

**DIFFERENCES IN DEVELOPMENTAL ASSETS
AND ALCOHOL AND DRUG USE OF
SIREN STUDENTS IN GRADES 7-12
AFTER ONE YEAR**

by
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ABSTRACT

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Differences in Developmental Assets and Alcohol and Drug Use of Siren Students in Grades 7-12 After One Year
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The differences in alcohol and drug use among urban and rural youth have dwindled in the past ten years. In the rural community of Siren, Wisconsin youth were found to be five percent above their peers nationally for alcohol abuse and eight percent higher for marijuana abuse. These figures place this population at a higher risk for developing chemical dependency, being involved in accidents, and being involved with problems socially, legally, and emotionally. The School Guidance Department in Siren has been using alcohol and drug abuse prevention programming to address the current student chemical abuse. This study will look at the difference in at risk alcohol and drug uses behavior and developmental asset levels by comparing results of *Profiles of Student Life: Attitudes and Behaviors* Surveys completed in 2001 and 2002 for students in grades 7 -12 at Siren School. Results of this retest will be used to effectively plan for future alcohol and drug abuse prevention for Siren community youth.

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Chapter One

Introduction

In 1997, the middle and high school students of Siren, Wisconsin (population 948) completed the American Drug and Alcohol Survey (ADAS). The school received the survey report in 1998. The report showed that the alcohol and drug use of Siren School students was five percent higher than the national average. The percentage of adolescents nationally who admit to getting drunk in the last 30 days is 27% among 8th graders, 49% among 10th graders, and 62% among 12th graders. In Siren school, the percentage of adolescents who admit to getting drunk is 22% among 8th graders, 56% among 10th graders, and 68% among 12th graders (Tri-ethnic Center for Prevention Research, 1998). This study caught the attention of the St. Paul Pioneer Press (1998, September 27), who published a story on the attitudes and beliefs, of Siren residents regarding alcohol consumption and alcohol and drug use by local adolescents. The reaction from members of the community ranged from, “we need to do something” to “The situation is not much different here than in most other places”, (Dawson, 1998, p.1B). The chief of police Dean Roland, stated, “In a town with five bars and only 900 people, the message is it’s OK to drink.” (Dawson, 1998, p.6B). The story focused on what could cause the adolescents in this village to have a reported higher use of alcohol and drugs. Some suggestions included that heavy drinking has been normalized by locals; that tourists and weekend residents bring with them the attitude of doing things on vacation that they would not do at home; a lack of variety of options to spending leisure time; and poverty (Dawson, 1998).

The question of what drugs American adolescents are using, and whether or not drug use has changed since the sixties has led to the development of national surveys like the ADAS. Oetting (1990) compared results of the American Drug and Alcohol Survey, the National Senior

Survey, and the National Adolescent Student Health Survey. The survey comparison indicated similar research findings regarding current adolescent alcohol and drug use. Oetting stated that the similarities in the data show that the three surveys are comparable and the answers that adolescents give are reliable. National surveys are also viewed as a way to track national trends, for example, the rise in inhalant use among eighth graders (Edwards, n.d.). National surveys indicate the overall use of alcohol and illicit drug use have gradually decreased from the mid-70s to late-80s. Cigarette and cigar smoking, marijuana, cocaine use and binge drinking show an increase during the 90's (Dryfoos, 1998. Oetting & Beauvais, 1990). Within certain populations alcohol and illicit drug use are increasing. The 1987 American Drug and Alcohol Survey (ADAS) indicated alcohol and drug use occurring in children as young as fourth grade. (Oetting & Beauvais, 1990). Dryfoos, (1998) states that 28% of ninth graders smoked tobacco before the age of thirteen, compared to 22% of twelfth graders. " All high-risk behaviors start earlier than ever" (Dryfoos, 1998, P.32). Other studies show an increase in the number of younger girls who report drinking (Selman & Adalbjarnardottir, 2000). This increase in younger adolescent alcohol use places adolescents at higher risk for developing chemical dependency. This dependency in turn, places adolescents at a higher risk for abusing harder drugs, dropping out of school, and encountering legal trouble (Dryfoos, 1998; Oetting & Beauvais, 1986; Selman & Adalbjarnardottir, 2000)

For these reasons alone, the 1997 Siren ADAS report was viewed as a warning sign to the village of Siren. Rural communities vary in their patterns and use of alcohol and drugs, which calls for tailored prevention, intervention, and treatment programs (Edwards, n.d.; Oetting & Beauvais, 1990; Benson, Leffert, Scales & Blyth, 1998). Alcohol and drug use surveys of adolescents not only show what the area youth are doing, they also reflect the beliefs and values

of the specific community. The Life-style theory of alcohol and drug use describes how drugs relate to membership in and identification with the kinds of groups that are very important to adolescent lives (Oetting & Beauvais, 1986). Selman and Adalbajarnardottir (2000) state, “ We have become increasingly aware of the importance that membership in an identifiable cultural group has for the interpretation that adolescents make of behaviors that may affect their health.” (p.49). The powerful effects of cultural, gender, friendships and ethnicity factors should not be underestimated.

There are two paradigms that professionals in the field of alcohol and drug prevention use to intervene with adolescent alcohol and drug abuse. By reducing health-compromising behavior and developmental risks of individuals, the *problem-focused* paradigm influences adolescent choices and decisions. It focuses on reducing problems in family, poverty, violence and education. The other paradigm, resiliency, identifies, names, and promotes core elements of human development known to enhance health and well-being (Leffert, Benson, Scales, Sharma, Drake,& Blyth, 1998). Resiliency focuses on exceptions to the problem. It asks, what is different about this individual? Joy Dryfoos (1998) states, “ Not every young person in a dysfunctional family, not every student in an inferior school, not all children growing up in disadvantaged neighborhoods fail to thrive.” (p. 39). Researchers in the 1970’s began to look at young people’s lives, and at points earlier in their development, for critical moments when development could be influenced. An example is Emma Werner’s longitudinal study of Hawaiian children. Over a thirty-year period, she found that subjects who were most resilient as adults had the largest network of multigenerational kin and unrelated adults for support during childhood (Werner& Smith, 1992).

The Search Institute (1999) implemented the theory of resiliency into the development of the *Search Institute Profiles of Student Life: Attitudes and Behaviors* (PSL-AB) survey. The development of the PSL-AB has taken 32 years. It begins with Dr. Merton Strommen's work from 1958 to 1967 on identifying concerns and needs among Lutheran youth. By the late sixties, Dr. Strommen's work was recognized by other denominations and Church Youth Research was formed. In 1976, the National Institute of Mental Health awarded Church Youth Research with a three-year grant entitled, *Effecting Utilization: Experimental use of Consultants*, which broadened the mission of Strommen's research group. This led to another name change and Church Youth Research became The Search Institute. The decade of the 80's broadened research at Search Institute into early adolescent relationships with parents, drug abuse, human sexuality, and adoptive families. In 1990, the concepts of developmental assets were introduced as "30 building blocks for healthy development" (Search Institute, p 12). In 1995 The Healthy Communities-Healthy Youth initiative was developed. Thirty-five communities in five states were involved in organizing initiatives to build assets for youth. The PSL-AB was designed in 1996. Due to further research findings, the asset categories were expanded from 30 to 40. Since 1997 more than 300 communities have been mobilized under the Healthy Communities-Healthy Youth program, and the PSL-AB continues to be administered by schools and communities across the country (Search Institute, n.d.).

