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Changes in Attitudes Towards Substance Use Among High School Students

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Abstract

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MPA, University of Missouri, 1995

BS, Cedar Crest College, 1988

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Use of alcohol and illicit drugs during adolescent development can have negative effects on cognitive functioning and mental health. The purpose of this cross sectional study was to examine grade level, sex, athletic affiliation, and ethnicity as they relate to substance-using attitudes to isolate the period in which shifts in attitudes toward substance use in adolescents occur. The social learning theory provided the framework for the study. Participants included 276 high school students from a midsized Midwestern city. Students in the ninth, 10th, 11th, and 12th grades who participated in the study were asked to complete a brief electronic survey designed to assess attitudes toward substance use, which was administered during a free study period. Survey questions were drawn from the Attitude Scale on the Substance Abuse Screening Inventory for Adolescents. An ANOVA was run using the multiple independent variables taken from the survey to examine the differences between each of the independent variables, grade level, athletic status, sex, and ethnicity on the dependent variable of attitudes. There were overall significant differences found for favorable attitudes towards substance use among the Grade levels ninth, 10th, 11th, and 12th grades at the $p < 0.001$ level [$F(3, 272) = 6.933$, $p = .001$]. Further analysis was conducted and significant differences were found between ninth graders and 11th graders in their attitudes towards substance use and between ninth graders and 12th graders in their attitudes towards substance use. The greater significant difference occurred between ninth graders and 12th graders. The findings from this study can be used to assist educators in the creation of developmentally appropriate curricula that could act as an intervention to the onset of substance use.

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Dedication

This dissertation is dedicated to all the adolescent Julie's and their families that are impacted from the catastrophic effects of substance use. If only we knew then, what we know now.

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I am grateful to all those who supported this work. Thanks to all who kept my flame burning when I believed it was extinguished. To my mother, her strength and voice carry me daily. To my husband Chris, he knew that somewhere through this process I lost my mind but still supported my dissertation endeavors. My children Sam, Christopher and Ian, you are my inspiration! Every day, the three of you push me to strive for greatness as a human. I am so grateful for the family from which I come.

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Chapter 1: Introduction

People decide to use alcohol and other drugs for a variety of reasons. Volkow (2010) indicated that the decision to use alcohol and other drugs is fueled by a person's desire to feel better, to change a person's thinking process, curiosity, and or to fit in with others. Walther, DeAndrea, Kim and Anthony (2010) stated that substance use has been associated with fatalities associated with loss of life, injury to self or others, and persistent mental illness. According to Volkow (2010), additional consequences from substance use include impacts on mood and relationships. According to Walther et al. (2010), media sources such as YouTube and Public Service Announcements (PSAs) have reported the fatalities and consequences resulting from the use of alcohol and other drugs. However, Dasgupta, Mandl, and Brownstein (2009) reported that these efforts might be overshadowed by how the media portrays the initial effects of substance abuse. According to Dasgupta et al. (2009), the reporting of initial euphoric effects of substances and the "sensation that problems are no more" might supersede the consequences of substance use (p. 5).

Since their inception in 1986, PSAs are dedicated to educating the public regarding the impacts of alcohol and other drugs. Terry-McElrath, Emery, Szczypka, and Johnston (2011) asserted that PSAs are useful in reaching a broad ban of people regarding the effects of substance use. PSAs, according to Terry-McElrath et al. (2011), are more likely to influence middle schoolers. In the Monitoring the Futures (MTF), Johnston, O'Malley, Bachman, and Schulenberg (2012) reported that substance using trends have declined among adolescents. Terry-McElrath et al. (2011) suggested that PSAs have less of an impact as a deterrent toward substance use on high schoolers.

Johnston et al. found that the continued airing of PSAs, substance use with cannabis continues to be on the rise in high schoolers.

The National Center on Addiction and Substance Abuse at Columbia University (CASA Columbia, 2011) found that 90% of people in the United States who meet the medical criteria for addiction started smoking, drinking, or using other drugs before age 18. Tyler et al. (2007) indicated that the use of alcohol and other drugs among adolescents will occur between the ages of 13-years-old and 15-years-old. During this age span, the brain undergoes a period of rapid growth and development. Gould (2010) indicated that the age of onset of use with alcohol and other drugs has been linked to the disruption of cognitive development and can do long term, irreparable damage to neurological cognitive processes in substance dependent individuals. One such area of impairment is found in the prefrontal cortex. As discussed by Volkow (2010), disruption of cognitive growth in this area of the brain can lead to impaired functionality in decision-making processes, along with impairments in mental controls that regulate a person's impulsiveness, sustain attention and concentration, and memory functions. According to Hooper, Wooley, and De Bellis (2014), even once use of marijuana has been discontinued for 1 year, changes in executive functions continue to be pronounced. These adolescents will experience impairments in achievement, attention, and memory (Hooper et al., 2014). As these mental controls become impaired, the ability to to regulate behavior becomes impaired for the adolescent. Adolescents could find themselves engaged in behavior activities that they might not have otherwise engage in had they not had these impairments to their decision-making processes. Mundt (2011) reported that adolescents who engaged in substance use were found to be more likely to engage in risk-

taking behavior, such as sexual activity with multiple partners, criminal behaviors, and other forms of high risk behavior.

Changes in neurochemical processes from substance use have been linked to mental disorders such as depression, bipolar disorder, and anxiety (Volkow, 2010). These changes in neurological functionality can create developments of chronic illnesses that will require lifelong monitoring and care. According to Hartwell et al. (2009), the repetitive ingestion of alcohol and other drugs will lead to permanent alterations in neurobiological systems. Schatzberg, Cole, and DeBattista (2010) designated that neurochemicals (i.e., aminobutyric acid, glutamate, serotonin, dopamine, and norepinephrine) not only play roles in the regulation of mood, but also in the concept of neuroplasticity. If an individual has a glass of wine with dinner, neurochemicals may become altered, and the person might experience a pleasant relaxed state. This state lasts for a short time as the neurochemicals become rebalanced. Schatzberg et al. (2010) referred to this rebalancing of brain functionality as neuroplasticity.

Hartwell et al. (2009) reported that chronic ingestion of alcohol and other drugs will cause the brain to lose the ability to practice neuroplasticity and the changes in brain chemistry become more permanent. Hartwell et al. indicated that along with these permanent changes the brain endures a state of stress. In response to this stressed state, it will release a hormone called corticotrophin releasing factor (CRT). The release of CRT then activates dopamine found in the mesolimbic system, causing the individual to seek pleasure obtained by alcohol and other drugs to reduce stress levels. Because both dopamine and CRT are implicated in both substance abuse disorders and psychiatric

mood regulation, the individual becomes more susceptible to psychiatric disorders, such as mood, anxiety, and personality disorders.

Background

Because the adolescent brain is still growing, it may be even more susceptible to the long-term mental health effects linked to substance abuse. In a study of adolescents from ages 12 to 22 years-old, Lansford et al. (2008) found that 66% of adolescents who began using alcohol and illicit substances prior to the age of 18 also had a comorbid internalized (e.g., anxiety, and depression) psychiatric diagnosis (n = 535). Volkow (2010) suggested that to control thinking and feeling, an individual might illicit the aid of alcohol and other drugs. Swendsen et al. (2010) found that when comorbid conditions (i.e., depression, anxiety, and bipolar) were present, individuals were also likely to meet the criteria for substance abuse. Swendsen et al. (2010) found that illicit substance abuse was higher among individuals who also had anxiety-based disorders and bipolar mood disorders. According to Winters, Tanner-Smith, Bresani, and Meyers (2014), the younger an adolescent begins using alcohol and other drugs, the more likely he or she is to develop a dependency disorder.

Johnston et al. (2012) specified that substance abuse is a health problem that has far reaching effects on families and communities, as well as being a leading contributor to morbidity and high mortality rates. Winters et al. (2014) alleged that survey methods based upon self-report might minimize the scope of the problem. The Drug Abuse Warning Network report (DAWN, 2010) reported that 4.9 million of all emergency department (ED) visits in 2010 were drug related. Of those persons aged 20 or younger

treated in the ED, 18.8% of all were drug-related visits. Winters et al. (2014) stated that these visits were related to social and personal problems, educational problems, leading causes of death, and legal problems. Griswold, Aronoff, Kernan, and Kahn (2008) indicated that even when the scope of the problem is recognized by physicians, parents, and the adolescent, few treatment programs adequately address the recovery needs of those in treatment programs. Smelson et al. (2012) speculated that treatment interventions fail because clinicians do not use interventions that fully engage the client. As a result, adolescents are vulnerable to relapse, treatment dropout, or recurring hospitalizations (Smelson et al., 2012).

The Substance Abuse and Mental Health Services Administration (SAMHSA, 2013) suggested that substance dependence or abuse can have cultural variants. Among Asian youth aged 12-years-old or older, 4.6% will use alcohol and other forms of drugs. Among Blacks aged 12-years-old or older, 7.4% will use alcohol and other forms of drugs, while among Hispanic youth aged 12-years-old or older, 8.6% will use alcohol and other forms of drugs. In mixed ethnicities, 10.9% among these persons reported the use of alcohol and other forms of drugs. Amid Native Hawaiians or Other Pacific Islanders, 11.3% of persons aged 12-years-old or older will use alcohol and other forms of drugs. Among American Indians or Alaska Natives, 14.9% of persons by the time they have reached age 12-years-old or older will have already begun to use alcohol and other form of drugs of abuse. Educational programming geared targeted toward youth regarding the impacts of substance use may lose their efficacy if a “one size fits all” approach is taken. This may explain the limited success of some school-based programs (Synder et al., 2010).

