

RELATIONSHIPS BETWEEN SELECT PROTECTIVE
FACTORS AND TOBACCO USE

by

Susan E. Brown

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Dr. Kerry J. Redican, Chair

Dr. Richard K. Stratton

Dr. Billie Lepczyk

Dr. William T. Price

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ABSTRACT

Students enrolled in Roanoke County Schools in 2003 became voluntary participants in the Communities That Care Youth Survey (CTCYS), which had been administered to a group ($N = 3022$) of 6th through 12th graders. The students answered multiple choice questions to determine their attitudes concerning many important topics within their home, school, and community domains. The carefully documented evaluation was conducted to determine the significance of two protective factors, which were employed to explain associations between students who stated that their parents had clear alcohol, tobacco, and drug use rules in the home as well as those who stated they frequently attended religious services and activities, termed *parent efficacy* and *religiosity*, respectively. Because risk factors are common among adolescents and few well-designed studies are addressing the benefits of parent efficacy or religiosity as protective factors, this study analyzed the CTCYS data utilizing meta-analyses to assess the efficacy of these two environmental factors in relation to students' expressed perceptions of smoking cigarettes as a popular adolescent risk activity. Variables are unique to each individual and sample, therefore, multiple factors demonstrating risk and protective qualities were measured using a 0 to 8 point Likert summated rating scale. The various areas were examined according to frequency of risk behavior (i.e., smoking status - current, past, or never). Findings yielded statistically conclusive relationships within the participant responses using Chi-square analysis at the 0.05 level (2-sided), indicating a significant level of interaction between the select protective factors and tobacco use study variables.

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CHAPTER 1

INTRODUCTION TO THE STUDY

Since increasing evidence seems to suggest a link between various aspects of risk factors and risk behavior in the youth population, prevention programs are often employed as a good public health investment (Hanson, 2002 as cited by Channing Bete Company, Inc., 2004) to maximize understanding of a given adolescent population. In one assessment, in 2003, and numbered among the multitudes of like efforts in many cities across the nation such as Seattle, Washington; East Pointe, Michigan; Staten Island, New York; and Middletown, Pennsylvania, to name a few schools who were trying one particular risk intervention program as an educational tool in order to learn how their student's attitudes over a large range of variables could affect their behavior, research was launched with the intention of finding significant explanatory relationships among pupils at Roanoke County schools in Roanoke, Virginia, with a community awareness process "based on proven science and research rather than guesswork" (Perdue Pharma News Release, 2004, p. 1).

The impending adjunct study employed this former critical research to understand the same Roanoke County adolescent population whose frequency of attendance at religious services or activities were indicated as: *never, rarely, 1—2 times a month, or about once a week or more*, and those who indicated that their parents had clear rules about alcohol, tobacco, and drug use as expressed: *NO!, No, yes, or YES!*, to find both the incidence of participant perception of tobacco use with relationship to religiosity and parent efficacy as potentially protective health benefactors. Participants who were voluntary subjects were assessed for protective qualities, which would reflect, (1) participant's tobacco use in regard to how the student perceived his or her parent's rules clear as to

alcohol, tobacco, or drug use, described as parent efficacy, and (2) expressed relationships among tobacco use in students who reported his or her involvement in regular attendance at religious services or activities, as religiosity. Religiosity served as an operational definition for the study and was conveyed by self-reported frequency of attendance at religious services and activities. Parent efficacy was conceptualized to express the rules for use of alcohol, tobacco, or drugs (ATOD) in the student's home and was employed as the practicable definition.

Perceptions of select tobacco questions were pertinent for investigation when taken from an extensive list of variables dealing with the number of environments for the adolescent participants on the Communities That Care Youth Survey in the areas of the student's home life, the student's school life, and the student's community life, known categorically as either the family domain, the school domain, and the community domain, according to the Channing Bete's *Item Construct Dictionary* (2003). Then too, a specific category known as the *peer-individual domain* (CBICD, 2003) produced a sampling of questions focused on the participant's views of their behaviors in association with others of the same age group. Peers were those moving within the sphere of influence of the student's world while at school or in his or her social circle of friends or acquaintances.

In accordance, questions were answered anonymously and would relate to many risk activities for those who had been a participant of such behavior. Tobacco use was the key focus variable to determine the relationships between it and those select study protective variables. Results were then studied for insight into the attitudes of adolescent individuals to render understanding for planned prevention intervention methods consequential to the relationships with protective factors predictive for tobacco use.

Statement of the Problem

“One of the central problems of adolescence,” Hill, Monks, Wall, Weeda, & Welling (1976) maintained, “is the development of identity, of a sense of who one is and what one will become in his or her own historical and sociocultural context” (Hill et al, 1976, p. 246). Hill et al (1976) observed that adolescence begins around the second decade of life and before there has been much opportunity for the age of maturity. Seemingly, the age of maturity has gradually increased over the last several generations, according to Hill et al (1976), but “peer relations play an important role in adolescent development” (Hill et al, 1976, p. 250).

Adolescents are likely influenced by popularity within their peer group in the school environment, as it was clear in one study that the desire to be popular is an overwhelming motivational force for student smoking susceptibility (Valente, Unger, & Johnson, 2004). For students to find smoking acceptable and even desirable is due to their close association and the desire of most to follow the popular students in one’s peer group (Valente, et al, 2004), even though others in a similar study reportedly viewed smoking as “‘disgusting’, ‘stinking’, a waste of money, and a habit which made you smelly, unfit and less attractive” (Turner, West, Gordon, Young & Sweeting, 2005, p. 2521). This particular age group seems to be influenced in their behavior by observation of those around them, and after studies have examined the problem, current wisdom states that “as long as these popular students embrace smoking, programs aimed at preventing smoking will have limited effectiveness” (Valente, et al, 2004, p. 328).

Tobacco use in adolescence is associated with many health risk behaviors, including higher risk for sexual behavior and use of alcohol or other drugs (CDC, 2006).

Data from the Centers for Disease Control (2003) also suggests that these behaviors take place during a phase of life when young teens are hopeful for a promising future where some of these same youth will have decided to begin the destructive habit (CDC, 2003).

In consideration of the large body of evidence that indicates adolescents are becoming addicted to cigarettes in alarming numbers from studies by such research teams as Ellickson, Tucker, & Klein (2001), reported results state that 32 % of adolescents had admitted experimenting with tobacco by grade 7 with findings suggesting “early experimenters were more likely than nonsmokers to exhibit problem behaviors as older teens” (Ellickson et al, 2001, p. 470). There is, therefore, a six times greater chance of becoming a daily smoker (Ellickson et al, 2001).

Referencing the Centers for Disease Control and Prevention 2006 report, tobacco use in adolescence is associated with many health risk behaviors, including a higher risk for sexual behavior and use of alcohol or other drugs (CDC, 2006). There is no dispute that this is a dangerous trend when credible information, reportedly by the U.S. Department of Health and Human Services, has tobacco use in association with the cause of many health risk behaviors to include increased sexual behavior, drug, and alcohol use (USDH, 1994 as cited by CDC). This news is further frightening when one learns about the addictive nature of nicotine. According to Salaman (1998), "nicotine gets into the brain faster and more easily than many other drugs, penetrating the blood-brain barrier as or more quickly than heroin" (Salaman, 1998, p. 979). Further examination of this problem to find protective factors that might serve as a deterrent to this dangerous risk activity among adolescents is warranted.

Purpose of the Study

The purpose of this study was to determine the relationships between select protective factors and the risk behavior of tobacco use in adolescents.

Research Questions

1. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student having ever smoked cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and EVER: SMOKED CIGARETTES.

2. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and how old the student was when he first smoked cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and AGE: FIRST SMOKED CIGARETTES.

3. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student's perception of how wrong his parents feel it would be for him to smoke cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and PARENT'S ATTITUDE: HOW WRONG CIGARETTES.

4. Is there a significant relationship between the student's attendance in religious services or activities and how wrong the student thinks it is for someone his age to smoke cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and SMOKE CIGARETTES: HOW WRONG.

5. Is there a significant relationship between the student's attendance in religious services

or activities and the student having 4 best friends in the past year who smoked cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES.

6. Is there a significant relationship between the student's attendance in religious services or activities and how cool the student thinks it is for someone his age to smoke cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and ARE YOU COOL IF: SMOKE CIGARETTES.

Definition of Terms

1. Adolescents – refers to *the period between childhood and adulthood* (Jones & Bradley, 2007, p. 433)
2. Risk behavior – refers to *problematic behavior due to risk factors* (CBC, 2004)
3. Risk factors – refers to *predictors of problem behaviors and are found in family, school, and community* (CBC, 2004)
4. Protective factors – refers to *predictors of positive youth development and healthy behaviors that buffer children's exposure to risk factors* (CBC, 2004)
5. Religiosity – operable term referring to *attendance in worship services or organized religious activities* (Hixson, Gruchow, & Morgan, 1998, p. 547)
6. Parent efficacy – operable term for relationship between student and parents who have *clear rules in the home concerning use of alcohol, tobacco, or drugs* (CTCYs, 2002); i.e., efficacy: *efficacy* (Merriam-Webster.com, 2008)

7. Juniororologist – operable term referencing one who addresses adolescent risk activity, attitudes, and behavior (Brown, 2009)
8. Prevention planning programs – refers to like methods of such programs with *evidence-based prevention strategies having empirical support in literature with the goal of overall improvement in existing prevention practices* (Armstrong & Webb, 2006, p. 83)
9. Channing Bete Company – refers to a company whose *mission is to strengthen individuals, families, and communities by reinforcing healthy behaviors and commitment to positive social values* (CBC, 2003)
10. Communities That Care® – A Channing Bete Company, Inc., eventually acquired by SAMHSA, with a *prevention planning system for a healthy community for the positive development of children and youth* (CBC, 2004)
11. Communities That Care Youth Survey – or CTCYS, a *needs-assessment instrument of evaluation which measures a range of risk and protective factors that affect adolescent populations* (CBC, 2002)

Limitations of the Study

1. This study focused on only one county in Virginia.
2. Variables for this study were categorized and the appropriate descriptions and exploratory analysis were performed on the data, however, the nature of the results of this study deals with perceptions, beliefs, and attitudes of the student but not with detailed views as one could expect from a more thorough interview.
3. There was no manipulation of independent variables.

4. The CTCYS construct dictionary was composed of questions for which the behaviors could not be directly observed.

Significance of Study

With exploration of reliable data and applicable studies as a firm foundation, applications of principles within this study could be relevant for explanation of corresponding associations in the adolescent's environment based on the perceptions of the 2003 CTCYS population study. These associations could reflect protective factors in the life of a youth to measure for valid and effectual relationships, which might yield beneficial protection to adolescents or find additional dimensions of understanding of this age group's smoking habits and eventually be influential to prevention programs, having value to institute change in a broader range of adolescent choices and behaviors.

Assumptions

The following assumptions were made in conjunction to this study:

1. It was assumed the Communities That Care (CTC) student population responded truthfully to the youth survey.
2. It was assumed that memory had not distorted the accuracy with regard to those answers submitted.

CHAPTER 2

LITERATURE REVIEW

Introduction

This literature review examines relevant research regarding adolescent risk and protective factors, which shape the attitudes of adolescents towards tobacco use. A review of studies where innate perceptions are conveyed by an adolescent population concerning risk behavior is a pressing topic for today, as even girls are involving themselves in smoking behavior earlier than ever before (Charlton, 2001). Therefore, it is beneficial for educational health practitioners to determine what behavioral associations have been found in similar studies relating to protective and risk factors in order to create more meaningful community prevention interventions, as “community health collaborations increasingly view health as physical and mental well-being, not simply the absence of disease” (Hawkins, Catalano, & Arthur, 2002, p. 956).

Associations between peer pressure and risk behavior is generally accepted by previous research as serving as a prime detrimental factor for adolescent tobacco use as a negative outcome. This study attempted to identify research response outcomes related to religiosity and parent efficacy. Protective characteristics of religiosity and parent efficacy would be assessed as adolescent protective factors with accordance to testing, which would be performed to verify conclusively a significant association with the tobacco use variables. Relationships in accordance to the parent efficacy variable would pertain to clear rules enforced at home regarding alcohol, tobacco, and drug use, and relationships in accordance to the religiosity variable would pertain to participant attendance at religious services and activities.

The Problem

Bearman, Jones, & Udry, (1998) offered insightful portrayals of adolescents who, as a whole, spend much of their attention and energy towards building social relationships in an attempt to achieve popularity, as proposed in the Add Health's National Longitudinal Study of Adolescent Health (Bearman et al, 1998). In the Add Health's study, it was found that peer relationships led many adolescents to participate in risk activity, likely, because they desire to fit into the group of friends with whom they want to associate and without real regard to later health consequences (Bearman et al, 1998).

Adelmann (2005, p. 40) demonstrated that most student risk was positively associated with delinquent behavior, substance abuse, and destructive behavior, yet there were no instances “where a protector is positively correlated with a negative behavior” (Adelmann, 2005, p. 40). Josephson Institute of Ethics (2000) reviewed information of adolescent risk factors and found that cheating on tests in over 70% of public high school students had occurred at least one time in the previous year. About half of students who commented said that they had cheated repeatedly (Josephson Institute of Ethics, 2000). Additionally, two years earlier almost all of the CHARACTER COUNTS! teenagers answered they were guilty of lying; however, 91% reported they were satisfied with their own character and ethics (Josephson Institute of Ethics, 2000). Then too, 16% on the same survey said they had been drunk at school during the previous 12 month-period at least once, and a percentage of those came to school drunk several times over the 12-month period (Josephson Institute of Ethics, 2000). Fortunately, graduation rates have been rising (NCES, 2007), since *A Nation Still at Risk: An Education Manifesto* (1998)

reported that 30% of freshmen entering college were in need of remedial coursework in several basis subjects including reading and writing (A Nation Still at Risk: An Education Manifesto, 1998). Elliott & Larson (2004, p. 305) found that over “90% of participants expected to graduate high school and more than 80% expecting to graduate college” but also engaged in risky activities, as “one in five reported smoking cigarettes 3 or more days each week” (Elliott & Larson, 2004, p. 305).

Decades of research have shown that youth risk factors have increased the risk problem in behaviors and mortality rates since the 1950’s (CTC, 2004), with the toll on the community’s youth being enormous. In the United States, where alcohol and other drug use, delinquency, and violence has been increasing, evidence has suggested a link between various aspects of behavior in the adolescent population and life-threatening behavioral problems such as vandalism, homicide or other antisocial behaviors (CTC, 2004). However, Bettcher maintained that one of the greatest threats to adolescents today comes with the foolish pastime of smoking cigarettes (Bettcher, 2008, as cited by Lederer & Gartner, 2008, p. 2):

Douglas Bettcher, director of WHO's Tobacco Free Initiative, said WHO estimates 5.4 million smoking-related deaths a year, rising to more than 8 million a year by 2030 if nothing is done. That adds up to 175 million between 2005 and 2030. Beyond that, he said, deaths will continue to rise and statistical projections put the death toll at near 1 billion by the end of the century.

Further alarming data supports the knowledge that finding a solution is paramount. One report from the United States Public Health Service (2000) has stated that 25 percent of adult Americans currently smoke cigarettes or cigars, and 3,000

children and adolescents become users every day of some form of tobacco (USPHS, 2000). Of these 3,000 newly addicted youth, the Virginia Department of Health (n.d.) predicts that at least 1,000 of them will eventually die because of the foolish decision to smoke (VDH, n.d.).

The Centers for Disease Control (2003), reported disparaging statistics; 6,000 young people experience their first cigarette every day with nearly 3,000 of them becoming addicted, which adds up to more than a million young people who light up a cigarette and become addicted each year (CDC, 2003). “Unlike other substance use that matures out, that is, the prevalence of high usage decreases with increasing age, cigarette smoking continues to be heavy and persistent throughout adulthood” (Chen & Kandel, 1985, as cited by Shillington, & Clapp, 2000). Fifty percent of males who initiate smoking during adolescence can be expected to continue smoking until age 33 and 50% of like females will continue smoking until age 37 (Pierce and Gilpin, 1996, as cited by Shillington, & Clapp, 2000). CDC (2003) indicated that since 1995, several states have tried to enact state tobacco laws as a collaborative enforcement plan, included as an additional provision for curbing tobacco use, according to the Morbidity and Mortality Monthly Report (1999), and twelve of those states have increased cigarette excise and tobacco products taxes with Alaska adding an increase of 71¢ (MMWR, 1999). Eleven other states have provisions that allow that those found to sale tobacco products to minors will face suspension or the revoking of their licenses, as indicated by the same 1999 Morbidity and Mortality Monthly Report. Ten states now have greater restrictions on tobacco vending machines (MMWR as cited by CDC, 2003). With all of these restrictions it is unimaginable how more than 4 million U.S. adolescents under the age of

18 can still obtain and smoke cigarettes (CDC, 2003).

Studies of young people who involve themselves with the use of tobacco products, especially smoking cigarettes, indicate this habit has become most problematic. More than 34% of U.S. high school students in their freshman through senior years reported smoking cigarettes in the last month of 1999 (CDC, 2003). In 1995, this data was 2 % lower than smoking trends in 1997, which reported that smoking prevalence rates remain high among high school students (CDC, 2003). Komro, Perry, Munson, Stigler, and Farbakhsh (2004), stated, “Despite recent improvements in tobacco use among youth, 15% of eighth graders, 24% of tenth graders.” A finding by Johnston, O’Malley & Bachman (2001, as cited by Komro et al, 2004, p. 18) reported “31% of twelfth graders reported smoking currently (use in the past 30 days).” A later study had a similarly dismal report that, “31% of eighth graders, 41% of tenth graders, and 57% of twelfth graders report having ever smoked, with 27% of twelfth graders reporting past-month smoking and 17% reporting daily smoking” (Johnston et al., 2003, as cited by Tevyaw, Gwaltney, Tidey, Colby, Kahler, Miranda, Barnett, Rohsenow, & Monti, 2007, p. 24). Kassel (2000) stated that, “in fact, there is reason to believe that nicotine may, in some respects, be the most addictive of all drugs; a far greater proportion of those who experiment with smoking appear to progress to dependence relative to users of drugs of abuse like alcohol, marijuana, and even heroin and cocaine” (Kassel, 2000, p. 29). However, the problem is even more severe still, because “adolescents’ beliefs and attitudes about tobacco can shape their lifetime tobacco use” (Carver, Reinert, & Range, 2006, p. 76), as a disparaging study by Henningfield, Michaelides, & Sussman (2000) reported further by its review by stating, “nearly a third of high school seniors (31.6%)

who smoke a pack or more of cigarettes per day are still smoking five years later” (Henningfield et al, 2000, p. 7).

According to Hu, Cao, Peterson-Wakeman, & Wang (2002), research has established that the younger someone is when they start to smoke, the greater the risk they have for developing heart disease, cancer, as well as a myriad of other complications and disorders since smoking does not only do damage to the heart and its vessels, it changes the platelet function (Hu et al, 2002), and destroys the alveolar septi (Mercer, et al, 2004). Currently, “worldwide, tobacco kills 3 million people each year or 6 people every minute” (Roberts, 1996, p. 1084). Additionally, Asplund (2003, p. 391) stated:

- *The process of burning tobacco produces toxic substances, for instance, through endogenous nitrostation;*
- *Among the approximately 2,500 chemical substances identified in tobacco smoke, several meties (eg, tobacco-specific nitrosamines, polycyclic aromatic hydrocarbons, and a wide variety of oxidant gases) have been implicated as agents causing cardiovascular disease;*
- *A specific chemical compound, 1,3 butadiene, that accelerates atherosclerotic plaque formation has been identified in environmental tobacco smoke;*
- *The elevated circulating levels of carbon monoxide in cigarette smokers have been implicated in the pathogenesis of smoking-related cardiovascular disease, however, the clinical and experimental evidence to support this hypothesis is not very robust;*
- *Some tobacco components are better absorbed through the airways than through the mucous membranes of the mouth.*

Maureen Salaman (1998) made reference to the hazardous composition of tobacco products by noting those chemicals other than nicotine, which are contained in cigarettes: “irritating ammonia and freon, a chlorofluoro-carbon, used in the cooling systems of refrigerators and automobiles” (AP, 1994, as cited by Salaman, 1998, p. 191). Benowitz (1991, p. 602) further confirmed that once a cigarette is inhaled, the nicotine quickly passes into the bloodstream where high levels of nicotine are then directly absorbed by the brain.

The Center for Disease Control (2006) supported knowledge that each day in the United States some 4,000 young people from the ages of 12 to 17 will start smoking cigarettes, and another 1,140 will become addicted to the extent they will smoke tobacco daily (CDC, 2006). On the state of becoming addicted by tobacco, Salaman maintained, “nicotine is a stimulant that acts on 'binding sites' in the brain and throughout the body” (Salaman, 1998, p. 979).

According to a study of maturation behaviors in rodents as compared to impact of similar behavior in humans, Sisk & Zehr (2005) stated, “The changes in behavior that take place with adolescent development are profound and far-reaching” (Sisk & Zehr, 2005, p. 166). These reports have particularly overwhelming implications because, “tobacco consumption initiates during adolescence, a period in which the individual is in search of an identity, in particular in relation to others” (Lutte, 1988; Stein et al., 1996, as cited by Falomir-Pichastor, Mugny, Invernizzi, Di Palma, & Estrada, 2006, p. 258). According to the Journal of the National Cancer Institute, Evans, Farkas, Gilpin, Berry, & Pierce (1995) further warned that nearly one quarter of all adolescents who had never smoked were found to be susceptible to starting (Evans et al, 1995).

Life Stages

Believing it was imperative to explore those stages in life which were pertinent to the problems to be considered, various stages became involved in the study to lend credibility to an endeavor that often explains why adolescents act the way they do in certain situations. Diener, Fraser, Beaman, & Kelem (1976) found that children's behavior rose to deviant patterns of elevated risk when they were involved in a simple group activity such as going trick-or-treating.

Studies by researchers such as Kohlberg (1981), Erickson (1959, 1968 as cited by MacKinnon & Marcia, 2002), and Levinson (1978), life is a series of stages and phases that continually change as we grow older. This was substantiated with studies by these and others like Gould (1975), Havighurst (1981, as cited by Baltes, 1987) and Piaget (1969, as cited by Baltes, 1987) and those who pose theories that "much of life span research proceeds within the theoretical scenarios of child development or aging work" (Baltes, 1987, p. 612). "Our youthful dreams reflect our unique personalities, but are shaped by the values and expectations of those around us, and they shift as we and our times change" remarked Rosenfield, Stark, and Cohen (1987, p. 62).

When discussing growth in childhood, however, problematic reasoning was found in Freud, (1986 as cited by Eysenck), who claimed it to be faulty and inaccurate to the point of being fraudulent (Eysenck, 1986). Schwartz's (2001) study, however, discussed one's self-concept with Freud as "one of the first psychological theorists to address the fundamental question of self-definition" (Schwartz, 2001, p. 8). Again, Schwartz's (2001, p. 10) study spoke of Erikson's:

- *Personal identity as the set of goals, values, and beliefs that one shows the world, and*
- *Social identity was identified as an inner sense of solidarity with a group's ideals, the consolidation of elements that have been integrated into one's sense of self from groups to which one belongs.*

Eysenck (1976, as cited by Zuckerman & Kuhlman, 2000) further found extroversion to be an indirect link to risky behaviors and related it to sociability as “associated with participation in a number of risky activities” (Zuckerman et al, 2000, p. 1001). Furthermore, “while our temperaments are governed by a specific biochemical, it is the individualized combination of four primary neurotransmitters that determines each personality,” according to Braverman (2004, p. 22). Moreover, “disturbances in our personality and emotional life are imbalances in our biotemperament” (Braverman, 2004, p. 22). “Some personality traits, such as sensation seeking and impulsivity, are of obvious relevance to the general risk-taking disposition, if there is such a trait” (Zuckerman & Kuhlman, 2000), as is explained in the following passage from the study regarding this risky behavior in adolescents (Zuckerman et al, 2000, p. 1000):

Impulsivity has been defined in many ways, but a definition incorporating its several elements is: the tendency to enter into situations, or rapidly respond to cues for potential reward, without much planning or deliberation and without consideration of potential punishment or loss of reward. Impulsivity also can be considered as a deficit in the capacity for inhibition of dangerous reward-seeking behavior. Sensation seeking and impulsivity have recently been combined in a supertrait called ‘impulsive sensation seeking.’

To turn that into one's benefit, Youniss, McLellan, Su, & Yates' (1999) study documented that for proper development in youth to take place there should be a foundation of social substance on which to build. Participation and service to one's community and to civic affairs is recommended as a focus for which integration into normative adult society as a way of promoting identity development for youth to engage with adult's society (Youniss, McLellan, Su, & Yates, 1999).

