings. This study revealed that positive expectancies and use have begun to emerge in sixth grade and increase for the seventh grade population. These findings lend support to the notion that the sixth grade is a sensitive time in the transition from negative to positive expectancies and the initiation of smoking and drinking behaviors.

Additionally, the acquisition of positive expectancies has been shown to occur across the domains of cigarettes and alcohol, indicating that there may be a global acceptance of these substances; if smoking cigarettes is okay, then it is also okay to drink alcohol. This global acceptance of cigarette and alcohol use may indicate that the pre-adolescents use these legal substances to try on more "adult-like" roles. The idea that cigarette and alcohol use is one way for pre-adolescents to show peers that they are mature has been postulated in the literature (Harton & Latane, 1997).

Although many of the hypotheses investigated in this study were supported by the results obtained, some were not. One such hypothesis involved the variable of closeness. Closeness was investigated in this study by utilizing relationship distinctions between self, friends, best friends and older siblings. Although it was predicted that the closer, more intimate relationships (i.e., best friends and siblings) would show stronger connections than the other relationship

(i.e., friends), there did not emerge important distinctions between the groups in this investigation. Previous research had indicated that the variable of best friendship would carry significance above that of a general friend due to issues of intimacy and greater contact (Urberg, 1992; Wills & Vaughan, 1991). In addition, the role of the older sibling was postulated to have similar significance based on the same issues of intimacy and frequent contact (Needle et al., 1986). However, all of the variables proved to impact on positive expectancies, with none of them emerging as stronger than the others. This may be due to the shifting friendship bonds that are detailed in the literature (Clasen & Brown, 1985; Downs & Rose, 1991). As sixth and seventh grades are times of transition, from grade school to middle school and from childhood to adolescence, alliances between friends, cliques and crowds may be changing. In addition, due to the processes of peer selection and peer influence (Ennett & Bauman, 1994; Fergusson, et al., 1995; Urberg, 1992) the pre-adolescents may be changing their best friends and thus the impact of the intimate influences is temporarily diminished. As a result of the natural shifting occurring at this time, pre-adolescents may be keyed in to friends' opinions in general as much as they are to the opinions in the more intimate relationships in their lives. In addition, Morgan and Grube (1991) found that both best friends and other good friends were important in the initiation phase of substance use, while the best friend was found to be most important during the maintenance stage of substance use. In Morgan and Grube's study, the 13-17 year old time period was investigated. In the current inquiry, sixth and seventh graders were utilized and their ages ranged from 11-13. Due to the age range

under investigation, it can be surmised that some of the students in this sample are in the initiation phase of substance use. These findings are supported by the descriptive statistics reported and the percentages of agreement on smoking and drinking variables for friends, best friends and siblings (Table 2 and Table 8). While the relationship variable that had the strongest influence on attitude toward smoking and drinking was the general friendship variable, in other analyses, best friend and sibling relationships also emerged as significant factors. Thus, for both sixth and seventh grades, all of the variables related to the closeness issue proved to be important correlates as well as predictors of positive expectancies, not just the more intimate bonds of best friendship and older siblings.

Another area where surprising results were obtained was with the variable of gender. Based on the literature, it was predicted that females would show stronger correlations on the variables of closeness, conformity, and quality of interaction than males. This is because intimate relationships were thought to exert more indirect pressure on females to remain the same (Downs, 1985; van Roosmalen & McDaniel, 1989; Wills & Vaughan, 1989). The results from this investigation did not support that hypothesis. Instead, the data indicated that different influences were significant for males and females, suggesting that the process of acquiring smoking and drinking expectancies and behaviors may be unique to each gender. Results from this investigation indicate that for the conformity and quality of interaction variables, males have more influences related to negative expectancies for both smoking and drinking and that females have more influences related to positive expectancies of smoking. This suggests

that in males experiencing high levels of normative influence and interaction variables, these qualities may help to maintain negative expectancies toward cigarettes and alcohol, thereby possibly delaying experimentation and use. Conversely in females, these same normative influence variables and interaction variables may be encouraging the transition to more mature attitudes, thus moving them to hold more positive expectancies for smoking, which in turn may lead to experimentation and use. This finding supports current research that has found that more young women, than young men, smoke (Charlton et al., 1999). Charlton and colleagues believe this to be a self-perpetuating cycle where more females smoke, thereby offering more cigarettes to best friends who eventually accept the offers of cigarettes, which in turn increases the incidence of female smoking further.