In 1998, The Siren School and police force received approximately \$116,000.00 in state and federal grants to address the alcohol and drug problem among community adolescents. From 2000 to 2002 the Siren School Guidance Department has continued to receive grants and implement prevention programming into the school curriculum for grades K-12. For the 2001-2002 school year, the Guidance Department was asked to evaluate the success of the prevention

programming. They administered the PSL-AB to Siren students in grades 7-12 in 2001, and readministered the PSL-AB in the spring of 2002 to compare data for evaluation of the prevention efforts.

Statement of the Problem

The problem of adolescent drug and alcohol use and abuse has been problematic in the United States for the past four decades. Research shows early use of tobacco and alcohol use places adolescents at high risk for use of illicit drugs, chemical dependency, dropping out of school, and legal problems. The rural school system of Siren, Wisconsin has recently studied their students' alcohol and drug use. In 2001, the PSL-AB was given to students in grades 7-12 to evaluate their developmental assets. According to Search Institute research there is a direct correlation between student's asset and thriving indicators, and a student's at risk behaviors. As a student's assets increase, the student's at risk behavior decrease (Starkman, Scales, & Roberts 1999). This research supports the concept that if students feel wanted and useful to their community, they are less likely to exhibit negative behaviors that are potentially life threatening to them (Starkman, et al. 1999). After a subsequent year of in school prevention programming at Siren School the PSL-AB survey was administered again in grades 7-12 to determine if prevention programming increased the number of reported developmental assets.

Purpose of the Study

The purpose of the study is to determine if there is a change in correlations between risk taking behavior and developmental assets for the 7-12 grade students of Siren, Wisconsin, through a retest of the *Profiles of Student Life: Attitudes and Behaviors*. The 2002 study will be compared

with the results from the 2001 study. The study seeks to determine if global effects on the community of students in grades 7-12 in the Siren school over the past year had a significant effect in increasing adolescent developmental assets and a direct negative correlation of assets with alcohol and drug use risk taking behavior.

Null Hypotheses

1. There is no statistically significant difference between developmental assets scores in the PSL-AB for Siren students between 2001 and 2002
2. There is no statistically significant difference between risk-taking alcohol and drug use behavior scores in the PSL-AB for Siren students between 2001 and 2002

Definition of Terms

The following is a list of definition of terms that will be utilized in this study.

Definitions were taken from the *Technical Overview; Search Institute Profiles of Student Life: Attitudes and Behaviors* (1999).

At Risk Behaviors: Repeated involvement in behaviors that compromise a young person's well-being. For instance a young person who has used alcohol once or twice in the past month is involved in risk taking behavior. But a young person using alcohol three or more times a month is engaging in a risk pattern of behavior. At risk behaviors include substance use, driving and use of alcohol, sexual intercourse, antisocial behavior, violence, school truancy, gambling, eating disorder, depression and attempted suicide.

Developmental Deficits: Negative influences or realities in adolescent lives that make it more difficult for them to develop in healthy, caring, and productive ways. These deficits may

not do permanent harm but make harm more likely. They include being home alone two or more hours per school day, TV overexposure, physical abuse, victim of violence, and attending drinking parties.

External Developmental Assets: Positive experiences and support a young person receives from formal and informal connections to others in the community. These assets are health promoting features of the adolescent's environment. They are grouped into four categories of support, empowerment, boundaries and expectations, and constructive use of time.

Internal Developmental Assets: A young person's own commitments, values, and competences that community and family can nurture within youth, so they can contribute to their own development. These assets are grouped into the four categories of commitment to learning, positive values, social competencies, and positive identity.

Thriving Indicators: Youth's beliefs and behaviors based on school success, helping others, valuing diversity, maintaining good health, exhibiting leadership, resisting danger, delaying gratification and overcoming adversity.

Chapter Two

Review of the Literature

This chapter reviews the literature regarding the prevalence and consequences of alcohol and marijuana use among adolescents age 12 to 18; the relationship of risk factors and developmental assets to alcohol and drug use; and what research reveals about prevention programming. This chapter will also review aspects of prevention efforts that are directed towards influencing youth not to use drugs and those aspects of prevention programming that are not effective. The last section focuses on the youth of Siren, Wisconsin, how the current research reflects their school's prevention programming, and how this programming is affecting the alcohol and marijuana use of Siren's youth.

The National Overview of Alcohol and Marijuana Use by Adolescents.

Alcohol is a commonly used mood altering substance. The 2000 National Household Survey on Drug Abuse (NHSDA) states that 46.6% of Americans 12 years old or older report consuming alcohol within the past 30 days (Department of Health and Human Services, 2002). Of the persons surveyed between the ages of 12 and 21, 27.5% report drinking alcohol within the past 30 days and 18.7% of this group reports drinking five or more drinks on the same occasion, at least once during the past 30 days (Department of Health and Human Services, 2002). The 1999 NHSDA results show that 16.5% of persons between the ages of 12 to 17 drank alcohol within the past month and 10.1% had five or more drinks on the same occasion (Wright & Davis nd). These percentages suggest that out of ten persons under the age of 21 who drink, 1 to 2 of them are likely to binge drink. Binge drinking, the consumption of five

or more alcoholic beverage on the same occasion (four or more for females), places an individual at risk for decreased school grades, driving while intoxicated, becoming a victim of abuse, experiencing black outs, behaving violently, having legal problems, and experiencing alcohol poisoning (Wechsler, Dowall, Davenport, & DeJong n.d.).

The National Household Survey or Drug Abuse 1999 study reported Wisconsin youth between the ages of 12-17, who had consumed alcohol within the past 30 day was 21.9%. This is 5.4% higher than the 16.5% NHSDA national average. Wisconsin youth reported 13.8% rate of binge drinking compared to the national average of 10.1% (Wright & Davis, nd). Comparing Wisconsin state 1999 NHSDA scores to 1997 NHSDA scores (Dold & Quirke, 1997), indicates that drinking within the past 30 days for youth 12-17 has increased 1.4%.

Douglas Wright and Teresa Davis (nd), discovered a strong negative correlation, in the 1999 NHSDA, between incidence of past month use of alcohol and perceived risk of alcohol use. The states with the highest incidence rate for past month alcohol use were also the same states that reported the lowest perceived risk resulting from drinking alcohol. In addition the States with high rates of alcohol use in the past month also had high alcohol dependency scores (Wright & Davis, nd).

Marijuana use has taken an opposite direction. Comparing Wisconsin state NHSDA scores from 1997 (Dold & Quirke, 1997) and 1999 (Wright & Davis, nd) indicates a 4.3% decrease in marijuana use within the past 30 days. Wright & Davis (nd) reports that the NHSDA national percentage of youths aged 12-17, who reported using marijuana in the past month was 7.2%. Wisconsin's percentage is 2.1% lower. These figures suggest that in Wisconsin, as alcohol use among 12-17 year olds increases, marijuana use decreases. The

1999 NHSDA looked at perceived risk, availability, and age of onset as variables to use of marijuana in the past 30 days. Findings indicate that the younger an individual is when he/she first used marijuana, the lower the perceived risk from smoking marijuana is and the more likely he/she is to have smoked marijuana within the last 30 days. If the youth perceived obtaining marijuana as highly difficult, there was a lower score of use within the past month (Wright & Davis, nd).