SAMHSA (2013) indicated that the sex of an adolescent is not a protective factor against the decision to use substances. SAMHSA quantified that the rate of current illicit drug use among persons aged 12-years-old or older was higher for males (11.5%) than for females (7.3%). Males were more likely than females to be current users of several different illicit drugs, including marijuana (9.7 vs. 5.6%), cocaine (0.8 vs. 0.4%), and hallucinogens (0.7 vs. 0.3%).

Pandina, Johnson, Lagos, and White (2005) reported that athletes use alcohol and other drugs at higher quantities than their nonathlete counterparts, and they are more likely to engage in high risk behaviors, such as driving while intoxicated. Naylor, Gardner, and Zaichkowsky (2001) questioned if high school athletes are more resistive to the harmful effects of substance use. Naylor et al. found that despite the efforts of educational programs geared toward intervention and student awareness of sanctions for substance abuse, high school athletes continued to report breaking rules regarding substance abuse in their school. Naylor et al. suggested that high school student athletes are more selective in the type of substances that they will use and/or abuse. According to Naylor et al., students involved in athletic programs tended to avoid the use of less socially acceptable drugs such as cocaine and psychedelics than their nonathlete counterparts. The purpose of the study was to examine the attitudes toward substance use among high school students (athletes and nonathlete) yearly from Grades 9 through 12.

Problem Statement

Since 1975, the University of Michigan's Institute for Social Research the Monitoring the Futures (MTF) has been tracking the trends of substance use among U.S. youth. Johnston et al. (2012) suggested that not all adolescents who make the decision to

use alcohol and other drugs begin using substances at the same time. Some adolescents will begin use during middle school, and others will begin use during the high school years. However, by the time a child has reached graduation from high school, he or she has experienced either being drunk from alcohol or have reported on at least one occasion having experienced the effects of other substances (Johnston et al. 2012).

Researchers (Gould, 2010; Hartwell et al., 2009; Winters et al., 2014) suggested that the younger adolescents begin using alcohol and other drugs, they are more likely to develop an addiction, and they are more likely to suffer cognitive deficits in the areas of executive functioning necessary for learning and emotional regulation necessary to manage life stressors. Terry-McElrath et al. (2011) and Johnston et al. (2012) identified the preventive efficacy of PSAs, but suggested that as the adolescent ages, PSAs lose their efficacy. Despite the knowledge of the impacts on the biological processes of the brain including impacts on executive functioning, some students continue to engage in substance use practices. According to Berk (2010), developmentally the period of adolescence is marked by high risk-taking behavior. As presented in Court (2013), adolescents will engage in behavior such as substance use because of the immediate rewards associated with use. This problematic thinking might contribute to the high mortality rate and emergency room visits that are related to substance abuse (SAMHSA, 2010). Researchers have not defined variables that predict changes in attitudes toward substance use among high school students.

Purpose of the Study

The purpose of this quantitative study was to isolate when differences in attitudes toward substance use might shift between the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels

among high school athletes and nonathlete with consideration to sex and ethnicity. Having this insight could have positive social effects in understanding an aspect of the social and cognitive development processes of adolescents. As an avenue of positive social change, educational programs that that are developmentally appropriate for the adolescent which target attitudes toward substance use as they differ over time could be implemented. Furthermore, the research could provide justification for policy decisions regarding the continued funding of athletic programing in high schools. The implication for positive social change for the study was to provide further understanding of how the function of attitude could contribute to the cycle of substance use of alcohol and other drugs among adolescents.

The theory of social influence is a relevant theory applicable when used to inform discussions regarding shifts in attitudes that impact interpersonal behavior choices. The theory of social influence and affiliation was used to hypothesize how variables of grade, sex and athletic involvement impact when attitude changes toward substance use occur as an adolescent progress through the high school years.

Research Questions/Hypotheses

The central research question asked whether attitudes towards substance use differ between the ninth, 10^{th}, 11^{th}, and 12th grade levels in high school students. Consideration was given to athlete and non-athlete students, the sex of the student, and the ethnicity of the student. As indicated by Johnston et al. (2012), attitudes toward substance use may reflect personal perceptions about the risks associated with negative effects of substance use. Attitudes toward substance use might explain not only decisions to begin use but

explain the continued use despite known negative effects. Sub-questions included the following:

1. Do attitudes regarding substance use in high school students differ between the ninth, 10th, 11th, and 12th grade levels?

$H_1$1: Attitudes are different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$1: Attitudes are not different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

2. Do attitudes regarding substance use differ for high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels?

$H_1$2: Attitudes are different regarding substance use in high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels.

$H_0$2: Attitudes are not different regarding substance use in athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels.

3. Do attitudes regarding substance use differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels?

$H_1$3: Attitudes toward substance use will differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$3: Attitudes toward substance use will not differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels.

4. Do attitudes regarding substance use differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels?

$H_1$4: Attitudes toward substance use will differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$4: Attitudes toward substance use will not differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels.

Theoretical Framework

The theoretical framework used in the study was the theory of social influence described by Cialdini and Goldstein (2004). The theory of social influence (Cialdini & Goldstein, 2004) is used to define the degree to which individuals strive to maintain or achieve affiliation with others. Individuals not only take pride in their affiliation to the group, but membership to the group becomes an essential feature of their self-concept (Cialdini & Goldstein, 2004). An individual will go to any lengths to maintain this affiliation. In some cases, Caildini and Goldstein (2004) found that a previously held attitude or belief might be disregarded as the individual complies with a collective attitude of the group. A gap in the research that the theory of social influence can assist in closing is how attitudes about substance abuse change during the yearly progress of the high school student.

Nature of Study

In this study, I employed a survey that asked questions regarding a high school student's attitude toward substance use. I used a quantitative cross-sectional data analysis to obtain a snapshot in time of a student's attitude toward substance use. For the purpose of this study, change was not defined by the empirical sense that would imply an intervention. Instead, I referred to change as the progression from one grade level to another. I was most interested in the differences in attitudes towards substance use

between the ninth grade level to the 10th grade level to the 11th grade level and then onto the 12th grade level. In addition to grade level, variables of athletic status (high school athletes and high school non-athletes), sex was considered. This study warranted a quantitative analysis as I examined the relationship among the variables.

Cross-sectional methods were used to gather data from the ninth, 10th, 11th, and 12th grade levels. This approach allowed data collection to be obtained in one point of time from each of the grade levels. According to Creswell (2009), a defining feature of the cross-sectional method is to provide the researcher an opportunity to investigate how multiple variables differ while focusing on the intent of the research question. For this study, the intent of the research question was to survey high school students regarding their attitude towards substance use in one moment of time (i.e., grade level). The advantages of this method, as described by Carlson and Morrison (2009), included its cost effectiveness, taking little time to conduct, and data on all identified variables can be collected at one time. However, the cross-sectional method did not provide information regarding a causal relationship regarding the variables. The cross-sectional design does not infer or conclude that a change occurs from one grade level to another. However, the cross-sectional design allowed me to make an inference regarding the differences in attitudes towards substance use as the adolescent progresses in grade level during high school. For the purposes of this study, I would not be able to make the inference that the sex of the adolescent, athlete status, or ethnicity would cause a change in attitudes toward substance use in high school students across the ninth, 10th, 11th, and 12th grade levels. Instead, I focused on the grade level, sex, athletic affiliation, and ethnicity in relation to substance using attitudes.

As discussed by Creswell (2009), unlike a true experimental design, a quasi-experimental approach, such as the cross-sectional design, does not consider the impacts of treatment effects that have been introduced to a subject. Levy and Ellis (2011) indicated that traditional elements of a pretest and posttest design, as well as a random selection of participants into groups found in a true experimental design, are removed in quasi-experimental designs. According to Levy and Ellis, the absence of these features creates an experimental situation that leaves the research open to the threat of internal validity. McCambridge, Mitcheson, Winstock, and Hunt (2005) explained that the cross-sectional method is used to draw out information regarding a variable within the population at a given point in time. This information could be useful in helping educators develop educational programs that would be relevant to the needs of a subgroup at a moment in time.

Definitions

The following are definitions that were used throughout the study.

Adolescent: A person who is actively engaged in the transitional period between puberty and adulthood in human development, extending mainly over the teen years and terminating legally when the age of majority is reached (Berk, 2010).

Athlete: A person who is trained in or good at sports, games, or exercises that require physical skill and strength (Athlete, n.d.).

Attitude: An individual's internalized beliefs or evaluations of any aspect toward his or her social world (Baron, Branscombe, & Byrne, 2008).

High school: For purpose of this study, high school was termed as that period which is descriptive of Grades nine, 10^{th}, 11^{th}, and 12^{th}.

Sex: Biological assignment as having either female or male features (Berk, 2010).

Substance use: The practice of engaging in the ingestion of alcohol, tobacco, and illicit drugs that can alter functionality, mood, and personality (Volkow, 2010).

Assumptions, Limitations and Delimitations

The target population of this study was comprised of adolescent boys and girls who attended high school (ninth through 12th grades). The location of the study occurred in a high school setting. I assumed that all those who attend high school have had exposure to legal and illicit substances. This assumption was important to the study in that if a student was asked a question regarding the use of legal and illicit substances on the survey, he or she would not need clarification regarding the nature of the question. The second assumption of the study was that students had formed an opinion regarding their decision to use these substances. Another assumption of the study was that grade level, athletic status, sex, and ethnicity of the adolescent will affect the decision to use alcohol and illicit substances. The final assumption of the study was that students were honest in their response style during the data collection. This assumption also acted as a potential limitation of the study.