Levinson, (1978) also wrote about life as a cycle and described the phases of life as eras having a sequence of distinctive and unifying qualities, which he equated to having everything to do with the character of living. According to Levinson (1978, p. 18) those studies covered four periods of one's life:

(1) Childhood to adolescence, age 0 – 22, (2) Early adulthood, age 17 – 45, (3) Middle adulthood, age 40 – 65, and (4) Late adulthood, age 60, and beyond. In his findings, in the first group the child's world goes throughout his formal school years, while living in a neighborhood with his family and while going through his adolescent school years alongside of a peer group. This is a period in the child's life cycle during which time he would demonstrate extraordinary growth.

Still, "scientific knowledge of adolescence lags far behind that for other periods in the lifecycle" (Baker, 2006, p. 243), but "longitudinal studies are needed to determine whether dissatisfaction with life is a consequence or determinant of substance abuse behavior" (Zullig, Valois, Huebner, Oeltmann, & Drane, p. 287). Evidence suggests that some of the leading risk behaviors in children could be reduced during this phase of growth if early interventions were made available for families and schools as a positive approach to risk activity (Baker, 2006).

Theory

The community mobilization and training component of Communities That Care is guided theoretically by the *Social Development Model* (Hawkins, et al, 2002). There is no single theory, however, which is relevant to the current study for when determining protective factors as interventions for community health problems such as tobacco use and cessation in adolescents. Those examined for this study are as follows:

- Social Cognitive Theory
- The Theory of Reasoned Action
- Life Course Theory, and
- Traditional Theories of Decision Making

Social Cognitive Theory

There is considerable reason to study behavior as a basis for the development of and behavior change or risk intervention programs. Using theory and other criteria to enable health professionals to identify characteristics in adolescents so that positive health choices would target at-risk youth to modify harmful health practices could be achieved through a “variety of protective factors” (He, Kramer, Houser, Chomitz, & Hacker, 2004, p. 27).

This does not discount the practicality of testing for attitudes. In one study by Bauman, Sallis, Dzewaltowski, & Owen, (1999), researchers were examining physical activity exploring a social cognitive approach as another theory that might be useful as society searches for roles it might play in the endeavor to implement a structured intervention. A question still remained from that study as to whether it would conclude as a successful effort when looking to explain behavior change as an outcome if the effect

could be explained instead by a social support relationship (Bauman et al, 1999). An insight by Bandura (1986, as cited by Bauman et al, 2002, p. 12) stated:

A social cognitive approach would lead the interventionist to implement strategies to change social support, to measure implemented social support among the target group, and to analyze the mediating role of perceived social support. It is hypothesized that if the intervention did not increase a participant's perceived social support, then the intervention would not have an effect.

Bandura (1986) discussed Social Cognitive Theory and the difficulties children have when a task is beyond their understanding and the result is of poor performance as “the rate of learning is obviously related to the level of cognitive development. Social cognitive theory analyzes learning in terms of the cognitive competencies necessary for acquiring knowledge and performance” (Bandura, 1986, p. 128).

Theory of Reasoned Action

Elder, Ayala & Harris (1999), while discussing Social Cognitive Theory (Elder, Ayala & Harris, 1999, p. 278) asserted:

Outcome expectancies, overlapping substantially with parallel concepts in the Theory of Reasoned Action and the Health Belief Model, represent the expectancy that a positive outcome or consequence will occur as a function of the behavior. Self-efficacy (or self-confidence specific to a behavior) is a self-perception of having skills to perform a behavior.

In the Theory of Reasoned Action, Clark & Aish (2002) proposed that a person tends to perform according to beliefs toward the intended action such as quitting smoking, and in turn, outside pressures continue to influence the individual toward

changed behavior (Clark et al, 2002). Commitment to healthy behaviors involves having priorities requiring one to recognize that certain positive social values must be reinforced, thus, according to a Catalano & Hawkins (1996, as cited by Hawkins, Catalano, & Arthur, 2000, p. 958) study:

The Social Development Model is used to describe the processes that lead to the strengthening of social bonding among children and adults within the community and the explicit expression of healthy beliefs and clear standards for behavior across developmental periods. These are important protective factors that motivate healthy behavior both at the level of the developing child and at the community level.

Life Course Theory

According to the Life Course Theory, “individual, family and societal factors interact to determine the developmental outcomes of adolescents” (Blum & Ellen, 2002, p. 289). From the family and societal factors, positive adolescent assets emerge to include families, neighborhoods, religious institutions, and schools (Blum et al, 2002).

To promote the understanding of risk behavior Dean, Colomer, & Perez-Hoyos (1995, p. 846) maintained:

Behavioral practices are shaped by values and beliefs learned in cultural settings, and by opportunities and constraints defined by specific social and economic situations. Furthermore, behaviors are not simple determinants of health. They interact with biological, psychological and social influences to shape both health and longevity.

Moreover, “the classical theorist saw religion as a key explanatory variable” (Bock et al, 1987, p.89), and “argued that it served as a significant reference group providing moral messages that affect conformity and deviance among its members” (Durkheim, 1965; Weber, 1956; Marx, 1972, as cited by Bock et al, 1987, p. 89). &

Traditional Theories of Decision Making

Additional information compiled from well-devised studies like the one by Cho, Keller, & Cooper, (1999, p. 262) reported:

Traditional theories of decision making state that a decision problem may be structured via several interactive steps. First, the problem must be identified and the possible course of action must be considered. Second, for each action (or option), several components must be assessed to compute the overall utility of each option.

Those theories discussed have many similar characteristics such as those found by Elder et al, (1998 as cited by Elder, Ayala & Harris, 1999, p. 276):

- *intentions to behave*
- *environmental constraints impeding the behavior*
- *skills*
- *outcome expectancies*
- *norms for the behavior*
- *self-standards*
- *affect, and*
- *self-confidence with respect to the behavior*

Bandura (1986) had a prospective on many related issues pertaining to adolescent behavior, stating there are four principal sources of information concerning self-knowledge about one's efficacy, whether accurate or faulty. Any given influence depending on its form may draw on one or more sources of efficacy information. He detailed four of those influences (Bandura, 1986, p. 399) as follows:

1. *performance attainments*
2. *vicarious experiences of observing the performances of others*
3. *verbal persuasion and allied types of social influences that one possesses certain capabilities, and*
4. *physiological states from which people partly judge their capableness, strength, and vulnerability to dysfunction.*

According to Arthur, Briney, Hawkins, Abbott, Brooke-Weiss, and Catalano, (2007), through a strategic planning process incorporating behavior modification models by which to pattern intervention comes the motivational forces to market effective risk management for community groups. As maintained by Arthur et al (2007), once the issue is diagnosed the primary delivery model is adopted based on the method determined for the program it must be within the context of the participant's ease of accepting a new idea with reference to their ability to adapt to the new behavior characteristics, as objectives will guide a development process based on good evidence (Arthur et al, 2007). One important reason to attempt change behavior in the beginning stage of deviancy is because there is a limit to what can be changed in the event of intervention delay (CTC, 2004).

Messages

Reger, Cooper, Booth-Butterfield, Smith, Bauman, et al, (2002) studied how interventions take the receivers through a number of processes from beginning until end for the message to be actually heard and for the behavior change to likely become operational (2002). For a message to be received, it must have unique features to the individual with understandable steps one must take to target the behavior and see change come about, unless the effect becomes less interesting to the participant or if one loses the benefit of the process (Snyder, 2007). Various delivery methods and mixtures of information with the same message may be required to bring about behavioral change, and evidence exists where there is support for change when it can be tailored to fit an individual's current belief and attitudes (Pate, Pratt, Blair, Haskell et al, 1995, p. 273).

Rogers (2002, p. 990) states that, “diffusion is a special type of communication concerned with the spread of messages that are perceived as dealing with new ideas, and necessarily represent a certain degree of uncertainty to an individual or organization.”

The four elements in the diffusion according to Rogers (2002, p. 990) are:

1. *innovation*
2. *communication channels*
3. *time*
4. *the social system*

Rogers (1995), also states, “*preventative innovations* are new ideas that require action at one point in time in order to avoid unwanted consequences at some future time” (Rogers, 1995 as cited by Rogers, 2000, p. 991). According to McGuire (1989, as cited by Reger, Cooper, Booth-Butterfield et al, 2002, p. 286):

Reviewed studies suggest that interventions must take receivers through a cascade of communication processes from reception of the message to processing, response, and ultimately, to behavior change.

Glanz, Lewis, & Rimer (1990, p. 274) report that diffusion:

- *Usually takes place through informal systems*
- *[Are] deliberately created, and*
- *Organized diffusion systems are of increasing importance.*

Orlandi, Landers, Weston, & Haley (1990, as cited by Glanz et al, 1990) “stress the need for linkage between the ‘resource system’ and the ‘user system’ to bridge the gap between innovation development and program diffusion” (Glanz et al, 1990, p. 274).

Because prevention messages for cigarette smoking have become the norm, research involving adolescents is bountiful with examples of types of campaign material are being read and offered to adolescents in the classroom when applying this principle. Beginning many years ago, student textbooks such as *Teen Health: Decisions for Healthy Living* (1993), listed eight messages to pupils as “Reasons Not to Use Tobacco.” One example from *Teen Health: Decisions for Healthy Living* (1993, p. 241) is as follows:

- *Tobacco use can cause many serious diseases.*
- *Smoking makes your hair and clothes smell bad.*
- *Tobacco use causes bad breath and dulls your senses of smell and taste.*
- *Smoking or chewing stains your teeth. Smoking stains your fingers.*
- *Using tobacco can be expensive.*
- *Tobacco use is no longer considered ‘cool.’*

- *New laws limit or ban tobacco use in schools and work-places. In most states it is illegal for persons under 16 years of age to purchase tobacco products.*
- *Tobacco can be addictive.*

“Mass media channels are more effective in creating initial knowledge of innovations” states Rogers (2002, p. 990), but there could be many credible delivery methods that would require a collection and systemization of the data to create this productive matrix of information from many sources (Rogers, 2002). Media messages through television networks began to do their part to change the viewing public’s perception that smoking was not going to be socially acceptable anymore when they stopped airing programs that portrayed actors while they were smoking. Amazingly, despite smoking campaigns and as late as the year 2004, according to CDC (2005), a total of 77.9% of middle school students had reportedly observed television or movie actors using tobacco while viewing them on either small or big screen, and another 34% while using the Internet (CDC, 2005). Watching television consumes 7-14% of the day for the average adolescent (Larson & Verma, 1999 as cited by Larson, 2000). This is unfortunate for parents who are finding it already difficult to fulfill their own goal of providing positive role models for their youth in today’s society (Mkandawire, 1994, as cited by Dehne and Riedner, 2001) in addition to finding appropriate positive factors outside of the home setting that can be offered to children to create awareness and increase the understanding of selected health messages (Mkandawire et al, 2001).

As Blanchard (1993) argues, when an individual is told that taking part in the desired behavior will bring that individual harm, whether they might choose to accept the message will depend on a variety of factors: “how much they think it will benefit them

while taking into account their needs and values, how easy adopting the message or behavior will be, and considering potential feedback from peers as a concern” (Blanchard, 1993). Conrad, Flay, & Hill (1992) and Tyas & Pederson (1998) asserted that both friends *and* parents have “important influences on adolescents’ smoking behaviors” (Conrad, Flay, & Hill, 1992; Tyas & Pederson, 1998, as cited by Szabo, White, & Hayman, 2006, p. 2298). Moreover, research studies support findings that both parental involvement in secular student activities and faith-based programs are positive message sources, and according to Bartkowski et al, are “valuable tools for preventing drug use among American teens” (Bartkowski, 2007, p. S192).

According to Stanley (2004, p. 399), a plan was being discussed in the UK with former Surgeon General C. Everett Koop reporting a “ban for-profit corporations from making, marketing, or importing all tobacco products” where over time it would decrease “the number of newly addicted young users of tobacco” (Stanley, 2004, p. 399), as over a quarter of all typical smokers are on the verge of losing on the average about 21 years of their life, according to USDA 1989 Surgeon General Koop’s Report (2002). If these prevailing rates stay the same, up to 70 million children who live in the United States alone will become smokers at some point in their lives and some 5 million of those children will die of smoking-related diseases (USDA, 2002). If adolescents begin to smoke a pack of cigarettes a day and continued to do so for the next forty years, he would have smoked approximately 300,000 cigarettes over that time (Slovic, 1998). Roberts (1996) stated, “about 46 million Americans smoke cigarettes; each average 25 cigarettes a day which means 70,000 nicotine ‘hits’ a year” (Roberts, 1996, p. 1084). Moreover, “the risks of tobacco have been dramatically detailed by the Surgeon General” (USPHS,

1979, as cited by Dudley, Mutch & Cruise, 1987, p. 218) since campaign messages by the former Surgeon General C. Everett Koop began directly identifying cigarette smoking cessation to be the most important tool of prevention in the war on premature mortality.

Bartecchi, MacKenzie, & Schrier (1994) stated that 418,690 deaths are caused by smoking each year, which equates to 1160 Americans each day, according to Roberts (1996, p. 1084) or “the equivalent of 3 jumbo jet crashes 365 days a year” (Roberts, 1996, p. 1084). There is hope that these anti-smoking messages from one of these sources will prevail, but until the market makes available a noncarcinogenic source of nicotine there will never be complete cessation of tobacco smoking (Gray & Boyle, 2003), even if it is known to be loaded with toxins. Regardless of the Surgeon General Koop’s assertion that tobacco need no longer be a part of American life (Glantz, 1996), the Food and Drug Administration has proposed an agenda to move away from the notion that this nation can achieve a totally smoke-free society and has further proposed an agenda to implement a simple plan to just try to prevent children from starting in the first place (Glantz & Parmley, 1996).

Charlton (2001) reported that the, “onset of smoking and quitting of smoking in a country appears to follow the pattern of diffusion of innovations” (Charlton, 2001, p. 220), so messages to combat smoking must be unique and have components that integrate the stages of the program with understandable steps for change. “Tobacco is addictive, and it is difficult to quit smoking” according to Dani & De Biasi (2001, p. 439), so those who intend to experiment with only one cigarette cannot foresee the consequences. “Education for adolescents to receive these warning messages before they become addicted is imperative” (Leshner, 2000, as cited by Dani & De Biasi, 2001, p. 439).

Protective Factors & Tobacco Use

Adolescence is the period “during which the previously dependent child changes into an independent adult” (Jones & Bradley, 2007, p. 433). This study considered whether church attendance or activities and observation of parental rules of behavior had invoked positive choices in behavior practices in adolescent participants. Within the context for consideration of all aspects on adolescent followers of various religious faiths, religiosity choices can be often influenced by parental church affiliation (Wilson & Sandomirsky, 1991). Bartkowski & Xu (2007) maintained that “among religiosity variables, integration within congregational networks (i.e., worship service attendance) exhibits the most consistent negative association with drug use” (Bartkowski & Xu, 2007, p. S182). With discussion on risk factors and risk behavior more relevant today than ever before, information on how this protective factor can generate promising results from various studies seems impressive and indicates that a divine belief system is also central to religious participation and “consistent with the hypothesis that attending church promotes the development of moral values and acceptance of conventional authority” (Burkett & White, 1974, p. 459). According to Kim (2001), “Kei-Ten-Ai-Jin (‘Respect the divine and love people’) is the motto for Kyocera, a Japanese corporation. In fact, many Asians believe and live that philosophy. Regardless of one’s religious or spiritual status, respecting the divine is the basis of global virtue and wisdom, as it teaches us humility, integrity, honesty, compassion, and generosity” (Kim, 2001, p. 214). These sentiments are universal and lend credence to the religiosity variable with compelling value towards positive behavior actions which are representative of this and other studies.

The American Journal of Psychiatry (Kendler, Liu, Gardner, McCullough, et al, 2003),

found that “high levels of the God as judge factor were significantly associated only with a decreased risk for alcohol dependence and drug abuse or dependence” (Kendler et al, 2003, p. 499). In another study involving adolescents, Bahr, Maughan, Marcos, & Li (1998) found that religiosity has a strong, negative association with peer drug use (Bahr, et al 1998). Favorable results were observed in another study, according to Chu (2007), with regard to outcome of religious behavior being “found to not only prevent the onset of delinquent behavior but also inhibit the continuation of drug use” (Chu, 2007, p. 674). Teens who were also active participants in worship services and activities, as reported by Sinha, Cnaan, & Gelles (2007), were less likely to smoke according to how increasingly religious he perceived himself to be with less overall risk behavior involvement as well.

Adults who were frequent attenders of religious services were much less likely than infrequent attenders to smoke cigarettes (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003, as cited by Guillum, 2005). Johnson, Jang, Larson, & Li (2001, p. 38), found “the negative direct effects of religiosity on delinquency remain significant,” and “are linked in some way to a deterrent effect (Johnson et al, 2001, p. 38).” Larson, Johnson, & Dilulio (1998) further maintained, “Commitment to religious values and beliefs can have both an immediate and a long-term impact on deviant or delinquent behavior” (Larson, Johnson, & Dilulio, 1998, as cited by *M. I. Publications*, 2000). One study also positively associated public religiosity as more protective against regular cigarette use among adolescents and as a benefit to community by emphasizing the “importance of multiple layers of influence on adolescent behaviors” as stated by (Bronfenbrenner, 1977; Jessor, 1992, as cited by Nonnemaker, McNeely, & Blum, 2006, p. 3086) who further maintained:

Such programs, by providing a ‘faith’ community can offer participants an alternative set of acquaintances that were around the person while using substances. Thus, in the context of youth smoking, religiosity might act as a buffer against negative peer pressure.

Church-based organizations were also credited with providing support to the family unit, in the Winett, Anderson, Whiteley, Wojcik, Rovniak, Graves, Galper, & Winett (1999) study, which followed up in the same study by concluding that religious organizations and churches are key settings for delivering viable health behavior inventions (Winett et al, 1999). In a study of members of one African American faith community, the importance of religiosity was influential toward increasing positive health-related behavior with 57% of those results associated with smoking attitude and practices (Kreuter, Lukwago, Clark, & Sanders-Thompson, 2003).

In another study by Hixson, Gruchow, & Morgan (1998), which was conducted primarily with white women, while smoking was not the emphasis of the research it was concluded that there was a direct relationship between religiosity and lower blood pressure, even though the reasons were unclear. The Hixson et al (1998, p. 547) study listed nine dimensions of religiosity and definitions for key terms while describing each:

1. *Intrinsic religiosity: a way of being religious that regards faith as a supreme value in its own right; the person finds motivation and meaning for life in their religion.*
2. *Extrinsic religiosity: a way of being religious that is utilitarian: useful for the self in granting safety, social standing, solace, and endorsement for one’s chosen way of life.*

- 3. Belief factor: the degree of acceptance of the prescribed doctrines of the Judeo-Christian religious tradition.*
- 4. Religious well-being: religious satisfaction; a concept that cuts across all other dimensions of religion.*
- 5. Organized religious activity: religious activities of an organizational nature such as church attendance and participation in Bible study or prayer groups; reflects in part the social aspects of religion.*
- 6. Nonorganized religious activity: religious activities of nonorganizational nature such as private prayer, reading devotional literature, and watching and listening to religious programs on television or radio.*
- 7. Religious knowledge: reflects knowledge about beliefs, writings, and rituals that make up one's religious tradition.*
- 8. Religious experiences: occasions defined by those undergoing them as an encounter between themselves and some supernatural consciousness.*
- 9. Religious coping: ways in which religion acts as a resource to help deal with stress, problems, or difficulties.*

Religiosity has also been defined by Neuman (1986, p. 76) as being “a set of personal attributes, skills, and preferences inspired or emphasized by religious ideology is expressed in the form of (1) religious activities such as church attendance or observance of religious codes of behavior,” and (2), as favorable for religious goods and services, according to his study which also indicates religiosity is otherwise considered an investment in “human capital” (Neuman, 1986, p. 76).

Some studies, therefore, effectively seemed to conclude that when specific

messages implied a necessary compliance to a given set of rules for membership, the motivation to submit to ordinances through conditional requirement serves to act as a protective factor for followers. However, coercible means suggest alternative understanding of the social aspect of religiosity's provision for protective factors for an effect in certain religious organizations involving religious *codes of behavior* as discussed by Neuman (1986).

Dudley, Mutch & Cruise's (1987) study concluded positively with results placing religiosity as key to abstinence of drug usage amongst members of the church of the Seventh-day Adventists. This denomination had a strong belief system ruling that members should abstain from tobacco and other substances deemed harmful to the body to the extent they would stand to lose membership in the church if they disregarded the policy (Dudley et al, 1987). Tuckey, Brewer & Williamson, (2002) acknowledged public feedback as an influence on motives, and cited the Ashford & Cummings (1983) study when referencing the public feedback as a "desire to protect one's ego and self-esteem from the threat of negative feedback" (Ashford & Cummings, 1983 as cited by Tuckey et al, 2002, p. 196). "Psychology has a central role to play in this transition, for the cornerstone of sustainability is behavior change" cited McKenzie-Mohr (2000, p. 531). Moreover, Bock et al (1997) finds that, "the more involved people are (by identifying as strongly religious, attending services, and belonging to religious groups), the more influential the moral message of their religious affiliations" (Bock et al, 1997, p. 99). The residual effect of biblical behavior codes imploring that "parent's train up their children in the way they feel it is right so when they are grown they won't depart from this teaching" (Stanley, 1977, p. 65) reportedly produce offspring who are established in

the fundamental faith of their upbringing. Calhoun, Cann, Tedeschi, & McMillan (2000) found that “although the general amount of reported religious participation did not independently predict growth, one aspect of a quest orientation to religious belief did” and openness to religious change was a factor in the amount of growth (Calhoun et al, 2000, p. 525). An example is the criteria of one who has an inner spiritual involvement, which was reportedly brought about by faith in the experiences for some study participants according to Kiel, Bruns, & Micke (2007), who concluded that both “spirituality and religiosity play a major role for cancer patients” (Kiel et al, 2007, p. S562).

Moreover, Campbell (2008, p.1) defined *spirituality* as “having a sense or power of something greater than self.” Campbell (2008, p.1) also observed:

In studying spiritual health, researchers have found that high levels of spirituality are associated with a number of positive outcomes. In studies that utilized adolescents, high levels of spiritual well being have been found to be negatively correlated with involvement in self-reported alcohol or other drug usage.

Bock, Cochran, & Beeghley (1987, p.89) pointed out in research that “the classical theorists saw religion as a key explanatory variable (Bock, et al, 1987, p. 89),” but the meaning of religiosity is usually fluid.

Important as well to a child’s emotional well being was the home domain, according to a qualitative study about the critical element of parental involvement into the school lives of their children. Bushnell’s (1997) study pointed out that there was a time when home and school did not overlap as each assumed its own place, and there was little to no intertwining of the two. Care was taken to not meddle in the others time or

space, and little has changed, unfortunately, says the author of that research. The study, however, gave social value to what was referred to as rituals, such as potluck gatherings to try change priorities by all involved and begin to create an atmosphere where the two could be socialized to cordially work hand-in-hand to create a better communication bond and produce a better balance for the child, teacher, families, and community as a whole (Bushnell, 1997). Buchanan (2006) studied the human condition using moral reasoning as a guide towards changing behavior to further health as the goal. Consistent with those goals, it was observed that, ““what is central to quality of life is the capacity to exercise choice in forming and pursuing an integrated and coherent life plan”” (Brock, 1993, as cited by Buchanan, 2006, p. 2724). It was proposed by Matthews (2002), that a child’s conception of himself is related to certain factors and influences he associates with those in authority and becomes the parents’ legal and moral obligation to provide a loving, safe, and supportive environmental structure in order to have what is needed for the child to grow into a normal adult (Matthews, 2002).

In one report regarding responsibility to child’s physical well being, Elliott & Larson (2004) maintained that for every three adolescents who received the physical health care they were in need of, two more lacked necessary treatment for a range of illnesses, chronic conditions or substance abuse. Currently, as a group, adolescents and young adults have worse health care access than all other age groups in the United States (Klein, 2000, as cited by Elliott & Larson, 2004, p. 303). Ary, Duncan, Duncan & Hops (1999), referred to (Patterson, Reid, & Dishion, 1999), and similar studies of the development model of antisocial behavior to discuss findings that suggested the nature of a child is to later exhibit anti-social behavior due to poor parenting skills. These skills

might lead to delinquency and drug use when parents create problems for their children through patterns of harsh and inconsistent disciplinary measures over time (Patterson, et al, as cited by Ary et al, 1999) or by further negligence, as disregarding dangerous habits such as smoking and the resulting Environmental Tobacco Smoke (ETS). ETS is “one of the most serious health hazards for children” (Collins, Levin, & Bryant-Stephens, 2007, p. 550).

