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# Is There Hope For Our Children?: An Evaluation of a Drug Resistant Education Program

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**IS THERE HOPE FOR OUR CHILDREN?  
AN EVALUATION OF A DRUG RESISTANT EDUCATION PROGRAM**

**A Thesis**

**Presented to the**

**Department of Criminal Justice  
and the Faculty of the Graduate College**

**University of Nebraska**

**In Partial Fulfillment**

**of the Requirements for the Degree**

**Master of Arts**

**University of Nebraska at Omaha**

**by**

**Gerald Johnson**

**December 2000**

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THESIS ACCEPTANCE

Acceptance for the faculty of the Graduate College,  
University of Nebraska, in partial fulfillment of the  
requirements for the degree Masters of Arts, Criminal Justice Studies  
University of Nebraska at Omaha

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Date *November 27, 2000*

IS THERE HOPE FOR OUR CHILDREN?  
AN EVALUATION OF A DRUG RESISTANT EDUCATION PROGRAM

Gerald Johnson, M.A., Criminal Justice Studies

University of Nebraska at Omaha, 2000

Advisor: Dr. Miram DeLone

Despite the abundance of drug prevention programs in this country, drug usage among America's youth continues to grow. This project will examine one emerging school-based prevention program designed to develop resistance skills that have been proven to help students oppose those risky behaviors. Prior to this examination the extent of drug use by American school children is discussed, followed by an extensive literature review evaluation. The main body of the thesis is a description of the All Stars Jr. Program, with an assessment and evaluation of the program's implementation. Finally, a discussion of how these findings impact the program performance with suggestions for future policy initiatives.

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Last, but certainly not least, I would like to dedicate this thesis to my parents, who celebrated their fiftieth wedding anniversary this year. Their relationship is a wonderful example of commitment and love to our entire family. I consider myself very fortunate to have them for parents and to continually watch my children and now my grandchildren experience the love and warmth of their home. For this I will always be grateful.

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## *Chapter 1*

### *Extent of the Problem*

A recent student survey (1999) revealed that over half (55%) of the young people questioned had tried illicit drugs by the time they had finished high school (Johnston, O'Malley and Bachman, 2000:3). Illicit drugs include marijuana, amphetamines, hallucinogens, tranquilizers, heroin and alcohol, and if inhalants are included within the definition of an illicit drug, over a third (37%) of the students tried these drugs as early as the eighth grade (Johnston, O'Malley and Bachman, 2000:3). Aside from alcohol, marijuana is the most widely used illicit drug among teenagers, with prevalence rates in grades eight, ten and twelve, of 17%, 32% and 38% respectively. In addition, cigarettes are also a serious problem. Nearly two-thirds of the students (65%) have tried smoking cigarettes by the twelfth grade, with over one-third (35%) of the twelfth graders reporting to be current smokers in 1999. Even as early as the eighth grade, nearly half have tried cigarettes (44%) and 18% already report being current smokers. Alcohol use is extremely widespread among today's teenagers. Four out of every five students (80%) have consumed alcohol (significant amounts) by the end of their high school years. Half of the eighth graders (51%) reported consuming alcohol in the eighth grade, in fact 62% of the twelfth graders and 25% of the eighth graders report being drunk at least once (Johnston, O'Malley and Bachman, 2000:3).

These are just a few of the key findings recently published in 1999 by the Monitoring the Future Project. The Monitoring the Future Project is conducted by the University of Michigan's Institute for Social Research and is supported through a series of investigator initiated, competitive research grants from the National Institute on Drug Abuse. This report is generated by a long-term study of American adolescents, college students, and young adults with the results compiled and published by University of Michigan, Institution of Social Research (Johnston, O'Malley and Bachman, 2000:1).

The Monitoring the Future Project consists of a series of large annual surveys given to representative samples of students nationwide in public and private secondary schools throughout the United States. Since 1975, a national representation of twelfth graders have been sampled and beginning in 1991 the study was expanded to include corresponding national samples of eighth and tenth graders each year. The University of Michigan Institute for Social Research staff members administer the questionnaires to students usually in the classroom during a regular class period. Participation is voluntary. In the eighth and tenth grades the questionnaires are completely anonymous and they are confidential in the twelfth grade (documenting the names while maintaining strict confidentiality permits a longitudinal follow up of a sub-sample of participants for some years after high school in a panel study). In 1999, a total of 45,000 (17,300, 13,900 and 14,100 in eighth, tenth, and twelfth grades respectively) students from 433 different schools participated (Johnston, O'Malley and Bachman, 2000:2).

When the study began in 1975, the majority of young people (55%) had used an illicit drug by the time they left high school. By 1981 that figure rose to 66% and then

gradually declined to a low of 41% by 1992 (See Figure 1). After a period of considerable rise in the 1990's the proportion is presently back to 55% (Johnston, O'Malley and Bachman, 2000:6-7).

The National Household Survey also confirms that the use of illegal substances is very widespread within the teenage and young adult population (DHHS, 1996:12). Nearly half of the adults age 21-25 had tried drugs at least once in their life time and an estimated 6.1 percent of the people (12.8 million people) over the age of twelve are current users, which is defined as individuals that have used an illegal drug in the past month (DHHS, 1995:12).

### ***Drug Use and Violence***

Drug use has been identified as one of ten leading causes of crime and violence in America (Elders, 1994:260). It is a well documented fact that substance abuse has been associated with violent behavior for decades (Johnson and Belfer, 1995:1-3; Elders, 1994:260).<sup>1</sup> The public health costs are significant. Disregarding the social costs of the state of normlessness of an individual, the inability to stay in school or be successful in a job that contribute to the family breakdown, the public health monetary consequences of drugs and violence alone are very large: the total cost of all violence alone in the U.S. was \$13.5 billion in 1992--\$3 billion due to suicides and suicide attempts and \$10.5 billion due to interpersonal violence (Elders, 1994:260).<sup>2</sup> Homicide rates among young men in this country are 20 times higher compared to most other industrialized countries (Elders, 1994:260). Research suggests that 40% of all homicides are related to drugs (Elders,

1994:260). Likewise, in 65% of all homicides the offender and/or the victim have been drinking (Elders, 1994:260). Alcohol is a factor in at least 55% of all domestic abuse cases (Elders, 1994:260). It is also estimated that between one-third and three-quarters of sexual assaults involve alcohol consumption by either the perpetrator, the victim, or both (Johnson and Belfer, 1995:2). Since the 1950's, suicide rates among our youth have almost quadrupled (Elders, 1994:260). Each day in this country 14 children will die in a suicide (Elders, 1994:260). Further concern is that nationwide violent crimes are being committed by younger individuals and are increasingly among middle class youth in suburban neighborhoods and communities (Durant, 1999:2).

Recently another connection between substance abuse and violence has been identified. In a report issued in the Washington, D. C.: National Academy Press: "Reducing Risks For Mental Disorders, Frontiers for Preventive Research," Mrazek and Haggerty (1994) stated that emerging prevention strategies for reducing violence resemble those being used for substance abuse. That is, preventative interventions that focus on changing norms regarding violent behavior by providing individuals the skills to resolve problems without the need to resort to violence (Mrazek and Haggerty, 1994:274).

The good news is that the number of drug users in the total population has dropped from 14.1 percent in 1979 to 6.1 percent in 1995. Overall, statistics reveal a 70 percent decrease in cocaine use and a 60 percent drop in the use of marijuana (DHHS, 1996:12). However, illegal drug use among teenagers has not dropped as dramatically (See Figure 1) in spite of many drug prevention programs that have become an intricate part of our school systems and communities (DHHS, 1996:12). By 1997, Drug Abuse

Resistant Education (D.A.R.E.), one of the most popular drug prevention programs with parents, politicians and police was operating in 70% (over 20 million school kids) of the nations school systems, with estimates of cost as high as 750 million dollars once all costs are considered (Elliot, 1995:1-2; Monroe, 1994:49). One of the apparent questions is, with the use of drugs dropping off in the general population why has drug abuse among our teenage population risen so dramatically in the 1990's, especially at a time in our history when more money is being spent on drug resistant education in our school systems than ever before?

### ***School Based Drug Prevention***

Most of us have been led to believe that drug prevention programs began in the 1960's; however, contrary to that popular belief, drug education goes back to the 1880's to the "Scientific Temperance Instruction Movement". It was at this time that members of the Women's Christian Temperance Union (W.C.T.U.) moved to take preventative action against alcohol, tobacco, opium and other narcotics by reaching out to youth before they began to use them. By 1901, every state and territory had passed laws mandating some form of temperance instruction to be taught in public schools; temperance instruction became the first "just say no" anti-drug program in America. Although the particular substances that are targeted have changed, the underlying approaches and dominant "no substance use" requisition has not (Beck, 1998:15). Drug and alcohol prevention programs have evolved through different stages of development through the years. During the 1960's, drug prevention programs were based almost exclusively on the

information deficit model or the informed choice/responsible decision making approaches, which assumed that the public did not understand the negative effects of drug use and that programs designed to educate the public on the dangers of drugs would quickly decrease the public's abuse of illicit drugs (Ajzen and Fishbein, 1973:41-57; Beck, 1998:17-24). Many of these programs attempted to incite fear among probable users; however, while the public's knowledge of drugs increased, it essentially had no positive effect on lowering drug use (Schinke and Gilchrist, 1985:22).

In the 1970's and 1980's, prevention programs were based more on a humanistic approach, such as the individual deficiency model, which appeals to an individual's self esteem, assertiveness, values clarification, and inter-personal and decision making skills to delay or reduce the onset of drug use. The net effect has shown some successes; however, the deficiency model requires empirical research, specification, and elaboration of the elements of the program that seem to contribute to a positive outcome (Sehwan, 1998:2).

One prevention program that has recently been criticized very openly is the D.A.R.E. (Drug Awareness Resistance Education) Program. D.A.R.E. is a very popular program that was originally designed by the Los Angeles Police Department. The program consists of seventeen 45-60 minute classes facilitated to fifth and/or sixth grade students by sworn police officers. It is a collaborative effort by certified law officers, educators, students, parents and their community to offer an educational program in the classroom to prevent and/or reduce drug use and violence among children and youth. The program offers preventative strategies to enhance protective factors, particularly the ability of the student to bond to family, school and community. It focuses on such strategies as

social competence, communication skills, self-esteem, empathy, decision-making, conflict resolution, sense of purpose and independence, and positive activities that promote alternatives to drug abuse and other destructive behaviors. These strategies help students develop skills to recognize and resist social pressures to experiment with tobacco, alcohol, and drugs and develop skills in risk management and decision-making. Another important element of D.A.R.E. is the use of student leaders who do not use drugs as positive role models in influencing younger students. D.A.R.E. offers a variety of interactive, group participation and cooperative-learning activities, which were designed to encourage students to solve problems of major importance in their lives (D.A.R.E. Officers Guide, 1996:1-144).

Within a recent report Lawrence Sherman and Denise Gottfredson (1998) seemed to enlist more controversy in the crime prevention and youth substance abuse techniques. A federal law in 1996 required the U.S. Attorney General to provide Congress with an independent review of the state and local crime prevention assistance programs funded by the U.S. Department of Justice, with special emphasis on factors that relate to juvenile crime and the effect of these programs on youth violence (Sherman and Gottfredson, 1998:1-2). The legislation required that the review employ rigorous and scientific methodologies. Authors of the law expected the evaluation to measure: a) reductions in delinquency, juvenile crime, youth gang activity, youth substance abuse, and other high risk factors; b) reductions in the risk factors in community, schools and family environments that contribute to juvenile violence; and c) increases in the protective factors

that reduce the likelihood of delinquency and criminal behavior (Sherman and Gottfredson, 1998:2).

The review defined crime prevention broadly as any practice shown to result in less crime than would occur without the practice (Sherman and Gottfredson, 1998:2). It also examined any program that claimed to prevent crime or drug abuse, especially regarding youth violence, and in accordance with the congressional mandate, examined the effects of programs on risk factors for youth violence and drug abuse. Programs that met any of the criteria were classified into seven local institutional settings (communities, families, labor markets, places such as businesses, hotels, and other locations) by police and by criminal justice agencies after arrest (Sherman and Gottfredson, 1998:2).

To evaluate the programs Sherman and his colleagues developed and employed the Maryland Scale of Scientific Methods, which ranked each study from 1 (weakest) to 5 (strongest) on overall internal validity. The five levels of the Maryland Scale of Scientific Methods are:

**Level 1.** Correlation between a crime prevention program and a measure of crime or crime risk factors at a single point in time.

**Level 2.** Temporal sequence between the program and the risk outcome clearly observed, or the presence of a comparison group without demonstrated comparability to the treatment group.

**Level 3.** A comparison between two or more comparable units of analysis, one with and one without the program.

**Level 4.** Comparison between multiple units with and without the program, controlling factors, or using comparisons units that evidence only minor differences.



**Level 5. Random assignment and analysis of comparable units to program and comparison groups.**

(Sherman and Gottfredson, 1998:4-5)

Each level on the scientific scale controls for various threats to internal validity.

The four types of internal validity controlled for causal direction (the question of whether the crime caused the program to be present or the program caused the observed level of crime), history (the passage of time or other factors external to the program that may have caused a change in crime rather than the prevention program itself), chance factors (events within the program group, such as imprisoning a few active offenders that could have been the true cause of any measured change in crime) and selection bias (factors characterizing the group receiving a program that independently affect the observed level of crime) (Sherman and Gottfredson, 1998:5-6).

Based on the strength and the weaknesses of the findings of the available observations within the study, the report classified each program into one of four categories: 1) what works, 2) what doesn't, 3) what's promising, and 4) what's unknown. "What works" can be described as having at least two level-three evaluations with statistical significant tests and preponderance of all available evidence showing effectiveness. "What doesn't work" must have at least two level-three evaluations with statistical significance test showing ineffectiveness and the preponderance of all available evidence supporting the same conclusions. Programs are coded as "what's promising" if they were found effective in at least one level three evaluation and the preponderance of the remaining evidence. "What's unknown" is any program not classified in one of the three above categories. These evaluations revealed some very interesting information.

The weakest part of the classification system is that there is no standard means for determining external validity. The conclusions in the report about what works and what does not work should be read, therefore, as more certain to the extent that all conditions of the programs that were evaluated (e.g., population demographics, program elements, social context) are replicated in other settings (Sherman and Gottfredson, 1998:6-13).

Some types of programs that seemed effective and were classified as programs that do work include: programs for infants that involved frequent home visits by nurses and other professionals, programs for preschoolers that had weekly classes and home visits by preschool teachers and, treatment for delinquent and at risk preadolescents that involved family therapy and parent training. Sherman and his colleagues also found that school programs that enlisted organizational development for innovation, encouraged communication and reinforcement of clear, consistent norms, taught social competency skills, and coached high risk youth in thinking skills were also found to be effective. Those programs that seemed to be ineffective were gun buy back programs, community mobilization against high-crime poverty areas, counseling and peer counseling in schools, arrest of juveniles for minor offenses, school-based leisure-time enrichment programs, summer jobs or subsidized work programs for at risk youth, diversion from court to job training as a case dismissal and Drug Abuse Resistance Education (Sherman and Gottfredson, 1998:6-13).

Other programs specifically related to school environments that seem to work were programs that initiate and sustain innovation through the use of school teams or other organizational strategies (Gottfredson, 1986, 1987:6-13). Programs that

communicated norms about behavior, and school wide initiatives (such as antibullying campaigns) have shown promise in reducing delinquency (Mayer et al., 1983:355-369; Olweus, 1992:100-125) and substance abuse (Hansen and Graham, 1991:414-430). Curriculum that educates over long periods of time, such as Life Skills Training (L.S.T.) that promotes social competency skills including stress management, problem solving, self control, and emotional intelligence, appear to reduce delinquency and substance abuse (Botvin et al., 1984:137-147; Weissberg and Caplan, 1998:14-17) and student behavior problems (Greenberg et al., 1995:117-136). Behavior modification techniques that train and coach high-risk youth through reward and punishments reduce substance abuse (Lochman et al., 1984:915-916; Bry, 1982:265-276; Lipsey, 1992:83-128).

The Sherman and Gottfredson study provides a different perspective to drug prevention methodology. It appears that programs that encourage student participation through school organizational strategies, programs that reinforce positive behavior through normative beliefs, and programs that help develop self-control and emotional intelligence have proven to be more successful. One overall theme seems to be that most, if not all, of these programs are taught over long periods of time. They are not delivered over a short period of time and abandoned; they are delivered continuously throughout the school year. If this is a consistent argument for success, the Monitoring the Future Study seemed to raise several questions. Is there a correlation between the length and consistency of delivery and success, or is it the inter-components of the programs that are just more effective? Is D.A.R.E.'s poor showing in the Sherman and Gottfredson study

due to the inter-components of the program or the lack of support programs around the primary program?

Tobler and Lessard (1999) evaluated thirty-seven universal drug use prevention programs delivered to students between grades six and twelve in American schools.

Programs were divided into two different types, interactive or non-interactive based on a combination of content and delivery methods. Tobler and Lessard found that

“Program type and sample size were found to be significant predictors of program effectiveness. Non-interactive lecture oriented prevention programs that stressed knowledge about drugs or affective development of students showed minimal reductions in marijuana use. Interactive programs that fosters the development of social competencies showed greater reductions in marijuana use” (Tobler and Lessard, 1999:105).