It is also interesting to note that when the frequencies of the normative influences are compared (Table 2), the percentage reported for most items is less for the seventh grade than for the sixth grade, which is in direct contrast to the attitude and behavior variables. This indicates that for the seventh graders completing the survey, the items which would be natural extensions of an intimate relationship (i.e. being able to discuss anything, holding others opinions in importance, and changing your mind based on others feelings), were beginning to have less significance for them. These influences were investigated in the survey as conformity variables and quality of interaction variables. The variables of conformity and quality of interaction were based on the notion that individuals involved in intimate relationships would be more similar in beliefs and would be

able to exert more pressure over each other to become that way due to increased contact and verbal interaction. Although conformity and quality of interaction did not have significant correlations associated with them in this investigation, the two variables emerged as best predictors in positive expectancies for smoking. Conformity was the variable that emerged as the best predictor of positive expectancies for smoking in seventh grade males and quality of interaction emerged as one of the best predictors of positive expectancies for smoking in seventh grade females. Based on the results of the study, the relationship of conformity and quality of interaction to the other variables investigated did not prove significant. However as a mediating factor in the prediction of positive expectancies, conformity and quality of interaction did emerge as significant.

Limitations of the Study

When using a self-report instrument such as a survey, there is the inherent limitation of the bias that the individual brings to the situation. It is possible that the pre-adolescents who participated in this investigation were not truthful in their responses. The responses could have been answered to appear more adult like by exaggerating expectancies and instances of use, thereby inflating the obtained results. Conversely, the pre-adolescents may have under reported beliefs and experimentation out of fear of reprisals. Although the students were repeatedly assured of confidentiality and anonymity, many pre-adolescents noticed and were concerned about the number codes placed on the surveys. When giving directions at the start of each administration, the confidentiality procedures were explained to the students. However based on the questions asked, it appeared

that many of them were still concerned. In addition, some of the students may not have been happy to participate in the survey, thereby choosing to give random answers to the questions rather than reading each item carefully and choosing the best answer. Lastly, it was apparent from questions that occurred during the administration of the survey, that some of the words and question formats used were difficult for some of the pre-adolescents to understand. During the administration, individual questions about these things were handled by students raising their hands and having the proctor come over to clarify the question. Although any one of these issues could have factored into the results obtained, when administering the surveys to the students, looking over the completed surveys and entering the data, it was apparent that the majority of pre-adolescents included in the results took their time and answered the questions in a thoughtful way.

Another limitation that arises from this investigation is the quantity of questions that comprise a variable. For most of the variables covered in this survey, the questions have been derived from other questionnaires that have available reliability and validity data. This includes the dependent variable of expectancies, which have a literature base previously developed. The expectancy questions utilized in this investigation were derived from a pilot inquiry for the Teen Attitude Study and provided the basis for the reduced expectancy scales used (Johnson & Johnson, 1996). However, for two of the other variables investigated, conformity and quality of interaction, this is not the case. The conformity variable relies on only two questions that get averaged to produce the

variable and the quality of interaction variable relies on only one question to produce the variable. As a result, the restriction of the range within these variables may have produced misleading results. As it happened with the results in this investigation, the correlational investigation showed no significant relationships with these variables and this may be due to the limited questions that made up the variables.