Mutoh, Bonham, Kott, & Joad (1999) stated that secondhand smoke that passes from the end of the smoldering cigarette or through a mixture of exhaled mainstream smoke has adverse repercussions on the respiratory health of children as well as children who have early onset asthma and greater levels of asthmatic dysfunction (Mutoh et al, 1999). The secondhand smoke coming from cigarettes is also sometimes referred to as *passive smoke* (Ross, Stagliano, Donovan, Breitbart, & Ginsburg, 2001). Present data by Bonham, Kott, & Joad (1996) indicated that children exposed to this passive indoor secondhand tobacco smoke have a greater incidence of respiratory symptoms including “cough, mucus secretion, airway obstruction, and airway ‘hyperactivity,’” (Bonham et al, 1996, p. 1715). Researchers referred to those as severe symptoms associated with asthma in some studies, however, only 55% of respondents to a Pediatric assessment agreed they were “‘very comfortable’ with their ‘knowledge about the effects of ETS’” (Collins, Levin, & Bryant-Stephens, 2007, p. 549). It is with understanding that all parents have or should have “some idea that it was inappropriate to expose children to ETS,” according to Johansson, Halling, Hermansson, & Ludvigsson (2005, p. 455), but “their way of protecting the children ranged form ‘blowing the smoke away from the baby’ to strictly outdoor smoking (Johansson et al, 2005, p. 455).” With obvious dependence on smoking

and cigarettes addictive characteristics being so powerful, studies such as that by Kandel, Hu, Griesler, & Schaffran (2007), remarked that “the impact of prenatal maternal smoking may manifest itself later on in offspring smoking career” (Kandel et al, 2007, p. 35).

While smokers try to combat the increasing flow of intolerance to passive smoke with protests of their own, by insisting that ETS is not at fault (Jo, Oh, & Dong, 2004), establishments have responded with ready scientific data per the Surgeon General Report (1979 as cited by Mercer, Kolesnikova, Sonett, & D'Armiento, 2004) which shows there are thousands of toxic chemicals in the passive smoke. Smokers are introducing into the environment with each puff from their cigarette, thus putting everyone else involuntarily at risk (Mercer, Kolesnikova, Sonett, & D'Armiento, 2004), while 85% of sidestream ETS is being emitted by the smoker into the same atmosphere (2004). Secondhand smoke causes 3000 nonsmokers in the United States to fall victim to lung cancer and causes hundreds of thousand of children to suffer from unnecessary respiratory tract infections, according to the Center of Disease Control (CDC, 2004).

With regard to smoking initiation in one adolescent study, Jackson (1997) found that “compared to abstinent children, children who had initiated cigarette smoking reported more exposure to parent and friend smoking models” (Jackson, 1997, p. 689). These participants “reported less parental monitoring of smoking activity and less communication from parents about not smoking” (Jackson, 1997, p. 690) as well as less likely to get in trouble should their parents learn of their behavior. In addition, a study by Szabo, White & Hayman (2006, p. 2302) involved 12 to 17 year old students. It was determined by the study that by reducing the likelihood of experimentation with tobacco

in the home environment that, “home smoking bans were associated with a reduced likelihood of being a current smoker,” (Szabo, White & Hayman, 2006, p. 2302) regardless of their friends’ smoking behaviors (Szabo et al, 2006). A study involving smoking modeling in the adolescent’s home, according to Taylor, Conard, O’Byrne, Haddock, & Poston (2004), ensured that those of either gender were likely to become addicted to cigarettes because of a mother who was a smoker while only females “were more likely to smoke if their father smoked” (Taylor et al, 2004, p. 194). Bono, Arossa, Scursatone, Meineri, & Gilli (1996) maintained that passive exposure to smoke in the home showed that amongst three hundred thirty-three sixteen year old students with urinary analysis levels indicating the level of exposure, tobacco was detectable in 91% of those subjects sampled (Bono et al, 1996). Discussion about mothers’ attitudes about tobacco use and their concerns about whether their children smoked, according to Andersen, Leroux, Mared, Peterson, Kealey, Bricker, & Sarason (2002, p. 204) stated:

This study showed that mothers’ attitudes about tobacco use are associated with a statistically significant reduction in the odds of smoking by their adolescent children, but only in families in which there is no smoking parent present. This reduction is such that the prevalence of smoking by adolescents in households in which neither parent smokes and the mother holds strongly anti-smoking attitudes, is almost half that of adolescents from households in which a parent smokes or the mother does not hold strongly antismoking attitudes.

Eitle’s (2005, p 976) study found that, “when a teen reports having little exposure to deviant peers, living in a single-parent family actually serves as a protective factor (relative to living in two-parent families).” This was in addition to an increased risk of

drug use when they had increased exposure to deviant peers in the same living arrangements (Eitle, 2005).

A study by Yanez, Lopez, Serra-Batles, Roger, Arnau, & Roura (2006), indicated that “smoking prevalence among adolescents who live with a single parent is higher than those who live with both” (Yanez et al, 2006, p. 24). The authors of the study additionally stated this was in agreement with earlier studies that had been conducted in some European countries and in North America (Bjarnason, Davidaviciene, Miller, Nociar, Pavlakis, & Stergar, 2003; Tucker, Ellickson, & Klein, 2003, as cited by Yanez et al, 2006).

According to Wen, Chen, Muscat, Qian, Lu, Zhang, Luo, Liang, Han, Deng, Ou, & Ling (2007, p. 195-196), which conducted a study in China:

In terms of the environmental interaction with gender, we have found some important differences between males and females in the stratified analysis.

Interestingly, the father's smoking seemed to have greater influence on male adolescents, while the mother's did on females.

Studies also showed that communication between parent and child was important to having a less positive attitude for smoking behavior, (Huver, Engles, Vermulst, & Vries, 2007). In the study, which “was related to a more positive attitude and lower self-efficacy to refrain from smoking, neither the presence of house rules about smoking nor having a non-smoking agreement was significantly related to smoking cognitions” (Huver et al, 2007, p. 120). According to (Distefan, Gilpin, Choi, & Piece, 1998, p. 473), the influence of parents on adolescent smoking behavior indicated “there was a strong protective effect against progression to established smoking if adolescents reported

talking to parents first when they had serious problems” (Distefan et al, 1998, p. 473). Those parents “who valued their child as remaining a nonsmoker were more likely to take active efforts to achieve this goal,” according to Farnow, Chassin, & Presson, (1998, p. 464). It was stated by Farnow et al (1998, p. 464):

For mothers, smoking-specific parenting may be a more routine part of their parenting role, whereas for fathers, such actions may be mobilized only when they serve to implement important values.

The study indicated, “ex-smoking parents are a particularly interesting group in terms of their efforts to socialize their children about cigarette smoking” (Farnow et al, 1998, p. 465).

To further tobacco cessation outcomes in youth, Harakeh, Scholte, Vermulst, de Vries, & Engels (2004) indicated that influence on one’s child comes mainly by way of example in their own smoking behavior and good parenting practices. “Therefore, in prevention campaigns, parents should be informed that they play a role in their child’s smoking career, and should be given advice and information on how they can prevent their children from starting to smoke” (Harakeh et al, 2004, p. 959). According to Wang, Fitzhugh, Westerfield, & Eddy (1995, p. 202), it was important to note that, “for both male and female adolescents, the perceived approval of smoking from parents was significant across all ages” (Wang et al, 1995, p. 202). Moreover, Tilson, McBride, Lipkus & Catalano (2004) maintained that models in the family environment are influential for high levels of youth connectedness to serve as protective value against smoking behavior. The study further stated, “Unlike youth who were highly connected to a parent that did not smoke, youth who were highly connected to a parent who smoked

were as likely to have experimented with smoking a youth who were not (Tilson et al, 2004, p. 187)." In another study on adolescent's views of parental authority, Jackson (2002, p. 430) found that "approximately 1 in 5 respondents denied parental authority regarding tobacco and alcohol use," with Jackson (2002, p. 430) stating:

While on the verge of adolescence, one in five respondents believed that their parents should not have a say about use of tobacco or alcohol. These young people had a fourfold increase in the likelihood of current smoking when compared with peers who affirmed parental authority regarding smoking.

According to Andersen et al, (2002) it was maintained that "smoking and parental behavior have an interactive effect on children's risk for future smoking (Andersen et al, 2002, p. 204)." Moreover, the National Institute on Drug Abuse (NIDA.gov, 2008) assigned protective properties to the following:

- *a strong bond between children and parent;*
- *parental involvement in the child's life; and*
- *clear limits and consistent enforcement of discipline.*

Channing Bete Company confirmed that the leading causes of preventable behavioral problems were primarily associated with protective factors; if practiced consistently such actions were likely to be successful in achieving desired outcomes (CTC, 2004). Instruments like the Communities That Care Youth Survey have been a success in several communities to reliably assess risk and protective factors (SAMHSA, 2008). According to Dennis Romero, Acting Director for Substance Abuse Prevention, the CTC program was developed as a "tool to our prevention toolbox will assist in the implementation of the Strategic Prevention Framework," (SAMHSA, 2007, p. 1).

Risk Prevention Programs

Taking inventory of various views from students while incorporating new programs or modifying parts of functioning programs to fit the needs of its youth population, schools are making tangible efforts to bring about beneficial improvements. By participating in programs like Communities That Care, it will help them deal with ever changing behavioral patterns. Schools are also using the latest advances to try to halt problems that have gradually taken a toll on communities' and victimized youth. According to Catalano et al (2002), programs such as the Communities That Care have been developed to serve in several states as the need arises which "must attend to the 'whole child'" (Catalano et al, 2002, p. 233). The CTC survey tool has helped to identify risk factors as predictors of risk behavior. It will ultimately be used to reduce the dysfunction amongst adolescents as soon as it is acknowledged that risk factors are the leading cause of risk behavior in that community (CDC & Health Promotion, 2002, as cited by Hawkins, Catalano, & Arthur, 2002, p. 952) as was noted in the following goals:

To focus attention on the most pressing public health concerns, the Centers for Disease Control and Prevention has identified six preventable behaviors, usually initiated in childhood and adolescence, that contribute substantially to the most serious health problems, as well as associated educational and social problems, among residents of the United States. These six behaviors include alcohol and other drug use, risky sexual behaviors, tobacco use, behaviors that result in unintentional and intentional injuries, unhealthy dietary patterns, and physical inactivity.

Decades of research have shown that youth risk factors increase risk or problem behavior. It has been known since a 1950's Glueck's study found an astonishing 98% of five hundred delinquents had delinquent friends with only 8% of nondelinquents having delinquent friends (Glueck & Glueck, 1950, as cited by Matsueda, R. & Anderson, 1998). In the United States, one or more researchers point to additional evidence that suggested a link between various aspects of risk behavior in the adolescent high school population and life-threatening behavioral problems such as sexual behavior, vandalism, homicide or other antisocial behavior (Arnett, 1996, as cited by Wagner, 2001). The focus of attention has not been on risk behavior as a primary concern until more recent research on AIDS brought it to the forefront, according to Cho, Keller, & Cooper. This came after certain risk-taking behaviors began to have life and death consequences (Cho et al, 1999). Juniorologists eventually became familiar with a range of novel risk taking habits and extreme behavior invading youth culture. Those youth so inclined were sampling a wide array of extreme and risky activity, as was noted by LaBrie & Shaffer (2007, p. 387-388) in a study pertaining to gambling amongst youth:

The common elements can converge to produce the often-observed 'high' levels of comorbidity among different addictions and the phenomenon of 'addiction hopping' (i.e., moving from one apparently unique addiction to another). From this vantage point, research findings derived from the better studied addictions might inform gambling research, and gambling research can contribute to promoting the general health by clarifying the shared health risks associated with gambling and other expressions of addiction.

Nevertheless, even though the majority of adolescents do seem to involve

themselves in some type of risk behavior, not all engage themselves in risk activity (Arnett, 1992; Moffitt, 1993, as cited by Arnett, 1999). A study by Arnett (1995) reported that “numerous types of reckless behavior tended to be more prevalent among males than among females” (Arnett, 1995, p. 699), and “simply being a teenage boy constitutes a considerable risk for becoming delinquent” (Robins, 1991, as cited by Regnerus, 2003, p. 634). Fite, Colder, & O’Connor maintained that “high levels of peer delinquency were associated with increases in externalizing behavior,” (Fite et al, 2005, p. 1457). According to The National Institute on Drug Abuse (2008), intervention is necessary to help reduce the delinquency among adolescents, therefore, as soon as it is acknowledged that certain risk factors are becoming a cause of risk behavior (NIDA, 2008). Another cause for concern is the ease for which alcohol, tobacco, and drugs can be acquired. “The easy availability of products or substances may also influence individual attitudes and beliefs, because abundant availability provides a tacit message that the products are normative – that the products are acceptable, are likely to be safe” (Cohen et al, 2000, p. 148).

While incorporating new programs or modifying parts of functioning programs to fit the needs of its youth population, schools often coordinate efforts to build beneficial environments by becoming participants in programs that help them deal with ever increasing problems such as violence or anything that can gradually take a toll on adolescents and communities at large (Stein, Jaycox, Kataoka, Wong, Tu, Elliott, & Fink, 2003). Dishion, McCord, & Poulin (1999) suggested that young people who are characterized by high-risk behavior will “escalate their problem behavior in the context of interventions delivered in peer groups” (Dishion et al, 1999, p. 755). Testing

further substantiated the research hypothesis when “two randomized intervention trials experimentally corroborated this basic idea” (Dishion et al, 1999, p. 761). Baker (2006) stated in a similar study that, “antisocial behaviour affects many aspects of a child and young person’s development” (Baker, 2006, p. 475). Findings further suggested that programs using coercive tactics to bring about compliance to the problems surrounding risk taking amongst youth was not reacted to favorably. Coercion was the subject of an evaluation to determine whether force against ones will would be an acceptable choice for treatment of criminal offenders. When explored for relevance to behavior change in rehabilitation programs, Day, Tucker, & Howells (2004) offered research indicating coercion was met with resistance when used and was a controversial approach. Day et al (2004, p. 259) stated that “being pressured into a course of action is a similar concept” to seeking one’s will to be bent towards compliance.

Based on successful public health models of community action, the Communities That Care prevention planning system was designed to guide communities through the five most critical steps in the prevention process (channing-bete.com, 2004, p. 1):

- *community mobilization*
- *needs assessment*
- *plan development*
- *implementation*
- *evaluation*

The team of the system’s developers included J. David Hawkins and Richard F. Catalano who regarded it as a process which “empowers communities to use advances from prevention science to guide their prevention efforts” (SAMHSA, 2005).

In 2005, the Communities That Care program was acquired by the Center for Substance Abuse Prevention (Getty, 2008). The Substance Abuse and Mental Health Services Administration followed up with its assessment of the Communities That Care Youth Survey by yielding a pertinent statement (SAMHSA, 2008):

The Communities That Care Youth Survey is a reliable and valid instrument to measure the incidence and prevalence of substance use, delinquency, and related problem behaviors and the risk and protective factors that predict those problems in the community.

Prevention planning programs can become highly successful determinants in a community when community leaders prepare strategies as interventions to further understand health behavior, according to Feinberg, Greenberg, & Osgood (2004). They can enable one to determine what can be changed through steps or to otherwise realize what is beyond one's control. Efforts often employ health promotion program initiatives to further the goal of improving the quality of life in a target area. They "view CTC effectiveness as a construct representing the degree to which a coalition advances both the adoption of a prevention perspective among a community, and the coordinated implementation of empirically supported strategies" (Feinberg et al, 2004, p. 166).

According to Alexander, Comfort, Weiner, & Bogue (2001, p. 164), "effective partnership leaders look beyond the narrow interests of their own organization or constituency, even beyond the interests of the partnership itself, and focus primarily on the needs and priorities of the community as a whole" (Alexander et al, 2001, p. 164).

Health promotion is a partnership activity associated with community efforts to provide assessments and prevention efforts in light of public health issues to identify health

problems that focus on those health concerns, according to Straub, Deeds, Willard, Castor, Peralta, Francisco, & Ellen (2007). Frankish et al (1998, p. 287) further contended:

Health promotion has been defined as the process of enabling people to increase control over, and to improve their health (World Health Organization, 1986, as cited by Frankish, Milligan, & Reid, 1998). In turn, health promotion is not solely the responsibility of the health sector.

Behavioral health promotion in terms of predictive prevention programs for communities is designed to reinforce positive behavior or change negative behavior. A critical needs assessment will begin with the process of separating speculation and knowledge through education. With an appropriate analysis of results gathered from adequate reports to ensure a high degree of effectiveness, it is then validated by an observable or measurable outcome explained in terms of success or failure, which will “relate to health maintenance, to health restoration, and to health improvement (Glanz et al, 1997, p. 9).”

Cudney & Reinbold (2002, p. 217) maintained:

Organizations must demonstrate that they have identified these processes ... that they have in place on an ongoing course of improvement based on the collected data and the analysis of that data.

Often one looks to agencies, experts, universities, and professional health organizations for data, or one polls various audiences to learn a population’s attitudes. According to the Institute of Medicine (1988, as cited by Northridge, 2002, p. 1710):

In a free society, public activities ultimately rest on public understanding and support, not on the technical judgment of experts. Expertise is made effective

only when it is combined with sufficient public support, a connection acted upon effectively by the early leaders of public health.

Beginning to build trusting relationships and ground-up infrastructure to facilitate the help needed in communities takes time before influence in a successful community partnerships takes shape (CDC, 1997). Hawkins, Catalano, & Arthur (2002, p. 965) stated:

Using CTC, family-, school-, and youth-focused preventive actions are implemented in the context of a community where formal and informal leaders have joined to establish a shared vision for the future of the community's children, where this vision for positive youth development is repeatedly presented to the entire community, and where there is an ongoing invitation to community members to support and participate in the efforts to move toward this vision based on prevention science.

While conducting educational research Sallee (2002, p. 1) stated, “Roanoke County Schools had chosen to survey students to develop an understanding of the choices youth are making in their community.” Sallee (2002, p. 2) reported that the “data provides Roanoke County with a data source to establish baselines on student health risk behaviors (Sallee, 2002, p. 2). Studies using surveys as an instrument of inquiry, are chosen because “not surprisingly youth are less forthcoming about substance use in household surveys where their parents are nearby than in school where they have privacy from family members” (Aguilar & Pampel, 2006, p. 1225). Using research from these findings, juniorologists continue to search for answers and understanding of substance use in adolescence and to create interventions to reduce tobacco use

Summary

An investigation of the Communities That Care Youth Survey, which evaluated Roanoke County School participants who answered multiple choice questions to determine their expressed perceptions concerning many topics of importance in their life domains with focus on attitudes regarding family, school, and community, yielded data from a fairly homogeneous group of public school students. An experienced professional administered the questionnaire to each of 2981 students in a public school population of 6th through 12th grade individuals in 2003. Gender for all grades was evenly divided between male (44.8%, N = 1355) and female (44.4%, N = 1342) participants. The hope was to determine any potential risk factors resulting in risk activity in an effort to gather data and determine the results of such for manifested risk behaviors, with the activity of tobacco use associated with a small percent of youth smokers from that particular age group (CBC, 2004, p. 1). The study was conducted in search of relationships between those surveyed group subjects and tobacco use using understudied test items for study questions taken from the Communities That Care Youth Survey.

The Channing Bete Company, Communities That Care Youth Survey (2002) had been instrumental as a sampling tool having been dispensed voluntarily to students (CTC, 2004, p. 1) to identify:

20 risk factors for reliably predicting adolescent problem behaviors in areas that include: alcohol and other drug use, delinquency, dropping out of school, and violence, amongst other negative activities that can impact youth development and achievement.

The Communities That Care questionnaire contained various questions involving students' attitudes. Questions covered many risk activities, which have become the focus of a growing concern in the given population to whether they had chosen to be participants of various risk activities, but all did not answer every question. These questions were intended to measure the extent for which participants regarded the risks involved in participation of various risk behaviors. The results regarding various questions about issues assessed uncovered perceived risk to oneself and the perceived risk to others. The test population self-reported in areas such as smoking, drinking, using drugs or taking part in any number of other risk activity in one's peer group where it was the popular thing to do, with data measurement further compiled in the area concerning those view one had about smoking cigarettes. In order to better understand adolescents and their thinking about this dangerous activity, the risk-related study questions were selected from tobacco topics in various domain areas for all grade levels after 129 data groups had been considered to establish the risk behavior that was most pressing for the research.

The gravity of the problem was discussed in the *Literature Review* in Chapter 2. According to Forten (2003), during adolescence, friends at school are a very influential aspect to social development where environments avail them the opportunity to have daily contact with one's peers, but many literature reviews on adolescent tobacco use have indicated that influential peer groups are also significant to one's likelihood of becoming a smoker (Conrad et al., 1992, Kobus, 2003, Leventhal & Cleary, 1980, McAlister et al, 1979, Sussman et al., 1995, Tyas & Pederson, 1998 as cited by Hoffman, Monge, Chou, & Valente, 2007), and there is a greater risk should the adolescent have

more than one friend who is a smoker (Donato, Monarca, Chiesa, Feretti, & Nardi, 1994 as cited by Hoffman, Monge, Chou, & Valente, 2007). According to by Hill et al (1976), however, association with one's peer group is necessary for maturity. In spite of any negative effects, therefore, peer relations should be fostered (Hill et al, 1976).

Because tobacco causes frequent problems or chronic disease (U.S. Public Health Service, 2000) for many who abuse it or an addiction is formed from its use (Minna, 2003), the mission of this study was grounded in previous knowledge from associated adolescent risk prevention programs aimed at improving public support (Institute for Community Peace/National Funding Collaborative on Violence Prevention, as cited by Zeldin, 2004) and through relevant background studies by a variety of researchers with regard to the exploration of theory as its foundation. Focus was on selected samples of findings from each study of risk and protective factor results from the CTC questionnaire, which proved significant and applicable to the study at hand. These types of programs are usually organized by schools as was this one, or by coalitions of interest groups who strive to achieve outcomes influenced by risk factors, such as adolescent addictions and alcoholism. For example, when alcohol is used before one turns 15 years old that individual has four times a greater chance of developing alcoholism than had he waited until age 21 to consume alcohol (NCADD, 1998). Coalitions in the Roanoke Valley, such as Roanoke Area Youth Substance Abuse Coalition (2005), built foundations for organizations to curtail substance abuse and other at risk behavior in Virginia, as was observed by that organization's source for having actively initiated and introduced new strategies over time to lower alcoholism amongst youth while having great hope for improving overall protective factors through its coordinating efforts (RAYSAC, 2005).

Among the risk behaviors that are of great concern, however, is the addiction to nicotine. Nicotine is one of the most abused substances amongst the popular risk activities and is a growing problem in adolescent populations today. Juniorologists, therefore, are making every attempt to find solutions with various programs and interventions geared to this segment of society. Bronisch, Hofler, & Lieb (2007) has even found a positive association between individuals and susceptibility to suicide attempts as having a higher dependency rate in smokers as compared to nonsmokers (Bronisch et al, 2007).

There are many options when embarking on the quest to understand the attitudes and issues that face today's youth. The main objective of this paper stemmed from interest in the Communities That Care Youth Survey data and review of literature regarding adolescent tobacco use as a risk activity. It was suggested that applications of principles within the Communities That Care prevention planning system were relevant. The term "religiosity" was operationalized to identify those in the study population who were involved with attendance at religious services and activities, with terminology for religiosity described in one area pertaining to the Hixson et al (1998) study for the related definition of religious activity: "those religious activities of an organizational nature such as church attendance and participation in Bible studies or prayer groups" (Hixson et al, 1998, p. 52). If adolescents were to show a greater tendency towards abstinence by following clear rules in the home regarding ATOD use, this would result in the protective factor termed "parent efficacy." Therefore, in theory there could be a protective relationship produced through association among the greater population of adolescents where these factors of influence would have implications.

The CDC (1997) noted that communities need to mobilize in order to participate in a longitudinal building effort. The Coordinator of Guidance and Counseling Services of the Roanoke study, Mrs. Kiker, commented that both the value of the Communities That Care and Youth Risk Behavior Surveys are national surveys, which would be helpful with the effort to determine services for young people while adding that the Youth Risk Behavior Survey should be important for a longitudinal study of trends in student behavior (RCSB, 2006). The community mobilization and training component of Communities That Care is guided theoretically by the *social development model* (Hawkins, et al, 2002). The Communities That Care umbrella company Channing Bete had given directional control at every level of the community with rewards for achievement (CADCA, 2004), while providing access to resources during all implementation phases in order to see effective change (CDC, 1997). These programs were designed to address areas of risk concern such as tobacco use as an addictive behavior amongst adolescents.

The examination of pertinent juvenile and adolescent behavior identified specific detriments such as contributions of peers-related interactions with at-risk youth having behavioral problems. A risk factor seemed to be “an event or organic or environmental condition which increases the probability that a young person will have emotional or behavioral problems,” according to Garmezy (1983, as cited by Forten, 2003, p. 676). One fact of importance to the association of risk factors to risk behavior was that “individual and environmental factors interact with each other” (Fortin, 2003, p. 676). Cloud & Townsend (1998, p. 28) suggested:

Children raised with good boundaries learn that they are not only responsible for

their lives, but also free to live their lives anyway they choose, as long as they take responsibility for their choices..