Larger implementations of both program types showed substantial decreases in efficiency, although the larger interactive programs were superior to the larger non-interactive ones. The primary finding was that interactive programs that cultivate social skills are far more effective in reducing marijuana use (Tobler and Lessard, 1999:105).

Another study attempted to measure the short and long term effect of the D.A.R.E. Program. Dennis Rosenbaum and Gordon Hanson (1998) conducted a randomized longitudinal six-year field study to estimate the short and long term effects of (D.A.R.E.) on student’s attitudes, beliefs, social skills and drug abuse behaviors. Surveys were administered to students from urban, suburban and rural setting (N= 1,798) in the sixth through the twelfth grades for a period of six years. Eighteen pairs of elementary schools were identified and the schools were matched in pairs by type, ethnic composition, number of students with English proficiency, and the percentage of students from low

income families. None of the twelve pairs of schools in the urban and suburban areas had ever received D.A.R.E. One school within each pair was assigned to receive D.A.R.E. in the spring of 1990 and the remaining schools were placed in a control group. Due to logistic considerations that affected the availability of D.A.R.E. officers, the six remaining pairs of rural schools received a non-random assignment. The six treatment schools were selected from rural areas where a D.A.R.E. officer was already assigned and six more schools from the same immediate area were selected for control schools. The researchers used the same matching variables for all schools in the study. Characteristics of the student sample indicated that about two-thirds of the students were in the sixth grade when they received the D.A.R.E. program with the remaining balance in the fifth grade. Over half (52%) received the D.A.R.E. program in the spring of 1990, with the balance of the students participating in the control group (Rosenbaum and Hanson, 1998:381, 390-395).

Two types of surveys were given each year over the six-year period: one for students and one for a specified teacher within each school. The student survey was the primary focus of the study measuring the effects of D.A.R.E. on student beliefs, attitudes, and behaviors related to drugs and alcohol. The teacher survey provided additional information regarding the student's exposure to post-D.A.R.E. drug programs during each academic school year. The student survey was designed with two sets of questions intended to solicit information about the student's use of various drugs, including tobacco, alcohol and other substances. Students were asked whether they had used any substances in 1) their whole life or 2) during the last month (30 days). The original format used in

this survey was devised by Moskowitz and his colleagues for their own drug and alcohol survey that has been used extensively in many prior studies since (Rosenbaum and Hanson, 1998:392-394). Students were instructed to not count legitimate uses of alcohol drugs such as for religious services (wine), or prescribed by a doctor (Librium, Codeine). A "30 day Drug Use Index" was designed that included a combination of student responses to eleven different types of drug and alcohol questions. This list included smokeless tobacco, marijuana, inhalants, hallucinogens, cocaine, other drugs and alcohol to get drunk. The survey also measured the onset of alcohol use, the level of agreement with eight statements about drug use, their attitude toward the use of specific drugs, how they perceived the benefits and cost of using drugs, their perceptions of the media's influence on smoking and beer drinking, self esteem, attitudes against the police, peer resistance skills, their school performance, and their delinquent and violent behavior (Rosenbaum and Hanson, 1998:390-394).

Rosenbaum and his colleagues found that there was no indication that D.A.R.E. had a consistent preventative effect on adolescent drug use. This outcome seems to confirm the results of several other previous evaluations of the D.A.R.E. program. However, there was some indication that D.A.R.E. did have some immediate and short term effects on several mediating variables (resistant skills, attitude about drugs) but nearly all these effects dispersed over time and certainly did not appear to survive into the critical high school years. In their summary Rosenbaum and Hanson comment that

"The absence of good booster programs creates a catch 22 for the elementary D.A.R.E. program, as researchers attempt to link mediating variables to drug use. In the fifth and sixth grades, the base rates for drug

use are too low to detect program effects, but by the time the drug use levels reach measurable variability (two to three years later), the likelihood of sustained effects from the original program have been dramatically reduced in the absence of sound reinforcement programs” (Rosenbaum and Hanson, 1998: 405).<sup>3</sup>

Thus, the possibility exists that it is not adequate to study the primary program’s inter-components alone; the likelihood of sustained immunity coverage from the original program is dramatically reduced because of the absence of reinforcement programs (Rosenbaum and Hanson, 1998:404-405).

In 1996, Clayton, Cattarello and Johnstone recorded the results of a 5-year, longitudinal evaluation of Drug Resistant Education (D.A.R.E.). Twenty-three elementary schools were randomly selected to receive D.A.R.E., with eight similar schools assigned as comparative schools. Students in the D.A.R.E. schools received sixteen weeks of protocol-driven instruction with the comparative schools receiving a drug education unit as part of their health curriculum. All students were pre-tested prior to delivery of the programs and all students were post-tested shortly after completion of the programs. All students were resurveyed each subsequent year through the tenth grade. A three-staged mixed effect regression model was used to analyze the data (Clayton, Cattarello and Johnstone, 1996:307).

No significant differences were noted between the schools receiving the treatment and the comparison schools with respect to cigarette, alcohol and marijuana use during the seventh grade or over the first year after completion of the program or over the full five year measurement interval as well. The findings are largely consistent with other short-

term evaluations of the D.A.R.E. program, which have reported limited effects on drug use, with greater efficiency with respect to building positive attitudes, social skills, and knowledge, but a general tendency for the curriculum effects to decay over time. The results of the study underscored the need for more robust prevention programming targeted specifically at risk factors, the incorporation of booster programs to sustain positive effects, and greater attention given to interrelationships between developmental processes in adolescent substance use, individual level characteristics, and social context (Clayton, Cattarello and Johnstone, 1996:317-318).

Four studies of substance use prevention programs reviewed by Resnicow and Botvin in 1993 also revealed the problem of resistance deterioration in the years following the program delivery (Resnicow and Botvin, 1993:484).<sup>4</sup> However, Resnicow and Botvin state:

“Rather than concluding that existing prevention approaches do not work, it is equally reasonable to conclude that they produce short-term effects which, without adequate booster sessions (or ongoing intervention), erode over time. Additional research regarding the nature, timing, and length of booster interventions is needed” (Resnicow and Botvin, 1993:485).

In 1993 S. Ennett did a comprehensive review of the over twenty completed evaluations of the D.A.R.E. program. Eight of the existing D.A.R.E. evaluations met the minimum criteria in design, sampling, measurement, and analysis. The review revealed that D.A.R.E. was moderately effective in presenting knowledge and in building social skills, however it has been less effective in other areas of drug attitudes and drug use (Ennett, et al., 1994:1394-1401; Dukes and Ullman, 1995:411). A 1994 three-year government study commissioned by the National Institute of Justice and the research



office for the U. S. Department of Justice found that D.A.R.E. raises children's self-esteem, polishes their social skills, and improves attitudes toward police.<sup>5</sup> The D.A.R.E. Programs ability to raise the child's self esteem and social skills seems to be undisputed; however, how effective are self-esteem and social skills in assisting the student in resisting drug and alcohol use (Elliot, 1995:2)?<sup>6</sup>

Dr. William B. Hansen has done a number of studies examining the effectiveness of alcohol and drug abuse resistance programs (Hansen, 1992:403-430; Hansen and Johnson, 1988:135-154; Hansen and Graham, 1991:414-430; Hansen and Rose, 1995:383-387). One such study examined the impact of D.A.R.E. on the potential mediators of substance use.<sup>7</sup> Twelve mediators are observed; four that have strong potential for positive behavior outcomes and eight that do not. From his analysis he determined that D.A.R.E. is either insufficiently affecting appropriate mediating constructs (failure of the curriculum) or targeting inappropriate mediating processes. For example, programs that address social skills, decision skills, resistant skills, self-esteem, stress management, building perceptions about alternatives, developing goal setting skills, and building skills for giving and getting assistance have little overall potential to prevent substance use because the path between the mediator and behavior is usually weak. Dr. Hansen makes the argument that programs that target such variables may not have the ability to create meaningful changes in patterns of substance use onset (Hansen, 1997:10-15).

Four of the twelve mediators had strong and consistent relationships with substance use, manifest commitment, normative beliefs, consequence beliefs, and lifestyle/value incongruence.<sup>8</sup> Hansen found D.A.R.E. to have a positive impact on social

skills mediators; however, it was associated with use in a programmatically negative direction.<sup>9</sup> That is, an increase in social and life skills was related to an increase in substance use, primarily alcohol use. Hansen makes the argument that D.A.R.E. had no significant influence on the four mediators that enhance positive behavior within substance use and other problem behaviors (Hansen, 1997:11-15).

The Sherman, Rosenbaum, Clayton, Resnicow and Hansen studies provide some different perspectives to the problems of effective drug prevention programs. Sherman, Clayton, and Rosenbaum find the D.A.R.E. program not effective. However, Rosenbaum, Clayton and Resnicow seem to not be as concerned about the inter-components of a particular program as they are of how effectively it is delivered and how often that program is reinforced throughout that child's life. Hanson stresses that the key to an effective program is in the mediators chosen by the program to bridge behavior change. In other words, while it is important to have sound curriculum, it is more important that the curriculum targets the correct mediators.

Public health has spoken out with concerns regarding drug and violence prevention programs.<sup>10</sup> The former Surgeon General, Joycelyn Elders is convinced that our schools offer the best and the easiest way to reach as many children as possible. She endorses effective interventions with young children that involve shaping their attitudes, imparting knowledge and modifying behaviors while the children are still open to positive influences (Elders, 1994:261). But to be of benefit, children must be in school, and there must be continuity in the approach from the school to the family to the community. Special attention must be directed to poor and underserved communities, many of these youth are

not in school and are members of a community who find themselves disenfranchised from traditional organizations that provide substance abuse and violence prevention programs (Johnson and Belfer, 1995:3-6).<sup>11</sup>

While each piece of research has a different perspective, there are some central themes that seem to emerge. In 1998 Sherman's findings were supportive of drug resistance programs that stress norms and normative beliefs, social competency skills, stress management, emotional intelligence, self control and behavior modification, not unlike several of Hansen's summaries. As we will discuss shortly, Rosenbaum, Clayton and Resncow's findings on the need for supplemental support for the D.A.R.E. program correlate well with the direction that Hansen took in designing the All Stars Jr. and Booster Programs intended to supplement the All Stars Program. These observations lead to some basic themes that will be discussed throughout this thesis:

**Theme #1:** Anti-drug prevention programs in the presence of affiliate support programs seem to be stronger and better able to build and sustain long-term immunity against deviant behavior.

**Theme #2:** The more often an anti-drug program is reinforced at different increments in the child's life (either through post and/or follow up programs, parental and/or community participation) the more positive effect the program will have.

**Theme #3:** The curriculum of a particular program must target and change mediating processes that account for deviant behavior or the corollary programs must not waste time trying to change mediating processes that cannot be changed or that do not account for deviant behavior.

**Theme #4:** Drug prevention programs need to be interactive. Curriculum that must encourage the child to work and take ownership of the program, thus allowing the child to discover the resistance concepts of the program as the result of their own interaction, are significantly more effective.

## ***Chapter 2***

### ***Description of the All Stars Program***

The program chosen for this review is the All Stars Jr. Pilot Program, a supplemental precursor of the All Stars Program both developed by Dr. William Hansen. Prior to the evaluation and critique of the All Stars Jr. Program, a review and description of the parent or core program is necessary. The All Stars Jr. Program is designed to be facilitated within one of two different forms, the community-based or the school-based curriculum. The community-based curriculum is designed to be delivered in a community setting such as within a youth church group, Y.M.C.A., Boys Scouts and Girl Scouts, or within the curriculum of an after-school program. Trained facilitators conduct 10 small group sessions (ideal group size is 10 to 15 youth) with the interactive sessions lasting approximately one hour. The school-based program is designed to be delivered within the school setting. The program can be delivered to a larger class, with the program divided into shorter sessions to accommodate school schedules.

All Stars basically has three goals: (1) to keep youth from experimenting and/or regularly using and abusing alcohol, tobacco, inhalants, marijuana , and other harmful substances; (2) to keep youth from becoming sexually active, and (3) to keep youth from becoming violent and destroying property (All Stars Community Program, 1997:1). All

Stars also believes that there are four qualities that have the greatest impact on a young person's ability to maintain healthy behaviors:

- A recognition that problem behaviors are uncommon and unacceptable to the peer groups.
- A deep belief that problem behaviors do not fit with personal ideals and desired lifestyle.
- A personal commitment to avoid participating in high-risk behaviors.
- A sense of attachment and belonging to positive friendship groups and social institutions.

(All Stars Community Program, 1997:1-8)

The All Stars Program believes that the critical period for keeping kids drug and alcohol free is the ten-to-fifteen-year-old range. This is the age in which children make critical decisions and may begin to experiment with drugs and alcohol. Early use places kids at high risk for all kinds of problems - both short and long term. The longer the program can delay the onset of alcohol and drug use the better chance the child has of leading an alcohol and drug free life. It has become well documented that knowledge and attitudes about alcohol, tobacco and other drugs are formed at a young age and often set the stage for future engagements with those very substances. Almost one-third (31%) of the ninth to twelfth graders in the United States have had their first drink of alcohol before the age of 13 (Kann, et al., 1997:1-89). Fergusson reported in 1994 that adolescents who develop alcohol related problems at the age of 15 are most likely to have consumed alcohol at an early age (Fergusson and Lynskey, 1994:1007-1016). Jackson and

Dickinson found in 1995 that 59% of the children who started drinking regularly in the fifth grade had their first drink in the first, second or third grade (Hahn and Hall, 2000:51).

While several drug prevention programs including All Stars have documented that the ten to fifteen year age is a critical period in the child's life to avert high-risk behaviors, All Stars also claims that no drug prevention program in itself is capable of directly changing the outcome behaviors they target. The outcomes are really the result of other processes that the program affects only indirectly. Sometimes these processes are referred to as risk protective factors. In this system, modifiable risk and protective factors are referred to as mediating processes or mediators. In the science of prevention, this is known as the law of indirect effect. The law states that all programs have their effects indirectly by altering traits or processes and that in turn directly act on the behavior. It is a law similar to Newton's Law of Physics that cannot be violated (All Stars Community Program, 1997:4). Hansen claims that for a drug prevention program to maximize its efficiency the program must work through four mediators:

(1) *Norms and Normative Beliefs*: Normative beliefs becomes a key component in the All Stars Program as it reflects each individual's perception of acceptable and unacceptable group behavior. The program addresses the concept of norms and normative beliefs by altering the individual child's perception of high-risk behavior through strategies that reveal unassailable information that demonstrates that participation by their peers in high-risk behaviors is low. Through this strategy the program hopes to project to the student that abstinence from sex, violence and the use

of alcohol and drugs is normal and expected by their peers (All Stars Community Program, 1997:8).

(2) *Pro-Social Values*: Increases the individual student's awareness that substance use, sexual activity and violence will interfere with their individual goals and aspirations. The model stresses that qualities that each student holds important in their lives don't fit in with high-risk behaviors. The program emphasizes that there is a sociological component to this: what is important and is a priority to the individual student is defined by the reference group (family, school and peers) as much as the individual child. Pro-social ideals do not simply refer to religious or traditional family values, high ideals or individual aspirations. The concept is very practical. No matter what is important to the student if the child's values are in conflict with problem behaviors it will have a long-term suppressing effect (All Stars Community Program, 1997:7-8).

(3) *Commitment*: An individual commitment is an internalized intention; however, it can be a public social intention as well. The program uses the curriculum to increase the individual student's commitment to abstain from sexual activity, violence, and to avoid the use of alcohol, drugs and tobacco. The program stresses that commitment reflects more than the end process, it mirrors the individual's self image as well as the image they want to transmit to others. The curriculum encourages the child to consider the alternatives and challenges them to make a voluntary determination about how to live their lives (All Stars Community Program, 1997:8-9).

(4) *Pro-Social bonding*: Encourages the degree to which the students are socially bonded to positive friendships and social institutions. Pro-social bonding refers to attachments that form between the individual student and the social institutions in which they belong. However, attachment is a two-way street, the child's loyalty and devotion to the institution must be reciprocated back to the child. Bonding is not always pro-social or positive. Individual gang members are bonded to a gang. The individual has a place to belong and that attachment is reciprocated by other gang members, nonetheless that relationship encourages negative behaviors that reflect high-risk norms. It is important to remember that once bonds have been established they are very difficult to sever. The program encourages relationships that set positive normative standards and will provide a foundation for positive long-term behaviors (All Stars Community Program, 1997:8).

The success of the program depends on how effectively the program works through the four mediators. The relationship of the program and pro-social bonding, pro-social values, commitments, and norms or normative beliefs and high-risk behaviors are illustrated in Figure 2a. and 2b. Because All Stars is a relatively new program, lack of long-term data has made the testing of the causal model in Figure 2a. and 2b. difficult. Lack of empirical evidence at this time makes it difficult to measure the programs long-term effect on delinquency, drug use and high-risk activity. However, as demonstrated in Table 1 All Stars is in the process of accumulating the data to measure not only the



immediate effects of the program, but the lasting effects of the program as well (Table 2).<sup>12</sup>

The original core program was designed to be delivered to children from ten to fifteen years old. Most importantly, the program enlists the child to participate by interacting within the program. The material is highly interactive and the student is encouraged to take personal ownership of the program. If possible, parent meetings should be held before the start of the program with parental participation encouraged. A booklet and audio-cassette tape is distributed to the parent before the program is facilitated to the child. The information focuses on six parenting behaviors that research suggests most influence whether young people use alcohol or drugs. These include:

- Nurturing a close, involved, and loving relationship with the child.
- Supervising and monitoring the child's activities and companions.
- Providing clear and consistent rules and expectations for the child's behavior.
- Teaching values and skill that encourage bonding to positive peers and social institutions.
- Establishing clear no-use rules regarding alcohol, tobacco, and other drugs by the child.
- Modeling low-risk alcohol use and no use of tobacco and illegal drugs.