As a limitation of the study, the students may have been skeptical as to the confidentiality of the study, which could have impacted their response style. Despite the explanation of confidentiality, students may have held onto concerns regarding breaches of confidentiality. Students may have been fearful of consequences should their parents or the administration of the school have access to their responses. In this school system, when students have been found to be using alcohol or other drugs, usually sanctions are placed on them that may impact their participation in extracurricular student activities.

Some parents may have refused to sign the agreement of participation, which could have impacted the sample size that might have impacted the effect size of the study.

According to Creswell (2009) and Levy and Ellis (2011), the design of this study could have also been a limitation. I used a cross-sectional study design, which captures data at one time. This is a limitation because it can only capture what is currently occurring and may not be a predictor of the future; it does not allow the researcher to draw any conclusions about causality. As a limitation the situation may provide differing results if another time frame had been chosen. The observation of a single moment in time did not allow me to conclude that variables such as grade, sex, athletic status, and ethnicity impact a student's attitude regarding use of alcohol and other drugs.

As a limitation and a delimitation of the study, the results of the study should not be overgeneralized to all athletes and sex groups. The sample of adolescents was selected from a small Midwestern Catholic school. As a subpopulation, Catholic school students may present some generalization issues. Therefore, the results of this study do not necessarily reflect the opinions of all students in the ninth, 10^{th}, 11^{th}, and 12^{th} grades in all types of schools. Additionally, because this was a sample of convenience, it will not reach those who are in other states. To suggest that all individuals involved in athletics and all sexes have the same attitude toward substance use as those who are part of the sample size of this study would reflect an overgeneralization bias of the study.

Significance

Baron et al. (2008) described an attitude as an internal reaction that evidences itself in behavior. Olson and Fazio (2001) designated that attitudes can either be favorable or unfavorable thought processes that are projected onto an object. According

to Baron et al., attitudes can be influenced by an individual's affiliation with a group, such as a peer group. The attitudes of high school students regarding substance use affect their decision to use (CASA, 2011; Johnston et al., 2012). Pandina et al. (2005) and Naylor et al. (2001) offered insight regarding the attitude of athletes regarding substance use.

Scholars (CASA, Columbia 2011; MTF 2012; SAMHSA 2013) indicated that even if students enter high school without having used alcohol and other drugs, by the time adolescents enter into the 12th grade level, they may have used alcohol and other drugs. Yet, scholars have not addressed at what point over time attitudes toward substance use change among high school students as they progress through high school. According to Lind (1984), a challenge in the measurement of an attitude is that an attitude may be more individualized than a collective trait reflecting the behavior of a subgroup. As an original contribution my study identified attitude changes over time regarding substance use among the adolescent population to determine at what point in the progression of high school attitude changes toward substance use occur. I considered if sex (male and female) as a subgroup and grade level had bearing on attitude changes toward substance use in the high school student.

Summary

I sought to monitor attitude changes toward substance use between the ninth, 10th, 11th, and 12th grade levels in high school athletes and non-athletes with consideration of sex and ethnicity. If there were attitude changes as the student progresses through high school, I hoped to isolate at which point in time these attitude changes occur. Regarding

positive social change, educational programs can be created that are geared towards prevention of substance use and are developmentally appropriate for the adolescent.

Despite the use of PSAs and preventative educational efforts, some high school students continue to use substances (Naylor et al., 2001; Terry-McElrath et al., 2011). According to the MTF studies, middle school children and eighth grade children are most likely to resist engaging in substance use. Involvement in athletics, as discussed in Padina et al. (2005), is considered a protective factor in making the decision to not use substances. However, Pandina et al. (2005) found that the methods of use, frequency, and type of substance differ from athlete to nonathlete student. As discussed in Volkow (2010), the longer an individual stops using alcohol and other drugs, the more likely he or she can lessen the risk of dependency.

Subsequent chapters will include the literature review and methods of the study. In the literature review, I will review works that support the need to investigate how attitudes toward substance use change over time as the adolescent progresses through high school. I will demonstrate an understanding of the problem and its societal impacts. I will consider the influences of athletic status, sex, and ethnicity as factors that might contribute to the depth of the study.

Chapter 2: Literature Review

Introduction

In this chapter, I review the literature regarding how attitudes toward alcohol and other drug use change as the adolescent progresses between the ninth, 10th, 11th, and 12th grade levels and how these attitudes may be influenced by sex, athletic involvement, and ethnicity. Using a cross sectional design, the purpose of this investigation was to examine at what grade level, if any, do attitudes toward the use of alcohol and other drugs differ between adolescents as they progress through high school in the ninth, 10th, 11th, and 12th grade levels.

To conduct this review, I used the following sources: EBSCOhost, The National Institute of Drug Addiction, Substance Abuse and Mental Health Services Administration and Center for Disease control to identify recent articles published since 2005 on the concepts of attitudes toward alcohol and other drug use. Peer-reviewed journals were selected for the literature review. I used information from the National Institute of Drug Addiction regarding the prevalence of substance use in adolescents as well as harmful effects. Statistical information regarding the harmful effects of substance use was drawn from the Substance Abuse and Mental Health Services Administration and the Center for Disease Control. Articles that contained information about attitude, athletes, sex, ethnicity, and adolescents were selected. Key words for the search included *adolescent, substance use, attitude, athletes, sex*, *ethnicity, quantitative study,* and *questionnaire*. Combinations of the key words were used to get a comprehensive list of articles about the subject of this study. The sections of this review contains substance abuse/use and adolescents, substance abuse/use and sex, substance abuse/use and athletes, prevalence of

substance abuse use among adolescents, as well as substance abuse/use across ethnicity and the use of a quantitative study.

Theoretical Framework

In some cases, Caildini and Goldstein (2004) stated that a previously held attitude or belief might be disregarded as the individual complies with a collective attitude of the group. According to Mundt (2011), the more friendships that an individual perceives that they have, the more likely they are to feel they have achieved a greater social status. In a study sample of 2,610 adolescents with ages ranging from 12 years of age to 19 years of age, alcohol initiation was associated with the number of perceived friendships on the part of the adolescent (Mundt, 2011). The greater number of friendships, the higher incidence of continued alcohol use was reported by the adolescent (Mundt, 2011). Fleming, Thorson, and Atkin (2004) evinced that an adolescent's attitude towards alcohol will be impacted by the advertising campaign. Fleming et al. indicated that alcohol advertisements evince a certain belief system that is adopted by the lifestyle depicted in the alcohol advertisement. Typically, according to Flemming et al. (2004), the individuals in alcohol advertisements are surrounded by their peers and appear to collectively be enjoying themselves. Most of these advertisements depict attractive lifestyles engaging attractive individuals (Fleming et al., 2004). According to Fleming et al., these portrayals encourage adolescents to adopt a belief system associated with the positive outcomes associated with the use of alcohol. This belief system becomes reinforced when and individual who has been consuming alcohol receives positive affirmations from their peer group (Flemming et al., 2004).

Cowley and Czellar (2012) reported that when an individual's attitude is different from that of someone he or she likes, the individual experiences internalized feelings of discomfort. Along with Caildini and Goldstein (2004), Cowley and Czellar indicated that there may be some individualized risk associated with having an attitude that is different from those they like or hold in high regard. According to Caildini and Goldstein, the like attitudes among group members set the standards for social norms. As an individual moves away from the normative behavior of the group by adopting a different attitude, he or she may risk alienation from the peer group as his or her attitude differs from the peer group. This risk might act as deterrent for someone who wishes not to engage in substance use when their peer group views substance use as normative behaviors. According to Caildini and Goldstein rather than risk feelings of loneliness and alienation an adolescent might choose to go along with the normative behaviors of their peer group.

As discussed by Olson and Fazio (2001), the formulation of an attitude might have its roots in classical conditioning. As a child adopts the same attitude as their parent, they are awarded through praise. This praise, according to Olson and Fazio, might be enough to keep the child's attitude and behavior in alignment with that of his or her parents. Weisfeld and LaFrenier (2007) attested that the development of an attitude or a belief system has survival evolutionary properties stemming from a dominant culture; such as a person's parents. As presented by Weisfeld and LaFrenier, not only does the child internalize this belief system, but he or she comes to adopt these beliefs as his or her own. Weisfeld and LaFrenier designated that the result is compliance, which helps to keep the belief system thriving. Weisfeld and LaFrenier stated that when the dominant culture changes or when the belief systems of the dominant culture change, the

internalized structure of a person's belief system will change as well. Steinberg and Morris (2001) specified that as the adolescent ages, teens will have a decreased shift in the amount of time spent with family members. Steinberg and Morris suggested that this shift in time spent away from parents lead adolescents to adopt the attitude or belief system of their peer group. As discussed in Russell (2005), middle schoolers who are queried regarding if they would want their parents to know if they were drug tested answered yes. Yet, when high schoolers were asked the same question they replied no.

Jacobus et al. (2015) described adolescence as a stage in childhood development that occurs from ages 13- to 18-years-old. Jacobus et al. stated that this stage is marked by significant neurological, biological, and social change and growth for the adolescent. According to Steinberg and Morris (2001), adolescents are faced with social situations in which they must make decisions for themselves in the absence of their parents. One of these choices is the decision to use alcohol and other drugs. Volkow (2010) expressed many concerns associated with this decision. Volkow identified that the use of alcohol and other drugs may lead a teen to engage in high risk behaviors, such as driving under the influence, having unprotected sex, or engaging in behaviors that the adolescent would not normally engage in had he or she not been using alcohol and other drugs. Volkow claimed that these behaviors can have far reaching effects or unplanned consequences, such as jails, institutions, or even death.