Sinha & Cnaan (2004, as cited by Sinha, Canaan, & Gelles, 2007, p. 672) additionally maintained:

Given the fact that youth who value religion and participate in congregations' activities are less involved in risk behaviors, it is possible that at-risk youth, in particular, may alter some of their behaviors if they are associated with a caring environment that stresses risk avoidance, pro-social behaviors, positive role models, and healthy relationships.

Parent efficacy was employed as one of two protective variables in the current study with meaning from those influences conceptualized to yield an understanding of the parents' ability to *produce an effect*, or *efficacy* (Merriam-Webster, 2008). This established an association within the student's domain with resulting answers given by each as to whether clear ATOD use rules at home were a policy, although studies abound with broader meaning for the parent's influence in the home. *Religiosity* as a second protective factor would be evidenced with participant's expressed frequency of attendance at religious services and activities.

Andersen et al (2002) examined whether parents modeling anti-smoking behavior presented a sufficient argument for parents who impose major influence over their children's choices regarding decisions about tobacco use. They cautioned that "literature is not consistent, with the strength of the association between parental attitudes and adolescent smoking, when found, varying greatly" (Murray, Kiryluk, & Swan, 1985; McNeill, Jarvis, Stapleton, Russell, Eiser, & Gammie, et al, 1988; Tyas & Pederson,

1998; Chassin, Presson, & Sherman, 1984; & Nolte, Smith, & O'Rouke, 1983, as cited by Andersen et al, 2002, p. 198). Murray, Kiryluk, & Swan (1985, p. 173) contended that “findings confirm that parental smoking behaviour and attitudes are an influential factor in the development of smoking among adolescents” (Murray et al, 1985, p. 173). A Harrell, Bangdiwala, Deng, Webb, & Bradley (1998), study suggested:

Knowledge of predictors of early initiation of smoking is vital if we are to develop appropriate interventions targeted at those most at risk for starting smoking. This is particularly important since studies have shown that beginning cigarette smoking at an early age increases the risk of smoking-related disease.

Sargent, Mott, & Stevens (1998) had already examined factors to determine an association, if any, between two hundred seventy-six adolescents in the age range of 12 years to 18 years old who smoked and the health risks from doing so. It was found that 31.9% of these participants smoked 10 or more cigarettes a day (Sargent, Mott, & Stevens, 1998). Evidence showed that at the same time, some of the leading risk behaviors tended to start occurring in various age groups beginning in adolescence. In literature summaries of the National Council on Alcoholism and Drug Dependence (1999), it was noted that using drugs or consuming alcohol and other harmful substance at an early age is an indication that one will likely use alcohol or drugs in later life (NCADD, 1999, p. 78).

While conducting behavior and addiction research, Prochaska (1996) maintained a belief in interventions as having an impact on problems such as smoking with programs “to be able to respond to the huge unmet needs and the great opportunities related to the

treatment of addictions" (Prochaska, 1996, p. 731). In changing behavior to further health as the goal, Buchanan (2006) identified in *Healthy People* 2010 those ideals for improvement of the quality of life. It was apparent that further educational research of adolescent risk activity is an attainable goal in order to reduce tobacco use and other risks by providing a framework of various approaches. Mercer, Green, Rosenthal, Husten, & Khan (2003, p. 1074S) suggested certain strategies:

1. *Clinical intervention and management,*
2. *Educational strategies,*
3. *Regulatory efforts,*
4. *Economic approaches, and*
5. *The combination of all of these into comprehensive programs that address multiple facets of the environment simultaneously.*

Selecting popular at-risk topics for study and preparing recommendations for future practices should result in creating awareness for the benefit of the adolescent population. However, if smoking patterns continue at the current rate, the Center for Disease Control states that deaths from tobacco-related disease will escalate into the tens of millions. This will contribute to the cost of human life well beyond the current number, which now amount to 438,000 premature deaths yearly (CDC, 2005). Even if adolescents are smoking cigarettes just to appear to be more mature (Turner, et al, 2005), it is imperative to introduce appropriate measures or solutions into the equation as protective factors which are vital efforts to curb this damaging risk activity (CDC, 2003). Research indicates that society must learn what the attitudes of contemporary youth are.

CHAPTER 3

METHODOLOGY

Introduction

A meta-analysis of one comprehensive data set of public school students in southwest Virginia served as an underpinning of the methodology. In order to examine relationships analyzed in this survey population of adolescents, descriptive data was used to assess relationships between two (2) select protective variables and six (6) tobacco variables within the participant's environment to determine understanding of tobacco use as a risk activity in the total population. The following research hypotheses directed this study:

Research Questions

1. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student having ever smoked cigarettes?
 H_0 : There is no relationship between HOME HAS ATOD USE RULES and EVER: SMOKED CIGARETTES.
2. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and how old the student was when he first smoked cigarettes?
 H_0 : There is no relationship between HOME HAS ATOD USE RULES and AGE: FIRST SMOKED CIGARETTES.
3. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student's perception of how wrong his parents feel it would be for him to smoke cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and
PARENT'S ATTITUDE: HOW WRONG CIGARETTES.

4. Is there a significant relationship between the student's attendance in religious services or activities and how wrong the student thinks it is for someone his age to smoke cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and
SMOKE CIGARETTES: HOW WRONG.

5. Is there a significant relationship between the student's attendance in religious services or activities and the student having 4 best friends in the past year who smoked cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and
HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES.

6. Is there a significant relationship between the student's attendance in religious services or activities and how cool the student thinks it is for someone his age to smoke cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and ARE
YOU COOL IF: SMOKE CIGARETTES.

Sample

Two thousand nine hundred and eighty-one ($N = 2,981$) 6th through 12th grade students who participated in the Communities That Care Youth Survey (CTCYS) comprised the sample used in this study. Of the 2,981 students, 44.4% ($N = 1342$) were female and 44.8% ($N = 1355$) were male.

Background

Parents were notified their student would be administered a survey questionnaire to which the student would voluntarily provide answers relating to incidents in their life. According to Kiker (2006), “the school system is required by the Pupil Protection Rights Amendment to notify parents of their right to opt their child out,” as is the customary practice (Kiker, 2006, as cited by Roanoke County School Board meeting notes, 2006, p. 13), with regard to the school district’s policy of surveying students. Students were asked to recall information with reference to each domain experience and relate it to a choice from selections of numerically assigned responses on the questionnaire.

The 2003 study consisted of a quality survey that has been referred to by Perdue Pharma (2004) as “the ‘Gold Standard’ for prevention planning based on proven science and research” (Perdue Pharma News Release, 2004, p. 1). Several larger national foundations made grants available in this effort with gifts of funding by “partnering with community foundations on a variety of national strategic initiatives,” as discussed by Carmen (2001, p 13). Jo Ann Burkholder, Director of the Roanoke County Schools Prevention Program proclaimed, “The \$25,000 grant from Purdue helped us to better focus our community prevention efforts - using science-based prevention to get to the root of the problem” (Burkholder, 2004, as cited by Perdue Pharma, 2004, p. 1). Valente’s (2005) expertise of health promotion programs, evaluation processes, and his authority on the subject when performing comprehensive research studies, including questionnaire design and interview methods (Walton, 2002) suggested gathering data this way was a proven and readily accepted method to employ in an assessment.

According to Vitolins, Rand, Rapp, Ribisl, & Sevick (2000), assessment

strategies for outcomes must have demonstrated validity and reliability if they are to be employed with confidence (Vitolins et al, 2000, p. 189S & p. 190S), as these concerns were necessary to address. Involvement of Likert's "summated rating scale is one that consists of several items, responses to which are summed to yield a single score" (Pedhazur, & Schmelkin, 1991, p. 122), and is widely used to measure attitudes (Ary, Jacobs, & Razavieh, 1974, p. 224). Likert standardized "the content analysis of interview responses" (Seashore & Katz, 1982, p. 852), which was necessary in assessing attitudes measuring the level of agreement so the patterns of responses could be further evaluated in the current study, based on the hypotheses concepts of the variables and observed relationships to one another.

Abbreviated labeling of CTCYS variables would identify the study factors when referencing in text in order to guard against confusion while discussing the sample data, for example, "Have you ever smoked cigarettes?" – (EVER: SMOKED CIGARETTES?), "How old were you when you first: Smoked a cigarette, even just a puff?" – (AGE: FIRST SMOKED CIGARETTES?), "How wrong do your parents feel it would be for you to: Smoke cigarettes?" – (PARENT'S ATTITUDE: HOW WRONG CIGARETTES?), "How wrong do you think it is for someone your age to: smoke cigarettes?" – (SMOKE CIGARETTES: HOW WRONG?), "Think of your four best friends (the friends you are closest to). In the past year (12 months), how many of your best friends have: Smoked cigarettes?" – (HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES?), "What are the chances you would be seen as cool if you: Smoked cigarettes?" – (ARE YOU COOL IF: SMOKE CIGARETTES?), "How often do you attend religious services or activities?" – (ATTENDS RELIGIOUS SERVICES?), and "My family has clear rules about alcohol, tobacco, and drug use?" – (HOME HAS ATOD USE RULES?).

Instrumentation

Instruments of inquiry are often employed to understand an existence of relationships, as was the Communities That Cares Youth Survey. “Communities That Care® is a registered trademark and service mark of Channing Bete” (Perdue Pharma, 2004, p. 1).¹ The data assessment for this study, which included variables obtained from the Likert-type youth-completed questionnaire, was designed to explore pertinent data through means such as cross-tabulation of variables within the CTCYS study. Smith & Sugden (1988) stated that “a survey is a study in which the scientist can control the selection of units for which responses will be observed” (Smith et al, 1988, p.166), and “without samples research cannot be conducted,” maintained Yarcheski & Mahon (2007, p. 170). Patterns of response were then evaluated in the current study by examining the responses from the risk and protective questions through a nonparametric test method. The completed data set of observed sample responses for all combined grade levels were interpreted using statistical analysis to measure the detailed categorical information by comparing the frequency distribution data with a Chi-square test of independence set at the .05 level (2-sided), which would be determined by the confident level of interaction observed between the risk and protective variables. This study used the Statistical Program for the Social Sciences (SPSS) as a statistical analysis program, which aided the exploratory research and resulted in explanatory implications of the data involving parent efficacy and religiosity protective factors to determine what degree the various risk factors were relevant to the CTC student population.

¹ *Communities That Care® Youth Survey, Channing Bete Company, Inc.* (2002). Permission for use of material for this study has been granted through SAMHSA: The Center for Substance Abuse Prevention, <http://preventionplatform.samhsa.gov>

Survey

In 2003, the public schools of Roanoke County, Virginia, conducted a confidential questionnaire assessment with voluntary student subjects to examine their attitudes toward levels of risk association in their environment in accordance to the responder's family, community, and school domains. Students were asked to recall information with reference to their domain experiences and then relate that to one choice from a selection of numerically assigned responses on the questionnaire (e.g., "Schoolwork is meaningful and important: 0 Always – 4 Never," CTCYS, 2004). This assessment elicited detailed information about students' involvement with alcohol, tobacco, or drug use and perceived norms, including expectations regarding the use of such substances and other extreme issues (i.e., whether the student had been arrested or ever carried a gun to school). Questions dealt with a variety of topics, including the student's relationship with parents, siblings, peers, neighbors, teachers, school, and communities. Examples of other behavior assessed was the self-reported involvement in criminal behavior (i.e., theft, weapon use) and student's attitudes involving the same behavior, intended to measure the extent for which the individual regarded risk involvement through participation in these activities, however, among variables for those who indulged in various acts of random risk behavior, "direct questions about sensitive issues often results in a bias component of error" (Sheers & Dayton, 1988, p. 969), therefore, a survey is one good alternative.

Tobacco use risk factors and environmental protective factors were further extrapolated to be evaluated as the current study variables from the Communities That Care Youth Survey, which was used with permission of Patricia B. Getty, Ph.D., 2009.

Data Analysis

Research had supported both parental involvement in student activities and faith-based programs as being positive message sources, according to Bartkowski (2007) and others as “valuable tools for preventing drug use among American teens” (2007, p. S192), therefore, six (6) nominal risk variables, along with two (2) nominal protective variables with assigned values were selected from the CTCYS to be further evaluated:

U3 Have you ever smoked cigarettes?

0 (No) – 4 (Regularly now)

Q60B How old were you when you first: Smoked a cigarette, even just a puff?

0 (Never have) – 8 (17 or older)

Q74B How wrong do your parents feel it would be for you to: Smoke cigarettes?

0 (Very wrong) – 3 (Not wrong)

Q67B How wrong do you think it is for someone your age to: smoke cigarettes?

0 (Not wrong) – 3 (Very wrong)

Q58A Think of your four best friends (the friends you are closest to). In the past year (12 months), how many of your best friends have: Smoked cigarettes?

0 (None) – 4 (4)

Q59A What are the chances you would be seen as cool if you: Smoked cigarettes?

0 (No) – 4 (Yes)

Q54 How often do you attend religious services or activities?

0 (Never) – 4 (About once a week or more)

Q83 My family has clear rules about alcohol and drug use.

0 (NO!) – 4 (YES!)

CHAPTER 4

RESULTS

The purpose of this study was to determine the relationship between selected risk and protective factors and tobacco use behavior among adolescents. The study investigated the significance of relationships in the various age groups of adolescents who self-reported responses between select protective and risk questions and their expressed perceptions from a range of choices involving views of tobacco use activities. The questions were extrapolated from the previously administered questionnaire. In order to examine interactions analyzed in this survey population of adolescents, the descriptive data was aimed at assessing associations within the participant's environment to determine understanding of tobacco use as a risk behavior in the adolescent population.

Research Questions

1. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student having ever smoked cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and EVER: SMOKED CIGARETTES.

2. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and how old the student was when he first smoked cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and AGE: FIRST SMOKED CIGARETTES.

3. Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student's perception of how wrong his parents feel it would be for him to smoke cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and PARENT'S ATTITUDE: HOW WRONG CIGARETTES.

4. Is there a significant relationship between the student's attendance in religious services or activities and how wrong the student thinks it is for someone his age to smoke cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and

SMOKE CIGARETTES: HOW WRONG.

5. Is there a significant relationship between the student's attendance in religious services or activities and the student having 4 best friends in the past year who smoked cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES.

6. Is there a significant relationship between the student's attendance in religious services or activities and how cool the student thinks it is for someone his age to smoke cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and ARE YOU COOL IF: SMOKE CIGARETTES.

Findings

Results for research questions 1 – 6 will be explained with an individual description of each finding in relation to:

1. Study question and hypothesis statement
2. Description of cross-tabulation characteristics of data
3. Result of each chi-square test per categorical variable pair
4. Chi-square risk and protective comparison of frequency data
5. Summary of research results

Study Question #1 & Hypothesis (H_0) Statement

Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student having ever smoked cigarettes?

H_0 : There is no relationship between EVER SMOKED: CIGARETTES and HOME ATOD USE RULES (Table 1).

Table 1**Hypothesis Statement & Test Level Set – HOME HAS ATOD USE RULES & EVER: SMOKED CIGARETTES**

Hypothesis (H_0) Statement Research Question [#] 1	alpha = .05
H_0 : There is no relationship between (HOME HAS ATOD USE RULES?) and (EVER: SMOKED CIGARETTES?).	χ^2 (12, N = 2810) = 273.777 $(p \leq .05)$, Significant, reject null

*1 cells (5.0%) have expected count less than 5. The minimum expected count is 4.65.

Cross-tabulation Characteristics of Data Set – Study Question [#]1

A total number of students (N = 3008) answered EVER: SMOKED CIGARETTES. A total number (N = 2819) answered HOME HAS ATOD USE RULES (N = 2819). Of those who responded to both questions (N = 2810), 70.0% stated *Never* to EVER: SMOKED CIGARETTES along with 54.1% stating *YES!* to HOME HAS ATOD USE RULES. An additional 396 (13.1%) of the students stating they had smoked only *once or twice*, 195 (6.5%) of participants reporting they had smoked *once in a while* but *not regularly now*, 113 (3.7%) of responders indicating that they had smoked *regularly in the past*, and 190 (6.3%) of the youths admitting they were *regular smokers now* (Table 2).

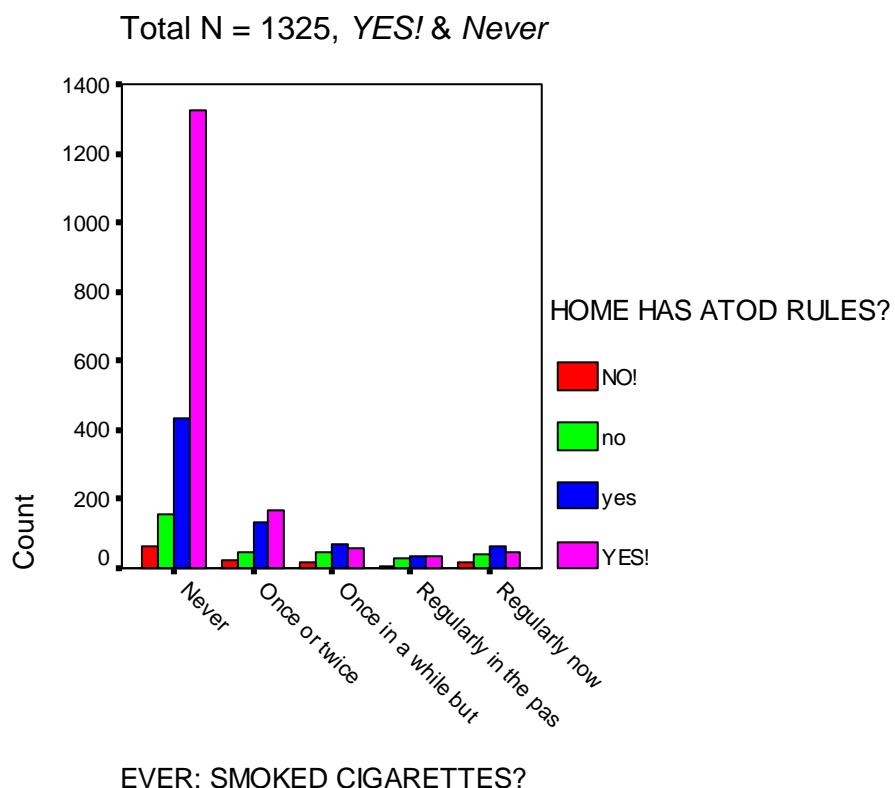
Table 2**Cross-tabulation Characteristics of Data Set – HOME HAS ATOD USE RULES & EVER: SMOKED CIGARETTES**

<i>Ever: Smoked Cigarettes?</i>	Never	Once or twice	Once in a while but not regularly now	Regularly in the past	Regularly now	Total
<i>Home Has ATOD Rules?</i>						
NO!	66	21	16	7	18	128
no	157	46	45	30	42	320
yes	432	131	68	33	65	729
YES!	1325	170	57	32	49	1633
Total	1980	368	186	102	174	2810

From the total number of students ($N = 2114$) expressing *Never* to the question EVER: SMOKED CIGARETTES along with the total number of students answering *YES!* ($N = 1635$) to HOME HAS ATOD USE RULES, those who replied to both of the questions did so by most often selecting the responses *Never* and *YES!* ($N = 1325$). A substantially larger number of total participants, therefore, answered both HOME HAS ATOD USE RULES and EVER: SMOKED CIGARETTES with these two responses and in greater proportion than in any other combination selected (Fig 1).

Figure 1

HOME HAS ATOD USE RULES & EVER: SMOKED CIGARETTES



Result of Chi-square Test for Categorical Variable Pair ^{# 1}

Chi-square analysis suggested a strong interaction between the parent efficacy variable HOME HAS ATOD USE RULES and the tobacco use variable EVER: SMOKED CIGARETTES. The first research question was statistically significant at the 0.05 level (2-sided) result of .000, which indicated an association between the two variables. This interaction is evidence that the relationship did not occur merely by chance. The null hypothesis (H_0) was rejected (Table 1).

Study Question #2 & Hypothesis (H_0) Statement

Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and how old the student was when he first smoked cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and AGE:

FIRST SMOKED CIGARETTES (Table 3).

Table 3**Hypothesis Statement & Test Level Set – HOME HAS ATOD USE RULES & AGE: FIRST SMOKED CIGARETTES**

Hypothesis (H_0) Statement Research Question [#] 2	alpha = .05
H_0 : There is no relationship between (HOME HAS ATOD USE RULES?) and (AGE: FIRST SMOKED CIGARETTES?).	χ^2 (24, N = 2790) = 255.715 ($p \leq .05$), Significant, reject null

*7 cells (19.4%) have expected count less than 5. The minimum expected count is 1.06.

Cross-tabulation Characteristics of Data Set – Study Question [#]2

A total number of students (N = 2974) answered AGE: FIRST SMOKED CIGARETTES while a total number of students (N = 2819) answered HOME HAS ATOD USE RULES. Many of the participants stated they *Never have* (67.6%) smoked - even just a puff to AGE: FIRST SMOKED CIGARETTES. Of those students who answered HOME HAS ATOD USE RULES, the response most often selected was *YES!* (54.1%). Two hundred sixty-five (8.8%) of the students expressed that they were *10 or younger* when they first took at least one puff from a cigarette, 113 (3.7%) of participants reported age *11*, and 162 (5.4%) had taken a first puff from a cigarette at age of *12*, 138 (4.6%) admitted they had begun to smoke with their first puff at age *13*, 95 (3.1%) had a first puff from a cigarette at age *14*, 87 (2.9%) replied they had taken a first puff at age *15*, 44 (1.5) stated they took a puff from a cigarette at *16*, and the remainder of the student group, 26 (.9%) who answered this question, maintained they had a first puff from a cigarette when they were *17 or older* (Table 4).

Table 4
Cross-tabulation Characteristics of Data Set – HOME HAS ATOD USE RULES & AGE: FIRST SMOKED CIGARETTES

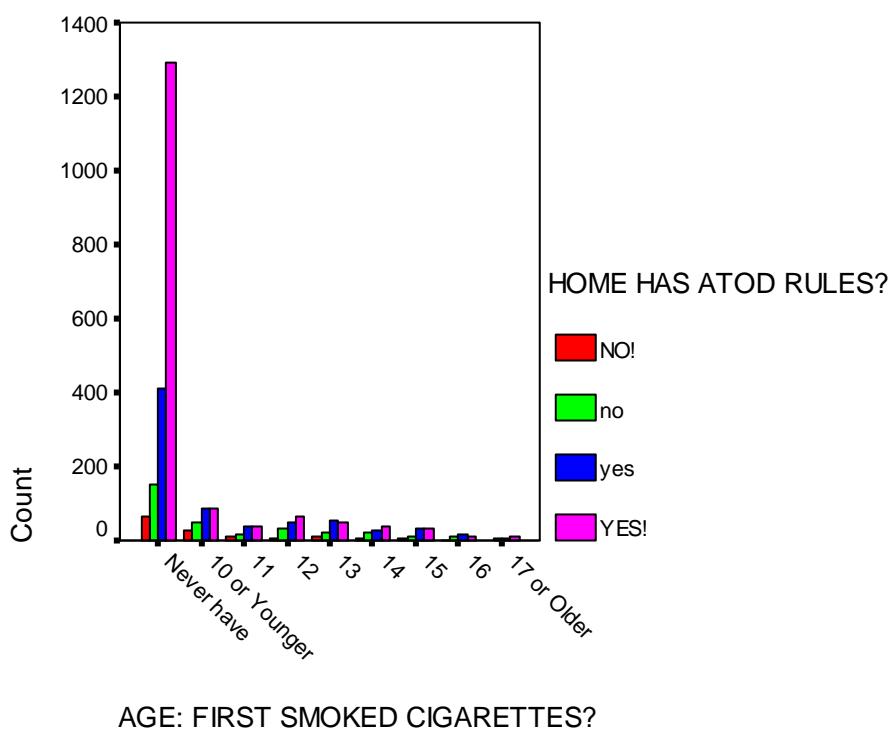
<i>Age: First Smoked Cigarettes?</i>	Never have	10 or younger	11	12	13	14	15	16	17 or older	Total
<i>Home Has ATOD Rules?</i>										
NO!	67	26	11	7	9	3	4	2	0	129
no	151	51	17	32	22	20	11	11	3	318
yes	410	86	39	47	52	28	34	17	8	721
YES!	1294	86	38	64	50	36	30	12	12	1622
Total	1922	249	105	150	133	87	79	42	23	2790

A total number of students ($N = 2044$) expressed *Never have* to the question AGE: FIRST SMOKED CIGARETTES. A total number of students ($N = 1635$) answered *YES!* to HOME HAS ATOD USE RULES. A substantially larger number of total participants ($N = 1294$) answered both HOME HAS ATOD USE RULES and AGE: FIRST SMOKED CIGARETTES with *Never have* and *YES!* with greater responses to these two answers than in any other combination selected (Fig 2).