(All Stars Community Program, 1997:25)

The program generates a number of homework assignments that can be a source to encourage youth and adult interaction. A strict homework policy is not adopted, but rather incentives for completing homework is used. Participants who feel they cannot talk

to one of their parents are encouraged to seek advice and guidance from another adult whom they most respect.<sup>13</sup>

The program attempts to encourage children to examine their future goals, both short-term and long-term, and reflect on their individual behavior to determine how deviant behavior could interfere with or prevent them from achieving those goals. Commitments are discussed individually with each child and the facilitator encourages the child to pledge sound commitments that will help them realize their goals (All Stars Community Program, 1997:9-13).

***All Stars Statistical Analysis  
Lincoln School System***

All Stars has been very active in facilitating the primary program within the Lincoln, Nebraska School Systems. The following is one of many evaluations that have been completed within the last two school years. The evaluation consisted of a questionnaire containing 53 items. Forty-eight of the items were used to measure the four mediators: norms and normative beliefs, pro-social values, commitment, and pro-social bonding. The remaining five items on the questionnaire asked the youth about their personal behaviors regarding alcohol, marijuana, inhalants, tobacco, and violence (these questions are for general information only and are not used within the statistical analysis). The questionnaire was administered once before the All Stars Program (pre-test) was implemented and once after the conclusion of the program (post-test). The pre and post-

tests were then compared to determine whether the All Stars Program had any effect on the youth in the group.

Table 2 presents the percentage of change in the four mediating variables observed in the pre and post-test of both the treatment and control groups and the percentage of change observed at six months after the programs completion. Tanglewood Research and the Nebraska Council to Prevent Alcohol and Drug Abuse continually test the effect of their program on each group of students that receives All Stars. Their data has consistently revealed positive results similar to the Lincoln study (Table 1); however, follow up testing with a composite of students in the Lincoln area six months after the initial delivery of the program has revealed some consistent immunity breakdown (Table 2). Tanglewood Research and the Nebraska Council, concerned about the decline in student resistant skills later in the child's development, developed a strategy that involves a two-part supplementary program in addition to the primary All Stars Program. The first supplementary program is the All Stars Jr. Program, which is designed to lay the groundwork and background in the fourth or fifth grade to help the students better develop the concepts that are vital for success in the primary All Stars Program in the sixth grade. The second addition is the All Stars Booster Program, which is designed to be facilitated with early high school students after the delivery of the traditional All Stars Program. Commitments and/or immunities are established in the student's life during the primary All Stars Program and the booster program is designed to reinforce those resolutions as they enter their high school years. The general thought is that All Stars Jr. will lay the groundwork, allowing the primary All Stars Program to have a stronger effect,

thus allowing the average student's resistance score to be at a higher level entering the booster program in the eighth or ninth grade.

During the spring of 1999 the Nebraska Council to Prevent Alcohol and Drug Abuse selected Riverside South Elementary in Masedonia, Iowa as one of the Pilot sites to test the All Stars Jr. Program. This presented an opportunity for an independent evaluation of both the testing mechanism and a detailed evaluation of the program itself. The program was closely monitored through the testing, with the data independently gathered, tallied and compiled for analysis later in this review.

The main focus of this thesis is an examination of the All Stars Jr. Pilot Program. The main question is how effective has the program been in laying a solid foundation for the primary program to be delivered later in the child's education. We will address such questions as: Has the program strengthened the four mediators in the child's life? Is there a relationship between the four mediators? Has the program's effect on the mediators been accurately measured?

***All Stars Jr. Pilot Program:***

The All Stars Jr. Program is designed for fourth and/or fifth grade students and is blended with the regular school curriculum delivered up to three times a week for the entire school year.<sup>14 15</sup> The program is delivered in three phases with three unique approaches: the first segment addresses aggression and anti social behavior and the second focuses on attitudes about honesty, aggression, and drug use, while the third builds idealism through the language arts.<sup>16 17</sup>

The goal of the first section is to develop group norms about social interaction that focus on establishing a tradition of cooperation that excludes fighting, acting out, and other negative behaviors. Aggression and antisocial behavior among children are widely considered risk factors for the development of serious problems including drug abuse later during adolescence (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:1)<sup>18</sup> Children develop these behaviors for many different reasons. Some come from families in which aggression is the primary means of discipline. Some children lack impulse and anger control that most people develop by the time that they are eight or nine years old. Many professionals feel that children often express aggression and engage in deviant behaviors because they perceive it to be accepted and even rewarded by the peer group. Many children and adolescents will do almost anything to gain social approval and earn social status. The goal of the program is to devalue aggression and antisocial behavior so that the natural outcome is social disapproval and the lowering of social status among the peer group (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:1).

The program enlists the All Stars Challenge game. The essential idea behind the game is that there is social judgment from the peer group itself. Even among nine and ten year olds, the peer group is the primary source of norms about behavior. The All Stars Challenge game is played in teams. Before the game commences, the teacher estimates aggressivity for each student.<sup>19</sup> The teacher then forms teams that are equal in aggressive behavior or within a range of being equal for all groups. The class meets as a group and forms the standards for getting along. The program intentionally engages the students to set the rules and standards so that they buy into the behavior that is chosen and under

which the game will be played.<sup>20</sup> By discussion the teacher encourages the students to consider such behaviors as taking turns, sharing, asking for things and not just grabbing, not hitting and giving compliments.

The game is implemented by first tracking hypothetical behavior, then the behavior of their own team and then the behavior of another team. The entire class scores the behavior of a hypothetical group using the standards set by the class.<sup>21</sup> After each student seems to have the procedure of the game in hand the students break into their teams and judge their behavior within their own group. Once there is competence in judging behavior within the class standards, there is an initial weekly competition among teams for best behavior. The number of votes each team gets from other teams is the basis of earning points; however, the teams exclude their own team in their voting to minimize self-interest. Team meetings are encouraged to be held on a weekly basis in which behaviors are discussed. A class goal is established and a weekly tally is displayed; once the goal has been reached awards are distributed.<sup>22</sup> Once all the teams have received an award within the initial game, they enter into a year-long competition for the best team award, to be given at the end of the year. This version of the game is structured in the same way as the initial competitions. The All Star Challenge attempts to encourage students to think about their personal behaviors in regard to the standard set by their own peer group (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:1-2).

The second phase expects to achieve several purposes simultaneously. The curriculum attempts to get the students to understand that attitudes about honesty, aggression and drug use are very conventional among their peer groups. Various

activities in this section demonstrate to the students that as a group most students believe problem behaviors are unacceptable.<sup>23</sup> This attempts to create an environment in which self-reinforcing group norms about these topics will emerge. The students learn to apply these topics by applying scientific methods to studying social phenomena. The program operates under the assumption that currently, science education that focuses on the physical world is much more refined. The social sciences use the basic principles of scientific inquiry, but the application of social sciences in our schools lags far behind the teachings of our other sciences.<sup>24</sup> At the same time, the topics of social sciences are more immediately understandable to the student, especially within a young person's world where people around them become the focus of their minute-to-minute attention.<sup>25</sup> This section allows the social scientific method to be effectively taught within this context (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:51).

Children who start fights often think that they will be viewed with increased respect. In fact, few children admire bullies. However, if left to the normal processes, the false impression is often reinforced.<sup>26</sup> For example, even children who disagree with the notion that fighting is acceptable are often quiet or even laugh along with the bullies when they brag about their exploits. This often presents the false perception that everyone accepts fighting as a way of promoting one's self, which ultimately is the equivalent to supporting that particular behavior (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:51).

This segment of the program has several activities that enlist the students to poll their peers about sensitive issues, the students then collect and analyze the data themselves.

Example: This assignment opens with a class discussion on how we know what others think. The discussion begins by posing questions to the class such as: Are there times when you don't know what others are thinking? Do people ever hide their feelings? Do people ever pretend to agree with others just to be part of the group? Have you ever lied about the way you feel? The facilitator then asks the students to give examples of when it's hard to know what other people are thinking. Using the examples given by the students the teacher reiterates that it is difficult to know what others are thinking especially when talking about issues where feelings and emotions are involved.

(All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:59-63)

The teacher then informs the students that they are going to use science to learn about themselves. The teacher informs the students that scientists have found a way to find out what people think. The method that they use is called survey research. Survey research involves asking people questions that people complete in private. The teacher stresses that the questions must be easy to understand, people must feel safe in giving their answers, they must be able to answer honestly and they must feel confident that what they say will not be used against them.

The teacher informs the students that they are going to take part in a survey. A story will be read to the students and they will answer questions on a blank piece of paper.<sup>27</sup> Terms such as sample, hypothesis, tally, summary, and data are discussed. The teacher reminds students that one of the steps of scientific inquiry is to collect data. Students are made aware that they will be the sample from which the data will be collected. Steps are taken to prepare the survey. Students design the instructions for the survey, questions and make arrangements to facilitate the survey.<sup>28</sup> Students then tally the data and assemble the results within their math classes (All Stars Jr. Fourth/Fifth Grade



Curriculum, 1999:7-13).<sup>29</sup> This not only engages the students in science skills, it also enlists the student's math skills as their findings are reflected on bar graphs, pie charts and general percentage analysis (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:51-114).

The third phase builds idealism through language arts. The program enlists words such as future, ideals, create, adventure and conscience.<sup>30</sup> Many of the terms are introduced as spelling words, and group discussions are held to gain a better understanding of the terms. The students are then encouraged to write about how the terms are meaningful to them individually. This identifies and strengthens their personal identification with positive ideals that should in return protect them from engaging in high-risk behaviors. It is the programs belief that enlisting the student in these activities is far more powerful than lectures, preaching and administrator-enforced rule setting (All Stars Jr. Fourth/Fifth Grade Curriculum, 1999:51-114).

Several questions will be addressed such as does the All Stars Jr. Program transition effectively through the previously described mediating process within the All Stars Core Program? Is there an inter-relationship between social bonding, social values, commitment and normative beliefs mediators?<sup>31</sup> With several studies showing that adolescent use of tobacco, alcohol and drugs has almost become the norm, how effective can normative beliefs be in delaying the onset of alcohol, tobacco and drug use? How does a child define their peer group, is it their general fourth and fifth grade population, their class or just their intimate group of friends.

All programs need to be empirically tested. It is the goal of this analysis to break down the inter-components of the program, identify the strengths and weaknesses of the curriculum, and encourage modifications that can better utilize the programs strengths.

## *Chapter 3*

### *Research Methodology*

The purpose of this analysis is to examine the All Stars Jr. Pilot Program, which will include not only the program itself, but the testing instrument used to compile the data and evaluate the program. All Stars Jr. is being assessed as a prerequisite to the “primary” or “core” All Stars Program; consequently, it was designed to build on positive attitudes and behaviors that can be reinforced and expanded within the core program. The testing instrument was designed to measure the child’s intimate attitudes toward different types of social behavior; the questions do not illicit personal behaviors regarding smoking, drinking, drugs and sex. Certainly, All Stars is concerned about the participation rates of fourth and fifth grade students; however, the All Stars Jr. Program was designed and geared to positively influence a child’s attitude toward those risky behaviors, thus “attitude” becomes the desired benchmark to measure success or failure. Therefore, the primary focus of this thesis will remain on evaluating the testing instrument’s ability to measure accurately the program’s capacity to work through the mediator process to change, build and/or reinforce the child’s positive attitudes toward those desired behaviors.<sup>32</sup>

### ***Testing Instrument***

The testing instrument (Figure 3) consisted of twenty-one close-ended questions (same test used pre- and post) designed to measure the child's attitude and attitude changes. Pre- and post-tests were given to the fourth and fifth grade students at Riverside South Elementary and to the control group A.H.S.T. Elementary schools. The testing instrument was designed by the Nebraska Council to Prevent Alcohol and Drug Abuse.<sup>33</sup> Riverside South Elementary regarded the program as part of the accepted curriculum for the 1999-2000 school year and did not require parent permission slips. Parents were sent a letter introducing and describing the program and encouraging them to call the school if they had any concerns regarding the curriculum. Because of confidentiality issues, each student within the treatment and the control group completed each test and returned it anonymously; this consequently does not allow us to match our pre and post-test results to each individual student.<sup>34</sup> The testing instrument consisted of one attitude test with twenty-one questions designed to measure each individual student's ability to make decisions pertinent to avoiding chemical dependency, premature sexual activity and violent behavior. The same instrument was used as the pre and post-test.

### ***Measurement***

Social science involves asking questions regarding the prediction, control, and the understanding of human behavior (Monahan and Walker, 1990:33). The testing instrument in this case measures the mean resistant score, which indicates each child's ability to resist high-risk behaviors. By being able to measure the resistant frequency we

are better able to predict and understand the phenomenon of high-risk behavior; as a result, we are able to judiciously attempt to control those behaviors through prevention programs.

The three components of the concept of measurement are variables, operational definitions, and reliability and validity (Monahan and Walker, 1990:39-44). In this instance we have twenty-one variables which we operationalize using interval/ratio measurement (scaled 1.0 through 5.0) through Likert Scaling. A Likert Scale is applied to score the results of both the pre- and post-test. Each question is scored 1.0 through 5.0 to develop an overall mean resistance score (See Figure 4/Table 5). Reverse scoring is sometimes employed to score the question properly; judgment is considered on the intent or objective of the question. A mean resistance score of 1.0 represents the lowest level of resistance possible, while a score of 5.0 represents the highest level of resistance. Validity is added to the testing instrument by carefully assigning a number (See Figure 4) to each possible answer on the testing instrument that adequately reflects the concept under consideration (Maxfield and Babbie, 1998:103-104; Monahan and Walker, 1990:33-34). Two steps are taken to explore the impact of the program on student attitudes, first a group mean is calculated to evaluate the groups overall attitude and attitude changes within each of the twenty-one variables (See Table 5). Second, the questions are then grouped into four outcome measures (mediators) with a mediator mean resistance score calculated to evaluate the child's progress within each of the four mediators (See Table 6).

The mean resistance score represents the child's attitude and perceptions regarding the high-risk behaviors expressed on the test, not the actual behaviors of the student

themselves. While a case can be made that there is a close relationship between a child's attitude and behavior, we need to remember that they are different social concepts.

### ***Reliability***

Reliability is essentially repeatability; if the child were to take the same test several times would they come up with the same result time after time. Every variable needs to be exhaustive and exclusive. Exhaustive in the sense that the testing instrument needs to include all possible responses and exclusive in that the respondent needs not to feel compelled to select more than one answer (Maxfield and Babbie, 1998:103-104; Monahan and Walker, 1990:33-34). The following discussion is centered around the Cronbach's alpha test, which is employed within this evaluation to assess the reliability of the testing instrument. The test determines the extent in which the items in the survey are related to each other and will give us an overall index of the repeatability or internal consistency of the frequency scale as a whole. The measure of reliability (Cronbach's alpha) will result in a number between 0 and 1. One indicates the perfect reliability; generally a value of 0.7 or higher indicates the measure is sufficiently reliable for use (Stark and Roberts, 1996:46).

Twenty-one questions from the questionnaire were divided into four different categories or mediators previously described within the primary All Stars Program: pro-social bonding, pro-social values, normative beliefs, and commitments. By breaking the survey data down and grouping the results into categories we get an indication of the programs affect on the four mediators (See Table 6).

In evaluating the testing method, two questions need to be answered: 1) If we had the ability to repeat the survey several times would we consistently get similar results? and 2) What is the internal consistency between each mediator variable and the remaining variables? When various items are used to form a scale within a survey, they need to have internal consistency.<sup>35</sup> Ideally, each of the items should measure the same thing. A useful coefficient for assessing internal consistency is Cronbach's alpha. The internal consistency method finds the correlation for each possible way of dividing the items into two groups, then uses the average correlation as the measure of reliability. There are different methods to test for reliability; however, Cronbach's alpha is by far the most popular method based on this approach. Both the number of items and the correlation among the items affects the value of alpha. Thus, if the average inter-item correlation remains the same, adding more items will increase the reliability of the variable. Cronbach's alpha is the model of internal consistency based on the average inter-item correlation (Stark and Roberts, 1996:46-47; Martin and Douglas, 1997:7080).

By merging the data from the two pre-tests (RIVER/PRE and AHST/PRE), two hundred and nine cases were obtained that relate to the twenty-one variables. Four internal consistency tests were ran (See Table 3), one for each mediator measuring the consistency between each mediator and the balance of the variables. The Cronbach's alpha evaluates differences in the magnitude of the variances used in its computation. This criterion implies that a relationship exists between the reliability of the test and the validity of the research findings (Bernardi, 1994:767-770; Stark and Roberts, 1996:46; Nunnally; 1978:245).<sup>36</sup>

### *Evaluation Groups*

When randomization cannot be used to control the threat to validity, a quasi-experimental design is often used (Figure 5). Because of the diversity of population size and cultural and social economic differences of the schools within the area the subjects were selected through a matching process. When selecting groups through a non-random process, we cannot assume that the groups are equivalent, consequently the procedure is called a nonequivalent group design. When the control group and the experimental group are not equivalent, we attempt to select groups in a way that will make them as comparable as possible. The best way to achieve comparability is through a matching process in which the subjects of the experimental group are matched with the subjects of the comparison group. In a nonequivalent design the term “comparison group” is often used instead of “control group;” however, a comparison group serves the same function as a control group (Maxfield and Babbie, 1998, 162-165).