At Risk Behavior as it Relates to Alcohol and Drug Abuse

The literature has many references to at risk behavior and the effect it has on adolescents. The *Profiles of Student Life: Attitudes and Behaviors* identifies 24 risk-taking behaviors. They are; alcohol use, binge drinking, smoking or using smokeless tobacco, use of inhalants, use of marijuana and/or other illicit drugs, drinking and driving, riding with a driver who has been drinking, engaging in sexual intercourse, shoplifting, vandalism, trouble with police, hitting someone, hurting someone, using a weapon, group fighting, carrying a weapon for protection, threatening physical harm, skipping school, gambling, eating disorders, becoming depressed and attempting suicide, (Search Institute, 2001).

Joy Dryfoos found similar risk behaviors. She mentions them in *Safe passage: Making It Through Adolescence In a Risky Society* (1998). She identifies overlapping risk behaviors of substance abuse, sexual behavior, violence, depression, and school failure. The amount of over-lap places adolescents into low, moderate and high-risk groups. She comments:

“ As of a decade ago, I estimated that about 10 percent of 10 to 17 year olds were at extremely high risk because they simultaneously were delinquent, failing in school, abusing drugs, and having early

unprotected sex; 15 percent were at high risk because they did all of these things, but had not yet been seen and placed in the juvenile justice system; 25 percent were at moderate risk because they were occasionally truant, weren't doing very well in school, experimented with drugs and alcohol, and had sexual intercourse; and 50% were at low or no risk because they appeared to be doing reasonably well in school and were not involved in any behaviors with potentially negative consequences." (p. 33).

A comparison of Dryfoos' estimates to the number of risk-behaviors that adolescents in Siren reported in 2001, show a difference between moderate and low risk group averages. Dryfoos estimates that 25% of adolescents are at a moderate risk level and 50% were at low risk level for developing future problems. In Siren 44 % of 7-12 graders, who took the PSL-AB, were averaging 5.3 of the 24 risk taking behaviors, which placed them at moderate risk; and 30 % were averaging 3.1 of the 24 risk taking behaviors, which placed them at low risk. (Search Institute, 2001, P 26). This comparison suggests the Siren group of moderate risk youth to be inflated and that intervention could decrease the moderate risk group and increase the low risk group.

The PSL-AB also identifies five deficits which are negative environmental influences that can make risk-behavior more likely to occur. They are:

1. Being alone at home two or more hours per school day.
2. Three or more hours of television per school day.
3. One or more incidences of having been physically harmed by family members or someone living in the home.

4. One or more incidences of being a victim of physical violence in the last two years.
 5. Attending one or more parties in the last year where other youth are drinking.
- (Search Institute, 2001).

Joy Dryfoos, (1998) also identifies deficits, they are:

1. Absence of nurturing parents through lack of nurturance, attention, supervision, understanding and caring.
2. Being a child of parents with drug or mental health problems.
3. Child abuse.
4. Involvement with the juvenile justice system.
5. Sexual or physical abuse.
6. Disengagement from school.
7. School problems such as poor reading ability; being two years behind in school.
8. Easily influenced by peers.
9. Depression that appears to be stress related.
10. Poverty.
11. Nonexposure to the world of work.

Similar deficits are also identified in research by Edwards (n.d.); Oetting & Beauvais (1986); Werner & Smith (1992); and Peele (1985). Siren students report that the two highest deficits from the PSL-AB were attending drinking parties 33% and being home alone two or more hours during the school day 22% (Search Institute, 2001).

Wright & Davis (nd), also identified the importance of researching risk factors and collected data from the 1999 NHSDA involving attitudes and behaviors associated with the higher likelihood of use of alcohol, cigarettes, and illicit drugs. Risk and protective factors were included in the 1997 NHSDA, factors were combined into five domains: community, family, peer/individual, school, and general. Community factors included access and availability of drugs and messages heard about drug use. Family factors included parental attitude and discipline, family conflict, and if there is communication between parent and child about drug use. Peer/individual factors include perceptions of risk of drugs and alcohol, friend's attitude towards individual's use, individual's attitude towards friend's use, and friend's alcohol and drug use. School factors include enrollment, scholastic achievement, and completion of formal alcohol and drug prevention programming. General domain consists of questions inquiring about social support, participation in activities, and intensity of religious beliefs and observations. Lane, Gerstein, Huang, & Wright (2001) state,

“The risk and protective factors studied explained a significant amount of the total variation in individual substance use. When combined with demographic factors the explained 61 percent of the variation in past year marijuana use. Because research has shown a causal relationship between certain risk and protective variables and youth substance use, changing these factors should reduce youth levels of past year substance use.” (p.4).

After completing a multivariate analyses, findings indicated that risk factors with the strongest relationship to past year marijuana use were whether anyone offered marijuana to a youth free or at a price, close friends' attitudes toward monthly marijuana use, close friend's marijuana use, and perceptions of no risk to moderate risk, of marijuana use (Lane, et al. 2001).

Asset Development as it Relates to Alcohol and Drug Abuse

The research on developmental assets shares similarities with research on resiliency, risk reduction, and protective factors. The concept of the 40 Developmental assets has taken over four decades to develop and is continuing to be modified in response to the current research being conducted on the PSL-AB, (Scales, 1999). The 40 Developmental Assets developed by the Search Institute consist of two categories, internal assets and external assets. Each of these consists of four categories. Internal assets are the beliefs and values that an adolescent already possesses, which can be nurtured through support from outside sources. These 20 internal assets are organized into four categories of commitment to learning, positive values, social competencies, and positive identity. External assets are health-promoting features of an adolescent's environment that result from their relationships with others. These 20 external assets are broken into the four categories of support, empowerment, boundaries and expectations, and constructive use of time (Scales, Benson, & Leffert (2000). Leffert, et al. (1998) researched the effect of developmental assets on risk behaviors and found that as an individual's assets increase there is a decrease in risk behaviors. They state,

“ The findings here contribute to the increasing body of evidence that elements of community life, which include the engagement and participation of multiple community, forces, person, organizations and sectors, serve as important protective factors across multiple domains of child and adolescent health. These findings are pervasive, engaging us to think more broadly about the cumulative effects or pileup of positive developmental features in the lives

of children and adolescents. These findings also add to a growing literature examining the phenomenon of cumulative impact.” (p. 226).

Other research supports this statement. Werner & Smith’s (1992) longitudinal study on children in Hawaii identified three protective factors that differentiated children with resilient characteristics from other high-risk children. The protective factors are:

1. At least average intelligence and dispositions that bring out positive responses from family members and strangers like strength and health, an outgoing personality, and an enthusiastic outlook.
2. Affectional ties with parent, guardian, or older siblings. These relationships promote trust, autonomy, and resourcefulness.
3. An external support system within a church, school, or youth group. These systems reward competence and provide the child with a sense of coherence.

Dryfoos, (1998) identifies four resilient characteristics that will allow a child to avoid risk taking behavior. One is an attachment to a caring adult that provides consistency, caring encouragement, and who maintains contact through childhood and adolescence. Second is the ability to be independent and competent. Third are adolescents who overcome odds, and who can detach themselves from their family’s dysfunctional behavior, have aspirations or dreams and can figure out how to achieve them. Usually this occurs by allowing an adult to mentor or help with the youth’s goal. Fourth are effective schools that provide a place to develop individual qualities, and have supportive teachers with high expectations.