Figure 2

HOME HAS ATOD USE RULES & AGE: FIRST SMOKED CIGARETTES

Total N = 1294, YES! & Never have



Result of Chi-square Test for Categorical Variable Pair ^{# 2}

Chi-square analysis suggested a strong interaction between the parent efficacy variable HOME HAS ATOD USE RULES and the tobacco use variable AGE: FIRST SMOKED CIGARETTES. Chi-square analysis identified a statistically significant finding of .000 at the 0.05 level (2-sided) for study question ^{# 2} and a high probability of association between the two variables, which does not appear to have happened by chance. The null hypothesis (H_0) was rejected (Table 3).

Study Question #3 & Hypothesis (H_0) Statement

Is there a significant relationship between parents having clear alcohol, tobacco, and drug use rules in the home and the student's perception of how wrong his parents feel it would be for him to smoke cigarettes?

H_0 : There is no relationship between HOME HAS ATOD USE RULES and

PARENT'S ATTITUDE: HOW WRONG CIGARETTES (Table 5).

Table 5**Hypothesis Statement & Test Level Set – HOME HAS ATOD USE RULES & PARENT'S ATTITUDE: HOW WRONG CIGARETTES**

Hypothesis (H_0) Statement Research Question [#] 3	alpha = .05
H_0 : There is no relationship between (HOME HAS ATOD USE RULES?) and (PARENT'S ATTITUDE: HOW WRONG CIGARETTES?).	χ^2 (9, N = 2801) = 414.096

($p \leq .05$), *Significant, reject null*

*1 cells (6.3%) have expected count less than 5. The minimum expected count is 2.81.

Cross-tabulation Characteristics of Data Set – Study Question [#]3

A total number of students (N = 2968) answered PARENT'S ATTITUDE: HOW WRONG CIGARETTES. A total number of students (N = 2819) answered HOME HAS ATOD USE RULES. Of the students who answered both of these questions (N = 2801), most of the students indicated their parents would feel smoking cigarettes for the student was *Very Wrong* (77.8%) in response to PARENT'S ATTITUDE: HOW WRONG CIGARETTES while also stating *YES!* (54.1%) to HOME HAS ATOD USE RULES. Three hundred ten students (10.3%) stated their parents would feel smoking cigarettes for the student was *Wrong*, 149 (4.9%) of those reporting thought their parents would feel smoking cigarettes for the student was *A little bit wrong*, and 64 (2.1%) maintained that their parents would feel smoking cigarettes for the student was *Not at all wrong* (Table 6).

Table 6**Cross-tabulation Characteristics of Data Set – HOME HAS ATOD USE RULES & PARENT'S ATTITUDE: HOW WRONG CIGARETTES**

<i>Parent's Attitude: How Wrong?</i>	Very wrong	Wrong	A little bit wrong	Not wrong at all	Total
<i>Home Has ATOD Rules?</i>					
NO!	83	15	15	14	127
no	179	74	49	15	317
yes	518	138	52	22	730
YES!	1517	73	26	11	1627
Total	2297	300	142	62	2801

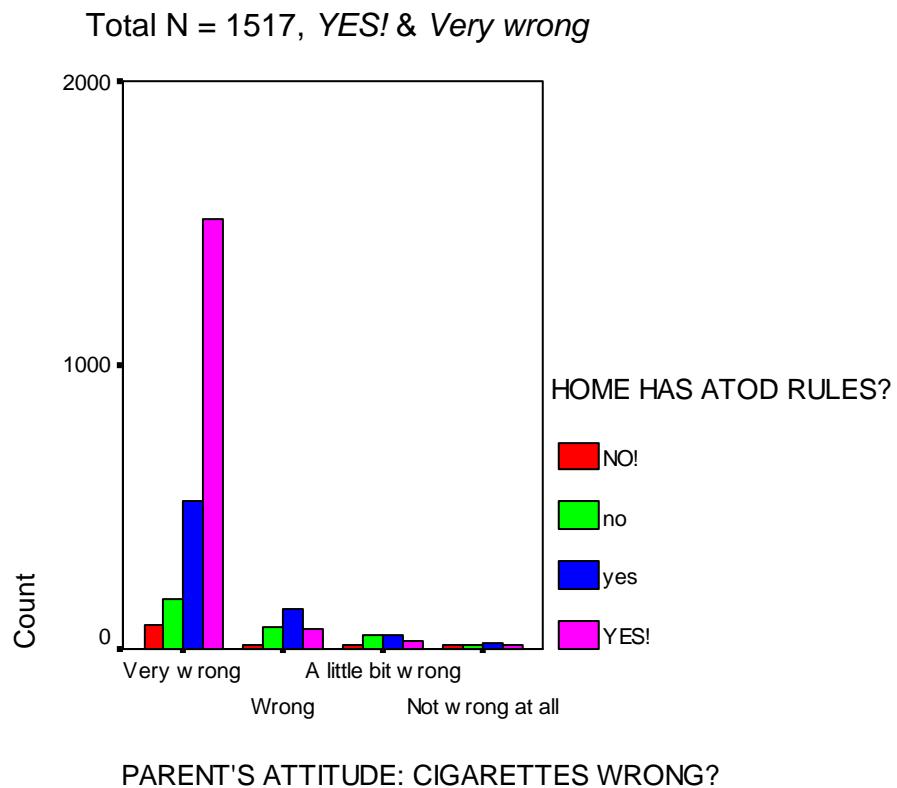
Result of Chi-square Test for Categorical Variable Pair [#]3

A total number of students ($N = 1635$) expressed *YES!* when answering HOME HAS ATOD USE RULES. A total number ($N = 2352$) of students stated *Very Wrong* to PARENT'S ATTITUDE: HOW WRONG CIGARETTES. Total of participant response ($N = 1517$) was overwhelming for those students who responded to these two questions with both *YES!* and *Very wrong* (Fig 3).

Chi-square analysis resulted in a statistically significant finding of .000, with the p-level set at a 0.05 (2-sided), suggesting a strong interaction between the parent efficacy variable HOME HAS ATOD USE RULES and the tobacco use variable PARENT'S ATTITUDE: HOW WRONG CIGARETTES. The null hypothesis (H_0) was rejected (Table 5).

Figure 3

HOME HAS ATOD USE RULES & PARENT'S ATTITUDE: HOW WRONG CIGARETTES



Study Question [#]4 & Hypothesis (H_0) Statement

*Is there a significant between the student's attendance in religious services or activities
and how wrong the student thinks it is for someone his age to smoke cigarettes?*

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and
SMOKE CIGARETTES: HOW WRONG (Table 7).

Table 7**Hypothesis Statement & Test Level Set – ATTENDS RELIGIOUS SERVICES & SMOKE CIGARETTES: HOW WRONG**

Hypothesis (H_0) Statement Research Question [#] 4	alpha = .05
H_0 : There is no relationship between (ATTENDS RELIGIOUS SERVICES?) and (SMOKE CIGARETTES: HOW WRONG?).	
	χ^2 (9, N = 2895) = 142.355 ($p \leq .05$), Significant, reject null

*0 cells (.0%) have expected count less than 5. The minimum expected count is 30.98.

Cross-tabulation Characteristics of Data Set – Study Question [#]4

A total number of students (N = 2945) answered SMOKE CIGARETTES: HOW WRONG, and a total number of students (N = 2952) answered ATTENDS RELIGIOUS SERVICES. Of those students (N = 2895) who responded to both of these questions, 64% stated *Very wrong* to SMOKE CIGARETTES: HOW WRONG while 46.2% answered *About once a week or more* to ATTENDS RELIGIOUS SERVICES. Four hundred seventy-eight (15.8%) maintained that smoking cigarettes was *Wrong*, 299 (9.9%) reported that smoking cigarettes was *A little bit wrong*, and 233 (7.7%) indicated smoking cigarettes was *Not wrong at all* for someone the student's age to smoke cigarettes (Table 8).

Table 8**Cross-tabulation Characteristics of Data Set – ATTENDS RELIGIOUS SERVICES & SMOKE CIGARETTES: HOW WRONG**

<i>Smoke Cigarettes: How Wrong?</i>	Very wrong	Wrong	A little bit wrong	Not wrong at all	Total
<i>Attends Religious Service?</i>					
Never	221	49	59	61	390
Rarely	373	142	83	74	672
1-2 times a month	280	83	54	40	457
About once a week or more	1027	197	97	55	1376
Total	1901	471	293	230	2895

Result of Chi-square Test for Categorical Variable Pair [#]4

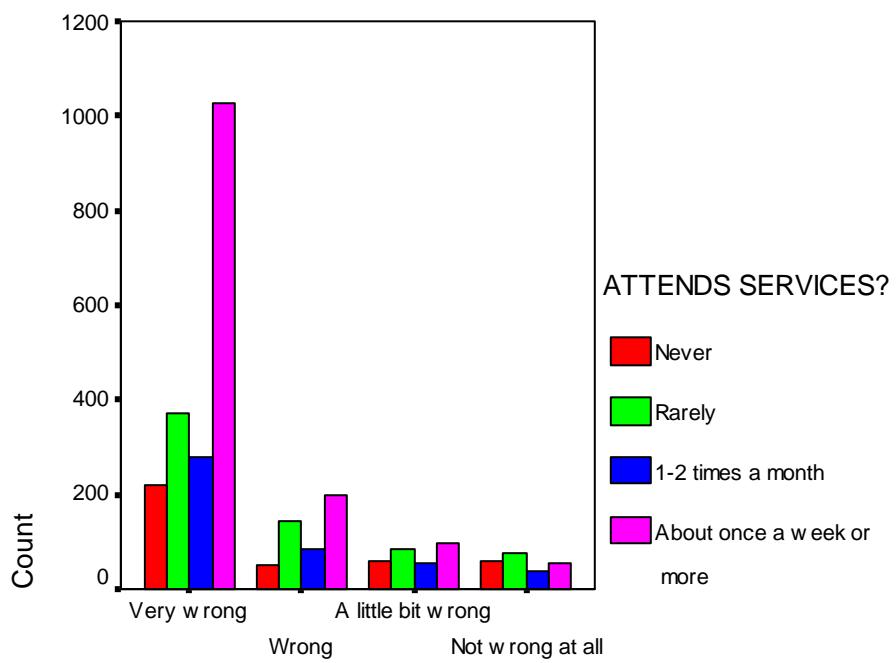
A total number (N = 1935) of students expressed *Very wrong* to the question SMOKE CIGARETTES: HOW WRONG. A total number (N = 1396) answered *About once a week or more* to ATTENDS RELIGIOUS SERVICES. Total of participant response (N = 1027) for both *Very wrong* and *About once a week* resulted in these answers being selected most often and in greater proportion than any other combination for the two questions (Fig 4).

Chi-square analysis resulted in a statically significant outcome of .000 when set at the 0.05 level (2-sided), suggesting that these associations were not likely to have occurred by chance. The null hypothesis (H_0) was rejected (Table 7).

Figure 4

ATTENDS RELIGIOUS SERVICES & SMOKE CIGARETTES: HOW WRONG

Total N = 1027
About once a week or more
& Very wrong



SMOKE CIGARETTES: HOW WRONG?

Study Question #5 & Hypothesis (H_0) Statement

Is there a significant relationship between the student's attendance in religious services or activities and the student having 4 best friends in the past year who smoked cigarettes?

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and HOW

MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES (Table 9).

Table 9

Hypothesis Statement & Test Level Set – ATTENDS RELIGIOUS SERVICES & HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES

Hypothesis (H_0) Statement Research Question # 5

alpha = .05

*0 cells (.0%) have expected count less than 5. The minimum expected count is 24.55.

Cross-tabulation Characteristics of Data Set – Study Question [#]5

A total number of students (N = 2992) answered HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES while a total number of students (N = 2952) answered ATTENDS RELIGIOUS SERVICES. Of those students who responded to both of these questions (N = 2924), 61.3% of the student participants reported *None* to HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES and 46.2% reported *About once a week or more* to ATTENDS RELIGIOUS SERVICES. Four hundred fifteen (13.7%) stated that they had only *1* friend, 252 (8.3%) maintained they had 2 friends, 181 (6.0%) indicated they had 3 friends, and 291 (9.6%) responded they could think of 4 best friends who had smoked cigarettes in the past 12 months (Table 10).

Table 10**Cross-tabulation Characteristics of Data Set – ATTENDS RELIGIOUS SERVICES & HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES**

<i>How Many of 4 Best Friends: Smoked Cigarettes?</i>	None	1	2	3	4	Total
<i>Attends Religious Services?</i>						
Never	182	58	41	41	79	401
Rarely	357	104	69	50	99	679
1-2 Times a Month	286	68	49	27	38	468
About Once a or More	984	180	89	61	62	1376
Total	1809	410	248	179	278	2924

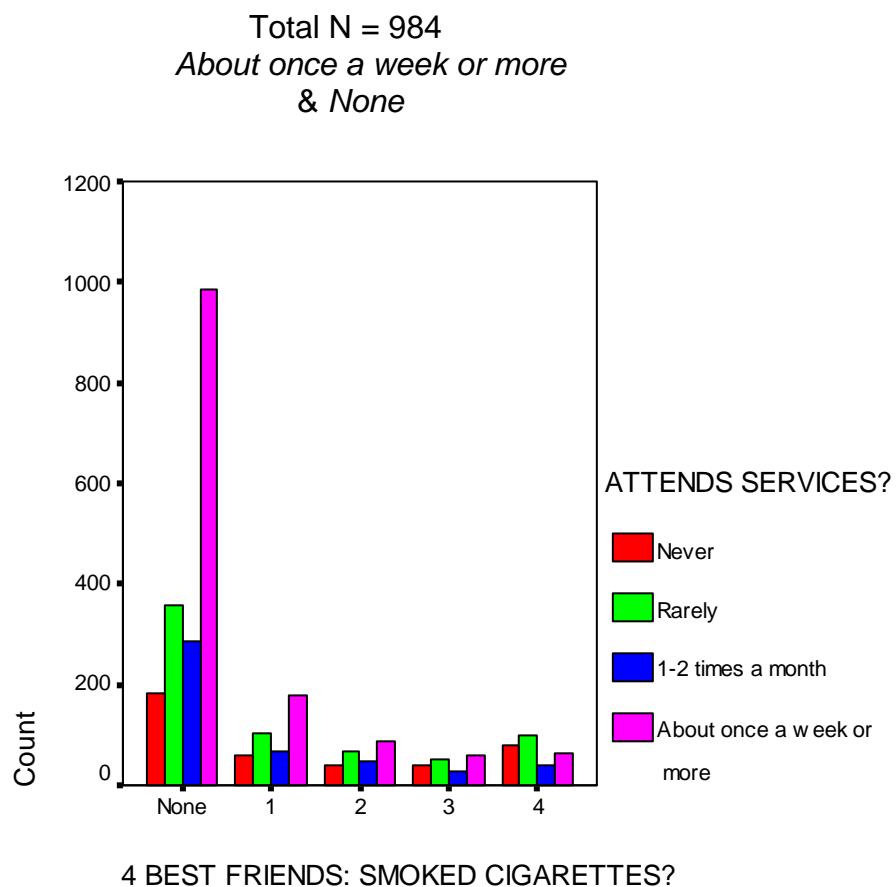
Result of Chi-square Test for Categorical Variable Pair # 5

A total number (N = 1853) of students expressed *None* to the question HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES. A total number of students (N = 1396) also expressed *About once a week or more* to ATTENDS RELIGIOUS SERVICES. Total for participant response (N = 984) for both of the questions was *None* and *About once a week or more*, which was responded to in greater proportion than any of the other answers selected for the two questions (Fig. 5).

Chi-square analysis indicated a statistical significance when set at the 0.05 level (2-sided) for the resulting outcome of .000. This interaction suggested that these associations were not likely to have occurred by chance. The null hypothesis (H_0) was rejected (Table 9).

Figure 5

ATTENDS RELIGIOUS SERVICES & HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES



Study Question [#]6 & Hypothesis (H_0) Statement

*Is there a significant between the student's attendance in religious services or activities
and how cool the student thinks it is for someone his age to smoke cigarettes?*

H_0 : There is no relationship between ATTENDS RELIGIOUS SERVICES and ARE YOU COOL IF: SMOKE CIGARETTES (Table 11).

Table 11**Hypothesis Statement & Test Level Set – ATTENDS RELIGIOUS SERVICES &
ARE YOU COOL IF: SMOKE CIGARETTES**

Hypothesis (H_0) Statement Research Question [#] 6	alpha = .05
H_0 : There is no relationship between (ATTENDS RELIGIOUS SERVICES?) and (ARE YOU COOL IF: SMOKE CIGARETTES?).	
	χ^2 (12, N = 2901) = 28.566

(p \leq .05), Significant, reject null

*0 cells (.0%) have expected count less than 5. The minimum expected count is 8.28.

Cross-tabulation Characteristics of Data Set – Study Question [#]6

A total number of students (N = 2968) responded to ARE YOU COOL IF: SMOKE CIGARETTES and a total number of students (N = 2952) responded to ATTENDS RELIGIOUS SERVICES. Of those total students (N = 2901) who answered both of the study questions, 65.9% stated *No or very little chance* to ARE YOU COOL IF: SMOKE CIGARETTES along with 46.2% stating *About once a week or more* to ATTENDS RELIGIOUS SERVICES. Five hundred forty-four (18%) also maintained there would be *Little chance*, 263 (8.7%) stated *Some chance*, 106 (3.5%) indicated there was a *Pretty good chance*, and 62 (2.1%) reported a *Very good chance* the student thinks it is cool for someone his age to smoke cigarettes (Table 12).

Table 12**Cross-tabulation Characteristics of Data Set – ATTENDS RELIGIOUS SERVICES & ARE YOU COOL IF: SMOKE CIGARETTES**

<i>Are You Cool If: Smoke Cigarettes?</i>	No or very little chance	Little chance	Some chance	Pretty good chance	Very good chance	Total
<i>Attends Religious Service?</i>						
Never	250	71	36	18	19	394
Rarely	448	121	56	27	17	669
1-2 Times a Month	298	93	52	13	8	464
About Once a or More	947	250	112	48	17	1374
Total	1943	535	256	106	61	2901

Result of Chi-square Test for Categorical Variable Pair [#]6

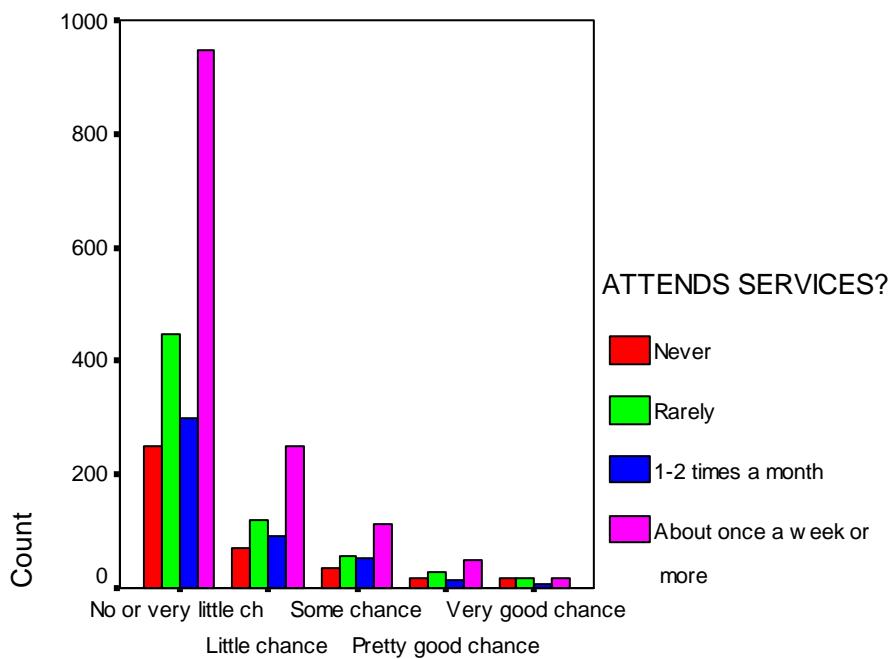
A total number (N = 1993) of students expressed *No or very little chance* to the question ARE YOU COOL IF: SMOKE CIGARETTES. A total number of students (N = 1396) expressed *About once a week or more* to the question ATTENDS RELIGIOUS SERVICES. Total participant response (N = 947) for the two most likely replies of *No or very little chance* and *About once a week or more* being submitted as those choices more often selected than any other answer combination for the two questions (Fig. 6).

Chi-square analysis suggested a strong interaction between the parent efficacy variable ATTENDS RELIGIOUS SERVICES and the tobacco use variable ARE YOU COOL IF: SMOKE CIGARETTES. The statistical significance of .000 at the 0.05 level (2-sided) indicated an association between the two variables, suggesting the relationship did not occur merely by chance. The null hypothesis (H_0) was rejected (Table 11).

Figure 6

ATTENDS RELIGIOUS SERVICES & ARE YOU COOL IF: SMOKE CIGARETTES

Total N = 947
*About once a week or more
& No or very little chance*



ARE YOU COOL IF: SMOKE CIGARETTES?

Summary

The variable list compilation of the six (6) tobacco use items (Table 13) had each been analyzed with Chi-square set at a level of 0.05 and illustrated compelling statistical evidence of an interaction. Strong indication of significance between each select protective and risk study variable pair suggested an association, which was demonstrated through the statistical analysis conducted, concluding that hypotheses in all outcomes are nullified by the specific test results of p-values of .005, or less, meaning there is less likelihood that the results happened by chance. The null hypothesis (H_0) was rejected in each protective factor and tobacco use variable combination with regard to research questions 1 – 6. The Communities That Care population demonstrated relationships between the select protective factors and all corresponding tobacco use study variables.

Table 13**Chi-square Risk & Protective Comparison of Frequency Data**

Research Variable List	N	Chi-square	df	Asymp. Sig. (2-sided)
Parent Efficacy/ EVER: SMOKED CIGARETTES	2810	273.777	12	.000
Parent Efficacy/ AGE: FIRST SMOKED CIGARETTES	2790	255.715	24	.000
Parent Efficacy/ PARENT'S ATTITUDE: HOW WRONG CIGARETTES	2801	414.096	9	.000
Religiosity/ SMOKE CIGARETTES: HOW WRONG	2895	142.355	9	.000
Religiosity/ HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES	2924	180.682	12	.000
Religiosity/ ARE YOU COOL IF: SMOKE CIGARETTES	2901	28.566	12	.005

Two (2) select protective factors were operationalized as study terms represented in the current research:

- (1) *parent efficacy* was the term employed to represent the protective variable, HOME HAS ATOD USE RULES and,
- (2) *religiosity* was the term employed to represent the protective variable, ATTENDS RELIGIOUS SERVICES.

The data for the individual's selection of, *YES!* exceeded 50% (N = 1635, 54.1%).as a most popular selection expressed for an answer to the first protective variable, HOME HAS ATOD USE RULES (Table 14). *About once a week or more* was selected as a most popular selection, with approximately 50% (N = 1396, 46.2%) of the students expressing it as the response for the second protective variable, ATTENDS RELIGIOUS SERVICES (Table 15).

Table 14**HOME HAS ATOD USE RULES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	NO!	130	4.3	4.6	4.6
	No	320	10.6	11.4	16.0
	yes	734	24.3	26.0	42.0
	YES!	1635	54.1	58.0	100.0
	Total	2819	93.3	100.0	
Missing	Multiple	7	.2		
	Missing	196	6.5		
	Total	203	6.7		
	Total	3022	100.0		

Table 15**ATTENDS RELIGIOUS SERVICES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	Never	404	13.4	13.7	13.7
	Rarely	684	22.6	23.2	36.9
	1- 2 times a week	468	15.5	15.9	52.7
	About once a week or more	1396	46.2	47.3	100.0
	Total	2952	97.7	100.0	
Missing	Multiple	3	.1		
	Missing	67	2.2		
	Total	70	2.3		
	Total	3022	100.0		

With consideration of the six (6) tobacco use risk variables, EVER: SMOKED CIGARETTES (Table 16), AGE: FIRST SMOKED CIGARETTES (Table 17), PARENT'S ATTITUDE: HOW WRONG CIGARETTES (Table 18), SMOKE CIGARETTES: HOW WRONG (Table 19), HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES (Table 20), and ARE YOU COOL IF: SMOKE CIGARETTES (Table 21), all data results are illustrated. As expressed in most of the submissions of answers given by the participants of the CTC youth survey, an overall opinion was expressed of tobacco use by this group as negative when questioned about smoking cigarettes. The tables list the responses as evidence of these results. When the tobacco use variables were crosstabulated with either HOME HAS ATOD USE RULES or ATTENDS RELIGIOUS SERVICES, the interactions supported findings, which suggested smoking cigarettes would not likely be the activity of choice within this population. The selection of answers were not less than 61.3% or more than 77.8% for responses of categories representing these participant's expressed views as such, indicating that a majority of the students were not attracted to tobacco use as a risk activity.