Two elementary schools in Southwest Iowa were chosen to participate in the All Stars Jr. Pilot Program: one as the treatment group and one as the control group. The fourth and fifth grade students at Riverside South Elementary School were chosen as the treatment group. Riverside South Elementary is located at Masedonia, Iowa and is part of the consolidated school district that includes the communities of Oakland, Carson and Masedonia, Iowa. By observation and recommendation of the Pottawattamie County Sheriff's Department, A.H.S.T. Elementary was selected as the control group. A.H.S.T.



is a consolidated rural school district composed of the communities of Avoca, Hancock, Shelby and Tennant.

By comparing and contrasting information published by the Iowa Department of Economic Development it appears that both communities have similar qualities. The A.H.S.T. School District operates out of three separate facilities, has 63 teachers on staff with a total school population of approximately 725 students. The Riverside School District is a consolidated effort of three communities that operate out of four separate facilities, the school employs 67 teachers with approximately 784 students. The two largest communities from each school district also show similarities in cultural and social economic structure. Shelby has a population of approximately 628 residents, predominately White/Non-Hispanic and Protestant, the community has one bank, one grain elevator with average property tax rates of \$26.09 per assessed \$1000.00 of property value. Local hourly wage rates range from \$7.29 (material handler) to \$14.37 (production supervisor), which computes to an average rate of \$10.02, with an unemployment rate within the community of 2.8%. Oakland has a population of approximately 1,496 residents, predominately White/Non-Hispanic and Protestant, with average property tax rates of \$23.41 per assessed \$1000.00 of property value. Local hourly wages range from \$8.24 (production machine operator) to \$16.60 (mechanic, auto) which calculates to an average rate of \$11.24, with an unemployment rate of 2.3%. Both towns have limited manufacturers and other employers within the immediate community, however both communities are located less than forty miles from the Omaha/Council Bluffs metropolitan area (Community Quick Reference, 1999:1-4).

Although both school districts lie in rural areas, urban communities heavily influence them both as seventy-two percent of Pottawattamie Counties 82,628 residents reside in Council Bluffs. Council Bluffs has approximately 54,065 residents and serves as the retail center for Southwest Iowa; however, it is significantly impacted by its inclusion in the Omaha Metropolitan Area, which encompasses over a half million people. The metropolitan area offers many advantages to surrounding rural communities such as: museums, art galleries, a highly regarded zoo, several colleges, libraries, a symphony orchestra and ballet. However there are several disadvantages as well, as families within and around the area are impacted by several large gambling facilities, higher crime rates and gang activity. It has become common knowledge that the area is influenced by approximately 600-800 gang members, who significantly influence youth violence and drug availability within the area (Community Quick Reference, 1999:1-4).

Riverside and A.H.S.T. are both rural Iowa communities that prove to have very comparable social and economic backgrounds. The schools have similar student demographics with similar performance, participation and discipline, as well as staffs with similar teaching experience and educational levels.<sup>37</sup>

### ***Data Collection***

The test facilitators were asked to follow the curriculum as closely as possible and to deliver each activity within the curriculum. The All Stars staff did take opportunities to make on-site visits and did visit through periodic phone calls and e-mails to check on the status and progress of the program delivery. The pre-test was delivered to the treatment

group on the September 15, 1999 with the post-test being completed on May 10, 2000, with the control group being tested on or within one week of those same dates.

### *Independent Sample t-test*

An independent t-test was performed to analyze the mean differences in the specified variables (Table 4).<sup>38</sup> The goal of this statistical analysis is to establish whether or not the difference that exists between two sample means is significant or insignificant. Three independent sample t-tests will be employed. The first will compare the pre-test mean (Time 1) of both the control and treatment group, this will give some indication of the equivalency of the two sample populations. The more insignificant the test (mean differences), the more comparable or equitable the two populations will be. To test the control group change, a second t-test will be employed to compare the average means of the control group before and after (Time 1 and Time 2) the treatment of the experimental group. Again insignificance will indicate that the populations were not influenced by other outside factors.

The third and final t-test will compare the average means of Time 1 and Time 2 of both populations. Here we are looking for significant variables that would indicate that the program did have a positive effect on the children's overall resistance skills. At this point, we are primarily interested in discovering and evaluating the differences between the effects rather than the effects themselves. Significance here signifies a true difference between the two populations. After identifying statistically significant changes in the treatment group we can do some comparative analysis with any possible changes in the

control group to evaluate any significant effect the treatment had on the student's attitude on violence, drugs and alcohol (Moser and Stevens, 1992:19-21).

### *Violation of Assumptions*

The inability to match cases is not a unique problem encountered by this particular analysis. Schools are becoming very conscious of their liability if the student's responses to the survey questions were revealed in any way. Anonymity counteracts many potential ethical difficulties. Consequently, the inability to match cases in a statistical analysis is becoming more and more accepted within the field (Kenny and Watson, 1998:57-72; Kenny and Watson; 1999:8).<sup>39</sup>

## ***Chapter 4***

### ***Findings***

#### ***Reliability Analysis***

The Cronbach's alpha was applied to measure the relationship and internal consistency of the testing instrument. The alpha levels (See Table 3) of the mediators pro-social bonding (.4049), pro-social values (.6178), and normative beliefs (.5093) seem to show some internal consistency with the other variables, nonetheless they all fall short of the .70 standard. However, the alpha level of the mediator commitment (.1612) shows a very low level of internal consistency with the other variables.

There is some consistencies revealed in comparing the frequencies of the Mediator Mean Resistance Scores Review (Table 6) and the Mediator Reliability Analysis:

Cronbach's alpha (Table 3). Pro-social values and normative beliefs reveals the highest internal consistency, with the least significant attitude change within the mediator mean resistance frequency review (+.14/-.25 respectively). Pro-social bonding has the next highest internal consistency and the second highest attitude change (+.30); behind commitment with the lowest correlation and the most significant attitude change (+.46). All four tests fall below the .70 standard; consequently, it appears that the questions are not reliable and that the mediators are not correlated with the other variables. While the

low alpha level is troubling, some research has indicated that there is justification for continuing to use the research data (Bernardi, 1994:766-770; Anastasi, 1982:102-130).<sup>40</sup>

There are at least two possible explanations for the low correlation from the Cronbach's alpha test. One, the students did not have a consistent understanding of the questions asked them, thus answered the questions in an inconsistent manner.<sup>41</sup> The student's interpretation of the questions could have easily contributed to the lack of internal consistency shown by the reliability tests.

While most questions are clear and unambiguous and utilize response categories that are exhaustive, a few questions have enough vagueness that the answer categories may prove not to be mutually exclusive. For example, a question such as #14 (*Most people don't ever smoke cigarettes*) is too imprecise. How does the child define smoking? Is smoking defined by having just one cigarette in one's lifetime or is it clearly a consistent pattern or habitual habit of smoking several cigarettes a day. The intent of the question to the researcher is clear; however, it is not clear to the respondent.

A second explanation may have to do with a very homogeneous population that received a very heterogeneous test.<sup>42 43</sup> In comparing questions such as #5 (*Most people will probably try cigarettes before they turn twenty-one*) and Question #10 (*I could never consider myself creative*) it seems apparent that each question was designed to extract entirely different types of information from the student. Question #5 is simply asking the student how they perceive the smoking culture, while Question #10 is attempting to extract personal feelings about the student's self-image and/or self-esteem. As a result, an

argument could be made that this is a very heterogeneous test used on a very homogenous population.

Richard Benardi explored the problem of using a complex test on a highly homogenous population and found that a low alpha does not immediately put the results of the analysis into question (Benardi, 1994:767-770).<sup>44</sup> Benardi introduces a highly methodological and extensive procedure. The model goes through a process of sample reduction: if the correlations remain constant through the sample reduction, the low alpha can be attributed to the sample's homogeneity. The purpose of this study is to evaluate the program and more specifically, in this instance, the testing instrument. The test may or may not be reliable, the point is that the testing instrument needs to be more refined in its question structure and more sensitively designed and focused to the specific population in which it is intended.

In reality, both student interpretation and the relationship of the homogenous population and the heterogeneous range of the test have had some negative influence on the reliability of the testing instrument. While many of the questions were well designed and placed, there were a few that were unclear and ambiguous. This no doubt had some negative effect; however, I feel that the relationship of the population and the testing instrument contributed more heavily to the internal inconsistencies. The test was designed to extract a number of particular attitudes and perspectives from a very narrow homogenous population.<sup>45</sup>

### ***Analysis of the Independent t-Test***

Three independent t-test strategies were employed to determine: 1) the comparability of the two groups, 2) test the control group changes and 3) determine the effect of the treatment on the experimental group (See Table 4). The first test is the group comparability analysis, which compared the means of the pre-tests of the control and experimental group. The t-test revealed that five of the twenty-one variables (23.8%) showed significant differences in attitude between groups. The five variables: #8 (*Most people my age would probably punch someone they are mad at*), #9 (*I should always try to hang around people who have a positive influence on me*), #11 (*Most people don't try alcohol until they're at least twenty-one years old*), #14 (*Most people don't ever smoke cigarettes*), and #20 (*Most people my age are honest*) all revealed significant differences. The treatment group had significantly higher means in four of the five variables (variables #8, #11, #14, and #20). With 76% of the variables showing no significant differences in attitude one could make an argument that the groups were equitable.

The second t-test (control group change) was a comparison of the means of the control group (Time 1/Time 2), which revealed that three of twenty-one variables (14.3%) changed significantly over the treatment period (variables #1, #5 and #9). Of variables #1 (*At my age, I don't really need to worry about my future*), #5 (*Most people will probably try cigarettes before they turn twenty-one*), and #10 (*I could never consider myself creative*), two of the three (variables #1 and #10) showed positive growth, while variable #5 deteriorated. With 85.7% of the variables displaying no significant influence from



outside factors, one again could argue that the control group was not significantly influenced from outside factors.

The third t-test, the main test (effect of treatment), compares the post-test means of both the control and treatment group. Variables #7 (*The way I live now has nothing to do with the way I will live as an adult*) and #11 (*Most people don't try alcohol until they're at least 21 years old*) are the only two variables of the twenty-one variables that are statistically significant. While the overall results are not impressive, variable #7 did make a positive statistically significant move. This is supported by the group comparability t-test that revealed that variable #7 was insignificant (equitable) in comparing the means of the two groups. This suggests that the students may have given some consideration to their present behavior and how that behavior may affect their future. However, variable #11 was significant (not equitable) in the group comparability t-test, consequently failing to show that the program had any positive influence on the variable. While these results are modest at best, this review will continue to examine the mean resistant scores (Table 5) and look for any trends that may or may not support this assumption.

### ***Mean Resistance Scores***

#### ***Pre-Test Overall Mean Results***

Riverside South had 114 (N= 114) students complete the pre-test, each students test was scored individually then added to a group total. The total raw score then was divided by the total number in the population for an average mean resistant score of 3.63.

The control group (A.H.S.T.) of 95 (N=95) students completed the pre-test for an average mean resistance score of 3.48 (See Table 5)

### *Post-Test Overall Mean Results*

Riverside South had 111 (N=111) students complete the post-test, each student's score was also tallied individually then added to the group total for an average mean resistance score of 3.73. The control group of 97 (N=97) students completed the post-test with an average score of 3.55 (See Table 5).

### *Discussion*

The treatment groups overall mean moved +.10 from 3.63 to 3.73, while the control group increased their mean score +.07 from 3.48 to 3.55. The program seemed to have a desirable effect on the subject matter concerned within eleven questions (#1, #3, #4, #6, #7, #9, #10, #12, #13, #19, #21); (average increase = +.366) The control group experienced a rise in their mean scores in fourteen (#1, #3, #7, #8, #9, #10, #12, #14, #15, #16, #18, #19, #20, #21); (average increase = +.182) questions on the survey, but to a smaller degree. Nine questions (#5, #8, #11, #14, #15, #16, #17, #18, #20); (average decrease = -.16) experienced significant to minor decline in their mean scores within the treatment group, while the control group experienced some deterioration in six questions (#2, #5, #6, #11, #13, #17); (average decrease = -.202).

There seems to be some interesting results extracted from Question #2 (*Most people my age tell lies if they need to?*) and question #20 (*Most people are honest?*). The

treatment groups responded to question #2 with a 2.77 mean resistant value (pre-test) that deteriorated to a 2.32 (-.45/post), while the control group also experienced some decline from a 2.45 to a 2.27 (-.18). The treatment group responded to question #20 with a 3.26 mean resistant value (pre-test) which deteriorated to a 3.07 (-.19/post- test), with the control group registered a 2.79 which increased to a 2.88 (+.09). It appears as though the student's perceive lying and dishonesty among their peers as normal behaviors and that perception became stronger as the year progressed.<sup>46</sup>

Questions #2 and #20 pose questions designed to extract student perceptions of society's behavior and values in the world around them. Questions that seem to be more concerned about their individual behavior and values such as; #3 (*If I act selfish, it is no big deal to other people*;  $t = 3.98/ 4.40$ ;  $c = 3.85/ 4.16$ ), #6 (*Sharing is an important part of building relationships*;  $t = 4.32/ 4.48$ ;  $c = 4.31/ 4.26$ ), #12 (*If I cheat, it is no big deal to other people*;  $t = 4.52/ 4.58$ ;  $c = 4.28/ 4.39$ ), #16 (*Respect is an important part of building relationships*;  $t = 4.56/ 4.43$ ;  $c = 4.36/ 4.51$ ), #21 (*Spreading rumors could effect the relationships a person has with others*;  $t = 4.25/ 4.60$ ;  $c = 4.10/ 4.37$ ), and #18 (*Being polite is important for getting along with others*;  $t = 4.53/ 4.51$ ;  $c = 4.55/ 4.56$ ) all revealed either minor losses, maintained or slightly increased the strength of their mean score.<sup>47</sup> There seems to be a contradiction between what behaviors the students perceive to exist in the world around them (those such as were posed in #2 and #20) and those behaviors they believe are necessary for them individually to be accepted by their friends and society as a whole (such as posed in #3, #6, #12, #16, #21, and #18). The question that seems to surface is whether the students are showing tendencies to endorse lying and

dishonesty or only expressing their perceptions of other's behavior as the question was posed? Based on how questions #2 and #20 were presented and how they responded to questions #3, #6, #12, #16, and #18 the students seem to be only revealing their perception of the behavior of others.

Question #5 (*Most people will probably try cigarettes before they turn eighteen years old*) in the treatment group did not show a desired effect (2.65/2.59; -.06); however, it declined much less than the control group (2.77/2.27; -.50).<sup>48</sup> Consequently, there may have been some effect from the program on student's perception of their peers experimenting with tobacco. However, Question #14 that also deals with the tobacco issue does not seem to be supportive. This possibly could be explained by the fact that the fourth and fifth grade students perceived their peers as not experimenting with tobacco before the age of twenty-one, but tend to disagree that most people don't ever smoke cigarettes.

Question #11 (*Most people don't try alcohol until they are at least 21 years old*), Question # 14 (*Most people don't ever smoke cigarettes*) and question #17 (*Drinking alcohol is a normal part of growing up*) within the treatment group declined -.31, -.31 and -.09, while the control group also changed -.26, -.21 and -.01 respectively. Questions #5, #11, #14 and #17 were originally designed to measure the student's perceptions or normative beliefs regarding tobacco and alcohol use.<sup>49</sup> It appears that overall a high percentage of the students polled within the treatment and control group believe that the majority of their peers will experiment with tobacco and alcohol, and the treatment group continued or was even more likely to have that perception after the treatment was

delivered. Unfortunately, the student's perceptions seem to go hand in hand with the recent information released on adolescent drug use.<sup>50</sup>

Question #8 within the treatment group (*Most people my age would probably punch someone they are mad at*) declined from 2.71 to 2.39 (-.32), while the control group showed a slight increase from 2.10 to 2.23 (+.13). This question seems to have been designed in an attempt to understand what the student feels and endorses as accepted normative behavior regarding violence. Interestingly, more students felt that their peers would be more likely use violence after the treatment than before.

Questions such as #2, #5, #8, #11, #14, #17, and #20 revealed notable deterioration within their mean resistance scores; however, one must remember that these questions are geared more towards measuring attitude than behavior. The questions attempt to measure the child's intimate attitude (normative beliefs) toward those behaviors not the behavior itself. There is the possibility, that the treatment group developed a resistance to the behavior that is not reflected in the mean resistance score. Perhaps, the treatment group developed a more sophisticated or honest view of those behaviors; a view where the child realizes and accepts that a substantial number of their peers participate in risky behaviors. However, the child has individually developed a personal commitment to avoid those behaviors. As previously mentioned in chapter three; even though attitude and behavior are very closely related they remain two separate social concepts.

The treatment group in questions #10 (*I could never consider myself creative*), #13 (*I often think about my future*) and #15 (*I think people my age should often look to adults for support*) showed mean resistant value moves of +.22, +.24 and -.01, with the

control group moving +.47, -.21 and .07 respectively. Question #13 indicates a +.45 improvement within the treatment group over the control group. However questions #10 (+.30) and #15 (+.08) had a higher response within the control group than the treatment group. It does appear that the program was successful in influencing the students to think about their future; however, the program was not as successful in encouraging creativity or encouraging them to look to adults for support. This could negatively affect the programs potential, as success within the All Stars Core Program hinges on individual creativity and a positive relationship with an adult sponsor.