According to Witt (2010), behaviorally the developmental time line of adolescence is riddled with high risk behavior, thrill seeking, and the breaking away from parental beliefs. Steinberg and Morris (2001) designated that during this stage of development, a teen embarks on an exploration of who he or she is. As evinced by

Steinberg and Morris, the adolescent may try new things, develop friendships outside of the family, and develop their own attitudes separate from the family's belief system. Steinberg and Morris suggested that these separate attitudes align to the thinking patterns of their peers and peer group. At this point in the developmental process, the adopted attitudes become a part of not only their peer group affiliation, but a part of their internalized psychological construct regarding the belief system of who they are. Lennox and Cecchini (2008) suggested that this might be why providing information regarding the effects of substance use through PSAs loses their efficacy with the adolescent population. According to Russell (2005), some middle schoolers hold the belief that all drugs are dangerous; whereas, high schoolers are less likely to adopt this belief.

The MFS was designed to identify the emergence of substance using trends among youth (Johnston et al., 2012). As specified by Miech, Johnston, O'Malley, Bachman, and Schulenberg (2015), the 2014 MTF survey included 41,551 eighth, 10th, and 12thgrade students in 377 schools nationwide. Albeit the study of trends across this age group can provide insights regarding frequency and patterns of use among this age group, the absence of changing attitudes towards use remains overlooked.

The intent of my study was to apply quantitative cross-sectional research methods to identify what point in time that attitudes change over time among high school students between Grades nine, 10th, 11th, and 12th grades with consideration to athletes and to non-athletes as well as consideration to sex and ethnicity. During adolescence, scholars (Caildini & Goldstein, 2004; Cowley & Czellar, 2012; Olson & Fazio, 2001; Steinberg & Morris, 2001; Weisfeld & LaFrenier, 2007) have stated that attitude formation is influenced by conformity to social norms that shift from parental influence to peer

influence. These attitude formations can have impacts on behavior choices (Cowley & Czellar, 2012). Yet, scholars know little regarding when during the adolescent stage of development attitudes shift. The hope of this study was to capture that period developmentally in which changes in attitudes in the adolescent develop.

Impact of Substance Use on Adolescents

The American Society of Addiction Medicine (2011) defined addiction as a chronic, progressive disease that impacts the functionality of the brain in the areas of reward, memory, and motivation. As a chronic progressive illness, Horigian et al. (2013) specified that if left untreated, individuals who are impacted by the disease of addiction will likely experience biological and psychological impairments. Long-term biological effects include lung, heart, liver, kidney, gastrointestinal diseases, and cognitive impairments. Socially, individuals who suffer from addictive disorders tend to have poor interpersonal relationships. Their behaviors, like their moods, are often unpredictable. Eaton et al. (2012) indicated that 7.8% of youth in Grades 9 through 12 will have attempted or committed suicide. Among this age group, as presented in Eaton et al., 15.8% of these adolescents will have seriously considered attempting suicide including having made a plan for suicide. According to Horigian (2013), the connection between those with a diagnosis of a clinical depression disorder with a comorbid condition of substance use disorder among high school students stands within a range of 11% to 32%.

According to Horigian et al. (2013), a consequence associated with the use of alcohol and other drugs is incarceration. Kajgang, Simons-Morton, and Hingson (2013) reported that incidences of Driving While Intoxicated (DWI) are more likely to occur among adolescent males than females. Angres and Bettinardi–Angres (2008) evinced that

individuals with addictive disorders are primed for relapse due to the stress reward impacts from substances on the brain. Angres and Bettinardi–Angres further suggested that those with addictive disorders have inadequate coping skills to manage life stressors, which perpetuates their use of alcohol and other drugs as a method to find relief in managing life stressors. Koob and Le Moal (2000) designated that addiction is a progressive disease. It is a disorder that progresses from use to misuse then progresses to abuse and then onto addiction.

The CASA Columbia (2011) found that 90% of people in the United States who meet the medical criteria for addiction started smoking, drinking, or using other drugs before age 18. The SAMHSA (2013) estimated that 21.6 million persons aged 12 or older (8.2%) were classified with substance dependence or abuse in the past year based on criteria specified in the *Diagnostic and Statistical Manual of Mental Disorders, 4th edition*. Volkow (2010) designated that early onset of substances abuse before the age of 21 leads to problems with addictive disorders. Tyler et al. (2007) reported that the average age a substance abuser begins use with alcohol and other drugs is between the ages of 13-years-old and 15-years-old.

Johnston et al. (2012) reported that the most common drugs of abuse during adolescence category are tobacco, alcohol, and marijuana. Johnston et al. indicated that adolescents perceive these types of drugs as easy to obtain. Horigian et al. (2013) designated that as many as 75% of adolescents with substance use disorders have had some additional form of mental health problems. Sedlak and Bruce (2010) indicated that the prevalence of youth in custody is tied to drug abuse and criminal activity. Haynie et

al. (2013) stated that incidences of domestic violence as either a victim or as a perpetrator are tied to frequencies of substance abuse.

Sedlak and Bruce (2010) estimated that the incidence of individuals in residential placement between the ages of 10-years-old to 20-years-old is 101,040. The majority of those in placement are male, and 51% are adolescents between the ages of 16-years-old to 17-years-old (Sedlak & Bruce, 2010). According to those surveyed nationwide, 44% stated that they acted under the influence of alcohol and other drugs (Sedlak & Bruce, 2010). In addition, 55% of those surveyed stated that the instance of their current offense was committed with another person and they were both under the influence of alcohol and other drugs when the crime was committed (Sedlak & Bruce, 2010). Crime linked to substance abuse includes possession, manufacturing, and distribution. Sedlak and Bruce stated that substance abuse affects the user's behavior generating violent behavior and other illegal activity. Of those detained, as reported by Sedlak and Bruce 28,590 are in custody for crimes directly related to alcohol or other drugs.

The consequences of substance use among adolescents include traffic accidents and traffic fatalities. The Center for Disease Control (2012) asserted that motor vehicle accidents were the leading cause of death among teenagers aged 16-years-old to 19-years-old. Kaigang, Simons-Morton, and Hingson (2013) reported that in 2008, 31% of all fatal accidents involving teens also involved alcohol. Eaton et al. (2012) stated that 24.1% of high school students nationwide admitted to riding in a car with a driver who had been drinking. Among these high school students surveyed nationwide, 8.2% admitted to having drove a motor vehicle after using alcohol or other drugs (Eaton et al., 2012). Of all ED room visits in 2010, SAMHSA (2012) stated that patients aged 20 or

younger accounted for 18.8% (922, 953 visits) of all drug-related, ED visits in 2010. Additionally, as specified by Eaton et al., substance using teens are more likely to engage in health risk sexual behaviors that could lead to contracting sexually transmitted diseases (STDs), unplanned pregnancy, and contracting HIV.

Wormington, Anderson, Tomlinson, and Brown (2013) documented the relationship between supportive and negative relationships on substance use. According to Wormington et al., when adolescents do not feel welcomed at school, have few friendships, and perceive their relationships with their teachers at school as poor, they are likely to feel victimized in their relationships with others. This experience of victimization, as discussed by Wormington et al., can influence the decision to use alcohol and other drugs. Wormington et al. explained that the perception of victimization becomes internalized and is experienced as feelings of hopeless and despair characterized by a sense of not belonging. Wormington et al. stated that the adolescent looks toward alcohol or other drugs to alleviate these negative emotions.

Haynie et al. (2013) found links between substance use and domestic violence. Using a sample size of 2,524 students with a mean age of 16.2 during the 2009-2010 school year with 53% of those surveyed being female, Haynie et al. found that 31% of these females had been involved in a domestic violence situation as a victim or a perpetrator. Of this female population, 56.5% reported having used alcohol over the course of the year, and 45.4% reported having used marijuana over the course of the 2009-2010 school years (Haynie et al., 2013).

The introductions of social networking and social media applications have affected the degree of exposure an adolescent will have to alcohol and other drugs.

Repeated exposure to alcohol and other drugs, as discussed in Johnston et al. (2012), is a high-risk factor in adolescents who are at risk to use alcohol and other drugs. Litt and Stock (2011) reported that 25% to 37% of older adolescents will post pictures displaying use of alcohol or other drugs. Pictures might depict adolescents laughing and having fun while using alcohol and other drugs. Other pictures might include teens engaging in high-risk behavior including sexual behavior that they otherwise might not be engaging in had they not been under the influence of other drugs.

Litt and Stock (2011) designated that postings on social media related to the use of alcohol and other drugs offer information on how to maximize the effect of the high from substance use. Litt and Stock stated that these photos falsely imply what normative older adolescent behavior should be. Litt and Stock found that individuals exposed to images of substance use on Facebook had a favorable attitude toward the use of alcohol and other drugs. CASA at Columbia (2011) found that when teens were not exposed to images of substance use on social media sites such as Facebook or MySpace, they were less likely to use alcohol and other drugs.

Attitudes and Mood

For the purposes of this study, I considered attitude as the most appropriate social implication of the study. Fisher (2010) designated mood as an affective state that shares etiology with biological and environment factors. A study considering mood would consider risk factors associated with adolescent substance abuse. Attitudes, as discussed by Fisher, are typically associated with a person's thinking process or belief system regarding an object of attention to which a person is focused on. An individual's attitude as opposed to a his or her mood, according to Fisher, may be the more permeable of the

two objects. As such, the influencing of a person's attitude toward substance use might have positive outcomes in prevention and intervention of substance use.