Table 16**EVER: SMOKED CIGARETTES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	Never	2114	70.0	70.3	70.3
	Once or twice	396	13.1	13.2	83.4
	Once in a while but not regularly	195	6.5	6.5	89.9
	Regularly in the past	113	3.7	3.8	93.7
	Regularly now	190	6.3	6.3	100.0
	Total	3008	99.5	100.0	
Missing	Multiple	2	.1		
	Missing	12	.4		
	Total	14	.5		
	Total	3022	100.0		

Table 17**AGE: FIRST SMOKED CIGARETTES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	Never have	2044	67.6	68.7	68.7
	10 or younger	265	8.8	8.9	77.6
	11	113	3.7	3.8	81.4
	12	162	5.4	5.4	86.9
	13	138	4.6	4.6	91.5
	14	95	3.1	3.2	94.7
	15	87	2.9	2.9	97.6
	16	44	1.5	1.5	99.1
	17 or older	26	.9	.9	100.0
	Total	2974	98.4	100.0	
Missing	Multiple	6	.2		
	Missing	42	1.4		
	Total	48	1.6		
	Total	3022	100.0	100.0	

Table 18**PARENT'S ATTITUDE: HOW WRONG CIGARETTES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	Very Wrong	2352	77.8	81.8	81.8
	Wrong	310	10.3	10.8	92.6
	A little bit wrong	149	4.9	5.2	97.8
	Not at all wrong	64	2.1	2.2	100.0
	Total	2968	95.1	100.0	
	Missing Multiple	4	.1		
	Missing	143	4.7		
	Total	147	4.9		
	Total	3022	100.0		

Table 19**SMOKE CIGARETTES: HOW WRONG Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	Very Wrong	1935	64.0	65.7	65.7
	Wrong	478	15.8	16.2	81.9
	A little bit wrong	299	9.9	10.2	92.1
	Not wrong at all	233	7.7	7.9	100.0
	Total	2945	97.5	100.0	
Missing	Multiple	5	.2		
	Missing	72	2.4		
	Total	77	2.5		
	Total	3022	100.0		

Table 20**HOW MANY OF 4 BEST FRIENDS: SMOKED CIGARETTES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	None	1853	61.3	61.9	61.9
	1	415	13.7	13.9	75.8
	2	252	8.3	8.4	84.2
	3	181	6.0	6.0	90.3
	4	291	9.6	9.7	100.00
	Total	2992	99.0	100.0	
Missing	Multiple	4	.1		
	Missing	26	.9		
	Total	30	1.0		
	Total	3022	100.0		

Table 21**ARE YOU COOL IF: SMOKE CIGARETTES Frequency Data**

		Frequency	Percent	Valid %	Cumulative %
Valid	No or very little chance	1993	65.9	67.1	67.1
	Little chance	544	18.0	18.3	85.5
	Some chance	263	8.7	8.9	94.3
	Pretty good chance	106	3.5	3.6	97.9
	Very good chance	62	2.1	2.1	100.00
	Total	2968	98.2	100.0	
Missing	Multiple	4	.1		
	Missing	50	1.7		
	Total	54	1.8		
	Total	3022	100.0		

CHAPTER 5

DISCUSSION, CONCLUSIONS, & RECOMMENDATIONS

Discussion

The purpose of this study was to determine the relationships between select protective factors and the risk behavior of tobacco use in adolescents. While seeking to explore the various elements of tobacco use within one student population, this study would establish whether significant relationships existed between students who stated that their parents had clear alcohol, tobacco, and drug use rules in the home as well as those who stated they frequently attended religious services and activities, which were termed *parent efficacy* and *religiosity*, respectively.

The literature seemed to overwhelmingly support parent efficacy and religiosity as influential while modeling positive characteristics in protective environments for the child and adolescent. If applied consistently, such actions are likely to be successful in achieving desired risk prevention outcomes (CBC, 2004). In the Communities That Care responses of students surveyed in 2003, a range of choices from self-reported perceptions about tobacco use as an activity for this adolescent population from a variety of questions were considered. Data was statistically analyzed for those who might have involvement with the risk factor of smoking cigarettes and the two select protective factors of ATOD use rules in the home and attendance at religious services and activities.

The first of the two protective factors for this study was parent efficacy, which was used as the term in the first three research questions to determine whether the student had ever smoked cigarettes, how old the student was when he first smoked cigarettes, and his parent's attitude toward smoking cigarettes. The second of two protective factors was

religiosity, which was used as the term in the last three research questions to determine how wrong the student might think it was for someone his own age to smoke cigarettes, whether the student had had 4 best friends in the past year who smoked cigarettes, and how cool the student would think it was for someone his own age to smoke cigarettes.

Both protective factors proved significant for relationships involving adolescent tobacco use as the risk factor, according to the carefully documented evaluation. By converting operational behavioral constructs for Communities That Care Youth Survey student's attitudes into a functional medium by means of Likert scale measurement, those perceptions were assessed to demonstrate significant relationships between parent efficacy and tobacco use as well as significant relationships between use of tobacco and religiosity. From the Likert process utilizing the CTCYS questionnaire to the Chi-square test results with an alpha level of each set at 0.05 (2-sided) while using SPSS statistical computations, both protective factors appeared to hold preventative significance in their influence, providing interaction for conclusive relationships where inferences could be made to the positive qualities of protectiveness when functioning in the adolescent's environment.²

The Communities That Care Youth Survey (CTCYS) and the Youth Risk Behavior Surveys (YRBS) have each been administered to students within the Roanoke public schools system in Virginia to better understand the student body in ways not necessarily academic in nature but, nevertheless, benefiting the students (RCSB, 2006). This was especially apparent with these protective factor and tobacco use study findings.

² Behavior measured was in conjunction with the self-reported beliefs of adolescent students participating in the Communities That Care® Youth Survey, but this study does not make causal conclusions.

Conclusions

Student Smoking Status – Current, Past, or Never

With examination of the questions seeking to find a relationship between the parents who have clear rules in the home concerning alcohol, tobacco, or drug use, 54.1% of the student participants stated *YES*, and it was concluded that high levels of parent efficacy are responsible for much of the findings in the Roanoke County student population. Students expressed *Never* most often as the answer when asked had they ever smoked cigarettes, with 70% of the student body of Roanoke County public schools in the 2003 study giving the response. Two thousand forty-four of the 2974 students also stated they *Never have* when it was asked of Roanoke County students the age when they had first smoked cigarettes, indicating parent efficacy was partially responsible for not ever having taken even one puff from a cigarette.

Student Smoking Status – Peer Associations

Of those who stated they were regular attenders of worship service and activities, 61.7% responded that they attended *About once a week or more* to *1–2 times a week* with a finding that it was also the student's decision to abstain from friends who used tobacco from many of the student participants answers. Just over 61.3% of the participants stated *None* when asked *How many of your 4 best friends have smoked cigarettes in the past year?* In addition, 65.9% did not think it would be cool if someone smoked cigarettes if they were the individual's own age. It was concluded that the relationship with one's associations depending on whether they used tobacco was with regard to religiosity as held partially responsible for these findings in the Roanoke County CTCYS population.

Student Smoking Status – With Consideration to “How Wrong?”

Those students with a combined total of responses including YES or yes when asked if their home had ATOD use rules were close to three-quarters (78.4%) of the total participant population. Participants who believed their parents would feel smoking was *very wrong* exceeded seventy-five percent (77.8%) as well. Research results from other studies had been mixed concerning use of tobacco and parenting since all measures were not alike, but this study confirmed results of abstinence from youth-related tobacco use when explaining parent efficacy in conjunction with the perception of how wrong tobacco use was perceived to be in this group. It is concluded that religiosity was significant in explaining much of the findings for how wrong students perceived cigarettes to be, as sixty-four (64%) of the participants responded *Very wrong* when asked how wrong it was for someone of the same age to smoke cigarettes.

Recommendations

Resulting implications of research indicated that identity modeling conveys an important abstinent message. It is imperative that future studies examine the elements which are contributing factors to the protective nature of modeling by key authority figures. The contribution gained from learning more about positive messaging is its ability to combat peer pressure amongst adolescents in groups where smoking is found to be a popular risk activity. This finding could result in saving thousands of adolescent lives. Learning more about characteristics of powerful messaging by “identifying characteristics that are commonly found in individuals who engage in specific health-risk behaviors is a key first step in designing and implementing effective interventions” (Pirkle & Richter, 2006, p. 51).



Surveys administered to students at lower grade levels can be highly effective, therefore, the consideration of surveys as an instrument of study is recommended.

Surveys in adolescent populations can be valuable tools since “identifying characteristics that are commonly found in individuals who engage in specific health-risk behaviors is a key first step in designing and implementing effective interventions” (Pirkle & Richter, 2006, p. 51). A 2002 Roanoke County survey study reported that 30.0% of high school students were cigarette users on one or more of the past 30 days (Sallee, 2002). The following year 70.0% of the student body in Roanoke County stated, “Never” when asked if they had ever smoked cigarettes by a Communities That Care Youth Survey (CTCYS, 2003). In addition, longitudinal survey testing indicated an 11.8% decline over two years in middle school student smoking (Roanoke Times, 2008, as cited by NCCFS, 2008). It is in the students’ best interest that survey studies continue to be administered as an annual service for adolescents in communities where tobacco use in this age group can be followed to determine trends among this important segment of the population.

Findings taken from student surveys have become valuable commodities in the war against tobacco use and community resources in determining solutions, for it is a fact that “adolescents’ beliefs and attitudes about tobacco can shape their lifetime tobacco use” (Carver, Reinert, & Range, 2006). Research of younger participants is advised, because “younger adolescents are more responsive to tobacco-related intervention, according to the U.S. Dept. of Health and Human Services (1994, as cited by Altman, Wheelis, McFarlane, Hye-Ryeon, & Fortmann, 1999, p. 769). It is noteworthy that “a limitation in studies of initiation of smoking in youth is that they seldom include children below the ninth grade” (Harrell, Bangdiwala, Deng, Webb, & Bradley, 1998, p. 272).

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APPENDIX A: SURVEY INSTRUMENT

³ *Communities That Care® Youth Survey* and related materials have been used with the permission of Dr. Patricia B. Getty, Acting Director, Division of Systems Development, Center for Substance Abuse Prevention, Substance Abuse & Mental Health Services Administration, patricia.getty@samhsa.hhs.gov.

Communities That Care® Youth Survey

This survey is voluntary. That means you do not have to take it. If you choose to take it, you may skip any question you don't want to answer.

Thank you for agreeing to participate in this survey. The survey asks your opinion about a number of things in your life, including your friends, your family, your neighborhood and your community. Your answers to these questions will be confidential. That means no one will know your answers. To help us keep your answers secret, please do not write your name on this survey form.

I nstructions

1. This is not a test. There are no right or wrong answers.
2. If you don't find an answer that fits exactly, use one that comes closest. If any question does not apply to you, or you are not sure what it means, just leave it blank.
3. Mark your answers clearly:
 - It is best to use a pencil, but you also may use a blue or black pen.
 - Completely fill in the circles.
 - Completely erase any answer you want to change.
 - Make no other markings or comments on the answer pages.
4. Some of the questions have the following format:

Please fill in the circle for the word that best describes how you feel.

EXAMPLE: Pepperoni pizza is one of my favorite foods.

NO! no yes YES!

This kind of mark will work:
Correct Mark



These kinds of marks will NOT work:
Incorrect Marks



Admin code

0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

PLEASE DO NOT WRITE IN THIS AREA



SERIAL #

These questions ask for some general information about you. Please mark the response that best describes you.

How old are you?

- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19 or older

What grade are you in?

- 6th
- 7th
- 8th
- 9th
- 10th
- 11th
- 12th

Are you:

- Female
- Male

**What do you consider yourself to be?
(choose all that apply)**

- White
- Black or African American
- American Indian/Native American, Eskimo or Aleut
- Spanish/Hispanic/Latino
- Asian or Pacific Islander
- Other (Please specify: _____)

What is the language you use most often at home?

- English
- Spanish
- Another language (Please specify: _____)

This section asks about your experiences at school.

Putting them all together, what were your grades like last year?

- Mostly F's
- Mostly D's
- Mostly C's
- Mostly B's
- Mostly A's

During the LAST FOUR WEEKS, how many whole days have you missed because you skipped or "cut"?

- None
- 1
- 2
- 3
- 4-5
- 6-10
- 11 or more

How often do you feel that the schoolwork you are assigned is meaningful and important?

- Almost always
- Often
- Sometimes
- Seldom
- Never

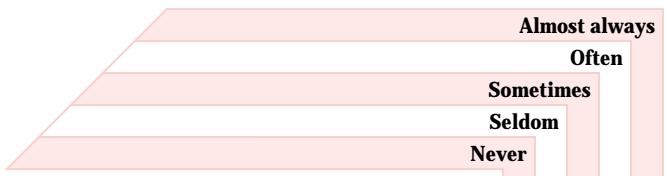
How interesting are most of your courses to you?

- Very interesting and stimulating
- Quite interesting
- Fairly interesting
- Slightly dull
- Very dull

How important do you think the things you are learning in school are going to be for your later life?

- Very important
- Quite important
- Fairly important
- Slightly important
- Not at all important

PLEASE DO NOT WRITE IN THIS AREA



Now, thinking back over the past year in school, how often did you:

Enjoy being in school?

Never	○ ○ ○ ○ ○
Seldom	○ ○ ○ ○ ○
Sometimes	○ ○ ○ ○ ○
Often	○ ○ ○ ○ ○
Almost always	○ ○ ○ ○ ○

Hate being in school?

Never	○ ○ ○ ○ ○
Seldom	○ ○ ○ ○ ○
Sometimes	○ ○ ○ ○ ○
Often	○ ○ ○ ○ ○
Almost always	○ ○ ○ ○ ○

Try to do your best work in school?

Never	○ ○ ○ ○ ○
Seldom	○ ○ ○ ○ ○
Sometimes	○ ○ ○ ○ ○
Often	○ ○ ○ ○ ○
Almost always	○ ○ ○ ○ ○

In my school, students have lots of chances to help decide things like class activities and rules.

NO!	○ ○ ○ ○ ○
yes	○ ○ ○ ○ ○
YES!	○ ○ ○ ○ ○

Teachers ask me to work on special classroom projects.

○ ○ ○ ○ ○

My teacher(s) notices when I am doing a good job and lets me know about it.

○ ○ ○ ○ ○

There are lots of chances for students in my school to get involved in sports, clubs, and other school activities outside of class.

○ ○ ○ ○ ○

There are lots of chances for students in my school to talk with a teacher one-on-one.

○ ○ ○ ○ ○

I feel safe at my school.

○ ○ ○ ○ ○

The school lets my parents know when I have done something well.

○ ○ ○ ○ ○

My teachers praise me when I work hard in school.

○ ○ ○ ○ ○

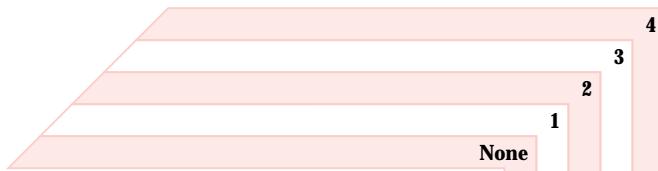
Are your school grades better than the grades of most students in your class?

○ ○ ○ ○ ○

I have lots of chances to be part of class discussions or activities.

○ ○ ○ ○ ○

These questions ask about your feelings and experiences in other parts of your life.



Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have:

Smoked cigarettes?

None	○ ○ ○ ○ ○
1	○ ○ ○ ○ ○
2	○ ○ ○ ○ ○
3	○ ○ ○ ○ ○
4	○ ○ ○ ○ ○

Tried beer, wine or hard liquor (for example, vodka, whiskey or gin) when their parents didn't know about it?

○ ○ ○ ○ ○

Used marijuana?

○ ○ ○ ○ ○

Used LSD, cocaine, amphetamines, or other illegal drugs?

○ ○ ○ ○ ○

Been suspended from school?

○ ○ ○ ○ ○

Carried a handgun?

○ ○ ○ ○ ○

Sold illegal drugs?

○ ○ ○ ○ ○

Stolen or tried to steal a motor vehicle such as a car or motorcycle?

○ ○ ○ ○ ○

Been arrested?

○ ○ ○ ○ ○

Dropped out of school?

○ ○ ○ ○ ○

Been members of a gang?

○ ○ ○ ○ ○



What are the chances you would be seen as cool if you:

Smoked cigarettes?

○ ○ ○ ○ ○

Began drinking alcoholic beverages regularly, that is, at least once or twice a month?

○ ○ ○ ○ ○

Smoked marijuana?

○ ○ ○ ○ ○

Carried a handgun?

○ ○ ○ ○ ○

The next section asks about your experience with tobacco, alcohol, and other drugs. It also asks some other personal questions. Remember, your answers are confidential. This means your answers will stay secret.

Have you ever used smokeless tobacco (chew, snuff, plug, dipping tobacco, chewing tobacco)?

- Never
- Once or twice
- Once in a while but not regularly
- Regularly in the past
- Regularly now

How frequently have you used smokeless tobacco during the past 30 days?

- Never
- Once or twice
- Once or twice per week
- About once a day
- More than once a day

Have you ever smoked cigarettes?

- Never
- Once or twice
- Once in a while but not regularly
- Regularly in the past
- Regularly now

How frequently have you smoked cigarettes during the past 30 days?

- Not at all
- Less than one cigarette per day
- One to five cigarettes per day
- About one-half pack per day
- About one pack per day
- About one and one-half packs per day
- Two packs or more per day



On how many occasions (if any) have you:

Had alcoholic beverages (beer, wine or hard liquor) to drink—more than just a few sips—in your lifetime?

Had alcoholic beverages (beer, wine or hard liquor) to drink—more than just a few sips—during the past 30 days?

Sniffed glue, breathed the contents of an aerosol spray can, or inhaled other gases or sprays in order to get high in your lifetime?

Sniffed glue, breathed the contents of an aerosol spray can, or inhaled other gases or sprays in order to get high during the past 30 days?

Used cocaine in your lifetime?

Used cocaine during the past 30 days?

Used marijuana (weed, pot) or hashish (hash, hash oil) in your lifetime?

Used marijuana (weed, pot) or hashish (hash, hash oil) during the past 30 days?

Used derbisol in your lifetime?

Used derbisol during the past 30 days?

Used heroin in your lifetime?

Used heroin during the past 30 days?



On how many occasions (if any) have you:

Used LSD (acid) or other psychedelics (peyote, PCP) in your lifetime?

Used LSD (acid) or other psychedelics (peyote, PCP) during the past 30 days?

Used Ecstasy in your lifetime?

Used Ecstasy during the past 30 days?

Used methamphetamine (meth, crystal meth, crank) in your lifetime?

Used methamphetamine (meth, crystal meth, crank) during the past 30 days?

Used prescription pain relievers, such as Vicodin®, OxyContin® or Tylox®, without a doctor's orders, in your lifetime?

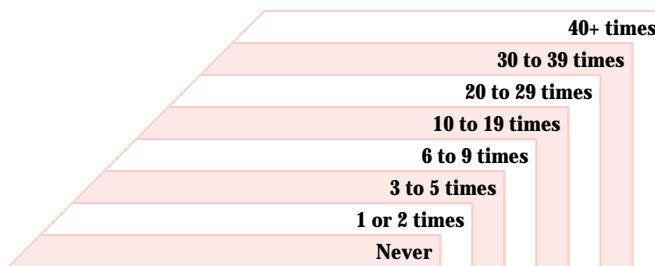
Used prescription pain relievers, such as Vicodin®, OxyContin® or Tylox®, without a doctor's orders, during the past 30 days?

Used prescription tranquilizers, such as Xanax®, Valium® or Ambien®, without a doctor's orders, in your lifetime?

Used prescription tranquilizers, such as Xanax®, Valium® or Ambien®, without a doctor's orders, during the past 30 days?

Used prescription stimulants, such as Ritalin® or Adderall®, without a doctor's orders, in your lifetime?

Used prescription stimulants, such as Ritalin® or Adderall®, without a doctor's orders, during the past 30 days?



How many times in the past year (12 months) have you:

Been suspended from school?

Carried a handgun?

Sold illegal drugs?

Stolen or tried to steal a motor vehicle such as a car or motorcycle?

Been arrested?

Attacked someone with the idea of seriously hurting them?

Been drunk or high at school?

Taken a handgun to school?

Have you ever belonged to a gang?

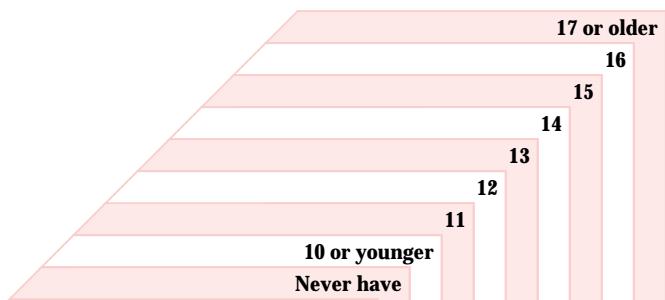
- No
- Yes

If you have ever belonged to a gang, did that gang have a name?

- No
- Yes
- I have never belonged to a gang.

Think back over the last two weeks. How many times have you had five or more alcoholic drinks in a row?

- None
- Once
- Twice
- 3-5 times
- 6-9 times
- 10 or more times



How old were you when you first:

Smoked marijuana?

Smoked a cigarette, even just a puff?

Had more than a sip or two of beer, wine or hard liquor (for example, vodka, whiskey, or gin)?

Began drinking alcoholic beverages regularly, that is, at least once or twice a month?

Got suspended from school?

Got arrested?

Carried a handgun?

Attacked someone with the idea of seriously hurting them?

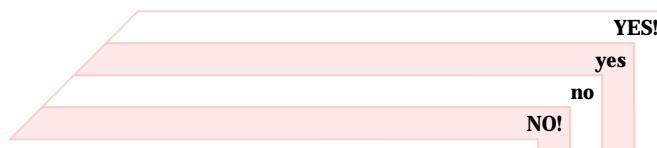
Belonged to a gang?

How often do you attend religious services or activities?

- Never
- Rarely
- 1-2 times a month
- About once a week or more

I like to see how much I can get away with.

- Very false
- Somewhat false
- Somewhat true
- Very true



Sometimes I think that life is not worth it.

At times I think I am no good at all.

All in all, I am inclined to think that I am a failure.

In the past year have you felt depressed or sad MOST days, even if you feel OK sometimes?

It is all right to beat up people if they start the fight.

I think it is okay to take something without asking if you can get away with it.

It is important to be honest with your parents, even if they become upset or you get punished.

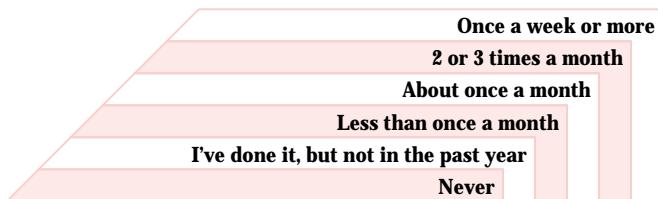
I think sometimes it's okay to cheat at school.

I ignore rules that get in my way.

- Very false
- Somewhat false
- Somewhat true
- Very true

I do the opposite of what people tell me, just to get them mad.

- Very false
- Somewhat false
- Somewhat true
- Very true



How many times have you done the following things?

Done what feels good no matter what.



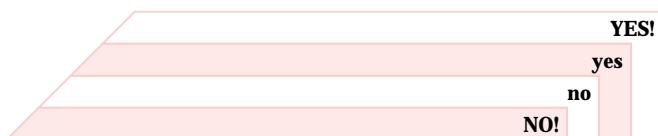
Done something dangerous because someone dared you to do it.



Done crazy things even if they are a little dangerous.



Sometimes we don't know what we will do as adults, but we may have an idea. Please tell me how true these statements may be for you.



When I am an adult:

I will smoke cigarettes.



I will drink beer, wine, or liquor.



I will smoke marijuana.



These questions ask about how you would act in certain situations. They also ask your opinion about certain things.

You're looking at CDs in a music store with a friend. You look up and see her slip a CD under her coat. She smiles and says, "Which one do you want? Go ahead, take it while nobody's around." There is nobody in sight, no employees and no other customers. What would you do now?

- Ignore her.
- Grab a CD and leave the store.
- Tell her to put the CD back.
- Act like it's a joke, and ask her to put the CD back.

It's 8:00 on a weeknight and you are about to go over to a friend's home when your mother asks you where you are going. You say, "Oh, just going to go hang out with some friends." She says, "No, you'll just get into trouble if you go out. Stay home tonight." What would you do now?

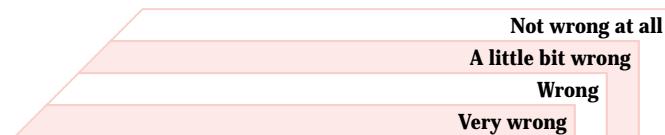
- Leave the house anyway.
- Explain what you are going to do with your friends, tell her when you'd get home, and ask if you can go out.
- Not say anything and start watching TV.
- Get into an argument with her.