Questions such as #1 (*At my age, I don't really need to worry about my future*), #4 (*Being healthy now will help me be healthy when I'm an adult*), #7 (*The way I live now has nothing to do with the way I will live as an adult*), #9 (*I should always try to hang around people who have a positive influence on me*), and #19 (*I'm not the type of person who could be a leader*) did reveal a notable change over the control group, with moves within the treatment group of +.70, +.39, +.49, +.57 and +1.49 compared with the control group scores of +.47, +.07, +.10, +.08, and +.28 respectively. It appears that the program had a very positive effect on student self esteem, which encouraged them to think about their future and strengthened positive social bonding.

Overall, the program may have failed in respect to establishing norms and normative beliefs that changed the student's perception of their peer's behavior in regards to lying, honesty, violence, tobacco and alcohol. Other behaviors such as selfishness and starting rumors revealed significant improvement, while attitudes about sharing and cheating showed only minor improvement; however, behaviors such as showing respect

and being polite slightly deteriorated. The program seemed to have a strong affect on the student's conviction to contemplate and plan for their future, to develop solid health habits that will follow them into adulthood, to realize the importance of spending time with people who are a positive influence and the certitude to build self confidence that allows them to be successful and take charge of their lives.<sup>51</sup>

### ***Mediator Internal Analysis***

The pro-social bonding mediator (See Table 6) consists of questions #9, #15, #19, and #10. Question #9 (*I should always hang around people who have a positive influence on me*) and question #15 (*I think people my age should often look to adults for support*) both have strong social bonding elements. Questions #10 (*I could never consider myself creative*) and #19 (*I am not the type of person to be a leader*) are related to self-esteem issues. Children that feel creative and feel like they have leadership qualities are far more active in school as well as community activities and tend to avoid delinquent behavior (Gold, 1978:303-308).

Pro-social bonding within the treatment group revealed a notable increase from 3.67 to 3.97, a +.30 increase in the mean resistance value. The control group moved +.22 from 3.74 to 3.96. Although the move was more noteworthy within the treatment group, there was a healthy increase within the control group as well. The overall influence of the program seems to be minimized as the treatment group only revealed a +.06 increase over the control group. Looking at the individual variable mean resistance scores (See Table 5) the program seemed to have a significant effect on the issues expressed within questions

#9, and #19, while little or no effect on the issues within questions #10 and #15. Overall, the program had a positive influence on creativity, self-confidence, and maintaining relationships with people that are positive influences; however, creativity proved to be a much weaker link than the other two variables. The program appears to have had no effect on building relationships with adults for support. As I expressed previously, the failure of the program to build creativity and adult support could prove troublesome as the success of the All Stars Core Program relies on individual creativity and adult mentors or sponsors.

Pro-social values are addressed in questions #3, #12, #6, # 16, #18, and #21. Questions #3 (*If I act selfish, it is no big deal to other people*) and #12 (*If I cheat, its no big deal to other people*) are two questions that are tied to social values, although both have strong normative belief implications. Both questions solicit the child's perception of their peer's values or society's values as a whole, but because of the strong value content I placed them in the social values category.<sup>52</sup> Questions #6 (*Sharing is an important part of building relationships*), #16 (*Respect is an important part of building good relationships*), #18 (*Being polite is important for getting along with others*) and #21 (*Spreading rumors could effect the relationships a person has with others*) are more intimate questions designed to extract the child's personal feelings about their own values. The mean resistance score indicates that pro-social values were neither significant within the testing group nor the control group, moving only +.14 within the treatment and +.14 within the control group. After breaking the data down individually only variable #3 and #21 have notable moves, while all other variables revealed little or no change. However,



these were the highest pre-test means of the four outcome measures evaluated. The treatment group at a mean resistance level of 4.36 and the control group at 4.50 are both quite high, which could be part of the reason that the program did not motivate a more significant move. Arguably, issues such as lying, selfishness, sharing, respect, being polite and spreading rumors are being dealt with better in other settings in their lives.

Nonetheless, it does appear that the program at least reinforced those social values as they both indicated some improvement.

The commitment mediator embodies questions #4, #7, #1 and #13. Clearly Questions #4 (*Being healthy now will help me be healthy when I'm an adult*), #7 (*The way I live now has nothing to do with the way I live as an adult*), #1 (*At my age, I don't really need to worry about my future*) and #13 (*I often think about my future*) are very focused on the child's view and perceptions of their own individual futures. These questions attempt to measure the child's awareness of the value of discerning and cognitively preparing for their future. While the questions do not solicit a direct commitment from the child, they do measure an undercurrent of awareness that is necessary to solidify a strong commitment from the child.

Commitment within the treatment group had by far the most significant move from 3.46 to 3.92 a +.46 improvement in the mean resistance value. While the control group only moved a +.07 from 3.51 to 3.58. Individually, variables #4, (+.39) #7 (+.49), #13 (+.24) and #1 (+.70) all made very strong positive moves. Students appeared to have become more conscious of their future. They also have become more aware and seem to

agree that good habits developed now will assist them in maintaining good health and being successful in the future.

The normative beliefs mediator consists of questions #2 (*Most people my age tell lies if they need to*), #5 (*Most people will probably try cigarettes before they turn twenty-one*), #8 (*Most people my age would probably punch someone they are mad at*), #11 (*Most people don't try alcohol until they're at least 21 years old*), #14 (*Most people don't ever smoke cigarettes*), #20 (*Most people are honest*), and #17 (*Drinking alcohol is a normal part of growing up*).<sup>53</sup> Questions #5, #17, #11, and #14 deal with the child's perception of societies behaviors related to smoking and drinking, while #2, #8 and #20 deal with the child's perception of societies norms related to violence and general honesty. Again, we have some questions that could have been placed in another category, specifically social values; however, while they have value content they strongly implore the child's perceptions of society norms.

The normative belief outcome measure seems to be the most disappointing as the treatment group regressed from 3.07 to a 2.82, a -.25 reduction in the mean resistant value. The control group also lost ground; however, not as severely as the treatment group as their mean resistance score dropped from 2.68 to 2.60, a loss of -.08. Not one of the individual variables within the treatment group responded positively. Seemingly, the program did not have a positive effect on the main issues at hand such as smoking cigarettes, alcohol, honesty, violence and self-control.<sup>54</sup>

At this point, the normative beliefs category results seem to be the most ambiguous. It appears that the All Stars Jr. Program failed to have a positive impact on

the normative belief mediator, a very significant piece within the All Stars theory. Pro-social bonding (3.67/3.97), pro-social values (4.36/4.50) and the commitment (3.46/3.92) mediators all had initially high mean resistance scores with positive responses to the program, while the normative belief mediator (3.07/2.82) started relatively weak and deteriorated further. Is a student's ability to lead a drug free life and to be successful, restricted or enhanced by his/or her individual perception of what is normal and expected societal behavior? Several questions come to mind when discussing the success of the program and peer concepts. If there is a relationship between social bonding, social values, commitment and normative beliefs, why has the response to normative beliefs been so weak? Is there no relationship with a student's perception of success and alcohol, tobacco, violence, honesty or even drug use? Who do fourth and fifth grade students perceive as their peers, does it include their age group in society as a whole, their class or just a small intimate group of friends? Is the negative result of the normative belief mediator due to a flaw in the program or is it reflecting a strong belief that violence, alcohol, tobacco and drugs are accepted behaviors within our society? With several studies showing that adolescent alcohol and tobacco use have almost become the norm, how effective a tool is the normative belief mediator in delaying the onset of alcohol, tobacco and drug use (Johnston and O'Malley and Bachman; 2000:5-8; Hahn, 2000:51; Kann, 1997:10-15)?<sup>55</sup> How do the students define success, money, happiness, health or fame? How do students perceive success in life relative to societies attitudes about violence, honesty, alcohol, tobacco, and drug use?<sup>56</sup>

It appears that the All Stars Jr. Program has been successful in increasing the student's conception of their social bond to their community and family and may have encouraged them to start thinking about their futures in a more constructive manner. The children started with a high social values frequency level and the program was able to maintain and build on that strength. The overall question is whether in the absence of a strong normative beliefs mediator, have we adequately provided a strong foundation for the primary All Stars Program?

## *Chapter 5*

### *Summary of Findings*

#### *Overview of the Programs*

Two programs have been discussed in detail within this paper: D.A.R.E. and the All Stars Program, more specifically All Stars Jr. a supplemental program of All Stars. It is important to remember that this analysis is focused only on the effectiveness of the All Stars Jr. Pilot Program and its ability to provide support for the All Stars core program later in the child's life. These findings are not reflective either positively or negatively on the core program's ability to be effective in drug prevention.

Several D.A.R.E. studies were reviewed, which often revealed that the program had an overall positive effect; however, the positive effects quickly dissipated, not unlike several other prevention programs including the All Stars Program (See Lincoln study/Table 1 and 2). Four common themes have surfaced as a result of this review: 1) prevention programs need to work through the correct mediators, 2) they need to be interactive and 3) have supplemental programs that 4) are delivered often through the child's life to reinforce the basic concepts of the core program (See page 19).

Because of criticism and the influence of many studies like those that have discussed in the literature review, several programs including D.A.R.E. have redesigned and modified their curriculum.<sup>57</sup> All Stars responded by designing two programs: the

booster program (pre-high school students) and the All Stars Jr. program (fourth and/or fifth grade students). All Stars Jr. was designed to promote a more solid base for the All Stars core program, while the booster program was designed to reinforce those positive commitments achieved through the core program.

The study was conducted during the 1999-2000 school year. During that time the pilot school's teaching staff and the independent All Stars Jr. coordinator were interviewed several times. The observations revealed a troubling aspect of the study. Either because of resistance to change or insufficient training, there seemed to be a lack of continuity within the teaching staff regarding the program. While some teachers seemed to relish the concept and follow the program in great detail, some became disenchanted and gradually drifted somewhat from the All Stars Jr. curriculum. How much effect this had on the program is very difficult to assess; however, what is interesting is that in spite of this problem the program seemed to have an overall positive influence on the children's attitude toward risky behaviors. Overall, the study obviously had some flaws. While the analysis does expose some weaknesses within the study and the program itself, it also reveals some positive attributes as well. Three aspects of the study are worthy of discussion: 1) problems in the delivery of the program, 2) the weakness and results of the testing instrument, and 3) failure and success of the program to have a positive influence on all four mediators.

### ***Teacher Training/Delivery***

The pilot project experienced some problems in the delivery of the curriculum due to inconsistencies created by the teaching staff. Some teachers followed the program in detail while others became discontented with the program and became very inconsistent in the delivery of the program. This problem was confirmed by discussions with the teachers as well as the principal of the school and the independent All Stars Jr. coordinator. The basis of the teacher's problems involved a lack of total understanding of the teaching strategies within the All Stars curriculum and time related factors. For example, one teacher expressed frustration over the multiple steps that needed to be taken within a lesson plan to drive home a specific point to the student. The teacher rationalized skipping steps within the program by determining that if the material and/or facts of the program were simply presented to the student, the student would be empowered to candidly make a rational choice that was correct. This action abandoned the power of interaction and discovery that the program promotes and resulted in the teacher unintentionally moving the program from an interactional to an informational program. Short cuts were taken and in some instances steps in the program were eliminated. The entire staff intended to follow the program to the letter when they left the training session, however, as they individually struggled with scheduling and organization of their lesson plans some of the teachers lost their motivation along with the basic concept of the program.

This is not an isolated problem. In a study done by Gingiss, Gottlieb and Brink (1994), 313 first grade teachers were asked to complete a questionnaire during the first

and second years of the Smoke-Free Class of 2000 (SFC2000) Project. Of the 64% of the recipients who agreed to use materials, two of every five did not maintain use a year later and many who had originally intended to use them did not use them at all. Four factors were identified as important in predicting teacher commitment to prevention programs: 1) their own personal receptivity to prevention education, 2) teacher support for prevention education, 3) personal involvement in teaching prevention education, and 4) school involvement in prevention education (Gingiss, Gottlieb and Brink, 1994:173-174).

A combination of conclusions may be drawn from this observation. First, of the five teachers involved, two were first year teachers and three were experienced teachers, and they all had limited experience in prevention education. Second, the training was not extensive enough to help the teachers to understand the true concept of the program. The training consisted of one, two-hour session facilitated by the All Stars Jr. coordinator. While the training was well facilitated and well attended, it did not prove to be adequate. Sometime after the training session, the teachers became disillusioned or lost confidence in the program. Third, while the school endorsed the program there was an inadvertent lack of ground support. The principal's time seemed to be limited as she had a number of responsibilities between two schools several miles apart, and the All Stars Jr. coordinators were supervising several pilot projects with a number of other obligations within the regular All Stars core program. While both were accessible by phone and e-mail, the scheduling, coordinating and delivery of the program was primarily left up to the teachers themselves. The lack of readily accessible support within the school building, either from the All Stars Program or someone in the school thoroughly trained by All Stars was



detrimental to the organization and delivery of the program. The first year teachers were especially vulnerable because of the normal first year jitters of teaching.

Two questions come to mind from this observation. First, was the program curriculum too difficult or cumbersome to integrate properly into the school's curriculum or was it just the lack of baseline support previously discussed? The answer appears to be the latter, however this study is not prepared empirically to accurately address this issue. Second, would the delivery of the program be more consistent if provided by trained facilitators from outside the school? There are two schools of thought on the delivery of school based prevention programs: 1) by teaching staff within the school and 2) trained facilitators from outside of the school. All Stars promotes the in school delivery concept, which certainly has some advantages. For example, the All Stars Jr. curriculum is blended into the school's lesson plans which permits the program to be delivered to the child in increments throughout the entire school year. This allows the child to be exposed to the program over a longer period of time rather than a rigid and limited time frame. Other clear advantages are that the teachers are readily available, have teaching experience and have a relationship with the students. There is a significant advantage to having the teacher aware of the student's strengths and weaknesses and personal issues; thus the teacher is better equipped to facilitate the benefits of the program to the student.<sup>58 59</sup>

However, are we asking too much of the teachers? Teachers on the average are faced with overcrowded classrooms, more discipline problems and less parental support. Teachers are increasingly being placed in parental roles because of the prevalence of single parent families and the high number of students who lack parental supervision and

attention caused by parents working longer and non-traditional hours.<sup>60</sup> Currently, schools are expected to be more than academic providers. They are being asked to provide social, ethical, and moral life skills to each student as well. Teachers are being told to improve the average student's academic level, while the average student enters school with lower levels of skills than ever before.

The other school of thought is that prevention programs should be delivered by professionals outside of the school system that are trained in prevention strategies. Some programs are implemented by outside professionals such as physicians, nurses and police officers. The rationale behind the use of non-school personnel is that experts from the community usually have higher credibility with the students (Schnke, Botvin and Orlandi, 1991:36). The D.A.R.E. Program is a good example of this concept. The strength of this approach is that the child is exposed to a professional within their community whose expertise is in the prevention field. In the case of the D.A.R.E. Program the children are exposed to facilitators who are certified police officers. The child has an opportunity to develop a relationship with the officer and to realize that they are not in the community to hinder their life but assist them in improving their life. This type of delivery demands a collaboration of time and scheduling between two professional agencies, which often means that the program would be delivered over a shorter period of time within a more rigid time schedule.

The proper delivery of any prevention program is vital to the success of the program. In reality, who delivers the program is not as important as the program being correctly delivered. In this case the design of the program called for the teachers to

deliver the program and for one reason or another it appears that some of the teachers did not deliver the program to specification. To be successful, the facilitators need to thoroughly understand the goals of the program and need to be able to master the tactics to accomplish those goals.

### ***Testing Instrument***

#### ***Reliability***

The Cronbach's alpha test was used to evaluate the survey and the four mediators: pro-social bonding, pro-social values, normative beliefs, and commitment. The test indicated that pro-social bonding (.4049), pro-social values (.6178), normative beliefs (.5093) and commitment (.1612) fail to meet the .07 standard of reliability (See pages 45-47). The Cronbach's alpha was used to test the relationship and/or the internal consistency of the variables that represent the given mediator and the balance of the variables within the testing instrument. For example, the commitment mediator consisted of four variables (questions #4, #7, #1, and #13), which were then tested against the remaining seventeen variables to obtain the relationship and/or internal consistency of the groups.<sup>61</sup>

#### ***Independent t-test/Mean Resistance Score Trends***

The program's effectiveness is evaluated by comparing and contrasting variable significance and mean trends. Variable #7 (*The way I live now has nothing to do with the way I will live as an adult*) was statistically significant (See Table 4/t = -3.577\*). Variable

#4 (*Being healthy now will help me be healthy when I'm an adult*/ $t = -1.829$ ) was marginally insignificant; however, it revealed some overall strength. Variable #5 (*Most people will probably try cigarettes before they turn twenty-one*/ $t = -1.916$ ) was also marginally statistically insignificant; however, t-test 2 (control group change) was significant at  $t = 2.684^*$ , which indicated that some outside factors had some influence on the children's mean resistance relationship in variable #5. Therefore t-test 3 (effect of treatment) provided no empirical evidence that the program had a positive influence on variable #5. The t-test analysis (t-test 1/t-test 2/t-test 3) indicated that of the twenty-one variables only variable #7 and #4 were significant or nearly significant in determining the programs effect on the child's attitude toward risky behaviors.<sup>62</sup>

Looking at the mean resistance scores by test and group (treatment group/river pre-and post test) seven of eight variables make moves either positively or negatively (Table 5). Variable #1 (*At my age, I don't really need to worry about my future*), #3 (*If I act selfish, its no big deal to other people*), #4 (*Being healthy now will help me to be healthy when I'm an adult*), #7 (*The way I live now has nothing to do with how I live as an adult*), #9 (*I should always try to hang around people who have a positive influence on me*) #19 (*I'm not the type of person who could be a leader*), and #21 (*Spreading rumors could effect the relationships a person has with others*) showed positive improvement (average of +.47) while variable #2 (*Most people my age tell lies if they need to*) showed negative change (-.45). As indicated earlier, after the t-tests are applied (t-test 1, t-test 2 and t-test 3/Figure 5) only variables #4 and #7 showed either significant or nearly significant changes.