But what kind of influence do adults have? Since 1997 the NHSDA has added questions to the survey asking adolescents about protective factors. They include five domains

of community, family, peer/individual, school, and general. These protective factors are identified as decreasing the likelihood of alcohol and drug use. This research has shown that 55 percent of adolescents between the ages of 12 and 17 had spoke with an adult about alcohol and drugs. From this group 16 percent reported using marijuana in the last 12 months. Of the 81 percent of adolescents who stated their parents would be upset if they tried marijuana, 9 percent reported using marijuana in the past 12 months. Of the 58 percent of the adolescents who reported having friends that would be very upset if they smoked marijuana regularly, only 2 percent had used marijuana in the past 12 months. Of the 42 percent of adolescents who said that marijuana was “fairly difficult” to get, only 2 percent had used marijuana in the past year. Of the 65 percent of the adolescents who had not been offered marijuana either free or for a price only 2 percent reported using marijuana in the past 12 months, (Lane, et al. 2001). Peer use and attitudes, access to, and availability continue to have the strongest relationship to marijuana refusal. Other research supports the concept that peers have an incredibly strong influence over whether or not an individual will use alcohol or drugs, (Oetting& Beauvais,1986; Peele, 1985; Selman & Adalbajarnardottir, 2000; & Dryfoos, 1998).

Beauvais, Oetting, Wolf, & Edwards (1989) identifies the importance of early prevention and intervention programming taught by adults. This education can positively influence the small intimate groups of friends or *peer clusters* that have the strongest influence on a youth’s decision to use or not use drugs. Oetting and Beauvais (1986) were able to validate the importance of indirect influence of family, church, and school to the type of *peer cluster* with which an adolescent associates. Other research states, “ Adolescents respond positively to environments that have encouraging supportive adults. Parents play a significant

role in the prevention of underage alcohol and illicit drug use. Of those adolescents who are using alcohol, 24 percent reported parental permission to do so.” (Dold & Quirke, 1999, p.10).

Current research in the areas of youth development and health are questioning the use of the *problem-focused* paradigm, (Leffert, et al. 1998). The problem-focused paradigm focuses on the reduction of health-compromising behavior (e.g., AODA abuse, teen pregnancy, and violence) and the reduction of developmental risks (e.g., parental alcoholism, poverty, and safety). Problems from the use of this paradigm result from communities becoming dependent on social service professionals who implement prevention programs and policies that are expensive to maintain and yield varying results, (Leffert, et al. 1998). There is a movement towards increasing the role that communities play in adolescent development. Benson, Leffert, Scales & Blyth, (1998) sees community-based efforts as a core to promoting developmental assets. Promotion and affirmation of developmental assets will take place within multiple settings (family, intergenerational relationships, neighborhood, school). Communities that provide opportunities for youth to contribute by working together with peers and adults, and allowing youth to participate in improving the welfare of others are promoting healthy adolescent development, (Leffert, et al. 1998).

Peter Scales, (1999) explains that there are no magical means to developing assets..

“ No approach, no measure concerning youth development, is so established and effective that it precludes the necessity of developing other approaches and other measures. Neither the risk reduction approach, the risk and protective factors approach, nor the developmental assets approach, can lay claim to successfully explaining the majority of what is going on in young people’s lives. All have strengths, and all have weaknesses. The

communities that will be the most successful in developing healthy environments for their children and youth are those that look through all those conceptual lenses and draw on all those sources of data to get the most complete picture possible of how young people are experiencing their lives,”(1999, p. 218).

Prevention Education as it Relates to Addressing At-Risk Behavior and Developmental Assets

Prevention education programming is a big business. There is a lot of competition between various curricula. Schools and community programs want to implement prevention curricula that achieve their stated goals and have a long-term effect (Donnemeyer & Davis 1998). There has been research on the effectiveness of these programs. The following is an overview of what researchers are finding.

Donnemeyer and Davis (1998) took a 1995 statewide sample of schools in Ohio and looked at the effect that prevention education had on eleventh grade students. They emphasized that this study was not an attempt to find a causal relationship between participation in prevention education and drug and alcohol use, but to examine a possible association between participation in multiple prevention education activities and current use. He used the American Drug and Alcohol Survey and a prevention program insert for instrumentation. Findings indicated that students who had participated in one or more prevention education programs had lower mean scores for drug involvement than students who had no prevention education programming. “Eleventh grade students who participated in two or more prevention education activities were most likely to be in the low-risk group” (p. 155). The low-risk group was defined as previous marijuana users, occasional alcohol users, those

who have experimented with other drugs, and abstainers. Drawbacks to the study were the contamination of control groups, due to the difficulty in finding schools with no prevention programming. High student mobility between schools systems could not insure that a student in a school with no prevention education had not been exposed to prevention education in his/her prior school. Out of the eleventh grade students who participated 42% reported no involvement in a prevention education activity, 26% in one activity, 19% in two activities, and 13% in more than two activities. The average number of prevention education activities was 1.10. The mean numbers for prevention activities were higher for female students, white students, and urban students. (Donnermeyer & Davis, 1998)

These results could be interpreted two ways. Are the students who do not use alcohol and drugs are more likely to participate in prevention education activities? Or are students who have previously participated in prevention education activities at a lower risk of alcohol and drug use. The data supports the second interpretation by revealing a noticeable lowering of mean drug involvement with each additional prevention education activity (Donnermeyer & Davis, 1998). In addition prior research has been focused on short term follow-up, while this study demonstrated that drug prevention programs can have a long lasting effect and is effective when the messages come from several sources i.e. parents, law enforcement, schools, churches, medical professionals, and others in the community (Beauvais, n.d.. 1989). Finally the findings of Donnermeyer's study support the need for booster prevention sessions through elementary, middle, and high school (Beauvais, n.d.; Dryfoos, 1998)).

Dryfoos (1998) supports these three basic points. She compiled a list of current prevention education programs that are successful and speculates why. Programs like *Big Brothers*, *Big Sisters* provide individual long term attention and positive mentoring. The

program *Life Skills Training* uses hands on interactive techniques to teach peer pressure resistance and coping skills. The prevention program *Project Northland* utilizes community members to teach refusal skills and communication skills for alcohol use prevention between 6-8th grades. The idea behind generalized prevention programs, which are delivered in school or through the media, are effective most in discouraging further use by occasional drug users and encouraging youth who have not tried drugs to maintain their abstinence. Youth who are using more frequently are not as likely to change their behavior due to such programs, (Oetting & Beauvais, 1990). It is important to realize that how the adolescent's use pattern plays a large role in how receptive they will be to prevention programs. The success or lack of success of a program should be gauged by change or lack of change in the behavior of youth who are the realistic targets of these programs.

Selman and Adalbjarnardottir (2000), focused on the developmental awareness levels of two male Icelandic adolescents, and their beliefs about their risks in using alcohol. The subjects in the study were both 15, first born children, parents were currently separated, both fathers were in early recovery from alcohol abuse, and both boys drank alcohol on weekends. The researchers speculated that the boy who saw rules on an impersonal level (He was aware of what the rules are regarding drinking, but was unable to adapted a personal meaning to them) would experience more problems with controlling his alcohol consumption and would be at a higher risk of addiction than the boy who both understood the rules and was able to apply a personal relevance with the rule. Looking at it in such a way adds one more facet for the prevention specialists to consider. Selman and Adalbjarnardottir (2000) states, "Adolescents will view prevention initiatives that fail to make the connection between the personal meaning of risk and of critical relationships to themselves as boring, or worse, as

ultimately irrelevant to their lives” (p. 62). This supports the idea that hearing healthy messages repeatedly from many sources is important to instilling beliefs about health and avoiding risk behaviors.