The premise of this study was to uncover at which point attitudes towards substance use change along a continuum. The continuum considered was grade level advancement. Consideration to sex, athletic involvement, and ethnicity were included in the study. Educational substance abuse education prevention efforts can be formulated and matched to appropriate stages of adolescent development. As specified by Witt (2010), much of adolescent behavior is linked to developmental changes that occur across this stage of development. Having substance abuse education prevention measures that are matched to stages of adolescent development would be unique to current models of educational prevention efforts.

Cognitive and Psychological Effects

The brain is an organ that is thought to regulate all human behavior. Considered by Schmitz (2000) to be the center of functionality it develops much like the rest of the human body in stages from birth to adulthood. Witt (2009) indicated that brain of an adolescent is in a constant state of growth and flux. As described in Fine and Sung (2014) during this time the neuronal cellular structure undergoes an evolutionary process. The synapses in the brain are forming connections while axons are becoming myelinated which in turns improves the connectivity between neural systems in the brain (Fine & Sung, 2014).

Until neuronal connections are fully integrated, Fine and Sung (2014) suggested that about the time the child enters adolescence the brain operates as having two different systems which are at times at odds with one another. The two systems which seem at

odds are the dopaminergic reward system and the prefrontal cortex (Fine & Sung, 2014). Whereas one system is responsible for regulating behavior through emotional and motivational rewards the other system is responsible for regulating behavior through cognitive control. As per Fine and Sung (2014) in the absence of full maturation the dopaminergic reward system has the upper hand in the decision-making process of the adolescent. Rather than make decisions based upon the risk calculations and logical possible outcomes Fine and Sung (2014) suggested that the decision-making process during adolescence is based upon what at that moment and time feels good to the adolescent. One such reward reported in Fine and Sung (2014) are social factors such as peer influence.

Fine and Sung (2014) stated that the brain grows in a back to front format in which primary systems such as vision and motor coordination develop first while areas associated with complex decision-making, impulse control, error checking and judgment mature last. Fine and Sung (2014) reported that while the brain cognitively is in this state of flux the adolescent's behavior will reflect their cognitive inability to exercise good judgment, balance risks and rewards which will affect them in the long run. Accordingly, the adolescent will engage in high risk behaviors which could result in death, pregnancy, STD and experimentation with alcohol and illegal substances. As suggested by Court (2013) although an adolescent may be keenly aware of the risk factors associated with their impulsive behavior they may be more susceptible to the quick cognitive rewards associated with impulsive behavior. A significant difference between the teenage brain and the adult brain as discussed in Fine and Sung (2014) lies in the ability of the adult

brain to engage in functions such as emotional processing, delay gratification and decision making.

When uninterrupted, cognitive growth of the adolescent brain will progress toward a mature state characterized by the ability to regulate mood, impulse control, partake in decision making, and manage stress. According to Fine and Sung (2014) environmental factors such as nutrition, toxins, and traumatic experiences will act as a disturbance and will interrupt the brain growth process. Witt (2009) implicated substance use as an environmental factor which will act as negative impact on the brain's natural growth, and development.

Volkow (2010) reported that many drugs of abuse have negative effects on the function of sleep. Sleep, according to Walker and van der Helm (2009) offers the brain an opportunity to process the information of the day and to regenerate its self. Walker and van der Helm stated that the regeneration process acts as a protective factor as the brain processes and manages day to day stressors. This important function as discussed in Walker and van der Helm will impact the functionality of the brain during waking states to attend to such functions as memory, emotional regulation and decision making. Disruptions in the sleep cycle have been linked to the clinical diagnoses of mood disorders, problems related to attention and pervasive personality disorders. As discussed in Hersen and Beidel (2012) the overlapping features of many disorders pose a challenge in the accurate diagnosis and subsequent treatments of a mood disorder. Hersen and Beidel (2012) stated that sleep disorders are commonly found as symptomatic features in such mental health disorders as major depressive disorder, post- traumatic stress disorder and substance abuse disorders. Walker and van der Helm (2009) the measurement of

sleep needs to be a treatment consideration for mental health providers and their adolescent patients. Walker and van der Helm argued that when an adolescent is void of necessary sleep, they will have difficulty with cognitive functions such as memory problems and problems related to attention. These conditions according to Walker and van der Helm could lead to a misdiagnosis of psychiatric conditions related to attention. A misdiagnosed condition can result in the use of inappropriate medicinal and psychological treatment interventions (Walker & van der Helm, 2009).

Psychological impacts are an inevitable outcome of ongoing substance use as presented by Volkow (2010). Neurobiological changes in the functionality of the brain for those with an addictive disorder can result in depression, anxiety, anger, and mixed states of mood impairment. Horigian et al. (2013) indicated that even when the individual discontinues use these neurobiological changes can create both immediate and long-term emotional chronic illnesses that require lifelong monitoring and care. Neurobiologists believe the continued use of alcohol and other drugs despite these negative consequences is typically associated with the impacts on the reward circuitry system in the brain. Court (2013) implicated that the period of adolescence is marked by an increased drive of the individual to seek immediate rewards. As per Court (2013) these attitudes and behaviors associated with seeking immediate pleasurable rewards might explain why an adolescent would engage in behaviors which typically fuel an immediate pleasurable response in the limbic system. Aside from the use of alcohol and other drugs according to Court (2013) these behaviors might include fast food and sexual activity.

Angres and Bettinardi-Angres (2008) discussed the role of the reward system of the brain as it related to addictive disorders. Found in the nucleus accumbens the reward system is usually associated with the flooding of dopamine that results from the chemical reaction of a substance as it is introduced to the brain (Angres & Bettinardi-Angres, 2008). The individual will experience this flooding of dopamine as a state of euphoria characterized by feelings of grandiosity, feeling invincible, and feelings of extreme happiness (Angres & Bettinardi-Angres, 2008). Volkow (2010) indicated that behaviorally the person experiencing a euphoric state will engage in risk-taking behaviors such as substance abuse, gambling, sexual activity and impulsive decision-making. As the flooding of the dopamine subsides the individual no longer has the produced desired effect of euphoria and will use again to achieve this effect (Volkow, 2010). During these times in which the individual is experiencing a decrease in dopamine they may become irritable or depressed and experience a compulsion to induce a state of euphoria found through substance use (Volkow, 2010). Overtime a condition of tolerance occurs in which the individual finds that the amount of a substance once used to obtain a state of euphoria shifts (Volkow, 2010).

Walker and van der Helm (2009) stated that the lack of sleep will also impact the functionality of the reward system. Walker and van der Helm (2009) indicated that as consequence of inadequate sleep individuals will have difficulty in experiencing the rewards associated with daily positive experiences. This emotional ongoing experience of dysthymia as presented by Walker and van der Helm (2009) might reinforce the positive

rewarding properties of substance abuse presented by Angres and Bettinardi-Angres (2008).

Sternberg and Sternberg (2012) describe the prefrontal cortex located in the frontal lobe as region of the brain that is responsible for higher order cognitive processes. These higher order cognitive processes include: impulse control, decision making, abstract reasoning, problem solving, and judgment. Developmentally, brain growth occurs from the back of the brain to the frontal lobe (Sternberg & Sternberg, 2012). As found in Witt (2010) until early adulthood the prefrontal cortex is largely gray matter until young adulthood. During adolescence this region of the brain has yet to be fully developed (Witt, 2010).

Horigian et al. (2011) specified that the growing brain of an adolescent is most vulnerable to the long-term effects of substance use. The use of alcohol and other drugs during adolescence will impede the growth process further and contribute to long-term comorbid mental health conditions such as anxiety and depression (Horigan et al., 2011). According to Horigan et al. comorbid mental health conditions evinced the irreversible neurobiological changes that continued substance use during adolescence can have on a person. Scheipis, Adinoff and Rao (2008) discussed the role of the prefrontal cortex as a regulatory function for a person's urges and drives. Scheipis et al. (2008) argued that without regulatory cognitive controls in place, the cognitive ability of a person to behaviorally override the dopaminergic effects of substance use becomes impaired. Behaviorally, a reduction in the cognitive ability to control a person's urges can lead to poor decision making (Volkow, 2010).

Links to cognitive impairment in the prefrontal cortex region reported by Gould (2010) are concerning with regard to perceptual distortions. Gould (2010) associated increased levels of paranoia and anger as resulting from the impacts of substance use on a person's ability to accurately decipher and perceive sensory information stimuli. Collectively this research suggested the adolescent brain may be more vulnerable to the negative consequences associated with use of alcohol and other drugs.

Athletes and Non-athletes

Veliz, Boyd and McCabe (2013) reported that 7.5 million high school students participate each year in interscholastic sports. Student athletes are viewed by others as examples of good health and well-being (Denham, 2014). According to Denham (2014) the student athlete has a higher level of respect from peers, educators, and administrators at their learning institution than those students who are not involved in an athletic program. Cowley and Czellar (2012) reported that when a student athlete has the respect of their peers, teachers and administrators that their decisions, attitudes, and behaviors of a student athlete will become influenced by how respected they feel by their peers, teachers and administrators. Kulesza, Grossbard, Kilmer, Copeland and Larimer (2014) suggested that athletes share a bond with their teammates on and off the playing field. For a student athlete their social circles off season and during season include their teammates (Kulesza et al., 2014). For those persons who feel closely connected to other people in their social circle they tend to align their decisions, attitudes and behaviors to that of their social circle (Cowley & Czellar, 2012). Cowley and Czellar (2012) reported that when a person begins to have differing opinions from those in their social circle the person will experience an internal psychological discomfort. To avoid this psychological

discomfort when an individual reports having a high affiliation with their peer group they will realign their decisions, attitudes and behaviors to be more congruent with that of their peer group (Cowley & Czellar, 2012). Pandina et al. (2005) reported that students who are involved in an athletic program at their school are surrounded by protective factors that act as barriers the use of alcohol and other substances of abuse. These protective factors included peer group affiliation, influence of coaches, skills to manage stressors and strength of attachment toward one's school (Pandina et al., 2005).