### *Mediator Mean Resistance Score*

There were positive changes (Time 1/Time 2) in three of the four mediators (pro-social bonding = +.30, pro-social values = +.14, and commitment = +.46), while the mediator normative beliefs recorded a -.25 (Table 6). Within the treatment group, pro-social bonding recorded a modest gain (+.08), while pro-social values was consistent with the control group (+.14).<sup>63</sup> However, the normative beliefs mean resistance score within the treatment group deteriorated more than the control group (-.17). Looking at the mediator mean resistance score table (Table 6) it appears that the mediator commitment (+.46) emerged with the most strength. Two findings are obviously significant within this observation: the strong showing of the commitment mediator and the very weak showing of the normative belief mediator.

### *Strength and Weakness Evaluation*

The pre-test mediator mean resistance scores (Table 6) showed that the treatment and control groups scored initially very high with regard to the pro-social values category (4.36/4.24) and moderately high within the pro-social bonding (3.67/3.74) and the commitment (3.46/3.51) categories. All three mediators either held steady or scored modest to significant gains through the treatment. However, the normative belief mediator initially scored a modest 3.07, the lowest initial score of the four mediators and lost ground through the treatment. It appears that the treatment did not have an effect on the normative belief mediator.<sup>64</sup>

The fact that the mediator mean resistant scores of pro-social bonding and pro-social values in both groups was initially elevated may have had an effect on the upside potential of the program. A case could be made that mean resistant scores that start high have a higher level of resistance to move higher than scores that start at a lower level. The treatment (RIVER) and control (AHST) groups mediator mean resistance scores (pro-social bonding at 3.67/3.74 and pro-social values at 4.36/4.24 respectively) may have less potential to improve. However, if this is true it presents a serious problem with the programs approach to the normative beliefs mediator. Either there was a problem with the curriculum, delivery of the curriculum or the groups were not open to accepting the curriculum.

It is common knowledge that normative social influences are very powerful; every individual wants to avoid rejection and gain approval. Some studies have indicated that peer pressure is not prevalent in a child's life until later in their middle school years and that social norms of behavior may not be established as yet in the fourth or fifth grade environment.<sup>65</sup> Therefore, social pressure to conform may not have been an established behavior within either the treatment or control groups; consequently, students may have had difficulty relating to the normative belief component of the survey and curriculum. This may have been a factor in why the mediator mean resistance scores started and remained so low within both groups through the entire testing period.

The effectiveness of the normative belief mediator in drug prevention education has been questioned several times within this study. Many statistics and various studies have indicated that the majority of students participate in risky behaviors.<sup>66</sup> Experimenting

with alcohol and drugs is no longer a characteristic of a small group; it has rather become more the norm of the current generation of American adolescents (Schinke, Botvin, and Orlandi, 1991:1). These national statistics concur with the survey results of the Riverside eighth grade, the same school in which the All Stars Jr. pilot study was conducted (See pages 59/endnote 55).

There are several factors that may have hurt the performance of the normative beliefs mediator. The problem either lies with the curriculum, delivery of the program or the ability of the groups to either understand and/or accept the curriculum. Rationally, the All Stars Jr. curriculum's approach to normative beliefs appears to be strong. The inconsistent delivery of the program no doubt hurt the normative belief mediator's performance; however, the program was at least somewhat effective with the other three mediators. It seems as though it is more likely that either the groups have not established norms/mores or they are willing to accept risky behavior as normative behavior. Considering the initial high mediator mean resistance scores of the other mediators, it seems even more likely that the students may not have established patterns of normative behavior.

The strength of the All Stars Jr. Program seems to be in the commitment value. The commitment component is a valuable piece of any school based program and certainly the All Stars Core Program. It appears that the program was successful in enticing the students into thinking about their future in terms of the value of personal commitment. While the program has shown some weaknesses, it appears as though this component of

the program had a strong influence on the students, which could give the All Stars Core Program solid support.

### ***Program Recommendations***

This evaluation supports three steps that need to be taken to improve the effectiveness of the All Stars Jr. program. First, teacher training and support needs to be reevaluated and strengthened. The teachers within the treatment group lacked adequate training and technical support. The effectiveness of the program suffered from only a half day of training, a principal whose time was divided between two school buildings several miles apart and the All Stars Jr. coordinator whose time was spread thin over several pilot studies. This resulted in the teachers not having firsthand access to help with daily problems in delivering the program.

Second, the testing instrument needs to be reevaluated. While the test appears on the surface to be quite simplistic, in reality it is a very complex test that is eliciting a wide range of information from a small select population. While many of the questions are well designed, there are a few that are vague and ambiguous. Questions that allow a wide range of interpretations invite ambiguity and, consequently, an unreliable testing instrument. The design of a survey to illicit information from elementary students is no easy task as there are many aspects to consider, such as attention span, maturity, reading skills and interpretation skills of each respondent. A drug prevention program cannot evaluate its successes and failures if it does not have an accurate measurement.



Third, to consider implementing the sponsor/mentor component of the All Stars Core Program within the All Stars Jr. Program. The sponsor/mentor has the ability to become a key component for the child to be successful within the program, especially in the case of a child who does not have an active parent in their life. The sponsor could be one/both of the parents, an uncle, aunt, grandmother, grandfather, teacher, coach or music teacher. This sponsor component of the core program could possibly be implemented within the All Stars Jr. Program to build more continuity and trust in the relationship between the student and the sponsor before they enter into the core program.

### ***Policy Implications***

Our nation's schools clearly represent the most convenient conduit to attempt to achieve widespread social changes among our young people, and that is why most drug abuse prevention has taken place in that setting. Teachers are highly educated professionals who are in tune with each student's academic, personal and social needs. However, the heat has been turned up on the public schools recently. Schools are being increasingly targeted and criticized for overall low academic testing, high truancy rates and their failure to control violence within the schools. In addition to these pressures, schools are being asked to address the issues pertaining to the use of drugs, alcohol, and tobacco and the increase of violence and premature sexual activity more comprehensively.

The schools seem to be the correct venue for drug education; however, if they are to become more intricately involved, they are going to need more support. For drug prevention programs to be successful in the school setting, there needs to be a new vision

of school education. The vision must include: 1) an holistic view of education with emphasis on educating the whole child, 2) the development of new standards for social and emotional development in school curriculum, and 3) a commitment by school administrators, and state and federal legislators for increased funding. Schools need more teachers and allied professionals who are trained in high-risk behavior prevention. This new vision demands that lessons be modeled and practiced in schools rather than just taught. A lesson that is presented, demonstrated, practiced, and consistently modeled arguably is more effective than if it were just taught. The vision must be shared as a common mission among the administrators and the staff with the focus on being more attuned to each child's social and emotional needs in order to create an environment that invokes positive learning behaviors and life skills.

### ***Conclusions***

Daniel Goleman (1995) in his book Emotional Intelligence characterized 10 years of scientific study on emotion as follows:

“Perhaps the most disturbing single piece of data in this book comes from a massive survey of parents and teachers and shows a worldwide trend for the present generation of children to be more troubled emotionally than the last: more lonely and depressed, more angry and unruly, more nervous and prone to worry, more impulsive and aggressive”(Goleman, 1995).

With so much effort put into prevention programs, why does teenage drug use remain such a problem in this country? Why do children participate in behavior that most assuredly will bring overwhelming physical, social, economical and legal problems? Many point to the drug problem and claim that it is the result of a poor family life and a troubled

adolescence. It is common to find drug abusers within large families and with parents who are divorced, separated or absent (Bucky, 1973:709-710; Hahn, 1998:335-340). Some young drug abusers have suffered from a childhood of harsh physical punishment and parental neglect and rejection (Baer and Corrado, 1974:101-102). Others relate drug abuse to poverty, social disorganization and a feeling of hopelessness; young people who have devalued identities, low self esteem, poor social economic status and continuous stress from living in a harsh urban environment (Vallant, 1966:537-539; Hahn, 1998:335-340). Some feel that it is due to genetic factors and/or addiction-prone personalities (Goodwin, 1985:171-174; Platt and Platt, 1976:127). Furthermore, some feel the drug problem is related to a lack of spirituality within our society, while still others feel that there is a lack of parenting skills within our families in which children are not held responsible for their actions. Consequently, this lack of what some call tough love soon leads to irresponsible behavior as the child matures and moves into their teenage years.

In all probability, there is no specific cause of drug abuse among young people; there is a combination and/or an array of problems that contribute to this ongoing enigma within our society. This makes it difficult for a particular program to be everything for all people at all times. The point is that there is probably no universally stamped prevention program that will inoculate or galvanize a child against drugs, violence and premature sexual activity. However, there are programs that can be effective.

The literature review in chapter one made a strong argument that drug prevention programs need to have a curriculum or framework that provides extensive detail and structure and at the same time offers flexibility and interactional material that encourages

each child to participate. Curriculum needs to be precise in its goals and focus on the mediating processes that are the most effective in suppressing the deviant behaviors targeted. Programs cannot be purely informational, each child needs to work the program and discover what the program has to offer to them individually. Changing behavior is an intimate process that can only happen when the child individually takes ownership of the program and recognizes the benefits of long-term behavioral change.<sup>67</sup> Anti-drug prevention programs also need to have affiliate support programs to help sustain long-term immunity. The more often the program is reinforced through these programs the more successful the program will be.

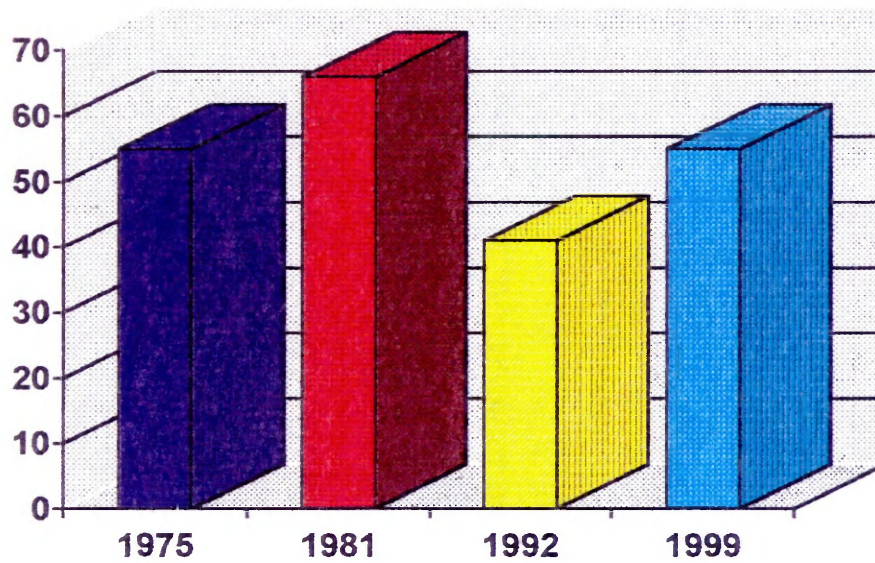
The inter-components of the All Stars Jr. Program seem to indicate that the program could be effective in supporting the All Stars Core Program. Unfortunately, the opportunity to measure the full potential of the program was hindered by quality control problems within the pilot study. Even with these improprieties, there were some successes. Despite the questionable reliability of the testing instrument, the independent t-test and the mean trends seemed to indicate that the program had a positive effect on the students' outlook and enhanced their ability to make a positive commitment to their futures.

For years society has taken the rational approach to the drug problem of our youth in this country. Drug prevention programs have often been formed purely through emotion, reason and intuition alone, which unfortunately have resulted in programs that were ineffective and squandered fiscal and human resources. There have been few evaluations of these programs with most of the findings being inconclusive or negative;

consequently, it has become quite obvious that drug educational programs have not achieved their primary goal of reducing drug and alcohol use within our youth. Human nature is far too complex to understand purely through a rational approach. Only by systematically gathering evidence through observation and by applying consistent procedures that can be replicated and tested can we design the most effective programs. As more empirical evidence is gathered and more effective programs are designed, there is ever-increasing hope for our children.

## *Appendix*

*Figure 1 Percentage Distribution of Juvenile Drug Use: Monitoring The Future Data 1975 Through 1999*

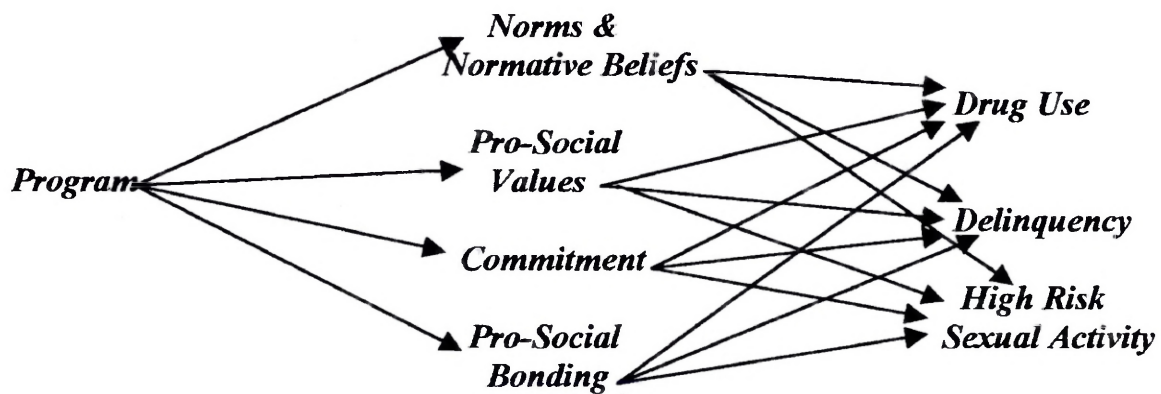


(Source: Johnston, O'Malley and Bachman, 2000:6-7)

**Figure 2a All Stars General Causal Model of Learned Behavior**



**Figure 2b All Stars Mediating Process of Learned Behavior**



(All Stars Community Program, 1997:5-7)



**Figure 3 Survey: ALL STARS Junior**  
(pre and post test instrument)

This is an anonymous survey so do not put your name on it. This is not a test. The correct answer is the one that best tells who you are, what you think, or what you believe. Place an "X" in the box that best represents your answer. If you do not understand a word or a question, place an "X" in the box for "I don't Know". Be sure to answer every question!