Research also has examined the effects of adult and peer pressure. Search Institute supports the concepts that adolescents respond positively to adults when they perceive that they are valued and important to that adult (Starkman, Scales & Roberts, 1999). Benson, et al. (1998) has observed trends within communities in the United States. They identify these trends as isolation of families from the community, the loss of community shared goals, decreasing engagement in civic responsibility, dependency on human services and schools to produce positive youth development, and lack of consistency regarding messages to youth by socializing systems. These trends within communities have created youth who are given many choices and opportunities but little support, guidance, boundaries, or empowerment from adults. Adolescence is a time of independence seeking and experimentation with ideas and behaviors that appear risky or exciting. How involved an adolescent becomes with these ideas and behaviors has a lot to do with his/her self-identity, psychological characteristics, and connections to the social environments of family, school, and peers. These internal and external factors form a substrate that can either make an individual susceptible to drug involvement or can inoculate that youth against drug use (Oetting & Beauvais, 1986). Oetting and Beauvais also points out that the most powerful and direct socialization influence on adolescent drug use is peers. This supports the idea that prevention needs to begin at early ages. The adolescent will develop beliefs and values that promote abstinence and determine identification with peers who also abstain.

This overview of some prevention research studies point out the importance of early exposure to prevention. It also supports the value of booster sessions and repetition of prevention messages throughout a child's formal education. Thirdly it emphasizes that prevention messages from a variety of community sources, and developing curricula that addresses adolescents at a variety of awareness levels that is personally relevant is necessary for the success of alcohol and other drug prevention programming.

Siren School's Prevention Program as it Relates to Developmental Assets

The prevention education implemented in the Siren Public School addresses a variety of areas and is directed to students from K-12 grade. In order to better understand the prevention efforts at Siren, it is important to know a little about the area. Siren, Wisconsin (population 948) is a village in the middle of Burnett County, an under populated, rural, and financially disadvantaged county in Northwest Wisconsin. The county's total population is 15,674 an average of 19.1 people per square mile. The nearest metropolitan areas of 50,000 or more people are Superior and Eau Claire, Wisconsin and St. Paul, Minnesota. All are 70 or more miles away. The average family income in Burnett County is \$29,356, which is \$10,544 less than the state average. This high poverty level affects 18.9% of the children in the county (United States Census, 2002). Of the 410 enrolled students, at Siren school, 52% qualify for the Reduced lunch Program (Leaf & Stanislaw, 2002). In June of 2001 an F3 Tornado destroyed 65% of the village's businesses and homes. Many of the tornado victims were under insured, which has worsened the economic stress of the community. Truancy and school drop-out are common problems for Siren. For the 2000-2001 school year there were seven students who dropped-out in grades 9-12. Fifty-five students were suspended and fifty-three students

were found habitually truant during the 2000-2001 school year (Leaf & Stanislaw, 2002).

Ethnic groups are predominately Caucasian and Native American. Native Americans, who are primarily St. Croix Ojibwa, make up 21% of the Siren School Population (Leaf & Stanislaw, 2002).

The following is a comparison of American Drug and Alcohol Survey (ADAS) results, between adolescents in Siren and adolescents in other Midwest rural communities who used alcohol and drugs within 30 days prior to taking the ADAS. The Midwest rural ADAS data for use of alcohol by 12 graders was 33.8%, and Siren's ADAS data for use of alcohol by 12th graders was 36%, or 2.2% higher. The Midwest rural ADAS data for marijuana by 12th graders was 10.1%, compared to Siren's ADAS data for marijuana use by 12th graders which was 30%, or almost 20% higher. Inhalant use by Midwest ADAS 8th graders was 5.5%. Siren's ADAS data for inhalant use by 8th graders 12%, or 6.5% higher. (Tri-ethnic Center for Prevention Research, 1998 & Edwards, n.p.).

The accessibility of methamphetamine to Siren youth is also a prominent problem. Recently Wisconsin identified Burnett County as having the second highest number of methamphetamine labs in the state (Leaf & Stanislaw, 2002). Researchers state that adolescents are at high risk for alcohol and drug addiction in communities where there is ready access to the drug (Beauvais, et al. 1989; Peele, 1985), where there is an early introduction to drug use (Peele, 1985; Edwards, n.d.; Dold & Quirke, 1999; Dryfoos, 1998) where there is poverty (Werner & Smith, 1992; Dryfoos, 1998; Beauvais, et al. 1989), and where schools have high truancy and drop out rates (Dryfoos, 1998; Benson, et al. 1998; Starkman, et al. 1999.) The residents of Siren School meet all of these criteria for adolescents to be at high risk for addiction.

The prevention education program in place in the Siren School this year includes curriculum for grades K-12, after school and summer school programs, specific programs to address health and safety issues, student tutoring programs, and community programs. There are staff service teams who are trained and work in the student programs. They include the *Pupil Services Team*, which is made up of a Pupil Services Director, a kindergarten through sixth grade counselor, a seventh through twelfth grade counselor, AODA Coordinator, SAP Coordinator, School Psychologist, School Nurse, School Health Aid/Pupil Services Secretary, Elementary Principal, Junior/Senior High Principal, At Risk Coordinator, Native American Home School Tutor, District Equity Committee, School Case Manager and District Administrator. This team looks at student school and community life, identifies pupil needs and encourages participation in various prevention education programs. The *De-Escalation Team* consists of Elementary Principal, Elementary Guidance Counselor, High School Guidance Counselor, School Case Manager and Special Education Teacher. This team is on-call and trained to de-escalate situations where a student may be acting out or showing signs of out of control behavior. *The School Community Action Team* consists of Elementary and High School Principals, Police Officer, AODA Coordinator, Technology Coordinator, School Board President, and several parents and community members. These individuals provide links between the school and community, to reduce risk-taking behavior of youth, to increase Developmental Assets and to keep communication open regarding youth issues in the community (Leaf & Stainslaw, 2002).

Student curriculum programs include *Developmental Guidance* and *Babes* programs for emotional, personal, social health, and safety for K-2. Grades 5-8 offer *Project T.N.T.* and *Project Northland* for AODA and violence prevention. *Life skills* and *Developmental*

Guidance are also offered to 5th-8th grades for multiculturalism, violence prevention, emotional, social, personal health, and safety. Grades 9-12 are required to take health, biology, and drivers education, classes which teach AODA, HIV/AIDS, social health, emotional health, and traffic safety, (Leaf & Stanslaw, 2002).

Students are encouraged to participate in *P.E.A.C.E.*, a conflict resolution program. Students in grades 4-6 who are continually involved in conflicts are enrolled in *ROPES* a five-week program that focuses on anger management. The *Student Assistance Program* is available for groups of students in grades K-12. A variety of topical groups are lead by trained facilitators. Group topics include social skills, AODA issues, friendship, anger management and tornado survivor. The *After School Tutoring Programs* are available to students in 4-8 grades who need to improve their grades and obtain a higher rate of success in the classroom. Community members and parents participate in *Adopt-A-Grandparent*, *Summer School Program*, and *Strengthening Families Program*; these programs improve communication and develop lasting social connections, (Leaf & Stainslaw, 2002).