Pandina et al. (2005) explained that when an athlete uses alcohol and other drugs their frequency and substance of use is different than their non-athlete counterparts. According to Pandina et al. (2005) athletes are less likely to use cocaine, tobacco and psychedelics but are more likely to use alcohol and performance enhancing drugs. Reported differences in frequency of use are reported by Pandina et al. athletic groups of students stated in Pandina et al. will use more substances in the off season than during their season. Additionally specified by Pandian et al. during their season athletes will use more on those days in which they are not required to perform. This pattern of use creates situations in which the student athlete will binge use during the season (Johnson, Lagos & White, 2005; Pandina et al., 2005).

Zamboanga et al. (2012) suggested that among athletes the use of alcohol is not associated as a negative behavior which could hinder overall performance but is seen as a behavior that affiliates itself with other risk-taking behavior. Known for their performance driven and risk-taking behavior as an athlete Zamboanga et al. designated that the use of alcohol among athletes might be perceived as an acceptable form of risk taking behavior. Additionally, Zamboanga et al. endorsed that those athletes who indicate

no adverse side effects of alcohol use on their performance are more likely to engage in drinking games with the sole intent to achieve intoxication. This same group, as specified by Zamboango et al. is likely to engage in binge drinking, experience a false sense of courage and engage in harmful sex practices.

Pandina et al. (2005) indicated that student athletes have a social image related to their invisibleness to live up to which might perpetuate how they use as well as what they will use. Additionally, according to Padina et al. student athletes are under a more extreme amount of pressure to preform which may not be experienced by their non-athlete counter parts. Kulesza et al. (2014) substantiated that across the board use of cigarette smoking is low among high school athletes but binge drinking and other drug use is high as defined by frequency and quantity of use. Denham (2014) established that marijuana, non-medical use of prescription pills and alcohol seem to be the drugs of choice among this peer group than other drugs. As indicated by Veliz et al. (2013) more than two million high school athletes each year will have been injured so severely on the playing field that they will be prescribed pain relieving medications. As suggested by Veliz et al. (2013) this accessibility to pain medications increases the risk that students will use these medications for nonmedical purposes.

Kulesza et al. (2014) endorsed substance use to be more prevalent among high school students who are engaged in team sports. Kulesza et al. advocated that the use of substances among teammates may increase team cohesiveness inside the sporting area in an outside social milieu. Kulesza et al. suggested that students engaged in an individualized sport only have themselves to rely on for successes associated with the activity and therefore might refrain from using substances that would impact their

performance. Denham (2014) attributed this difference to the type of physical endurance needed by those engaged in team sports versus those that are engaged in individualized sports such as track and field. According to Denham (2014) more individualized physical activity is needed by the athlete when they are engaged in an individualized sport.

This body of research has suggested that student athletic involvement alone may or may not influence the decision for an individual to use alcohol and other drugs. As suggested by Cowley and Czellar (2012) issues related to conformity and social influence can influence the decision of the student athlete to use alcohol and other drugs. Documented by Allen, Chango, Szwedo, Schad and Marston (2012) peer influences during adolescence are a strong predictive indicator of behavior outcomes. Allen et al. (2012) revealed that when an adolescent has a close friend who is using substances this adolescent is more likely to also be using substances. Among the athlete community close bonds and friendships are formed among teammates (Kulesza et al., 2014). As an extension of this research regarding student athletes this study hopes to examine if as a student athlete would attitudes toward substance use changes as the student athlete progresses through high school.

Sex

Adolescence according to Musher-Eizenman, Holub and Arnett (2003) is a tumultuous period for males and females alike. Socially and emotionally as revealed by Musher-Eizenman et al. (2003) the adolescent will be in a constant state of flux. According to Berk (2010) during this marked period of time from the ages of 13 years old to 18 years old, the adolescent is expanding their social network, experiences physical changes and behaviorally works toward establishing more independence from their

family of origin. Black, Sussman, Unger, Pokhrel and Sun (2010) explained that during adolescence boys and girls find affiliations with peers that they have cultivated rather than having peer group affiliations that might have been created by their parents. Peer approval as discussed in Stagman, Schwarz and Powers (2011) becomes more important to the adolescent during this stage of development than parental approval. Stagman et al., (2011) assert that the more influential the adolescent perceives their peers to be, the more the adolescent will align their behaviors to that of their peer group. Black et al. (2010) clarified that sometimes the interface between these two forces is not always in alignment causing conflicts that before the developmental period of adolescence may not have existed.

As explained by Wormington et al. (2013) not all peer relationships offer an adolescent a positive experience. Some adolescent relationships are characterized by having few friends and feelings of exclusion by classmates resulting in feelings of peer victimization (Wormington et al., 2013). These groups of adolescents report not feeling supported by parents or teachers (Wormington et al., 2013). Wormington et al. (2013) reported that feelings of peer victimization had impacts on the decision to initiate use of alcohol or other drugs in the adolescent male population. According to Wormington et al. (2013) when a male adolescent is experiencing peer victimization the onset of use is earlier than in their female counterparts. Allen et al., (2012) have indicated that rather than risk exclusion from their peer group the adolescent will engage in behaviors such as substance use to maintain their connectivity to others. Reedy and Saunders (2013) have suggested that when the adolescent experiences alienation from their peer group that they will find a group to find connection to, even if that group engages in behaviors that are

different from their own. Reedy and Saunders (2013) further deducted that the more time an adolescent spends with those using alcohol and other drugs the more likely that individual will as well.

Witt (2010) indicated that changes in physical appearance rapidly occurred during the adolescent stage of development. As per Black et al. (2010) these physical changes in appearance can have impacts on the adolescent's identity formation that is influenced by the adolescent's perception of self and how they think others view them. Positive and negative points of view regarding physical changes can have impacts on self-esteem (Black et al., 2010).

With regard to sex differences between adolescent males and adolescent females literature has suggested that adolescent females initiate and continue to use alcohol and other drugs for different reasons than their adolescent male counterparts. The literature has suggested that initiation of substance use for the adolescent female could be influenced by issues related to physical and emotional growth. Black et al. (2010) indicated that females during adolescence are more self-conscious and dissatisfied with their physical appearance than adolescent boys. As a result, the female adolescent might engage in substance use as a method to control for the changes in their physical appearance. Stice, Presnell and Bearman (2001) suggested that female adolescent use of alcohol and other drugs might be an attempt to control the size and growth associated with their bodies and regulate hormonal fluctuations which have mood impacts. Stice et al. (2001) indicated that weight loss over the counter medications, stimulants and laxatives are all drugs of abuse for females.

Waller et al. (2006) reported that hormonal fluctuations in a growing adolescent female can enhance the onset of stress and lead to depressive symptoms. Regarding mood regulation, Stice et al. (2001) along with Waller et al. (2006) conveyed that female adolescents have reported that the use of alcohol has been advantageous in managing emotions (e.g., depression and hopelessness) associated with self-concept.

Stice et al. (2001) implicated that the development of secondary sex characteristics can lead females feeling more vulnerable to emotional difficulties that are result from them having to confront new stressors related to their outward appearances. Stice et al. (2001) indicated that physical maturation occurs more rapidly than their chronological age. In some instances, female adolescents are perceived as being older than their stated age. In turn, older males become more attracted to these young adolescent females. Stice et al. (2001) raised concern that these girls are introduced to sexual activity and substance use that is more typically associated with the activity of an older adolescent or college aged young adult.

Denham (2014) in agreement with Stice et al. (2001) linked female use of alcohol and other drugs as a coping method to control for poor self-esteem and issues related to their perception of their body image. Denham (2014) reported that female adolescents will engage in substance use with others as a measure to improve their chances of social inclusion. Black et al. (2010) agreed with findings from Denham (2014) as well as Stice et al. (2001) indicating that the initiation and continued use of substance use acts as a measure to be perceived as more attractive to their peer group.

Like their adolescent female counter parts, male adolescents will use alcohol and other drugs as a method of social connection to their peers (Black et al. 2010; Denham

2014; Musher-Eizenman et al. 2003; Stice et al. 2001; & Tyler et al. 2006). However, the differential laying between these two adolescent groups seemed to occur in the frequency and quantity of use as methods to enhance social status. Denham (2014) suggested that male adolescent substance use may have a competitive component. Black et al. (2010) displayed this to be especially true among males who held the belief that alcohol use will lead to a more positive public perception of them.

Matsen et al. (2009) evinced that binge drinking (the use of four to five drinks at a time) is a more common occurrence in males than in females. An interesting finding presented by Black et al. (2010) is that the perception of how the use of alcohol and other drugs among males is closely tied to their perception of how popular they are with their peers. Male adolescents as cited by Tyler et al. (2006) will have a higher frequency of alcohol use than adolescent females. Faden (2006) implicated that the initiation of alcohol among male adolescents will occur earlier than their adolescent female counterparts. When queried, male adolescents indicated that they thought that the use of marijuana made them less popular, whereas the use of alcohol made them more popular (Black et al., 2010). However, there is indication that this belief changed as the male adolescent chronologically became older (Black et al., 2010). Miech et al. (2015) reported findings in the 2014 Monitoring the Futures survey that as the male adolescent ages, their use of marijuana increases.