You are visiting another part of town, and you don't know any of the people your age there. You are walking down the street, and some teenager you don't know is walking toward you. He is about your size, and as he is about to pass you, he deliberately bumps into you and you almost lose your balance. What would you say or do?

- Push the person back.
- Say "Excuse me" and keep on walking.
- Say "Watch where you're going" and keep on walking.
- Swear at the person and walk away.

You are at a party at someone's house, and one of your friends offers you a drink containing alcohol. What would you say or do?

- Drink it.
- Tell your friend "No thanks, I don't drink" and suggest that you and your friend go and do something else.
- Just say "No, thanks" and walk away.
- Make up a good excuse, tell your friend you had something else to do, and leave.



How wrong do you think it is for someone your age to:

Take a handgun to school?

Steal anything worth more than \$5?

Pick a fight with someone?

Attack someone with the idea of seriously hurting them?

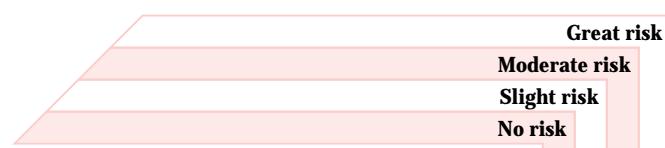
Stay away from school all day when their parents think they are at school?

Drink beer, wine or hard liquor (for example, vodka, whiskey or gin) regularly?

Smoke cigarettes?

Smoke marijuana?

Use LSD, cocaine, amphetamines or another illegal drug?



How much do you think people risk harming themselves (physically or in other ways) if they:

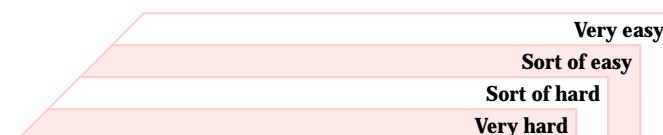
Smoke one or more packs of cigarettes per day?

Try marijuana once or twice?

Smoke marijuana regularly?

Take one or two drinks of an alcoholic beverage (beer, wine, liquor) nearly every day?

These questions ask about the neighborhood and community where you live.



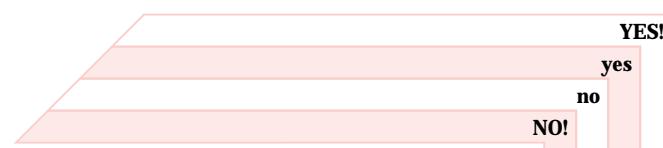
If you wanted to get some beer, wine or hard liquor (for example, vodka, whiskey, or gin), how easy would it be for you to get some?

If you wanted to get some cigarettes, how easy would it be for you to get some?

If you wanted to get a drug like cocaine, LSD, or amphetamines, how easy would it be for you to get some?

If you wanted to get some marijuana, how easy would it be for you to get some?

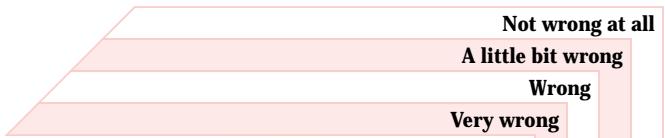
If you wanted to get a handgun, how easy would it be for you to get one?



If a kid smoked marijuana in your neighborhood, would he or she be caught by the police?

If a kid drank some beer, wine or hard liquor (for example, vodka, whiskey, or gin) in your neighborhood, would he or she be caught by the police?

If a kid carried a handgun in your neighborhood, would he or she be caught by the police?



How wrong would most adults (over 21) in your neighborhood think it was for kids your age:

To use marijuana?

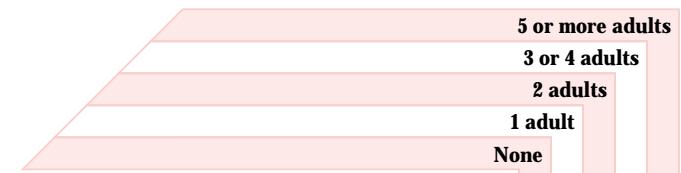
Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1

To drink alcohol?

Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1

To smoke cigarettes?

Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1



About how many adults (over 21) have you known personally who in the past year have:

Used marijuana, crack, cocaine, or other drugs?

Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1

Sold or dealt drugs?

Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1

Done other things that could get them in trouble with the police, like stealing, selling stolen goods, mugging or assaulting others, etc.?

Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1

Gotten drunk or high?

Not wrong at all	1
A little bit wrong	1
Wrong	1
Very wrong	1



If I had to move, I would miss the neighborhood I now live in.

YES!	1
yes	1
no	1
NO!	1

To use marijuana?

YES!	1
yes	1
no	1
NO!	1

To drink alcohol?

YES!	1
yes	1
no	1
NO!	1

To smoke cigarettes?

YES!	1
yes	1
no	1
NO!	1

I like my neighborhood.

YES!	1
yes	1
no	1
NO!	1

There are lots of adults in my neighborhood I could talk to about something important.

YES!	1
yes	1
no	1
NO!	1

There are people in my neighborhood who are proud of me when I do something well.

YES!	1
yes	1
no	1
NO!	1

I feel safe in my neighborhood.

YES!	1
yes	1
no	1
NO!	1

I'd like to get out of my neighborhood.

YES!	1
yes	1
no	1
NO!	1

There are people in my neighborhood who encourage me to do my best.

YES!	1
yes	1
no	1
NO!	1



Which of the following activities for people your age are available in your community?

Sports teams

Yes	1
No	1

Scouting

Yes	1
No	1

Boys and girls clubs

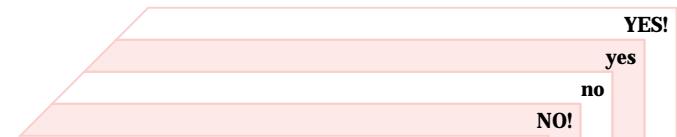
Yes	1
No	1

4-H clubs

Yes	1
No	1

Service clubs

Yes	1
No	1



How much do each of the following statements describe your neighborhood:

Crime and/or drug selling

YES!	1
yes	1
no	1
NO!	1

Fights

YES!	1
yes	1
no	1
NO!	1

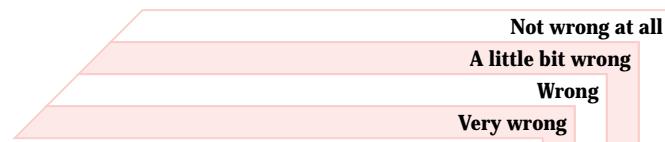
Lots of empty or abandoned buildings

YES!	1
yes	1
no	1
NO!	1

Lots of graffiti

YES!	1
yes	1
no	1
NO!	1

The next few questions ask about your family.



How wrong do your parents feel it would be for you to:

Drink beer, wine or hard liquor (for example, vodka, whiskey or gin) regularly?

Smoke cigarettes?

Smoke marijuana?

Steal anything worth more than \$5?

Draw graffiti, or write things or draw pictures on buildings or other property (without the owner's permission)?

Pick a fight with someone?

Have you changed homes in the past year?

- No
- Yes

How many times have you changed homes since kindergarten?

- Never
- 1 or 2 times
- 3 or 4 times
- 5 or 6 times
- 7 or more times

Have you changed schools (including changing from elementary to middle and middle to high school) in the past year?

- No
- Yes

How many times have you changed schools (including changing from elementary to middle and middle to high school) since kindergarten?

- Never
- 1 or 2 times
- 3 or 4 times
- 5 or 6 times
- 7 or more times

Has anyone in your family ever had a severe alcohol or drug problem?

- No
- Yes

I don't have any brothers or sisters

Yes

No

Have any of your brothers or sisters ever:

Drunk beer, wine or hard liquor (for example, vodka, whiskey or gin)?

Smoked marijuana?

Taken a handgun to school?

Been suspended or expelled from school?

YES!

yes

NO!

no

The rules in my family are clear.

People in my family often insult or yell at each other.

When I am not at home, one of my parents knows where I am and who I am with.

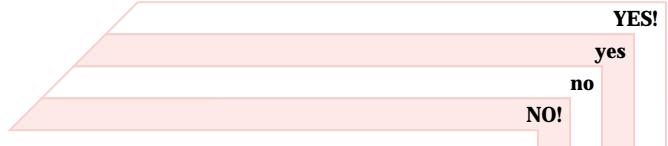
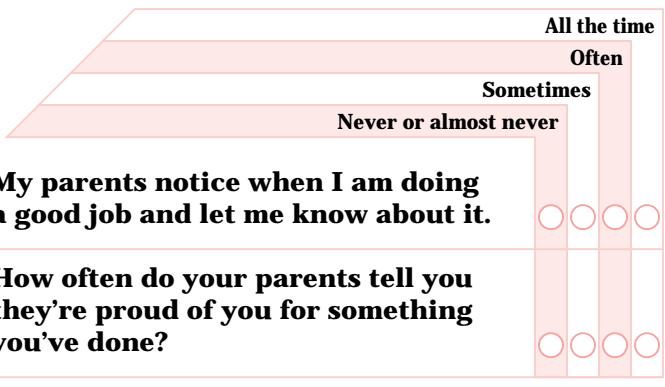
We argue about the same things in my family over and over.

If you drank some beer or wine or liquor (for example, vodka, whiskey, or gin) without your parents' permission, would you be caught by your parents?

My family has clear rules about alcohol and drug use.

If you carried a handgun without your parents' permission, would you be caught by your parents?

If you skipped school, would you be caught by your parents?



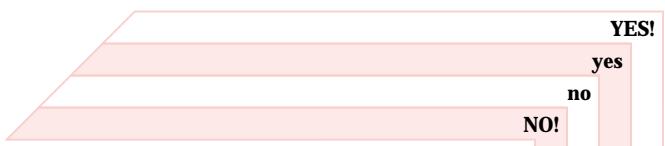
Do you share your thoughts and feelings with your mother?

My parents ask me what I think before most family decisions affecting me are made.

Do you share your thoughts and feelings with your father?

Do you enjoy spending time with your mother?

Do you enjoy spending time with your father?



Do you feel very close to your father?

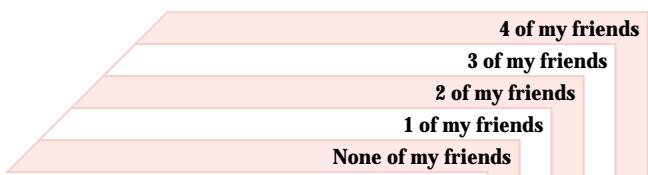
My parents give me lots of chances to do fun things with them.

My parents ask if I've gotten my homework done.

People in my family have serious arguments.

Would your parents know if you did not come home on time?

These questions ask for more information about your friends.



Participated in clubs, organizations or activities at school?

Made a commitment to stay drug-free?

Liked school?

Regularly attended religious services?

Tried to do well in school?

PLEASE DO NOT WRITE IN THIS AREA

You may be asked to answer some additional questions. If so, those questions will be handed to you on a sheet of paper or written where everyone taking the survey can see them. In the spaces that follow, record your answer to each additional question.

1. (A) (B) (C) (D) (E) (F) (G) (H)

2. (A) (B) (C) (D) (E) (F) (G) (H)

3. (A) (B) (C) (D) (E) (F) (G) (H)

4. (A) (B) (C) (D) (E) (F) (G) (H)

5. (A) (B) (C) (D) (E) (F) (G) (H)

6. (A) (B) (C) (D) (E) (F) (G) (H)

7. (A) (B) (C) (D) (E) (F) (G) (H)

8. (A) (B) (C) (D) (E) (F) (G) (H)

9. (A) (B) (C) (D) (E) (F) (G) (H)

10. (A) (B) (C) (D) (E) (F) (G) (H)



APPENDIX B: SURVEY C VARIABLE LABEL DICTIONARY

⁴ *Communities That Care® Youth Survey* and related materials have been used with the permission of Dr. Patricia B. Getty, Acting Director, Division of Systems Development, Center for Substance Abuse Prevention, Substance Abuse & Mental Health Services Administration, patricia.getty@samhsa.hhs.gov.

STANDARD CTCYS: RAW SURVEY ITEMS

Variable Name	Variable Label	Comments
RESPONDENT	Respondent ID Number	Litho-serial code from survey form
D1	Respondent's Age	Item removed to ensure student anonymity
D2	Respondent's Grade	0 (6 th) – 6 (12 th) Note: This item masked for students at a middle school reporting a high school grade level and students at a high school reporting a middle school grade level. This was done to ensure student anonymity and to better the match grade distribution of the individual school reports.
D3	Respondent's Sex	0 (Female), 1 (Male) Note: This item masked for students from Glenvar MS and HS in order to ensure student anonymity.
RACE (D4)	Respondent's Race	Item removed to ensure student anonymity
D8	Language spoken at home	Item removed to ensure student anonymity
Q13	What were your last year's grades	0 (F's) – 4 (A's)
Q738	School days missed/skipped	0 (None) – 6 (11)
Q3681	Schoolwork is meaningful & important	0 (Always) – 4 (Never)
Q3682	How interesting are courses	0 (Very interest) – 4 (Very dull)
Q3683	How important learning for later life	0 (Very import.) – 4 (Not import.)
Q3684	How often enjoy school	0 (Never) – 4 (Always)
Q3685	How often hate school	0 (Never) – 4 (Always)
Q3686	How often do best work in school	0 (Never) – 4 (Always)
Q14	Students given chances to decide	0 (NO!) – 3 (YES!)
Q2891	Teachers ask me to work on special projects	0 (NO!) – 3 (YES!)
Q15	Teacher praises me for good work	0 (NO!) – 3 (YES!)
Q2057	Chances for school activities outside class	0 (NO!) – 3 (YES!)
Q17	Can talk to teachers one-on-one	0 (NO!) – 3 (YES!)
Q18	I feel safe at my school	0 (NO!) – 3 (YES!)
Q21	School tells parents when I do well	0 (NO!) – 3 (YES!)
Q731	Teachers praise me for hard work	0 (NO!) – 3 (YES!)
Q23	Are your grades better than others	0 (NO!) – 3 (YES!)
Q3668	Chances to be part of discussions & activities	0 (NO!) – 3 (YES!)
Q58A	4 best friends (12 months): Smoked cigarettes	0 (None) – 4 (4)
Q58B	4 best friends (12 months): Tried alcohol	0 (None) – 4 (4)
Q58C	4 best friends (12 months): Used marijuana	0 (None) – 4 (4)
Q58D	4 best friends (12 months): Used hard drugs	0 (None) – 4 (4)
Q65A	4 best friends (12 months): Suspended	0 (None) – 4 (4)
Q65B	4 best friends (12 months): Carried handgun	0 (None) – 4 (4)

Note: 88 = Multiple and 99 = Missing for all variables EXCEPT for D5A-D5P.

Variable Name	Variable Label	Comments
Q65C	4 best friends (12 months): Sold illegal drugs	0 (None) – 4 (4)
Q65D	4 best friends (12 months): Stole vehicle	0 (None) – 4 (4)
Q65E	4 best friends (12 months): Been arrested	0 (None) – 4 (4)
Q65F	4 best friends (12 months): Dropped out of school	0 (None) – 4 (4)
Q65G	4 best friends (12 months): Belonged to gang	0 (None) – 4 (4)
Q59A	Are you cool if: Smoke cigarettes	0 (No) – 4 (Yes)
Q59B	Are you cool if: Drink alcohol regularly	0 (No) – 4 (Yes)
Q59C	Are you cool if: Smoke marijuana	0 (No) – 4 (Yes)
Q59D	Are you cool if: Carry handgun	0 (No) – 4 (Yes)
U1	Ever used smokeless/chewing tobacco	0 (No) – 4 (Regularly)
U2	Frequency (30 days): Smokeless/chewing tobacco	0 (No) – 4 (Regularly)
U3	Ever smoked cigarettes	0 (No) – 4 (Regularly)
U4	Number occasions (30 days): Smoked cigarettes	0 (0) – 6 (40+)
U5	Number occasions (lifetime): Alcohol	0 (0) – 6 (40+)
U6	Number occasions (30 days): Alcohol	0 (0) – 6 (40+)
U10	Number occasions (lifetime): Inhalants	0 (0) – 6 (40+)
U11	Number occasions (30 days): Inhalants	0 (0) – 6 (40+)
U18	Number occasions (lifetime): Cocaine	0 (0) – 6 (40+)
U19	Number occasions (30 days): Cocaine	0 (0) – 6 (40+)
U32	Number occasions (lifetime): Marijuana or hashish	0 (0) – 6 (40+)
U33	Number occasions (30 days): Marijuana or hashish	0 (0) – 6 (40+)
U28	Number occasions (lifetime): Derbisol	0 (0) – 6 (40+)
U29	Number occasions (30 days): Derbisol	0 (0) – 6 (40+)
U14	Number occasions (lifetime): Hallucinogens	0 (0) – 6 (40+)
U15	Number occasions (30 days): Hallucinogens	0 (0) – 6 (40+)
U36	Number occasions (lifetime): Ecstasy	0 (0) – 6 (40+)
U37	Number occasions (30 days): Ecstasy	0 (0) – 6 (40+)
U16	Number occasions (lifetime): Methamphetamine	0 (0) – 6 (40+)
U17	Number occasions (30 days): Methamphetamine	0 (0) – 6 (40+)
U38	Number occasions (lifetime): Other club drugs	0 (0) – 6 (40+)
U39	Number occasions (30 days): Other club drugs	0 (0) – 6 (40+)
U24	Number occasions (lifetime): Heroin	0 (0) – 6 (40+)
U25	Number occasions (30 days): Heroin	0 (0) – 6 (40+)
PURD1	Number occasions (lifetime): Prescription pain relievers	0 (0) – 6 (40+)
PURD2	Number occasions (30 days): Prescription pain relievers	0 (0) – 6 (40+)
PURD3	Number occasions (lifetime): Prescription stimulants	0 (0) – 6 (40+)
PURD4	Number occasions (30 days): Prescription stimulants	0 (0) – 6 (40+)

Note: 88 = Multiple and 99 = Missing for all variables EXCEPT for D5A-D5P.

Variable Name	Variable Label	Comments
PURD5	Number occasions (lifetime): Prescription tranquilizers	0 (0) – 6 (40+)
PURD6	Number occasions (30 days): Prescription tranquilizers	0 (0) – 6 (40+)
Q66A	Number Times (12 Months): Been suspended	0 (0) – 7 (40+)
Q66B	Number Times (12 Months): Carried handgun	0 (0) – 7 (40+)
Q66C	Number Times (12 Months): Sold illegal drugs	0 (0) – 7 (40+)
Q66D	Number Times (12 Months): Stolen vehicle	0 (0) – 7 (40+)
Q66E	Number Times (12 Months): Been arrested	0 (0) – 7 (40+)
Q66F	Number Times (12 Months): Attacked to hurt	0 (0) – 7 (40+)
Q66G	Number Times (12 Months): Drunk or high at school	0 (0) – 7 (40+)
Q66H	Number Times (12 Months): Handgun to school	0 (0) – 7 (40+)
Q2561	Ever belonged to a gang	0 (No) – 1 (Yes)
Q3678	Did that gang have a name	0 (No), 1 (Yes), 2 (never belong)
U7	Number occasions (2 weeks): Binge drinking	0 (None) – 5 (10+)
Q60A	Age first: Smoked marijuana	0 (Never have) – 8 (17 or older)
Q60B	Age first: Smoked cigarettes	0 (Never have) – 8 (17 or older)
Q60C	Age first: Drunk alcohol	0 (Never have) – 8 (17 or older)
Q60D	Age first: Drunk alcohol regularly	0 (Never have) – 8 (17 or older)
Q60E	Age first: Suspended from school	0 (Never have) – 8 (17 or older)
Q60F	Age first: Arrested	0 (Never have) – 8 (17 or older)
Q60G	Age first: Carried handgun	0 (Never have) – 8 (17 or older)
Q60H	Age first: Attacked to hurt	0 (Never have) – 8 (17 or older)
Q60I	Age first: Belonged to gang	0 (Never have) – 8 (17 or older)
Q54	Frequency attend religious services	0 (Never) – 3 (1/wk)
Q73	Like to see how much I can get away with	0 (False) – 3 (True)
DEP1	Sometimes I think life is not worth it	0 (NO!) – 3 (YES!)
DEP2	At times I think I am no good at all	0 (NO!) – 3 (YES!)
DEP3	I am inclined to think that I am a failure	0 (NO!) – 3 (YES!)
DEP4	Felt depressed or sad most days	0 (NO!) – 3 (YES!)
Q63	Okay to beat people up if they start it	0 (NO!) – 3 (YES!)
Q56	Okay to take without asking	0 (NO!) – 3 (YES!)
Q64	Important to be honest with parents	0 (NO!) – 3 (YES!)
Q72	Okay to cheat at school	0 (NO!) – 3 (YES!)
Q62	Ignore rules that get in my way	0 (False) – 3 (True)
Q55	Do opposite to get people mad	0 (False) – 3 (True)
Q57A	Do what feels good no matter what	0 (Never) – 5 (1/wk)
Q57B	Do dangerous act on a dare	0 (Never) – 5 (1/wk)
Q57C	Do crazy things even if dangerous	0 (Never) – 5 (1/wk)

Note: 88 = Multiple and 99 = Missing for all variables EXCEPT for D5A-D5P.

Variable Name	Variable Label	Comments
Q87A	Intention to use: Cigarettes	0 (NO!) – 3 (YES!)
Q87B	Intention to use: Alcohol	0 (NO!) – 3 (YES!)
Q87C	Intention to use: Marijuana	0 (NO!) – 3 (YES!)
Q68	Friend steals CD: What would you do	
Q69	Mom says can't go out: What would you do	
Q70	Teen bumps you: What would you do	
Q71	Friend offers alcohol: What would you do	
Q61A	How wrong: Take handgun to school	0 (Very wrong) – 3 (Not wrong)
Q61B	How wrong: Steal item worth more than \$5	0 (Very wrong) – 3 (Not wrong)
Q61C	How wrong: Pick fight	0 (Very wrong) – 3 (Not wrong)
Q61D	How wrong: Attack to hurt	0 (Very wrong) – 3 (Not wrong)
Q61E	How wrong: Stay away from school all day	0 (Very wrong) – 3 (Not wrong)
Q67A	How wrong: Drink alcohol regularly	0 (Very wrong) – 3 (Not wrong)
Q67B	How wrong: Smoke cigarettes	0 (Very wrong) – 3 (Not wrong)
Q67C	How wrong: Smoke marijuana	0 (Very wrong) – 3 (Not wrong)
Q67D	How wrong: Use hard drugs	0 (Very wrong) – 3 (Not wrong)
Q3687	How much risk: Smoke one + pack a day	0 (No risk) – 3 (Great risk)
Q3679	How much risk: Try marijuana 1 or 2 times	0 (No risk) – 3 (Great risk)
Q3688	How much risk: Smoke marijuana regularly	0 (No risk) – 3 (Great risk)
Q3680	How much risk: 1 or 2 drinks nearly every day	0 (No risk) – 3 (Great risk)
Q25	How easy to get: Alcohol	0 (Very hard) – 3 (Very easy)
Q26	How easy to get: Cigarettes	0 (Very hard) – 3 (Very easy)
Q28	How easy to get: Hard drugs	0 (Very hard) – 3 (Very easy)
Q32	How easy to get: Marijuana	0 (Very hard) – 3 (Very easy)
Q30	How easy to get: Handgun	0 (Very hard) – 3 (Very easy)
Q27	Would kid be caught smoking marijuana	0 (NO!) – 3 (YES!)
Q29	Would kid be caught drinking alcohol	0 (NO!) – 3 (YES!)
Q31	Would kid be caught with handgun	0 (NO!) – 3 (YES!)
Q33A	Neighborhood adult judge kids using marijuana	0 (Very wrong) – 3 (Not wrong)
Q33B	Neighborhood adult judge kids using alcohol	0 (Very wrong) – 3 (Not wrong)
Q33C	Neighborhood adult judge kids using cigarettes	0 (Very wrong) – 3 (Not wrong)
Q34A	Adults known to: Use drugs	0 (None) – 4 (5+)
Q34B	Adults known to: Sell drugs	0 (None) – 4 (5+)
Q34C	Adults known to: Do bad stuff	0 (None) – 4 (5+)
Q34D	Adults known to: Get drunk-high	0 (None) – 4 (5+)
Q100	I would miss my neighborhood if moving	0 (NO!) – 3 (YES!)
Q101	Neighbors notice my good job	0 (NO!) – 3 (YES!)
Q102	I like my neighborhood	0 (NO!) – 3 (YES!)
Q555	Neighbors I could talk to	0 (NO!) – 3 (YES!)

Note: 88 = Multiple and 99 = Missing for all variables EXCEPT for D5A-D5P.