The problems facing the youth of Siren are not extreme, but indicate a need to address adolescent and community attitudes about risk taking behavior. The approach that Search Institute implements in evaluating the data from the PSL-AB is to focus on what is positive regarding the health and well-being of Siren youth. This approach can decrease defensiveness among youth, parents, schools, churches and community members. When the focus shifts from the problem to increasing strengths, the community becomes receptive to recognizing problems and motivated to taking responsibility to implement change.

Chapter Three

Methodology

This chapter describes the subjects involved in this study. *The Search Institute Profiles of Student Life: Attitudes and Behaviors* (PSL-AB) is described regarding its content, validity, and reliability. Methods of data collection and analysis of data is included. This chapter ends with a description of study limitations.

Description of Subjects

The subjects of this study were students from grades 7-12 enrolled in the Siren, Wisconsin school system in April of 2002. The students ranged in age from 12 to 18. A total of 198 students took the PSL-AB in 2001, one test was omitted, 84 were male and 105 were female. 78% of the sample were Caucasian, 14% were Native American, 5% were Multi-racial, and 1% were Hispanic, Black, or Asian. A total of 187 students took the PSL-AB in 2002, two tests were omitted, 90 were male and 97 were female. 80% were Caucasian, 12% Native American, 7% were Multi-racial, and 1% were Hispanic, Black or Asian.

Sample Selection

The assignment of subjects was based on having parental permission and attendance at school during the day of testing. Students were required to obtain parental consent before completing the survey. While not the same sample as the 2001 test, the same sample selection criteria was repeated for the 2002 test. A test date for the retest was established for April 17,

2002 and students who were in attendance were scheduled to take the PSL-AB. There was no follow-up testing for students with consent who were absent for the test or retest.

The subject sample for the 2001 and 2002 testing was not the same. There are students who moved from the Siren school district between April of 2001 and April of 2002. There are also students who moved into the Siren school district after the 2001 survey was completed. The members of the Senior Class of 2001 who had graduated or discontinued education were omitted from the sample population. Students who advanced from 6th to 7th grade entered the sample population.

Instrumentation

This study used the *Search Institute Profiles of Student Life: Attitudes and Behaviors*, a 156 item survey instrument that measures eight principal asset domains: support, empowerment, boundaries and expectations, constructive use of time, commitment to learning, positive values, social competencies, and positive identity. It also measures eight thriving indicators which are, succeeds in school, helps others, values diversity, maintains good health, exhibits leadership, resists danger, delays gratification, and overcomes adversity. The PSL-AB also measures five developmental deficits. These are being alone at home more than two hours per day, TV overexposure, physical abuse, victim of violence, and attendance at drinking parties. There is also a measure of and twenty-four risk-taking behaviors covering alcohol and drug use, sexual activity, and antisocial behavior(Search Institute, 2001).

Reliability

Search Institute used internal consistency coefficients to measure the reliability of the developmental asset scales. The Cronbach's coefficient alpha was used to measure the scales with three or more items. The Spearman-Brown prophecy formula was used for scales with two items. Thirteen of the 40 assets are measured with single items, so internal consistency could not be measured (Search Institute, 1999)

Reliability coefficients were above .60 for nineteen asset scales, four are between .50 and .59, and four are less than .50. Search institute explains that the low reliability of the four items is due to those items measuring individual assets across multiple contexts. An example of this is three of the questions that make up the asset of youth programs. The respondent is asked to report on the number of hours her or she spends on different types of youth program activities in both school and community contexts. For these items to be reliable as a scale, it would be necessary that young people who do one type of activity to spend equal time doing other activities (Leffert, et al. 1998).

Validity

The *content validity* of many of the items used in the PSL-AB have been developed by the Search Institute or have been developed in other studies. For example, items assessing alcohol and other substance abuse were identified from Bachman, Johnson, & O'Malley's *Monitoring the Future Project* a national annual study of high school seniors (Leffert, et al. 1998). Other items were developed through a process of pilot testing, pre-testing, and question revision. Because developmental assets are a new construct content validity is in the form of

face validity, and is supported through review of literature (Leffert, et al. 1998). There have been no *concurrent validity* studies done on the PSL-AB. An exploratory factor analysis has contributed to an assessment of the *construct validity* of the developmental assets framework. Factor analysis of the 92 asset items was conducted using the principal component method for extraction with varimax rotation (Search Institute, 1999). Leffert, et al. (1998) reports.

“ Factors were extracted using values equal to 1 as the criteria. The results support the identification of a 16 factor solution that accounted for 49.6% of the variance. The 16 factors were composed of 89 items; 3 items did not have sufficient loadings ($> .35$) with any one factor. When items shared loadings on more than one factor, consensus regarding the conceptual fit of the items was established by the research team” (p. 218)

Data Collection

Two weeks prior to testing, letters of consent were sent to all students' parents or guardians. The survey was described including the purpose for retesting students in grades 7 through 12, what would be done with the information collected, and the risk that a student would assume by participating in the retest. On the day of the test, students were read the consent to participate in testing statement. The statement informed students of measures to protect their anonymity and the purpose for this retest. They were also informed that participation was voluntary. All non-participating students were excused to the library during the testing. Students were told that by staying and completing the survey they were giving their consent to be tested.

All students were tested on the same day in their homeroom classes. Grades 9-12 were tested during 5th hour. The eighth grade was tested during 7th hour and the seventh grade was tested during 8th hour. Students were given instructions on how to complete the test and were allowed to ask the administrator clarifying questions. When students completed the survey they placed the survey form into a brown unmarked envelope. Envelopes were sealed, collected, and sent to the Search Institute for scoring.

Data Analysis

Scores from the survey taken in 2001 were compared to scores taken in 2002. Data was analyzed to determine the level of difference in developmental assets, thriving, and risk-taking behavior scores. Search Institute omitted surveys that contained the wrong reported grade (any grade reported other than 7,8,9,10,11,or12), reported use of fictitious drug, inconsistent responses, missing data on 40 or more of the 156 items, exaggerated reported use of drugs. For the 2001 survey, one survey was omitted. For the 2002 survey, 2 surveys were omitted. Search Institute compiled the data into two separate reports, which were sent back to Siren School. The data had been converted into a binary variable for each asset, deficit, and thriving indicator. This simplified measurements into a percentage of youth who “have the asset”. Search Institute recognizes that the use of binary variables affects reliability, but makes the data more understandable to citizens of a community than reports based on scale means (Search Institute, 1999).

Data on both 2001 and 2002 surveys were compiled into tables and used to perform a statistical analysis. The summary statistics that were returned by the Search Institute were in the

form of percentages. Because the data was in percentages, the “z-test on the differences between proportions and frequencies” was chosen as the most appropriate statistical procedure.

Limitations

The methodology may contain the following limitations:

1. When looking at the effectiveness that prevention programming had on the students, it is important to view it on a relative, rather than conclusive basis.
2. The data collected needs to be viewed as collective data for individual communities. The PSL-AB was not designed as an assessment instrument.
3. The PSL-AB is measuring global changes in grades 7-12. Mobility of students between schools systems could not insure that a student had received the same exposure to prevention education that was offered in Siren School. This complicates any implication that prevention programming is the cause of any findings in this study.
4. While there maybe changes in students' level of assets from test to retest, these changes may not be indicated by the data, because the assets are measured dichotomously (that is, students either “have” or “do not have” the asset).