In addition to the previous limitations noted, the population from which the sample was drawn also contributes to the limitations of this investigation and constrains the generalizability of the results. The survey was administered to a sample of convenience in a small urban school district in Massachusetts that drew its students from both the immediate city and surrounding suburbs. Also, the racial breakdown was 89% Caucasian, with just 11% comprising other racial backgrounds. In addition, as the survey was administered to students whose parents had actively consented to their participation in the study, there is the possibility that the consent procedure introduced bias into the study. Characteristics of the families and children of those consenting to participation may be very different from those who did not consent.

Future Research

Although the field of adolescent substance use has a large body of research associated with it, there are still many areas that need to be investigated in order to implement the most efficacious interventions. First, developmental patterns need to be delineated for the experimentation with and acquisition of smoking and drinking behaviors. Research is needed to determine how the

relationship processes of selection and influence operate within experimentation, initiation and use and whether these processes are different for males and females as this investigation has suggested.

It would also be beneficial to investigate further the type of questions that ask the pre-adolescent to answer about another person's beliefs and behavior. With the format used in this investigation, it is not expected that the researcher will obtain a true picture of the other person's beliefs and attitudes, instead what is obtained is the perception held by the pre-adolescent. For this inquiry the perception of approval or the perception of use is as important as the actual level of approval and use because the perceptions contribute to the development of the attitudes and expectancies held by the pre-adolescent (Morgan & Grube, 1991). However, it is also desirable to have information from the peers themselves. In this way, further information can be ascertained as to whether the student's perception and reality are in agreement and if there are other variables impacting on the relationship.

Additionally, research needs to be conducted on the links between cigarette and alcohol expectancies, attitudes and behaviors. The literature, and this investigation, has found that expectancies, attitudes and behaviors are closely related. However, results from this study suggest the global attitudes of approval form prior to the formation of the specific positive expectancies. This could have an impact on the types of interventions that need to be administered and the timing with which they are administered. It also may impact the relationship factors that seem important in substance use behaviors. If more

global attitudes form first, then it is possible that influences from the peer group may have more of an impact on expectancies and use than influences from a best friend. This may be due to the idea suggested in this research that pre-adolescents are tuned in to their peer groups because best friendship relationships are in flux. Additionally, this idea would also be important for further research into the selection and influence processes as pre-adolescents may choose friends based on global characteristics rather than the specific beliefs they hold.

Another problem encountered in much of the substance use literature involves the age at which the adolescent is investigated. Most studies use adolescents in the 14 – 18 age ranges because this is the time when prevalence of use increases. However, studies show that it is the adoption of attitudes and expectancies prior to use that determines whether an adolescent will ultimately choose to smoke or drink. Therefore, it is important that more studies investigate the time periods prior to use in order to identify sensitive periods in the adoption of positive substance use expectancies and to investigate other influences impacting on them.

In addition, for prevention programs directed at peer influences, knowledge of antecedent behaviors and moderator variables impacting on substance use are important. Adolescents make choices and act on both the verbal and non-verbal influences from others. According to Ennett et al. (1994), current prevention programs assume a pro-use influence on adolescents from their peer group. Prevention activities with this orientation focus on assertiveness and social skills

training to help adolescents resist the influence of their peers to initiate substance use behaviors. "Just Say No" campaigns assume that the only pressure on the adolescent is direct pressure from peers. Ionnotti and Bush (1992) conclude in their research that children in substance abusing communities need intervention programs that go beyond "Just Say No". Future research for prevention programs need to incorporate all influences impacting on pre-adolescent's substance use decisions, both verbal and non-verbal.

Lastly, one consistent finding in the research is that peer pressure has the potential to provide pro-social influences on adolescents (Clasen & Brown, 1985). With this in mind, future research into substance use prevention programs needs to investigate the validity of supporting and promoting friendships with non-using peers. Research supports the fact that an academic lifestyle orientation may act as a warning to others without similar beliefs, helping to maintain an adolescent's non-using status and attracting friends with the same orientation (Charlton et al., 1999).