	I totally agree	
	I sort of agree	
	I don't know	
	I sort of disagree	
	I totally disagree	
(1) At my age, I don't really need to worry about my future.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(2) Most people my age tell lies if they need to.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(3) If I act selfish, it's no big deal to other people.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(4) Being healthy now will help me to be healthy when I'm an adult.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(5) Most people will probably try cigarettes before they turn 18 years old.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(6) Sharing is important for building relationships.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(7) The way I live now has nothing to do with the way I will live as an adult.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(8) Most people my age would probably punch someone they were mad at.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(9) I should always try to hang around people who have a positive influence on me.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(10) I could never consider myself creative.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(11) Most people don't try alcohol until they're at least 21 years old.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(12) If I cheat, it no big deal to other people.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(13) I often think about my future.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(14) Most people don't ever smoke cigarettes.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(15) I think people my age should often look to adults for support.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(16) Respect is an important part of building good relationships.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(17) Drinking alcohol is a normal part of growing up.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(18) Being polite is important for getting along with others.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(19) I'm not the type of person who could be a leader.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(20) Most people are honest.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
(21) Spreading rumors could effect the relationships a person has with others.		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**Figure 4 Scoring Key/ Variable Names: Survey: ALL STARS Junior**

- (1) At my age, I don't really need to worry about my future. (WORRY)
- (2) Most people my age tell lies if they need to. (LYING)
- (3) If I act selfish, it is no big deal to other people. (SELFISH)
- (4) Being healthy now will help me be healthy when I'm an adult. (HEALTHY)
- (5) Most people will probably try cigarettes before they turn twenty-one. (SOMEING)
- (6) Sharing is an important part of building relationships. (SHARING)
- (7) The way I live now has nothing to do with the way I will live as an adult. (LIVENOW)
- (8) Most people my age would probably punch someone they are mad at. (PUNCH)
- (9) I should always try to hang around people who have a positive influence on me. (POSINFL)
- (10) I could never consider myself creative. (CREATIV)
- (11) Most people don't try alcohol until they're at least 21 years old. (NOALC21)
- (12) If I cheat, its no big deal to other people. (CHEAT)
- (13) I often think about my future. (THINK)
- (14) Most people don't ever smoke cigarettes. (NOSMOKE)
- (15) I think people my age should often look to adults for support. (SUPPORT)
- (16) Respect is an important part of building good relationships. (RESPECT)
- (17) Drinking alcohol is a normal part of growing up. (DRINKOK)
- (18) Being polite is important for getting along with others. (POLITE)
- (19) I'm not the type of person who could be a leader. (LEADER)
- (20) Most people are honest. (HONEST)
- (21) Spreading rumors could effect the relationships a person has with others. (RUMORS)

Note: Response framework is:

I totally disagree (1); I sort of disagree (2); I don't know (3); I sort of agree (4); I totally agree (5)

**Figure 5 General Quasi-Experimental Design of The Evaluation**

<i>Treatment group</i>	<i>O<sub>1</sub></i>	<i>X</i>	<i>O<sub>2</sub></i>
<i>Comparison group</i>	<i>O<sub>1</sub></i>		<i>O<sub>2</sub></i>
	<i>T<sub>1</sub></i>		<i>T<sub>2</sub></i>

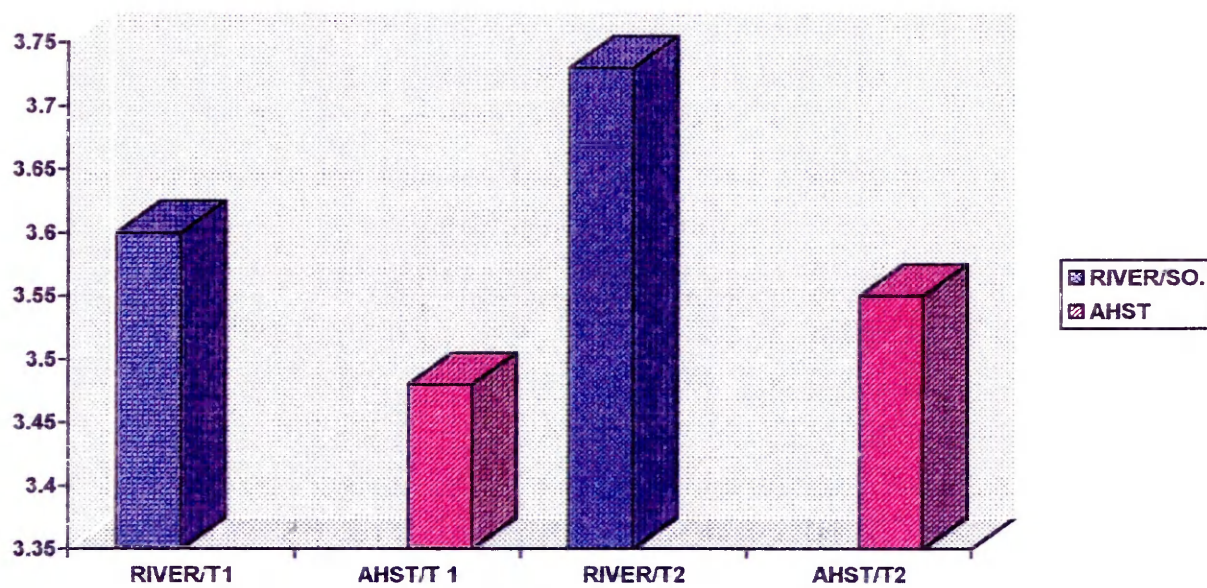
*X = exposure to treatment*

*O = observation*

*T = time points*

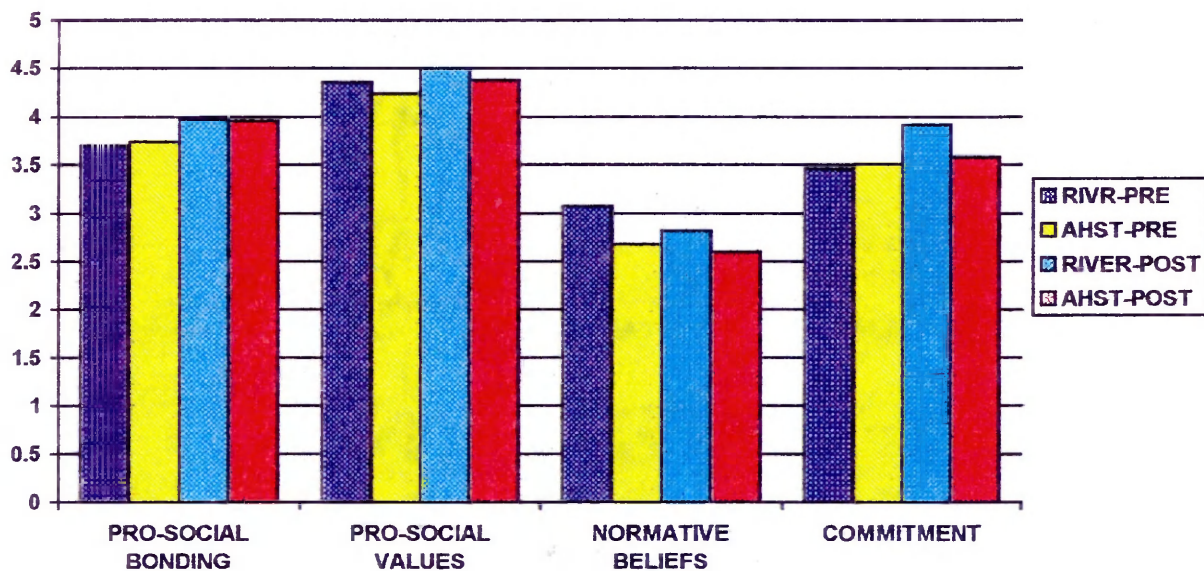
(Maxfield and Babbie, 1998:163)

*Figure 6 Mean Resistance Score by Group*



Note: Represents the mean of the pre test and post-test of each group of students.  
T1/T2 = Time 1 or Time 2

*Figure 7 Mean Mediator Resistance Scores by Group*



Note: A comparison of the four mediator frequency pre/post test scores of both groups.

**Table 1 Lincoln Public Schools t-test Results for Pre-and Post-Tests on the Four Mediator Variables.**

<i>Mediator</i>	<i>Group</i>	<i>Size</i>	<i>Mean</i>	<i>Standard Deviation</i>	<i>t value</i>
<b><i>Pro-Social Bonding</i></b>	Pre	263	33.86	4.66	1.79**
	Post	240	34.55	4.12	
<b><i>Pro-Social Values</i></b>	Pre	266	31.76	4.3	1.54
	Post	243	32.33	3.99	
<b><i>Normative Beliefs 1</i></b>	Pre	269	15.07	2.80	2.33**
	Post	242	15.59	2.23	
<b><i>Normative Beliefs 2</i></b>	Pre	258	22.24	2.72	1.01
	Post	240	22.0	2.69	
<b><i>Commitment</i></b>	Pre	266	28.76	4.73	2.34**
	Post	245	29.67	4.1	

\*\* significant ( $p < .05$ , one tailed t-test)

Note: Pre-and Post tests are delivered to the students in a school setting by independent facilitators, completed tests are then delivered to the Nebraska Council for in-house evaluations.

Note: There was an improvement in mean scores from pre-test to post-test in five of the five mediator variables listed.

Note: The mediators norm beliefs 1, strong personal commitment and positive relationship all had a statistically significant increase in their mean scores.

**Table 2 Longitudinal Summary of The Effects of The All Stars Program**

	<i>Pre-Test Mean</i>	<i>Post-Test Mean</i>	<i>Change</i>	<i>Probability</i>
<b><i>Normative Beliefs:</i></b>				
<i>Treatment</i>	7.71	8.62	.907 (+11.76%)	.001
<i>Treatment + 6 months</i>		8.22	.506 (-6.56%)	
<i>Control</i>	7.43	7.55	.1162 (+1.56%)	
<b><i>Pro-social Values</i></b>				
<i>Treatment</i>	7.23	8.56	1.33 (+18.42%)	.002
<i>Treatment + 6 months</i>		7.83	.5997 (-8.29%)	
<i>Control</i>	7.13	7.18	.059 (+.82%)	
<b><i>Commitment</i></b>				
<i>Treatment</i>	7.75	8.64	.883 (+11.39%)	.016
<i>Treatment + 6 months</i>		8.10	.34 (-4.39%)	
<i>Control</i>	7.22	7.31	0.09 (+1.22%)	
<b><i>Pro-Social Bonding</i></b>				
<i>Treatment</i>	8.75	9.78	1.03 (+11.74%)	.028
<i>Treatment + 6 months</i>		8.99	.234 (-2.68%)	
<i>Control</i>	8.13	8.15	0.02 (+0.22%)	

Note: Summary of the percentage of change of the means of the four mediators of various All Stars groups (pre/post-and post + six months).

**Table 3 Mediator Reliability Analysis: Cronbach's Alpha**

***Pro-Social Bonding (209 cases / 4 variables)***

Two-way mixed effect model (consistency coefficient):

People effect random, measure effect fixed

Single measure intraclass correlation = .1454\*

95.00% C. I.: Lower = .0812 Upper = .2175

F = 1.6803 DF = ( 208, 624.0) Sig. = .0000 (test value = .0000)

Average measure intraclass correlation = .4049\*\*

Alpha = .4049

***Pro-Social Values (209 cases / 6 variables)***

Two-way mixed effect model (consistency definition):

People effect random, measure effect fixed

Single measure intraclass correlation = .2122\*

95.00% C. I.: Lower = .1590 Upper = .2732

F = 2.6164 DF = ( 208, 1040.0) Sig. = .0000 (Test Value = .0000)

Average measure intraclass correlation = .6178\*\*

Alpha = .6178

*Note: When question #17 (Drinking alcohol is a normal part of growing up) is eliminated it results in a higher Normative Belief reliability frequency. The question appears to lack internal consistency, however because of its strong normative belief properties it remains part of the Normative Beliefs Mediator.*

***Normative Beliefs (209 cases / 7 variables)***

Two-way mixed effect model (Consistency definition):

People effect random, measure effect fixed

Single measure intraclass correlation = .1291\*

95.00% C. I.: Lower = .0871 Upper = .1793

F = 2.0379 DF = ( 208, 1248.0) Sig. = .0000 (Test Value = .0000)

Average measure intraclass correlation = .5093\*\*

Alpha = .5093

***Commitment (209 cases / 4 variables)***

Two-way mixed effect model (consistency definition):

People effect random, measure effect fixed

Single measure intraclass correlation = .0459\*

95.00% C. I.: Lower = -.0100 Upper = .1108

F = 1.1922 DF = ( 208, 624.0) Sig. = .0556 (test value = .0000)

Average measure intraclass correlation = .1612\*\*

Alpha = .1612



**Table 4 Independent t-test of Difference of Means**

<i>Variable</i>	<i>Group Comparability</i>	<i>Control Group Change</i>	<i>Effect of Treatment</i>
1) WORRY	-.867	-2.215*	-.379
2) LYING	1.555	.911	-.270
3) SELFISH	.651	-1.468	-1.468
4) HEALTHY	-1.081	.435	-1.829 <sup>a</sup>
5) SOMEING	-.630	2.684*	-1.916 <sup>a</sup>
6) SHARING	.067	.267	-1.441
7) LIVENOW	1.788	-.451	-3.577*
8) PUNCH	3.286*	-.662	-.849
9) POSINFL	-3.146*	.155	-.397
10) CREATIV	.599	-2.114*	.597
11) NOALC21	2.909*	1.248	-3.030*
12) CHEAT	1.368	-.575	-1.201
13) THINK	-1.255	1.074	-1.316
14) NOSMOKE	3.074*	-1.053	-.395
15) SUPPORT	.319	-.400	.182
16) RESPECT	1.424	-.987	.524
17) DRINKOK	1.507	.061	-1.006
18) POLITE	-.163	-.071	.346
19) LEADER	.414	-1.306	-1.199
20) HONEST	2.498*	-.446	-1.146
21) RUMORS	.926	-1.567	-1.589

Note: Three t-tests are represented: 1) comparability t-test (compares the two groups pre-test mean / statistical significance indicates that the groups are not similar), 2) control group change t-test (compares the pre-test and post-test mean of the control group/statistical significance indicated that there was an outside influence that effected resistance frequency), 3) effect of treatment test (compares the post-test of both groups / significance indicates that the treatment was effective).

\* = statistical significant ( $p < .05$ , one tailed t-test)

<sup>a</sup> = technically not statistical significant, however results considered in evaluation

**Table 5 Mean Resistance Scores by Test and Group**

	<b>RIVER PRE-TEST</b>	<b>RIVER POST-TEST</b>	<b>AHST PRE-TEST</b>	<b>AHST POST-TEST</b>
(1) WORRY	(2.88)	(3.58)	(3.04)	(3.51)
(2) LYING	(2.77)	(2.32)	2.45	2.27
(3) SELFISH	(3.98)	(4.40)	3.85	4.16
(4) HEALTHY	(4.11)	(4.50)	4.28	4.21
(5) SOMEING	2.65	2.59	(2.77)	(2.27)
(6) SHARING	4.32	4.48	4.31	4.26
(7) LIVENOW	(2.92)	(3.41)	2.55	2.65
(8) PUNCH	2.71	2.39	2.10	2.23
(9) POSINFL	(3.73)	(4.30)	4.26	4.34
(10) CREATIV	3.57	3.79	(3.44)	(3.91)
(11) NOALC21	2.96	2.65	2.35	2.09
(12) CHEAT	4.52	4.58	4.28	4.39
(13) THINK	3.94	4.18	4.16	3.95
(14) NOSMOKE	2.80	2.49	2.20	2.41
(15) SUPPORT	4.27	4.26	4.22	4.29
(16) RESPECT	4.56	4.43	4.36	4.51
(17) DRINKOK	4.33	4.24	4.07	4.06
(18) POLITE	4.53	4.51	4.55	4.56
(19) LEADER	(3.11)	(3.54)	3.03	3.31
(20) HONEST	3.26	3.07	2.79	2.88
(21) RUMORS	(4.25)	(4.60)	4.10	4.37
<i>Average Mean</i>	3.63	3.73	3.73	3.55

Note: Comparison of variable pre-and post-test means of both groups (Time 1/Time 2). Variable means that have noteworthy moves (either positively or negatively) are noted in parenthesis.

**Table 6 Mediator Mean Resistance Scores Review**

	<i>Frequency Resistance Score</i>		<i>Frequency Resistance Score</i>	
	<i>Time 1</i>	<i>Time 2</i>	<i>Time 1</i>	<i>Time 2</i>
	<b><i>River</i></b>	<b><i>River</i></b>	<b><i>AHST</i></b>	<b><i>AHST</i></b>
<b><i>Pro-Social Bonding</i></b> (#9, #15, #19, #10)	3.67	3.97	3.74	3.96
	<i>RIVER = (+.30)</i>		<i>AHST = (+.22)</i>	
<b><i>Pro-Social Values</i></b> (#3, #6, #12, #16, #21, #18)	4.36	4.50	4.24	4.38
	<i>RIVER = +.14</i>		<i>AHST = +.14</i>	
<b><i>Normative Beliefs</i></b> (#2, #5, #8, #11, #14, #20, #17)	3.07	2.82	2.68	2.60
	<i>RIVER = -.25</i>		<i>AHST = -.08</i>	
<b><i>Commitment</i></b> (#4, #7, #1, #13)	3.46	3.92	3.51	3.58
	<i>RIVER = (+.46)</i>		<i>AHST = (+.07)</i>	

Note: Comparison of the four variable mediator means frequencies of both groups (Time 1 / Time 2). Noteworthy increases in the mediator frequencies are noted in parenthesis.

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## *Endnotes*

<sup>1</sup> There are two basic ways in which drug abuse contributes to violence. First, violence can be perpetuated when an individual is under the influence of substances such as alcohol and psychoactive medications, and illegal drugs such as cocaine, amphetamine, inhalants, LSD and a host of other designer drugs. The second type of violence related to substance abuse stems from the drug trade, which is often focused in the poor and underserved communities (Johnson and Belfer, 1995:3-4).

<sup>2</sup> Public health views violence as any form of unjustified force or threat of force to commit physical harm, either against oneself or against others.

<sup>3</sup> D.A.R.E. officials say the solution to the problem is not less D.A.R.E but more of it, and urge cities to teach D.A.R.E. in middle and high school classes. That is precisely what D.A.R.E. plans to do. Hoping to double the programs size, the New York Police Department recently applied for a federal grant to add 100 more D.A.R.E. officers and expand the program into the cities middle schools. Over the next four years D.A.R.E. plans to implement a full curriculum (kindergarten through twelfth grade) in all of New York cities public schools (Gonnerman; 1999:58)

<sup>4</sup> The four studies reviewed were: (1) the Oslo Youth Smoking Prevention study that included ten years of follow up data that began in 1979, (2) a two year follow up done by Bell and Ellickson on Project Alert (1993), (3) another multi-site longitudinal test done in Minnesota by Bell and Ellickson (1990) and, (4) a six year follow up study of the first Waterloo School Smoking Prevention Trial (1989).

<sup>5</sup> The title of the government study is: *The D.A.R.E. Program: A Review of Prevalence, User Satisfaction, and Effectiveness*; 1994.

<sup>6</sup> Enhancing personal self-esteem was once thought to be a dominant means of stemming drug abuse and violence, although certainly important it has been found to be one of many necessary components (Johnson and Belfer, 1995:4).

<sup>7</sup> Mediators are described as variables that have the potential to intercede or mediate between a particular prevention program's exposure and outcome.

<sup>8</sup> Dr. Hansen later describes these mediators within the All Stars Program as: norms and normative beliefs, pro-social values, commitment and pro-social bonding.

<sup>9</sup> Other studies have found D.A.R.E. to have a positive effect on the student's self-esteem and social skills (Eliot; 1995:2).