Chapter Four

Results

This chapter discusses the results of the current study, which has investigated the relationship between developmental assets and at risk alcohol and drug use behavior. The instrument used to measure this is the *Search Institute Profiles of Student Life: Attitudes and Behaviors* Survey (PSL-AB). In addition, this chapter presents demographic data to facilitate the description of the sample.

Demographics

The subjects for both survey data collections were students enrolled in Siren school and in grades seven through twelve. The samples for the 2001 and 2002 surveys were broken into gender, grade, and race/ethnicity. The total sample for the 2001 survey was 190 students. Males made up 44 percent (84) of the sample and females made up 56 percent (105) of the sample, one survey was omitted. The sample represented 13 percent (25) seventh graders, 16 percent (30) eighth graders, 20 percent (38) ninth graders, 18 percent (34) tenth graders, 23 percent (44) eleventh graders, and 10 percent (19) twelfth graders. Seventy-eight percent (148) of the sample indicated being European American as their ethnic background; fourteen percent (27) indicated being American Indian; five percent (10) identified being Multi-racial; one percent (2) identified being Asian American; .5 percent (1) identified being African American; and .5 percent (1) identified being Hispanic (Search Institute, 2001)

The total sample for the 2002 sample was 187 students. Males made up 48 percent (87) of the sample and females made up 52 percent (98) of the sample, two surveys were omitted. The sample represented 16 percent (30) seventh graders, 15 percent (28) eighth graders, 16 percent (30) ninth graders, 18 percent (34) tenth graders, 16 percent (29) eleventh graders, and 19 percent (36) twelfth graders. Eighty percent (148) of the sample indicated being European American as their ethnic background; twelve percent (23) indicated being American Indian; seven percent (13) identified being Multi-racial; .5 percent (1) indicated being Asian American; and .5 percent (1) indicated being Hispanic (Search Institute, 2002)

Statistical Analyses and Their Relationship to the Null Hypotheses

The research objective of this study was to determine whether there is a statistical difference between developmental assets, thriving indicators, and at risk alcohol and drug use behaviors scores from the PSL-AB 2001 and 2002 surveys. Search Institute scored the surveys and reported student's responses in a dichotomous format. The report simplifies data into the percentage of youth who identify with each item. The following data from the Search Institute's 2001 and 2002 PSL-AB reports to Siren School was related to differences between uncorrelated proportions using Z-tests, (Guilford, 1965) and addresses the null hypotheses. A test of significance was calculated through use of a z ratio. The formula used to find this z score is,

$$Z = \frac{p_1 - p_2}{\sqrt{p_e q_e \left(\frac{N_1 + N_2}{N_1 N_2} \right)}}$$

The estimated population proportion is:

$$\bar{p}_e = \frac{N_1 p_1 + N_2 p_2}{N_1 + N_2}$$

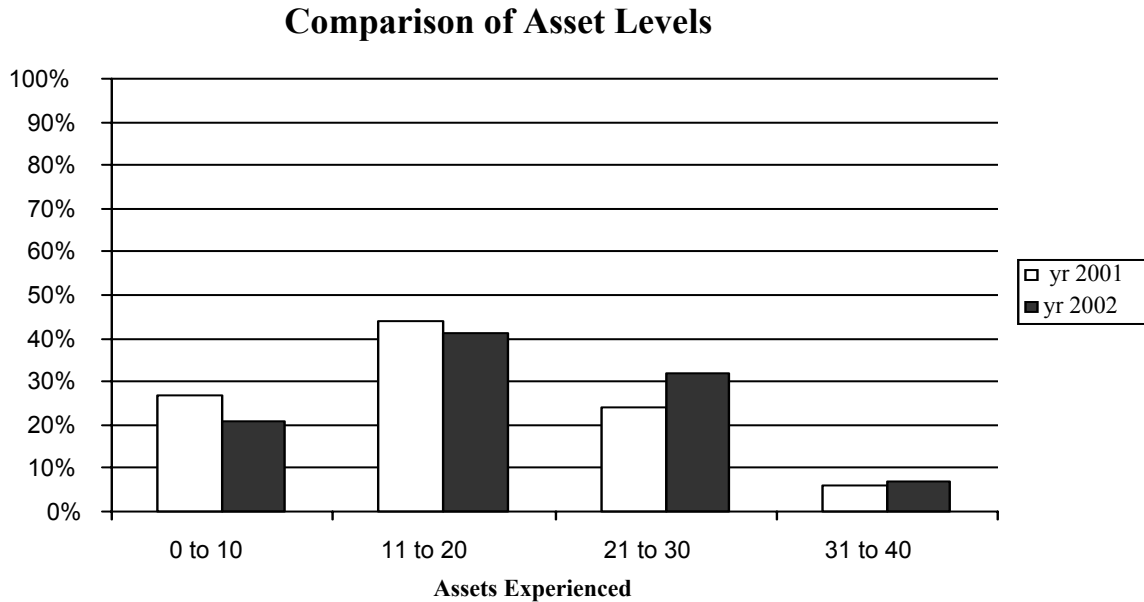
And where $\bar{q}_e = 1 - \bar{p}_e$

A weighted mean of the two sample proportions was calculated to estimate a population proportion. The estimated population proportion for 2001 and 2002 data came to .0106107 with a z score of + or - 1.960 at the .05 level; a + or - 2.576 at the .01 level; and a + or - 3.291 at the .001 level (Blalock, 1960).

Differences of developmental assets in PSL-AB scores

Hypothesis #1 dealt with the difference between developmental assets scores in the PSL-AB surveys. It was hypothesized that there would be no statistically significant difference in the number of developmental assets between the 2001 and 2002 surveys. The average number of developmental assets from the 2001 survey was 16.5. This increased to an average of 17.9 developmental assets in 2002. A comparison of asset levels in Figure 1. shows decreases in percentage of youth who identified with 0 to 20 assets ($z = -1.85$) and an increase in the percentage of youth who identified with 21 to 40 assets ($z = 1.84$). Neither of the z scores was statistically significant. The 40 developmental asset scores were also calculated individually. There were increases in student's identification with 38 of the 40 developmental assets. The assets of *school engagement* remained the same and the asset *reading for pleasure* decreased by 5 percent. Differences were only significant for two of the 38 developmental assets that increased. They were the internal assets of homework ($z = 2.33$) and bonding to school ($z = 2.35$). Therefore, the null hypothesis could be rejected.

Figure 1.