Volkow (2010) presented findings which indicated that cognitive controls regarding the ability for a person to control their inhibitions will become lowered as they use alcohol or other substances regardless of age. Faden (2006) indicated that this lowering of inhibitions sets the stage for the adolescent to engage in high risk behaviors

that they might not normally engage in. Developmentally as suggested in Kaigang et al. (2013) and by Stagman et al., (2011) a rite of passage enjoyed by the adolescent is the obtaining of a driver's license. Not only does a driver's license offer the adolescent increased autonomy from their parents, but it also provides a place a private local for that adolescent to engage in the use of alcohol and other drugs. Male adolescents as reported in Kaigang et al. (2013) are especially more likely to drive while under the influence of alcohol and other drugs than their female counter parts. According to Witt (2009) the use of alcohol and other drugs significantly impairs motor functioning necessary to safely operate a motor vehicle. As per the DAWN report (SAMHSA, 2010) emergency department admissions involving motor vehicle related accidents associated with the use of alcohol and other drugs continues to be on the rise among individual who are under the age of 20 years old.

This body of research regarding sex has suggested that an individual's sex can influence a person's attitude regarding the use of alcohol and other substances. As an extension of this research this study hoped to examine if attitudes towards substance use changes by sex as the adolescent progresses through high school. According to Faden (2006) whether an adolescent is female or male chronologically the earlier they engage in substance use the more likely they are to engage in high risk behavior, experience issues related to loss of control and the building of tolerance. Continued use despite these types of consequences as reported in Volkow (2010) could lead to the onset of addiction. The implementation of sex specific educational prevention programs in high school might prove valuable in addressing attitudes towards substance use which are sex specific.

Ethnicity

The existence of ethnicity as a covariate in substance use research has suggested that there is a correlation between use and ethnicity. As discussed in Gibbons et al. (2010) the Black adolescent is bombarded with media exposure involving the use of alcohol and other drugs. Black adolescents are exposed to more incidences of substance use in their music, movies, advertisements and product placements than their White adolescent peers (Gibbons et al., 2010). Longitudinal repetitive studies such as the MTF (Johnston et al. 2012), National Youth Survey (SAMHSA, 2013), CASA Columbia (2011) all indicated that White adolescents are more likely to use alcohol and other drugs sooner than other ethnic groups. This ethnic group is followed by Hispanics and then by the Black community. According to Denham (2014) when a Black student is an athlete there exists even more statistical variance between the Black student and other ethnic groups regarding substance use during high school.

Denham (2014) attributed this finding to sociological effects regarding social mobility. As discussed in Denham (2014) the Black student might hold cognitions regarding substance use as an activity which would negatively influence their chances for upward social mobility. Gibbons et al. (2010) suggested that Black students might be less vulnerable to the effects of peer pressure than their Caucasian counterparts. As suggested by Gibbons et al. (2010) the Black adolescent could possess more interpersonal protective factors than other ethnic groups. These might include but not be limited to cognitions regarding the ability to trust others and a tendency to act more independently of their peers.

Across ethnicity, Kajgang et al. (2013) found that Latinos are less likely to drive while intoxicated then their Caucasian counterparts. As reported in the Youth Risk Behavior Surveillance Survey (YRBSS, CDC, 2011), across the United States 23.8% of female Caucasian adolescents will ride in a car with a driver who has been using alcohol. As found in the YRBSS (CDC, 2011) ethnic differences occur in this behavior. Of all Hispanic adolescent females surveyed 30.7% reported having driven in a car with a driver who had been under the influence of alcohol. Black female adolescents were the lowest reported population (22.8%) to ride in a car when a driver was under the influence of alcohol (CDC, 201).

In response to treatment outcomes, Strada, Donahue and Lefforge (2006) found that most studies which reviewed treatment outcomes addressed those needs of the adult population. Strada et al. (2006) found a sample size of 18 studies from 1980 -2004 (n = 18) which spoke to the treatment outcomes of the adolescent population. Of those studies identified according to Strada et al. (2006) although ethnicity was identified, Caucasians were identified as the ethnic group most likely to treatment complete.

This body of research regarding ethnicity has suggested that one's ethnic background may have influences on attitudes toward the use of substance abuse. As an extension of this research this study hoped to examine if attitudes towards substance use varied across ethnicity as the adolescent progresses through high school. As longitudinal repetitive studies have documented substance use will vary with ethnicity (MTF Johnston et al. 2012; SAMHSA 2013; CASA Columbia 2011). Despite these findings outcome studies as presented in Stada et al. (2006) indicated that treatment initiatives continue to provide standard level of treatment options implying a one-size-fits all mentality. The

implementation of ethnic specific education prevention programs might prove valuable in addressing attitudes towards substance use which are ethnic specific.

Deterrent and Prevention Efforts

Pandina et al. (2005) defined the purpose of school-based initiatives as programs designed to deter initial use and provide intervention strategies for students who are engaged in substance use. As presented by Johnston et al. (2012) substance abuse is a health problem that has far reaching effects on families and communities as well as being a leading contributor to morbidity and high mortality rates. Synder et al. (2010) identified the successfulness of educational programs introduced at the elementary level that have been found to reduce the incidence future substance abuse. Naylor et al. (2001) described drug testing programs in schools as methods to deter students from using alcohol and other drugs.

Naylor et al. (2001) found that despite the efforts of educational programs geared toward intervention and student awareness of sanctions for substance abuse, high school athletes continued to report breaking rules regarding substance abuse in their school. As suggested in Naylor et al. (2001) high school athletes adopt attitudes that indicated that they are resistive to the harmful effects of substance use. Naylor et al. (2001) found that students involved in high school athletic programs are more selective in their choice of substance use than their non-athlete counter parts. Naylor et al. (2001) reported that students involved in athletic programs tended to avoid the use of less socially acceptable drugs such as cocaine and psychedelics than their non-athlete counter parts.

According to the National State Board of Education (NASBE as retrieved 2015) the existing mandate in the state of Missouri as part of The Missouri School Improvement

Program, which includes school accreditation standards (2001), requires that elementary schools provide comprehensive health education that meets the state's academic standards. The mandate stipulates that Junior high schools and middle schools must provide health (including tobacco, alcohol and other drug abuse prevention education, and HIV/AIDS prevention education) and safety education" for a minimum of 1,500 minutes each year. As the student progresses through high school these requirements decrease significantly. High schoolers in the state of Missouri as a graduation requirement are required to complete and earn .5 credits in health education to graduate. For these students this is the equivalent of one class for a nine-week semester. However, students are not required to complete a course per se in health education for high school graduation. This requirement can be met if the student is a part of an athletic program. As the mandate reads many high school students may be missing out on educational opportunities to learn about the effects of substance use on their growth and development.

Widespread media efforts are being made to reach the general population regarding the effects of substance use. Results from the National Survey on Drug Use and Health (NSDUH, SAMHSA, 2013) concluded that in 2013, 72.6 percent of youths aged 12 to 17 reported having seen or heard drug or alcohol prevention messages in the past year from sources outside of school, such as from posters or pamphlets, on the radio, or on television. Musher-Eizenman, Holub, and Arnett (2003) conveyed that attempts at prevention are failing. One explanation for their failures might lay in research by Scull, Kupersmidt and Eraquinn (2014). Scull et al. (2014) indicated that media avenues of marketing for substances may allude to the ill effects of substance use but portray a different message. Most media messages regarding the harmful effects of substance abuse

first begin with attractive people appearing to be enjoying themselves. The concern presented in Scull et al. (2014) is that impressionable adolescents could be drawn into the positive effects of alcohol and other drugs while minimizing the negative impacts. According to Suitor, Powers and Brown (2004) students who endorsed the use of alcohol and other drugs while attending high school felt as though their use created a more popular social climate for themselves among their peers.

The best efforts of intervention according to Scull et al. (2014) have to do with parental behavior. As discussed by Scull et al. (2014) adolescents are less likely to report interest or intention to use alcohol and other drugs when parents do not use alcohol or other drugs. CASA Columbia (2011) indicated that the degree to which parents were involved in the adolescent's day to day activities also acts as an intervention measure. As found by CASA Columbia (2011) when adolescents had a negative view point regarding substance use by their peers they were less likely to use alcohol and other drugs themselves. The opposite has been founded to be true as well. According to Scull et al. (2014) when an adolescent is concerned about how their peers will perceive their use, they are less likely to use alcohol and other drugs. This concern regarding what other's think of them according to Berk (2010) is characteristic feature of adolescence.

Summary

Findings in the literature suggested that attitudes toward substance use are created over time. It would seem as supported by the literature that factors such as peer influences, sex and ethnicity have some effect over attitudes toward substance use. Covariates such as athlete status, sex, ethnicity and grade level were considered in the current study. An alarming finding reported in Pandina et al. (2005) is that trends

regarding exposure to substances and their use among adolescents are not only becoming a norm but are becoming a rite of passage. Indicative within the literature is the assertion that a portion of students who are currently using substances have previously held negative attitudes toward substance use and that at some point in time these attitudes have changed (Pandina et al., 2005). This change is evinced in Johnston et al. (2012) regarding the changes in the pattern of use from eighth graders to 12th graders. The synthesis of the literature leaned toward the suggestion that attitudes by an adolescent about substance use are an imperative feature in the decision-making process to use alcohol and other drugs.