Implications for School Psychology

As the acquisition of substance use expectancies and behaviors are developmental processes that involve family systems, peer systems and school systems, it is important to understand them in order to facilitate correctly timed prevention programs. The personnel most adequately equipped to do this in the school system are the school psychologists. School psychologists are trained in both research and practice and know the culture of the school. In this way, they are in a prime position to understand the needs of the school they are working in

and the individual pressures that the children in that setting struggle with. Although the school psychologist would not be responsible for ongoing intervention in cases of serious substance use, they would be in the perfect position to implement procedures for ongoing work in the area of prevention. Individuals who work in the area of substance use would acknowledge that a social inoculation at a single point in time is not an adequate substance use prevention program. Interventions should be ongoing, sensitively timed throughout the child's school years and tailored to the developing child's needs and pressures. The school psychologist is in the best position to accomplish this task as each child remains in a given school setting for multiple years, thereby providing many opportunities throughout the child's school career for prevention activities. The current research has investigated a pre-adolescent population in regard to their attitudes, expectancies and behaviors involving cigarette and alcohol use. This information is important to school psychologists as it can be used to support the timely implementation of programs designed to impact on children's attitudes and expectancies, and to work toward the school psychologist's goal of preventing or reducing substance use in the school population.

Appendix A

Questionnaire items used in data analysis

GENDER & AGE QUESTIONS:

1. Are you male or female?

2. When were you born? _____/_____/_____ (Month/Day/Year)

124. We would like to know whether there are other people in your age group, brothers, sisters, cousins or friends, who live with you and your family. Please circle below the age of anyone in your household, and for each check male or female.

	10	11	12	13	14	15	16	17	18
Male	___	___	___	___	___	___	___	___	___
Female	___	___	___	___	___	___	___	___	___

144. My closest sibling's age is: _____years

SMOKING BEHAVIOR:

20. About how often have you smoked cigarettes?

0 = Do not smoke at all

1 = Less than once a year

2 = Less than once a month, but at least once a year

3 = About once a month

4 = Three or four days a month

5 = One or two days a week

6 = Three or four days a week

7 = Every day

23. Does your best friend smoke regularly? Yes___ No___

121. Does your (older) brother or sister smoke regularly? Yes___ No____

DRINKING BEHAVIOR:

40. About how often have you drunk any kind of alcoholic beverage (beer, wine or liquor)?

109. About how often would you say this closest friend drinks any kind of alcoholic beverage (beer, wine or liquor) ?

SCORED:

0 = Do not drink alcoholic beverages at all

1 = Less than once a year

2 = Less than once a month, but at least once a year

3 = About once a month

4 = Three or four days a month

5 = One or two days a week

6 = Three or four days a week

7 = Every day

122. Does your (older) brother or sister ever drink alcohol?

Yes___ No___

POSITIVE EXPECTANCIES:

If I smoke cigarettes:

27. I am more accepted by others

28. I feel good

30. I have a good time

33. I feel happy

34. I am more outgoing

35. It takes away my bad moods and feelings

If I drink alcohol:

52. I am more accepted by others

54. i feel good

57. It takes away my bad moods and feelings

59. I have a good time

62. I feel happy

64. I am more outgoing

NEGATIVE EXPECTANCIES:

If I smoke cigarettes:

29. I feel ashamed of myself

31. I feel guilty

32. I get a cough

36. I feel sad or depressed

37. I feel sick

If I drink alcohol:

53. I become clumsy or uncoordinated

55. I feel ashamed of myself

56. I get into fights

58. I can't concentrate

60. I feel guilty

61. I get a hangover

63. I get mean

65. I feel sad or depressed

66. I feel sick

All EXPECTANCIES SCORED: 1 = no chance

2 = very unlikely

3 = unlikely

4 = likely

5 = very likely

6 = certain to happen

FRIEND APPROVAL:

How do most of your friends feel about kids your age:

71. Smoking cigarettes?

72. Drinking alcohol?

SCORED:

1 = very much against it

2 = against it

3 = doesn't care about it

4 = for it

5 = very much for it

BEST FRIEND APPROVAL:

140. My best friend thinks that smoking cigarettes is:

____very good ____good ____bad ____very bad

141. My best friend thinks that drinking alcohol is:

____very good ____good ____bad ____very bad

SUBJECT APPROVAL:

75. What is your general feeling about drinking alcohol?

___very good ___good ___bad ___very bad

125. What is your general feeling about smoking cigarettes? I think that smoking cigarettes is: ____very good ____good ____bad ____very bad

SIBLING APPROVAL:

146. My closest sibling thinks that smoking cigarettes is:

____very good ____good ____bad ____very bad

147. My closest sibling thinks that drinking alcohol is:

____very good ____good ____bad ____very bad

CONFORMITY:

130. When I make a decision, I do not stick to it if my friends think I've made a bad choice. ___always ___most of the time ___sometimes ___hardly ever ___never

131. My friends' opinions are important to me.

___always ___most of the time ___sometimes ___hardly ever ___never

132. When I make a decision, I do not stick to it if my brothers or sisters think I've made a bad choice. ___always ___most of the time ___sometimes ___hardly ever ___never

133. My brothers' and sisters' opinions are important to me.

___always ___most of the time ___sometimes ___hardly ever ___never

QUALITY OF INTERACTION

138. With my best friend, I can discuss my beliefs without feeling restrained or embarrassed.

142. With my closest sibling, I can discuss my beliefs without feeling restrained or embarrassed.

SCORED:

1. Strongly agree
2. Agree
3. Neutral
4. Disagree
5. Strongly disagree

Appendix B

Significant Correlations Separated on Gender for Variables of Conformity, Quality of Interaction, Closeness and Positive and Negative Expectancies

	FI	PP	SI	SP	SD	BFD	SA	DA	FAS	FAD	BFAS	BFAD	SAS	SAD	NES	PES	NED	PED
FI		m** f*	m* f**	f*	f*	m* f**			m*							f*	m*	
PP				m** f**			m*				m*		m*					
SI				m** f**	m** f**		m* f**	f*		f*	f*			f*		f*	m*	
SP									m*	m*			m*					
SD						m* f**		m*							m*		m*	
BFD															m*	f*	m*	
SA								m** f**	m** f**	m** f**	m** f**	m** f**	m** f**	m** f**	f**	m* f**	f**	m** f**
DA									m** f**	m** f**	m** f**	m** f**	f**	m** f**	m* f**	m* f**	m** f**	m** f**
FAS										m** f**	m** f**	m** f**	m** f**	m** f**	m* f**	m* f**	m* f**	m** f**
FAD											m** f**	m** f**	m* f**	m** f**	f**	m* f**	m* f**	m** f**
BFAS												m** f**	m** f**	m** f**	m* f**	m** f**	m* f**	m** f**
BFAD													m** f**	m** f**	f**	m** f**	m* f**	m** f**

continued on next page

Appendix B cont.

Significant Correlations Separated on Gender for Variables of Conformity, Quality of Interaction, Closeness and Positive and Negative Expectancies

	FI	PP	SI	SP	SD	BFD	SA	DA	FAS	FAD	BFAS	BFAD	SAS	SAD	NES	PES	NED	PED
SAS														m**	m*	m*	m*	
														f**	f*	f*	f*	f*
SAD																m*	m*	m*
															f**	f*	f*	f**
NES																	m**	
																f*	f**	
PES																		m**
																	f*	f**
NED																		
																		f**