Variable Name	Variable Label	Comments
Q105	People in neighborhood proud of me	0 (NO!) – 3 (YES!)
Q107	I feel safe in my neighborhood	0 (NO!) – 3 (YES!)
Q109	Like to get out of my neighborhood	0 (NO!) – 3 (YES!)
Q111	Neighborhood people encourage to do my best	0 (NO!) – 3 (YES!)
Q2912	Activities in community: Sports team	0 = No, 1 = Yes
Q2913	Activities in community: Scouting	0 = No, 1 = Yes
Q2914	Activities in community: Girls and boys clubs	0 = No, 1 = Yes
Q2915	Activities in community: 4-H clubs	0 = No, 1 = Yes
Q2916	Activities in community: Service clubs	0 = No, 1 = Yes
Q103A	Neighborhood has: Crime and drugs	0 (NO!) – 3 (YES!)
Q103B	Neighborhood has: Fights	0 (NO!) – 3 (YES!)
Q103C	Neighborhood has: Abandoned buildings	0 (NO!) – 3 (YES!)
Q103D	Neighborhood has: Lots of graffiti	0 (NO!) – 3 (YES!)
Q74A	Parents' attitudes toward: Alcohol	0 (Very wrong) – 3 (Not wrong)
Q74B	Parents' attitudes toward: Cigarettes	0 (Very wrong) – 3 (Not wrong)
Q74C	Parents' attitudes toward: Marijuana	0 (Very wrong) – 3 (Not wrong)
Q74D	Parents' attitudes toward: Steal \$5+	0 (Very wrong) – 3 (Not wrong)
Q74E	Parents' attitudes toward: Graffiti	0 (Very wrong) – 3 (Not wrong)
Q74F	Parents' attitudes toward: Pick fights	0 (Very wrong) – 3 (Not wrong)
Q110	Changed homes in past year	0 = No, 1 = Yes
Q104	How many homes since kindergarten	0 (Never) – 4 (7+)
Q106	Have you changed schools in the past year	0 = No, 1 = Yes
Q108	How many schools since kindergarten	0 (Never) – 4 (7+)
Q75A	Have sibs ever: Drunk alcohol	0 = No, 1 = Yes, 2 (Don't have)
Q75B	Have sibs ever: Smoked marijuana	0 = No, 1 = Yes, 2 (Don't have)
Q75C	Have sibs ever: Smoked cigarettes	0 = No, 1 = Yes, 2 (Don't have)
Q75D	Have sibs ever: Taken gun to school	0 = No, 1 = Yes, 2 (Don't have)
Q75E	Have sibs ever: Been suspended	0 = No, 1 = Yes, 2 (Don't have)
Q77	Family members with alcohol or drug problems	0 = No, 1 = Yes
Q76	Rules in my family are clear	0 (NO!) – 3 (YES!)
Q2909	Family insults or yells at each other	0 (NO!) – 3 (YES!)
Q79	Parents know who I am with	0 (NO!) – 3 (YES!)
Q2911	Family argues same things over and over	0 (NO!) – 3 (YES!)
Q82	Would parents catch if drank alcohol	0 (NO!) – 3 (YES!)
Q83	Family has clear ATOD use rules	0 (NO!) – 3 (YES!)
Q84	Would parents catch if carried gun	0 (NO!) – 3 (YES!)
Q85	Would parents catch if skipped school	0 (NO!) – 3 (YES!)
Q86	Parents notice my good job	0 (Never) – 3 (All the time)
Q91	How often parents praise	0 (Never) – 3 (All the time)

Note: 88 = Multiple and 99 = Missing for all variables EXCEPT for D5A-D5P.

Variable Name	Variable Label	Comments
Q87	Do you feel close to mother	0 (NO!) – 3 (YES!)
Q88	Do you share feelings with mother	0 (NO!) – 3 (YES!)
Q89	Parents ask for input on family decisions	0 (NO!) – 3 (YES!)
Q92	Do you share feelings with father	0 (NO!) – 3 (YES!)
Q93	Do you enjoy spending time with mother	0 (NO!) – 3 (YES!)
Q94	Do you enjoy spending time with father	0 (NO!) – 3 (YES!)
Q96	Could ask mom or dad for help with problems	0 (NO!) – 3 (YES!)
Q97	Do you feel close to father	0 (NO!) – 3 (YES!)
Q99	Have chances to do fun things with parents	0 (NO!) – 3 (YES!)
Q78	Parents ask about homework	0 (NO!) – 3 (YES!)
Q2910	Family has serious arguments	0 (NO!) – 3 (YES!)
Q80	Parents know if home on time	0 (NO!) – 3 (YES!)
D5A	People living with now: Mother	Items removed to ensure student anonymity
D5B	People living with now: Stepmother	
D5C	People living with now: Foster Mother	
D5D	People living with now: Grandmother	
D5E	People living with now: Aunt	
D5F	People living with now: Father	
D5G	People living with now: Stepfather	
D5H	People living with now: Foster Father	
D5I	People living with now: Grandfather	
D5J	People living with now: Uncle	
D5K	People living with now: Other Adult	
D5L	People living with now: Brothers	
D5M	People living with now: Stepbrothers	
D5N	People living with now: Sisters	
D5O	People living with now: Stepsisters	
D5P	People living with now: Other children	
D6	Number of older siblings	
D7	Number of younger siblings	
D11	Where living now	
SCHOOL	Cluster Identification	
WT	Overall Weighting Variable	Adjustment only applies to overall results for full dataset. This weighting factor should not be used when calculating school-level results.

Note: 88 = Multiple and 99 = Missing for all variables EXCEPT for D5A-D5P.

STANDARD CTCYS: CALCULATED FIELDS
RISK AND PROTECTIVE FACTORS

VARIABLE NAME	VARIABLE LABEL	COMMENTS
PCTCP1	Community opportunities for prosocial involvement	Community domain protective factor – this scale is UNDER REVISION, data are all missing (-9).
PCTCP2	Community rewards for prosocial involvement	Community domain protective factor
PCTCR3	Low neighborhood attachment	Community domain risk factor
PCTCR4	Community disorganization	Community domain risk factor
PCTCR5	Personal transitions and mobility	Community domain risk factor
PCTCR7	Laws and norms favorable to drug use and firearms	Community domain risk factor
PCTCR8	Perceived availability of drugs and firearms	Community domain risk factor
PCTFP1	Family attachment	Family domain protective factor
PCTFP2	Family opportunities for prosocial involvement	Family domain protective factor
PCTFP3	Family rewards for prosocial involvement	Family domain protective factor
PCTFR4	Poor family supervision	Family domain risk factor
PCTFR5	Poor family discipline	Family domain risk factor
PCTFR6	Family conflict	Family domain risk factor – this scale is UNDER REVISION, data are all missing (-9).
PCTFR7	Family history of antisocial behavior	Family domain risk factor
PCTFR8	Parental attitudes favorable to ATOD use	Family domain risk factor
PCTFR9	Parental attitudes favorable to antisocial behavior	Family domain risk factor
PCTSP1	School opportunities for prosocial involvement	School domain protective factor
PCTSP2	School rewards for prosocial involvement	School domain protective factor
PCTSR3	Poor academic performance	School domain risk factor
PCTSR4	Low school commitment	School domain risk factor
PCTIP1	Religiosity	Peer-individual domain risk factor
PCTIP2	Social skills	Peer-individual domain risk factor
PCTIP3	Belief in moral order	Peer-individual domain risk factor
PCTIP4	Rebelliousness	Peer-individual domain risk factor
PCTIP5	Friends' delinquent behavior	Peer-individual domain risk factor
PCTIP6	Friends' use of drugs	Peer-individual domain risk factor
PCTIP7	Peer rewards for antisocial behavior	Peer-individual domain risk factor
PCTIP8	Favorable attitudes toward antisocial behavior	Peer-individual domain risk factor
PCTIP9	Favorable attitudes toward ATOD use	Peer-individual domain risk factor
PCTIP10	Low perceived risks of drug use	Peer-individual domain risk factor
PCTIP11	Early initiation	Peer-individual domain risk factor
PCTIP13	Sensation seeking	Peer-individual domain risk factor
PCTIP14	Gang involvement	Behavioral outcomes

STANDARD CTCYS: CALCULATED FIELDS
PREVALENCE FACTORS

VARIABLE NAME	VARIABLE LABEL	COMMENTS	
		Based on Dichotomi- zation of:	
U1P	Lifetime prevalence of smokeless/chewing tobacco	U1	0=No 1=Yes
U2P	30-day prevalence of smokeless/chewing tobacco	U2	
U3P	Lifetime prevalence of cigarettes	U3	0=No 1=Yes
U4P	30-day prevalence of cigarettes	U4	
U5P	Lifetime prevalence of alcohol	U5	0=No 1=Yes
U6P	30-day prevalence of alcohol	U6	
U7P	Two-week prevalence of binge drinking	U7	0=No 1=Yes
U10P	Lifetime prevalence of inhalants	U10	
U11P	30-day prevalence of inhalants	U11	0=No 1=Yes
U18P	Lifetime prevalence of cocaine	U18	
U19P	30-day prevalence of cocaine	U19	0=No 1=Yes
U32P	Lifetime prevalence of marijuana or hashish	U32	
U33P	30-day prevalence of marijuana or hashish	U33	0=No 1=Yes
U14P	Lifetime prevalence of psychedelics	U14	
U15P	30-day prevalence of psychedelics	U15	0=No 1=Yes
U36P	Lifetime prevalence of ecstasy	U36	
U37P	30-day prevalence of ecstasy	U37	0=No 1=Yes
U16P	Lifetime prevalence of methamphetamine	U16	
U17P	30-day prevalence of methamphetamine	U17	0=No 1=Yes
U38P	Lifetime prevalence of other club drugs	U38	
U39P	30-day prevalence of other club drugs	U39	0=No 1=Yes
U24P	Lifetime prevalence of heroin	U24	
U25P	30-day prevalence of heroin	U25	0=No 1=Yes
PURD1P	Lifetime prevalence of prescription pain relievers	PURD1	
PURD2P	30-day prevalence of prescription pain relievers	PURD2	0=No 1=Yes
PURD3P	Lifetime prevalence of prescription stimulants	PURD3	
PURD4P	30-day prevalence of prescription stimulants	PURD4	0=No 1=Yes
PURD5P	Lifetime prevalence of prescription tranquilizers	PURD5	
PURD6P	30-day prevalence of prescription tranquilizers	PURD6	0=No 1=Yes
Q66AP	Annual prevalence of school suspension	Q66A	
Q66BP	Annual prevalence of carrying handgun	Q66B	
Q66CP	Annual prevalence of drug selling	Q66C	
Q66DP	Annual prevalence of vehicle theft	Q66D	

VARIABLE NAME	VARIABLE LABEL	COMMENTS	
		Based on Dichotomi- zation of:	
Q66EP	Annual prevalence of being arrested	Q66E	0=No
Q66FP	Annual prevalence of attacking a person with intent to harm	Q66F	
Q66GP	Annual prevalence of being drunk or high at school	Q66G	1=Yes
Q66HP	Annual prevalence of taking gun to school	Q66H	

APPENDIX C: DATA SET DOCUMENTATION

⁵ *Communities That Care® Youth Survey* and related materials have been used with the permission of Dr. Patricia B. Getty, Acting Director, Division of Systems Development, Center for Substance Abuse Prevention, Substance Abuse & Mental Health Services Administration, patricia.getty@samhsa.hhs.gov.

DATA SET DOCUMENTATION

RISK AND PROTECTIVE FACTOR ITEM-CONSTRUCT DICTIONARY

Prepared by:

Channing Bete Company, Inc.
South Deerfield, MA

Risk Factor Scales

COMMUNITY DOMAIN

Low Neighborhood Attachment

- Q109 I'd like to get out of my neighborhood.
- Q102 I like my neighborhood.
- Q100 If I had to move, I would miss the neighborhood I now live in.

Community Disorganization

- Q103a How much do each of the following statements describe your neighborhood: crime and/or drug selling.
- Q103b How much do each of the following statements describe your neighborhood: fights.
- Q103c How much do each of the following statements describe your neighborhood: lots of empty or abandoned buildings.
- Q103d How much do each of the following statements describe your neighborhood: lots of graffiti.
- Q107 I feel safe in my neighborhood.

Personal Transitions and Mobility

- Q110 Have you changed homes in the past year?
- Q104 How many times have you changed homes since kindergarten?
- Q106 Have you changed schools (including changing from elementary to middle and middle to high school) in the past year?
- Q108 How many times have you changed schools since kindergarten?

Laws and Norms Favorable to Drug Use and Firearms

- Q33a How wrong would most adults (over 21) in your neighborhood think it was for kids your age: to use marijuana.
- Q33b How wrong would most adults (over 21) in your neighborhood think it was for kids your age: to drink alcohol.
- Q33c How wrong would most adults (over 21) in your neighborhood think it was for kids your age: to smoke cigarettes.
- Q29 If a kid drank some beer, wine or hard liquor (for example, vodka, whiskey, or gin) in your neighborhood, would he or she be caught by the police?
- Q27 If a kid smoked marijuana in your neighborhood, would he or she be caught by the police?
- Q31 If a kid carried a handgun in your neighborhood, would he or she be caught by the police?

Perceived Availability of Drugs and Firearms

- Q25 If you wanted to get some beer, wine or hard liquor (for example, vodka, whiskey, or gin), how easy would it be for you to get some?
- Q26 If you wanted to get some cigarettes, how easy would it be for you to get some?
- Q32 If you wanted to get some marijuana, how easy would it be for you to get some?
- Q28 If you wanted to get a drug like cocaine, LSD, or amphetamines, how easy would it be for you to get some?
- Q30 If you wanted to get a handgun, how easy would it be for you to get one?

FAMILY DOMAIN

Poor Family Supervision

- Q78 My parents ask if I've gotten my homework done.
- Q80 Would your parents know if you did not come home on time?
- Q79 When I am not at home, one of my parents knows where I am and whom I am with.
- Q76 The rules in my family are clear.
- Q83 My family has clear rules about alcohol and drug use.

Poor Family Discipline

- Q82 If you drank some beer or wine or liquor (for example, vodka, whiskey, or gin) without your parents' permission, would you be caught by your parents?
- Q85 If you skipped school, would you be caught by your parents?
- Q84 If you carried a handgun without your parents' permission, would you be caught by your parents?

Family History of Antisocial Behavior

- Q77 Has anyone in your family ever had a severe alcohol or drug problem?
- Q75a Have any of your brothers or sisters ever: drunk beer, wine or hard liquor (for example, vodka, whiskey or gin)?
- Q75b Have any of your brothers or sisters ever: smoked marijuana?
- Q75c Have any of your brothers or sisters ever: smoked cigarettes?
- Q75d Have any of your brothers or sisters ever: taken a handgun to school?
- Q75e Have any of your brothers or sisters ever: been suspended or expelled from school?
- Q34a About how many adults (over 21) have you known personally who in the past year have: used marijuana, crack, cocaine, or other drugs?
- Q34b About how many adults (over 21) have you known personally who in the past year have: sold or dealt drugs?
- Q34c About how many adults (over 21) have you known personally who in the past year have: done other things that could get them in trouble with the police, like stealing, selling stolen goods, mugging or assaulting others, etc?
- Q34d About how many adults (over 21) have you known personally who in the past year have: gotten drunk or high?

Parental Attitudes Favorable toward ATOD Use

- Q74a How wrong do your parents feel it would be for you to: drink beer, wine or hard liquor (for example, vodka, whiskey or gin) regularly?
- Q74b How wrong do your parents feel it would be for you to: smoke cigarettes?
- Q74c How wrong do your parents feel it would be for you to: smoke marijuana?

Parental Attitudes Favorable toward Antisocial Behavior

- Q74d How wrong do your parents feel it would be for you to: steal anything worth more than \$5?
- Q74e How wrong do your parents feel it would be for you to: draw graffiti, or write things or draw pictures on buildings or other property (without the owner's permission)?
- Q74f How wrong do your parents feel it would be for you to: pick a fight with someone?

SCHOOL DOMAIN

Poor Academic Performance

- Q13 Putting them all together, what were your grades like last year?
Q23 Are your school grades better than the grades of most students in your class?

Low School Commitment

- Q3681 How often do you feel that the schoolwork you are assigned is meaningful and important?
Q3682 How interesting are most of your courses to you?
Q3683 How important do you think the things you are learning in school are going to be for your later life?
Q3684 Now, thinking back over the past year in school, how often did you: Enjoy being in school?
Q3685 Now, thinking back over the past year in school, how often did you: Hate being in school?
Q3686 Now, thinking back over the past year in school, how often did you: Try to do your best work in school?
Q738 During the LAST FOUR WEEKS, how many whole days have you missed because you skipped or "cut"?

PEER-INDIVIDUAL DOMAIN

Low Perceived Risks of Drug Use

- Q3687 How much do you think people risk harming themselves (physically or in other ways) if they: smoke one or more packs of cigarettes per day?
Q3679 How much do you think people risk harming themselves (physically or in other ways) if they: try marijuana once or twice?
Q3688 How much do you think people risk harming themselves (physically or in other ways) if they: smoke marijuana regularly?
Q3680 How much do you think people risk harming themselves (physically or in other ways) if they: take one or two drinks of an alcoholic beverage (beer, wine, liquor) nearly every day?

Early Initiation of Drug Use and Antisocial Behavior

- Q60a How old were you when you first: smoked marijuana?
Q60b How old were you when you first: smoked a cigarette, even just a puff?
Q60c How old were you when you first: had more than a sip or two of beer, wine or hard liquor (for example, vodka, whiskey, or gin)?
Q60d How old were you when you first: began drinking alcoholic beverages regularly, that is, at least once or twice a month?
Q60e How old were you when you first: got suspended from school?
Q60f How old were you when you first: got arrested?
Q60g How old were you when you first: carried a handgun?
Q60h How old were you when you first: attacked someone with the idea of seriously hurting him or her?

Sensation Seeking

- Q57a How many times have you done the following things? Done what feels good no matter what.
Q57b How many times have you done the following things? Done something dangerous because someone dared you to do it.
Q57c How many times have you done the following things? Done crazy things even if they are a little dangerous.

Rebelliousness

- Q55 I do the opposite of what people tell me, just to get them mad.
- Q62 I ignore rules that get in my way.
- Q73 I like to see how much I can get away with.

Friends' Delinquent Behavior

- Q65a Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have been suspended from school?
- Q65b Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have carried a handgun?
- Q65c Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have sold illegal drugs?
- Q65d Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have stolen or tried to steal a motor vehicle such as a car or motorcycle?
- Q65e Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have been arrested?
- Q65f Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have dropped out of school?

Friends' Use of Drugs

- Q58a Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have smoked cigarettes?
- Q58b Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have tried beer, wine or hard liquor (for example, vodka, whiskey or gin) when their parents didn't know about it?
- Q58c Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have used marijuana?
- Q58d Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have used LSD, cocaine, amphetamines, or other illegal drugs?

Peer Rewards for Antisocial Behavior

- Q59a What are the chances you would be seen as cool if you smoked cigarettes?
- Q59b What are the chances you would be seen as cool if you began drinking alcoholic beverages regularly, that is, at least once or twice a month?
- Q59c What are the chances you would be seen as cool if you smoked marijuana?
- Q59d What are the chances you would be seen as cool if you carried a handgun?

Favorable Attitudes toward Antisocial Behavior

- Q61a How wrong do you think it is for someone your age to take a handgun to school?
- Q61b How wrong do you think it is for someone your age to steal anything worth more than \$5?
- Q61c How wrong do you think it is for someone your age to pick a fight with someone?
- Q61d How wrong do you think it is for someone your age to attack someone with the idea of seriously hurting him or her?
- Q61e How wrong do you think it is for someone your age to stay away from school all day when their parents think they are at school?

Favorable Attitudes toward ATOD Use

- Q67a How wrong do you think it is for someone your age to drink beer, wine or hard liquor (for example, vodka, whiskey or gin) regularly?
- Q67b How wrong do you think it is for someone your age to smoke cigarettes?
- Q67c How wrong do you think it is for someone your age to smoke marijuana?
- Q67d How wrong do you think it is for someone your age to use LSD, cocaine, amphetamines or another illegal drug?

Gang Involvement

- Q65g Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have: been members of a gang?
- Q2561 Have you ever belonged to a gang?
- Q3678 If you have ever belonged to a gang, did that gang have a name?
- Q60i How old were you when you first: belonged to a gang?

Protective Factor Scales

COMMUNITY DOMAIN

Community Rewards for Prosocial Involvement

- Q101 My neighbors notice when I am doing a good job and let me know.
- Q111 There are people in my neighborhood who encourage me to do my best.
- Q105 There are people in my neighborhood who are proud of me when I do something well.

FAMILY DOMAIN

Family Attachment

- Q87 Do you feel very close to your mother?
- Q88 Do you share your thoughts and feelings with your mother?
- Q97 Do you feel very close to your father?
- Q92 Do you share your thoughts and feelings with your father?

Family Opportunities for Prosocial Involvement

- Q99 My parents give me lots of chances to do fun things with them.
- Q89 My parents ask me what I think before most family decisions affecting me are made.
- Q96 If I had a personal problem, I could ask my mom or dad for help.

Family Rewards for Prosocial Involvement

- Q86 My parents notice when I am doing a good job and let me know about it.
- Q91 How often do your parents tell you they're proud of you for something you've done?
- Q93 Do you enjoy spending time with your mother?
- Q94 Do you enjoy spending time with your father?

SCHOOL DOMAIN

School Opportunities for Prosocial Involvement

- Q14 In my school, students have lots of chances to help decide things like class activities and rules.
- Q17 There are lots of chances for students in my school to talk with a teacher one-on-one.
- Q2891 Teachers ask me to work on special classroom projects.
- Q2057 There are lots of chances for students in my school to get involved in sports, clubs, and other school activities outside of class.
- Q3668 I have lots of chances to be part of class discussions or activities.

School Rewards for Prosocial Involvement

- Q15 My teacher(s) notices when I am doing a good job and lets me know about it.
Q21 The school lets my parents know when I have done something well.
Q18 I feel safe at my school.
Q731 My teachers praise me when I work hard in school.

PEER-INDIVIDUAL DOMAIN

Religiosity

- Q54 How often do you attend religious services or activities?

Social Skills

- Q68 You're looking at CDs in a music store with a friend. You look up and see her slip a CD under her coat. She smiles and says, "Which one do you want? Go ahead, take it while nobody's around." There is nobody in sight, no employees and no other customers. What would you do now?
Q69 It's 8:00 on a weeknight and you are about to go over to a friend's home when your mother asks you where you are going. You say, "Oh, just going to go hang out with some friends." She says, "No, you'll just get into trouble if you go out. Stay home tonight." What would you do now?
Q70 You are visiting another part of town, and you don't know any of the people your age there. You are walking down the street, and some teenager you don't know is walking toward you. He is about your size, and as he is about to pass you, he deliberately bumps into you and you almost lose your balance. What would you say or do?
Q71 You are at a party at someone's house, and one of your friends offers you a drink containing alcohol. What would you say or do?

Belief in the Moral Order

- Q56 I think it is okay to take something without asking, if you can get away with it.
Q72 I think sometimes it's okay to cheat at school.
Q63 It is all right to beat up people if they start the fight.
Q64 It is important to be honest with your parents, even if they become upset or you get punished.

Outcome Scales

Antisocial Behavior

- Q66a How many times in the past year (12 months) have you been suspended from school?
- Q66b How many times in the past year (12 months) have you carried a handgun?
- Q66c How many times in the past year (12 months) have you sold illegal drugs?
- Q66d How many times in the past year (12 months) have you stolen or tried to steal a motor vehicle such as a car or motorcycle?
- Q66e How many times in the past year (12 months) have you been arrested?
- Q66f How many times in the past year (12 months) have you attacked someone with the idea of seriously hurting him or her?
- Q66g How many times in the past year (12 months) have you been drunk or high at school?
- Q66h How many times in the past year (12 months) have you taken a handgun to school?

Gang Involvement

- Q65g Think of your four best friends (the friends you feel closest to). In the past year (12 months), how many of your best friends have been members of a gang?
- Q2561 Have you ever belonged to a gang?
- Q3678 If you have ever belonged to a gang, did that gang have a name?
- Q60i How old were you when you first belonged to a gang?

Drug Involvement

- U2 How frequently have you used smokeless tobacco during the past 30 days?
- U4 How frequently have you smoked cigarettes during the past 30 days?
- U6 On how many occasions (if any) have you had beer, wine or hard liquor during the past 30 days?
- U33 On how many occasions (if any) have you used marijuana or hashish during the past 30 days?
- U15 On how many occasions (if any) have you used LSD or other psychedelics during the past 30 days?
- U19 On how many occasions (if any) have you used cocaine during the past 30 days?
- U11 On how many occasions (if any) have you snuffed glue, breathed the contents of an aerosol spray can, or inhaled other gases or sprays, in order to get high during the past 30 days?