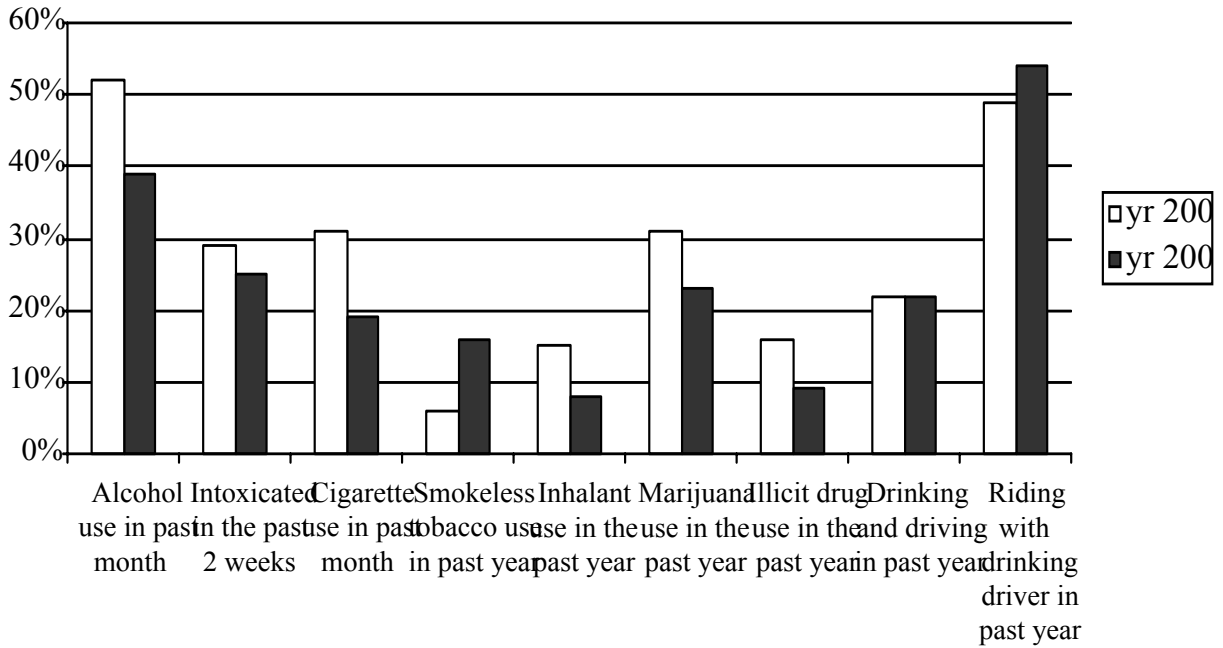


Differences in alcohol and drug use at risk behaviors in PSL-AB scores

Hypothesis #2 dealt with differences in the number of alcohol and drug use risk behaviors in the PSL-AB scores. These differences are illustrated in Figure 2. It was hypothesized there would be no statistical difference in the number of alcohol and drug use risk behaviors between 2001 and 2002 PSL-AB surveys. One behavior *drinking and driving* remained the same. Two of the behaviors, *riding with drinking driver* and *smokeless tobacco use* increased. The increase in *smokeless tobacco use* was significant ($z = 3.1$). There were decreases in six of the eight alcohol and drug use risk behaviors. The decreases in *Alcohol use* ($z = -2.5$), *cigarette use* ($z = -2.6$), *inhalant use* ($z = -2.11$), and *illicit drug use* ($z = -2.05$) were all significant. Therefore the null hypothesis could be rejected.

Figure 2.

Comparison of Alcohol and Drug Risk



Chapter Five

Discussion

Summary of Findings

The current study examined the differences between PSL-AB scores of Siren students in 7-12 grade over a one year period. Differences in the number of identified developmental assets and alcohol and drug use at risk behaviors between 2001 and 2002 survey results were compared. The increase of 1.4 assets between 2001 and 2002 asset scores were just short of being significant, but there was a decrease in alcohol and drug use at risk behaviors, which was

statistically significant. This supports general Search Institute research findings, that as asset scores increase there will be a decrease in at risk behaviors. Leffert, et al. (1998) states that the assets of *positive peer influence* and *restraint* were the most important predictors associated with lower reports of alcohol and substance abuse. Siren students showed significant decreases in alcohol, cigarette, inhalant, and illicit drug use, but significant asset increases in *homework* and *bonding to school* do not support Leffert's findings. An increase in homework completion could be attributed to 7 and 8 grade participation in Siren School's After School Tutoring Program. The results of the PSL-AB indicated a 41% increase in homework completion by 7th and 8th graders. *Bonding to school* is defined in the *40 Developmental Assets* as, "Young person cares about her or his school." (Search Institute, 2001, pg. 6). The significant increase in this asset could be attributed to school efforts to improve school safety; provide student support groups for tornado trauma recovery, anger management, social skills, and friendship; and training students in conflict resolution strategies.

The decrease in Siren student substance abuse could be attributed to participation in Siren School AODA Prevention Education Programs. Another possible explanation for the decrease was the need for Siren Students to provide labor for community cleanup and rebuilding of Siren after the tornado in June of 2001. This has kept much of the student population occupied, and has given them a sense of accomplishment and bonding to the community, which could be contributing to increases in self-esteem, which could decrease a student's need to use alcohol or drugs to enhance self-esteem. Decreases in alcohol and drug use could also be attributed to students choosing to wait until they are older before using alcohol and drugs. There was a 14.2% average decrease in alcohol, tobacco, marijuana, inhalant, and illicit drug use among 7th and 8th graders.

Limitations

Siren students decrease in alcohol and other drug use as measured by the PSL-AB was significant in this study. The cause of this decrease is unclear. When looking at the effectiveness that prevention programming had on the students, it is important to view it on a relative, rather than conclusive basis. There was no data collected regarding student participation in prevention programming at Siren School. A student's exposure to prevention material through media, and family intervention also was not assessed.

The data collected in this study should to be viewed as collective data of the Siren School students in grades 7-12. The PSL-AB was not designed as an assessment instrument. Therefore it is unreasonable to make predictions or conclusive statements about individuals or specific groups of students at Siren. What can be concluded is that data shows an increase in asset development and a decrease in alcohol and drug use between 2001 and 2002 and that this is a desirable change for Siren School.

Another limitation of this study is the global measurement of change from the PSL-AB. The community of Siren was dramatically affected by the tornado of June 2001. This event strongly impacted individual's self-worth and sense of identification to the community. Also this study was completed across two school years making it impossible to avoid subject contamination due to student population changing from one administration to the next.

While there may be changes in students' level of assets from the 2001 to the 2002 test, these changes may not be indicated by the data, because the assets are measured dichotomously (that is, students either "have" or "do not have" the asset). Search Institute does recognize that this dichotomous or binary approach to reporting affects reliability, but it is more understandable

to the citizens of a community than are reports based on scale means. The increase of assets between 2001 and 2002 surveys fell short of being significant. Had raw data been obtained there may have been a significant difference and an increase in significant identification between the 40 Developmental Assets in both surveys.

Recommendations for Future Studies

It is apparent that there have been positive changes in Siren School students. Data will continue to be collected for grant applications, evaluation of program effectiveness and charting of behavioral trends at Siren School. The *Search Institute Profiles of Student Lifestyle: Attitudes and Behaviors* does not claim to be an evaluation tool and its effectiveness as an evaluation instrument is limited. The addition of prevention participation surveys with administration of the PSL-AB could be useful to evaluate the effectiveness of specific programs.

The anonymity of students is essential for obtaining accurate information. But it limits the researchers ability to track and evaluate variables that could effect change for the individual. This keeps educators limited to providing prevention programming that addresses the needs of students whose needs fall within the mean of survey results. Siren School has limited purchasing prevention programs that are marketed as being effective for all student populations, and have developed a broad and encompassing prevention program that addresses their students' unique needs over the scope of a student's formative education years.

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Appendix

SEARCH INSTITUTE PROFILES OF STUDENT LIFE
ATTITUDES AND BEHAVIORS

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