Note. m = males f = females
Conformity variables (FI = Friend Influence; PP = Peer Pressure; SI = Sibling Influence; SP = Sibling Pressure)
Quality of Interaction variables (SD = Sibling Discussion; BFD = Best Friend Discussion)
Closeness variables (SA = Positive Smoking Attitude, DA = Positive Drinking Attitude; FAS = Friend's Approval of Smoking; FAD = Friend's Approval of Drinking; BFAS = Best Friend's Approval of Smoking; BFAD = Best Friend's Approval of Drinking; SAS = Sibling's Approval of Smoking; SAD = Sibling's Approval of Drinking)
Positive Expectancy variables (PES = Positive Expectancy of Smoking; PED Positive Expectancy of Drinking)
Negative Expectancy variables (NES = Negative Expectancy of Smoking; NED = Negative Expectancy of Drinking)
*p < .05; **p < .001

QUEENS COLLEGE
THE CITY UNIVERSITY OF NEW YORK
FLUSHING, NEW YORK 11367-1597

Dear Parent:

The National Institute of Health is sponsoring a research project on the relation between middle school students' beliefs about drinking alcohol and their personal experiences at school and in their family relationships. The study is being undertaken by Dr. Helen L. Johnson, a faculty member in the School of Education at Queens College, and Dr. Patrick B. Johnson, a senior research associate at Queens College.

We would like your child to participate in the project because she/he is a sixth or seventh grader in the Pittsfield Public Schools. We are asking all sixth and seventh graders in the Pittsfield School District to participate. The project involves filling out a questionnaire each year for the next two years. The questions deal with your child's beliefs about drinking and smoking cigarettes and marijuana, experiences at home and in social settings with drinking and smoking cigarettes and marijuana, and relationships with family and friends. It will take approximately 30 minutes to complete the questionnaire. All information given by your child will be kept completely anonymous and confidential. His/her answers will be recorded without his/her name.

Your child may leave any question s/he does not want to answer blank, and there is minimal risk of distress from the questions. Your child's participation is voluntary. We will contact you each year to see whether you wish your child to continue to participate in the project. Should you or your child decide later on to withdraw from the study, you may do so at any time.

A Certificate of Confidentiality has been issued by the Department of Health and Human Services (DHHS) for this project. This Certificate will protect the investigators from being forced to release any research data in which your child is identified, even under a court order or subpoena. This protects your child from being identified in any civil, criminal, administrative, legislative, or other proceedings whether federal, state, or local. When results of this study are published, your child's name will not be used. The Certificate of Confidentiality does not represent an endorsement of this research project by the Secretary of Health and Human Services. Nor is this protection absolute. A copy of this Certificate will be made available should you wish to see it.

The information obtained in this project will be used to develop more effective alcohol and smoking education programs. To that end, your child's participation would be greatly appreciated. Please sign below and return this form so that we can know whether or not you wish your child to participate.

If, at any time, you have questions about any aspect of the project or about your child's rights as a research participant, you should contact us directly at our offices. Thank you for your assistance.

Sincerely,

Helen L. Johnson, Ph.D.
(718) 997-5311

Patrick B. Johnson, Ph.D.
(718) 997-4150

___ Yes, I agree to let my child participate in the Teen Attitude Study.

___ No, I do not wish my child to participate in the Teen Attitude Study.

_____
Child's name

_____
Name of child's teacher Name of child's school

_____
Parent/guardian signature Print parent name

Queens College/CUNY
IRB APPROVED:
01/14/99 to 03/26/99

The National Institute of Health is studying the beliefs of students your age about drinking alcohol and smoking. Your participation is important to the success of this study. Participation involves answering questions about yourself, your friends, and some of your life experiences, including questions about drinking alcohol and smoking and your relationships with your family. Your answers will be kept entirely confidential. We will not show your answers to anybody. We will be asking you to complete questionnaires again next year and the following year.

We would like you to help us in this study. Should you decide later on that you do not want to continue participating in the study, you can stop at any time. If there is any question you do not want to answer, you can leave it blank. If you are willing to participate in this study, please sign your name on the line below. Then print your name on the next line. Thank you for your cooperation.

_____

Please sign your name

_____

Please print your name

Queens College/CUNY
IRB APPROVED:
01/14/99 to 03/26/99

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