<sup>10</sup> Homicide, aggravated assault, firearms-related injury, child and spouse abuse, rape or sexual assault, and robbery are common occurrences in the United States that are related to drug and alcohol abuse. Types of violent crimes such as these are not only social problems, but constitute major health problems as well.

<sup>11</sup> Many youngsters, both male and female, see a gang as a substitute for family, church and other community organizations. Unfortunately, too many of these youngsters find no viable alternative to the excitement and rewards of the street, drugs, and violence. This always comes at a high cost to the individual and the community (Johnson and Belfer, 1995:3-4).

<sup>12</sup> Later within our statistical analysis we will also look at the relationship between the four mediators. Are the mediators correlated independently or is there relationship between two or more mediators that strengthen or weaken the effect of the program's ability to delay the onset of adolescent high risk behaviors.

<sup>13</sup> Parental participation is encouraged, however if the child does not have a parent to actively participate in the program sponsors are encouraged. Sponsors can be any responsible adult who has a close relationship with the student; such as, grandmother, grandfather, teacher, uncle, aunt, or neighbor.

<sup>14</sup> The All Stars Jr. Program is a pilot program that was designed by Dr. William Hansen and The Nebraska Council to Prevent Alcohol and Drug Abuse. All Stars Jr. is one of two programs designed to

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supplement the primary All Stars program (All Stars Jr. and the Booster program). Dr. Hansen and the Nebraska Council set up several pilot studies to test the effectiveness of the program. At this point All Stars Jr. is not a part of the official curriculum of All Stars.

<sup>15</sup> Two to three hours a week is the estimated recommended time to dedicate to the curriculum. The materials are to be blended into the regular curriculum; consequently, the teachers are given some latitude on the order and time of delivery.

<sup>16</sup> The pre-test was delivered before the delivery of the first phase of the program and the post-test was delivered after all three phases of the program were completed.

<sup>17</sup> The program was delivered to three fourth and two fifth grade classes at Riverside Elementary. The Nebraska Council to Prevent Alcohol and Drug Abuse facilitated a training session, which all five teachers and their principal attended. Teachers were given curriculum manuals and the Nebraska Council walked the group through the steps of the program. The group also received a copy of the project guidelines and time was taken to address any specific concerns or problems that each individual teacher might have.

<sup>18</sup> Sexual issues are one of the four main objectives of the All Stars program; however, the issue is not addressed within the All Stars Jr. curriculum. Although children in the fourth and fifth grade may not be as physically mature and/or sexually active, the program presents an opportunity to discuss such issues as inappropriate touching and language. A better understanding of what is and is not appropriate equips the child to assess their personal behavior as well as the behavior of others. Sexual abuse is always an issue, studies have shown that children that are sexually abused often suffer from low self esteem, drug abuse, alcoholism and are more prone to participate in criminal activity (Browne and Finkelhor, 1986:99). Does the program miss an opportunity to help children become more aware and better able to deal with a major issue or would the program be going too far? This issue will be discussed in more depth later in this paper.

<sup>19</sup> The teacher rates each individual student by filling out a Risk Diagnosis Work Sheet. Four types of social behavior are considered: physical aggressiveness, social aggressiveness, shyness and their awareness of social norms. Each student's risk level is either rated: high risk = 2, some risk=1 or no risk=0. Teams then are formed in which the aggression scores are equal or within a range of being equal for all groups.

<sup>20</sup> A shadow list is actually generated by the teacher beforehand and the students present their ideas until they have addressed all the issues on the instructor's list.

<sup>21</sup> Scoring is established by individual student behavior; good behavior scores points, while bad behavior takes away points. The students establish the scoring system after they form the rules and standards of behavior.

<sup>22</sup> Points needed for an award needs to be more than can be reached in one or two weeks, but not so many as to make it impossible for the teams to eventually earn. Lagging groups are encouraged to continue to give a good effort. The teacher works with groups that aren't getting many votes to help them better meet their peer standards. This takes the teacher out of the role as a bad guy and into the role as a helper. The teacher also has discussions with exemplary groups to encourage them to see positive changes in behavior among students who are in struggling groups and encourage them to reward improvement as much as meeting the specific standards of behavior.

<sup>23</sup> Do most students believe that problem behaviors are unacceptable? This becomes a point of discussion within this evaluation, as findings seem to indicate that some of these behaviors are accepted by students. Previous studies also seem to indicate that the majority of students do participate in high-risk behaviors (Johnston, O'Malley and Bachman, 2000:1; Snyder and Sickmund, 1999:70-73).

<sup>24</sup> It is a well-known fact that the natural sciences are well established within every school curriculum. Science refers to a body of knowledge that is obtained by methods that are based upon systematic observation, not unlike the social sciences. Students at an early age understand the concepts of the natural sciences; however, they have very little exposure to the methods of observation of human nature.

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<sup>25</sup> Children at a young age are very conscious to avoid rejection and gain social approval and quickly become sensitive to social norms of accepted and expected behavior of their peers. Consequently, they are very aware and attentive of their peers around them.

<sup>26</sup> Questions posed within the pre and post-tests within the primary All Stars Program, overwhelmingly show that most students do not admire bullies. However, most children do not confront a bully and consequently the bullies behavior is often falsely assumed to be acceptable by their peers.

<sup>27</sup> The stories pertain to issues such as aggression, honesty, violence, smoking, alcohol and drugs. The stories encourage the student to consider the issues and answer the questions presented. An example of a story is as follows: Mary was fourteen. Next year she would go to high school. During summer vacation, she started going to parties with friends. At one party, someone brought some marijuana. A few people at the party tried smoking it. Mary didn't want to smoke it. She stayed away from the people that did.

<sup>28</sup> The teacher informs the students that they are to imagine that they are going to give the survey to another class that didn't know anything about why they were doing the survey. They are to compose instructions that include information about what is being done, why it is being done, and how privacy will be protected.

<sup>29</sup> New terms and forms of analysis are then introduced such as bar charts, and percentages. Students then analyze their results within math class and prepare a written summary on the norms that they found.

<sup>30</sup> The term "idealism" represents what the child envisions they want in their life such as: wealth, acceptance, education, etc.

<sup>31</sup> *For example:* Is there a relationship between social values and commitment or are they completely independent entities.

<sup>32</sup> The All Stars Jr. testing instrument does not allow us to check the child's actual behaviors, only attitudes and perceptions the child has of those high-risk behaviors.

<sup>33</sup> A more detailed analysis of the questions will follow later in the review.

<sup>34</sup> This violates some research assumptions that will be addressed later within the context of this review.

<sup>35</sup> Items are described as the choices that the student has to answer each question on the survey. For example the response framework of the All Stars Jr. Survey was: I totally disagree, I sort of disagree, I don't know, I sort of agree, and I totally agree.

<sup>36</sup> Measures of reliability are designed to estimate only the effect of random errors, effects caused by misreading questions, mismarking answers, and so on. Systematic errors are not detected by these methods. For example, if everyone subtracts 5 years when reporting age, these errors will not be reflected in the reliability estimate (Stark and Roberts, 1996:46).

<sup>37</sup> Both groups were predominately white, with a very even distribution of males and females.

<sup>38</sup> We are evaluating two different sample populations (Riverside/treatment; A.H.S.T. control); two samples were taken at two different points in time, one sample from each sample population prior to treatment at the RIVER / SITE (pre-test) and one sample taken from each site after the treatment at the RIVER/SITE (post-test).

<sup>39</sup> A Study by Dennis Kenny and Stuart Watson published in the National Institute of Justice in July of 1999 faced a similar problem. The study investigated a student-based problem-solving model for reducing crime in the nation's schools. A quasi-experimental design was implemented, the design used measures collected in three survey waves from 450 students attending two schools, one treatment and one control. The second and third waves were collected from two schools at approximately 5 month intervals. During each collection wave, the data was collected from both schools anonymously on a single day, thus matching the cases was not possible (Kenny and Watson, 1999:8; Kenny and Watson, 1998:57-72).

<sup>40</sup> Richard Bernardi's research findings indicate that low alpha's do not necessarily put the results of an analysis into question especially in cases where the sample are very homogenous (Bernardi, 1994:767-770). An argument could be made that the two samples in question (Riverside South and AHST Elementary) are very homogenous because all of the students are in either the fifth or sixth grade, all come from a mid-west community, have the same teachers, and probably have very similar economic resources.

<sup>41</sup> Some questions may be interpreted by the child in a different manner, for example, Question #14 : Most people don't ever smoke cigarettes. How does the student define the word "smoking"? Does the child believe that an individual who has one cigarette violates the question or does it take a consistent habit. In reality very few people go through their life without smoking one cigarette, while at this time less than half of our population is considered to be habitual smokers.

<sup>42</sup> An argument could be made that the populations tested at Riverside South and A.H.S.T. are homogenous populations. Stephen Thoma found that age and education account for about 52% of the total variance within a population. Within these two communities the children are relatively the same age, taught by the same teachers, and all live in a very small rural environment with relatively the same economic base (Bernardi, 1994:769).

<sup>43</sup> The more homogenous the domain is, the higher the inter-item consistency. For example, if one test includes only multiplication items, while another comprises addition, subtraction, multiplication and division items, the former test will probable show more inter-item consistency than the latter. In the latter more heterogenous test, one examinee may perform better in subtraction than in any other arithmetic operations; another examinee may score relatively well in division items, but more poorly in addition, subtraction and multiplication. Test scores will be less ambiguous when derived from relatively homogenous tests (Anastasi, 1982:102-130).

<sup>44</sup> A complex test is interpreted as a test designed to extract a wide range of information from a given population.

<sup>45</sup> The test attempts to measure the child's attitudes and perspectives to the four mediators: pro-social bonding, pro-social values, normative beliefs and commitment.

<sup>46</sup> How does a child define a lie? For example, if a student asks her best friend if she likes her new coat and the friend responds by telling her that she loves it when she really thinks its ugly. Another example lie is when an individual tells an untruth that hurts someone, or an individual fabricates a story to avoid embarrassment or punishment. Which example is a lie and which one is not? The point is that the question may be interpreted differently, especially in the case of a fourth or fifth grade student.

<sup>47</sup> t = treatment group

c = control group

<sup>48</sup> Consequently there may have been some effect from the program on a students perception of their peers experimenting with tobacco. However, question #14 that also deals with the tobacco issue does not seem to be supportive. This possibly could be explained by the fact that the fourth and fifth grade students perceived their peers as not experimenting with tobacco before the age of twenty-one, but tend to disagree that most people don't every smoke cigarettes.

<sup>49</sup> The primary All Stars Program addresses the concept of norms and normative beliefs by altering youths perceptions of what their group thinks is common place and acceptable behaviors. The primary strategy for doing this is through revealing factual information that defines non-participation as normal and demonstrates that the prevalence of participation in high-risk behaviors is low (All Stars Community Program; 1997:8-9).

<sup>50</sup> It is interesting that the greater number of fourth and fifth grade students within both groups believe that the majority of their peers will experiment with tobacco and alcohol before their eighteenth and/or twenty-first birthday. Unfortunately, the majority of students do experiment with tobacco (65%) and alcohol (80%) before they graduate from high school (Johnston, O'Malley and Bachman; 2000:5). The fact that the majority of students do in fact experiment with tobacco and alcohol raises some challenges to the normative belief theory within the All Stars program, which we will discuss later within this paper.

<sup>51</sup> After examining the data one question seems to surface: Why haven't students made the connection between a positive future, good health, smoking and drinking? We will discuss these issues further later within this paper.

<sup>52</sup> If we remove the data from questions # 3 and # 12, the treatment group moved from a 4.42 to a 4.51 (+.9) and the control group moved from a 4.33 to a 4.43 (+.10). Removing # 3 and # 12 data from the social values category does not change the frequency significantly.

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<sup>53</sup> Removing questions # 3 and #12 from the social values category and placing them in the normative beliefs category gives the treatment group an initial 3.33 frequency, which dropped to a 3.19 (-.14) after treatment with the control group dropping from a 2.98 to a 2.97 (-.01).

<sup>54</sup> If questions #3 and #12 are added to the normative belief category we initially begin with a 3.33 frequency, which declines to an 3.19 (-.14) within the treatment group, and the control group has a 2.98 that drops to a 2.97 (-.01).

<sup>55</sup> The question of what has become normative behavior was reinforced by a survey given to the eighth grade class within the Riverside Jr. High School the same year (the same school where the All Stars Jr. program was delivered to the fourth and fifth grade). The results revealed that 68.8% of the students by the eighth grade had used alcohol, 26.9% had used tobacco, 4.5% had used marijuana, 8.9% have sniffed glue and 41.79% felt that they have participated in some form of violent behavior. Some caution has to be taken with these results especially in regards to alcohol and violent behavior. The questions did not define what qualifies as alcohol use or what is violent behavior, for example, a sip of wine at Christmas or frequent raids to their parents bar; occasional loss of temper or frequent physical confrontations. However, the fact that such a high percentage of eighth grade students would feel they could answer "yes" to these questions is alarming.

<sup>56</sup> A child perception of success may include someone that possibly is a heavy smoker, drinks and occasionally has physical confrontations with others. For example, a student may have a parent who is a successful industrial engineer who smokes heavily and is a heavy social drinker and they are very successful in that they makes a large salary, live in a large beautiful home and drive a new car.

<sup>57</sup> Traditionally D.A.R.E. has been an informational non-interactive program, however that trend has changed. The curriculum continues to teach the effects, beliefs and consequences of mind-altering drugs. However, the lesson plan now has a interacting curriculum that teaches resistance techniques to say "no" to risky behaviors and "yes" to positive alternatives as well as strategies for managing stress. The program now addresses violence issues as well as promoting self-esteem and positive role models (D.A.R.E. Officers Guide, 1998:1-144). The program appears to be far more interactive and has been modified to be delivered several times to different age groups throughout the child's life (Gonnerman, 1999:58).

<sup>58</sup> In a study Botvin (1984) disclosed that psychological/social approaches to substance abuse prevention can be implemented effectively by teachers (Botvin et al., 1984:375-378).

<sup>59</sup> A teacher's knowledge and general awareness of a student's family background can be extremely effective. The strongest factor associated with substance abuse involves both the behaviors and attitudes of the child's family. Students who have family members or friends who are substance users have a significantly increased risk of becoming substance users themselves (Schinke, Botvin and Orlandi, 1991:12).

<sup>60</sup> As of 1992 about 18% of white families, 31% of Hispanic and 53% of African American families were headed by a single parent (Bureau of Census, 1993a.). While it is wrong to imply that single parent families are always economically and emotionally deprived, life for a child in a single parent family can be stressful and there is a clear association between the increase of families headed by single mothers and the "*feminization of poverty*" (Abowitz, 1986:209-211; Rogers, 1987:9-10; Scott, 1985:16-22).

<sup>61</sup> An argument could be made that we get two interpretations: 1) that the test indicates that the survey and the mediators have a low standard of reliability, and 2) the relationship indicates that the mediator has independent qualities that verify that the proper variables have been chosen to represent that particular mediator. In other words, the mediator mean resistance score indicates that of the questions available from the testing instrument, the correct combination of variables have been chosen to represent each individual mediator. As a result the mediator mean resistance score (Table 6) is giving us a clearer picture of the program's ability to affect each mediator.

<sup>62</sup> Even though variable #4 was not technically statistically significant, a decision was made to consider the results within the study.

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<sup>63</sup> While the pro-social mediator in the treatment group had a positive response (+.30), the control group also moved +.22. The t-test analysis indicated that there were both comparability and out side influences that effected the pro-social mediator.

<sup>64</sup> Both the treatment group (3.07/2.82) and the control group (2.68/2.60) were the lowest of all the initial scores with both categories remaining the lowest through the treatment period.

<sup>65</sup> Studies have shown that pre-school children are almost totally impervious to conformity pressure (Higgins, Ruble and Hartup, 1983:69-70). The tendency to conform to group norms increases during the middle childhood years (Contanzo and Shaw, 1966:967-968). Conformity behavior increases rapidly in preadolescents (Mussen, Conger and Kagan, 1974; Schnke, Botvin and Orlandi, 1991:12).

<sup>66</sup> Alcohol is extremely widespread, four out of every five students have consumed alcohol by the end of high school, and 52% have done so by the eighth grade. In fact, 62% of the twelfth graders and 25% of the eighth graders have reported being drunk at least once. Nearly two-thirds of the students have tried cigarettes by the twelfth grade and nearly half (44%) have tried smoking by the eighth grade (Johnston, O'Malley and Bachman, 2000:2-7). In 1998, 10% of the eighth graders and 18% of the tenth graders reported using marijuana in the past month. About 23% of the high school seniors reported using marijuana, in fact more high school seniors use marijuana on a daily basis than drink alcohol daily (Snyder and Sickmund, 1999:70-73).

<sup>67</sup> Lisnov found that the more impersonal the strategy the lower the students rated its effectiveness. Her findings indicated that a interpersonal component is necessary for a prevention strategy to succeed (Linnov, et al., 1998:308). These finding were consistent with other findings (e.g., Bangert and Drowns, 1986:250=260; Tobler, 1986:537-567). Other studies have indicated that a behavioral/ psychosocial component involving instruction in refusal and social skills is critical (Bangert and Drowns, 1988:250-260; Tobler, 1986:537-567; Bruvold, 1990:146-150). An example Bruvold's meta-analysis of California-based programs revealed that those programs with a developmental component were more effective than those that were purely informational.