Overall my study was unique from other studies regarding substance using attitudes with consideration to sex, grade level, ethnicity and athletic status. First, I examined the point in time attitude towards substance changed use across grade level as the adolescent progressed through Grades ninth, 10th, 11th and 12th grade. Secondly, I examined if athletic status impacted one's attitude toward substance use as the student athlete progressed through high school. Lastly, I added covariates of ethnicity and sex to the study. Chapter 3 described the best method to evaluate the differences in attitudes toward substance use between the Grades ninth, 10th, 11th, and 12th grade levels among high student athletes and non-athletes with consideration to sex and ethnicity.

Chapter 3: Methodology

Introduction

In this study, I investigated at what point during the period of adolescence the changes in attitudes toward substance use might occur among adolescent high school students between the ninth, 10th, 11th, and 12th grade levels. I examined whether differences in attitudes towards substance use differed among high school athletes and non-athletes. Further, I examined whether these differences in attitudes towards substance use differed by sex and ethnicity.

Chapter 3 includes details regarding the setting, sample size, the survey that was used, data collection procedures, and data analysis. I also explain human subjects' protection and data confidentiality of procedures.

Research Design

I employed quantitative research methods. A cross-sectional study design was used in this study to examine the differences in attitudes toward substance use that might occur among adolescent high school students between the ninth, 10th, 11th, and 12th grade levels. This approach allowed data collection to be obtained in one point of time from each of the grade levels. According to Creswell (2009), quantitative research methods are useful in research that uses survey data and comparison groups. I collected data through survey methods and compared attitudes among high school students between the ninth, 10th, 11th, and 12th grade levels. Creswell indicated that survey research methods are appropriate when assessing attitudes or opinions among a population regarding trends. In a quantitative study regarding attitudes and substance abuse among high school students, the theory of social influence and affiliation indicated that attitudes regarding substance

use could change as the adolescent progresses through high school. Both research questions and hypotheses follow:

1. Do attitudes regarding substance use in high school students differ between the ninth, 10th, 11th, and 12th grade levels?

$H_1$1: Attitudes are different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$1: Attitudes are not different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

2. Do attitudes regarding substance use differ for high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels?

$H_1$2: Attitudes are different regarding substance use in high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels.

$H_0$2: Attitudes are not different regarding substance use in athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels.

3. Do attitudes regarding substance use differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels?

$H_1$3: Attitudes toward substance use will differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$3: Attitudes toward substance use will not differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels.

4. Do attitudes regarding substance use differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels?

$H_1$4: Attitudes toward substance use will differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$4: Attitudes toward substance use will not differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels.

Setting and Sample

Population

In the 2012-2013 academic school years there were 1,020 high schools in Missouri, made up of 832 public schools and 188 private schools (National Center for Education Statistics, 2017). Missouri ranked as the 20th state in terms of student enrollment and 15th in terms of total number of schools (National Center for Education Statistics, 2017). Of those adolescents, there were a total of 313,418 students who are reportedly affiliated with the Missouri State Activities Association (2015). All adolescent students in ninth, 10th, 11th, and 12th grades were eligible to participate in this study. According to the United States Census Bureau (2013), Kansas City had a population of 467,007, making it the largest city in the state of Missouri. As documented by U.S. Department of Education (2015), of these accounted for citizens, 25,734 were students who attended Kansas City's public and private high schools. Kansas City, Missouri was home to 62 public and private high schools (National Center for Education Statistics, 2017). Of the total number of public and private high schools encompassing the 2011-2012 school year, 20 of the high schools serving the Kansas City, Missouri populace were private high schools (National Center for Education Statistics, 2017). The student enrollment in the private sector as of 2011 -2012 school year included 5,359 students

(National Center for Education Statistics, 2017). Nine of these schools were classified as religiously oriented.

The location for the study was chosen based upon the assumption that students who attend a religious-affiliated high school might be more likely to have a positive attitude toward substance use by the time they reach the 12th grade; thereby, they might be a more progressive example of when attitudes towards substance use change over time in high school students. As discussed in Suitor et al. (2004), parents who send their children to a religiously-affiliated private school tend to do so under the premise that their children will be less susceptible to a negative social climate that endorses the use of alcohol and other drugs. However, according to Suitor et al., this is not the case. Suitor et al. argued that this parental belief regarding the protective feature of religiously-affiliated private schools is a falsely belief. Students in grade levels ninth thru 12th who attend religiously-affiliated private schools report higher incidences of substance use than their public school counterparts (Suitor et al., 2004). A convenience sample from Midwestern Catholic Diocesan schools was obtained. Students who attended the ninth grade through 12th grade levels were eligible to participate in the study.

Sample Size

To calculate sample size, GPower statistical analyses A priori test was used to determine the number of participants needed for the main research question. Based on an ANOVA, assuming a margin of error at .05 with a confidence level of 95% and an effect size at .25 (medium effect size), a total of 251 study participants was needed.

Data Collection

Discussions were held with the superintendent of education for the Catholic diocese in a mid-sized Midwestern town. Permission was granted by the Walden University Institutional Review Board (IRB) to guarantee that the study complied with federal law and university policies. The process of data collection began. There are approximately three Catholic high schools that are supported by the Catholic diocese in this locale that were invited to participate in this study through a letter to the principal. The letter explained the significance of the study, the use of classroom time, and limits of confidentiality.

Informed consent forms were provided one time to parents via a weekly school messenger that is distributed electronically by the school. In this form, I explained the nature of study including the purpose of the study as well as impacts for social change. Parents were asked for their consent for their child's participation. Parents giving consent for their child's participation in the study were asked to forward a link to the study to their child's school e-mail address. This process provided informed consent. Parents who did not wish for their child to participate in the study were asked to send a separate link to the filler activity provided by the school to be completed on the day of the survey. In this process, I hoped to mitigate issues related to privacy and bullying. This process was indicated on the parent consent form. This controlled for continued anonymity of the study as none of the school personnel was privy to information linking any one student to the study.

The designated day of the study was predetermined in collaboration with the school principal and me. Students on this day were gathered by grade in the school

auditorium. Data collection took place during the homeroom period that is more commonly referred to as advisory. This time was chosen to not interrupt the students' regularly scheduled activities. All students were asked to proceed to the school auditorium with their IPADs after roll call was taken in their homeroom. During the homeroom period, students were present for 30 minutes, roll call was taken, and then students were permitted to use the time to read or engage in another quiet activity. Students were then signaled via the sound of a bell to proceed to their next class. The superintendent of the school requested that the students gather by grade in the auditorium during the normal homeroom period.

Conducting the study in an assembly fashion was implemented as a measure to help mitigate issues related to intrusion by others not involved in the study and ensure that only I was collecting the data and answering any questions relative to the nature of the study. Also, this step helped ensure that only I was answering any questions related to the administration of the study (e.g., if a student were to ask a question related to how to answer a question on the survey). Once the students were gathered in the auditorium, they were asked to spread themselves out with at least one chair between themselves and the student sitting next to them. This step was placed as a preventative measure against bullying and to ensure privacy. At that time, students were introduced to the study and the nature as well as the intent of the study was explained. My contact information was provided should questions arise regarding the nature of the study. Prior to administering the questionnaire, students were asked to electronically sign an assent form providing their permission and acknowledging their participation of the study. The electronic consent acted as a gateway to the study. For students who provided assent by clicking the

"I consent" tab, they were directed to the study, which I password protected. For those who clicked the "I do not consent" tab, they were directed to the filler activity provided by the school, which was also password protected. Once there were no further questions regarding the nature of the study, two different passwords were provided for students via overhead projector to help avoid confusion. One password allowed entry into the study itself, while the other allowed entry into the filler activity. Only the participating students knew which activity they were partaking in. Passwords were changed immediately following the completion of data collection to ensure continued privacy and avoidance of tampering with the survey. I am currently holding a paper copy of the assent form to comply with the American Psychological Association ethical codes of conduct regarding research that mandates that data collection procedures are replicable for future research.

I provided a one-time online administration of 14 survey questions. Each question was designated to one page of the survey. Students were asked to turn the page by clicking the "submit" button when they had answered the question. Study participants were assured that they could withdraw from the study at any point in time by simply clicking the "withdrawal" button found on the bottom of the page. The first pages of the survey asked for identifying information: grade, gender (male/female), if they were involved in a school athletic program, and their ethnicity (forced choice: African American, Asian American, Hispanic American, Native American, Caucasian, or mixed race). These were study covariates.

The following group of 10 questions contained the items that addressed attitudes towards substance use from the SASSI-A2. Consent had been obtained by the publisher to use these items found on the SASSI-A2. Following the instructions for administration

on the SASSI A-2, students were asked to answer *true* or *false* to the questions after a brief explanation that there was no right or wrong answer and that the questions were opinion-based. The students were encouraged to provide their best answer and to not over think the questions. The survey completion estimated by the publisher is no more than 10 -15 minutes to complete as to not interfere in the students' educational learning practices. Some students required a longer allotted amount of time to complete the questionnaire. Accommodations were offered as requested. Questions concerning the elements in the questionnaire were not answered so as not to guide the student's response. I was present throughout the entire testing situation for each grade level and to collect the questionnaires after the allotted time. Because of my availability and the student body, the study was scheduled to take place over a 2-week period of time. Ninth and 10th grades were administered the study on one week and 11th and 12th grades the subsequent week. I am currently holding a paper copy of the assent form to comply with the American Psychological Association ethical codes of conduct regarding research that mandates that data collection procedures are replicable for future research.

Instruments and Measures

I used the Substance Abuse Subtle Screening Inventory-Adolescents 2 (Lazowski & Miller, 2001, SASSI-A2) instrument. The SASSI-A2 is a 72-item true/false screening tool designed to separate adolescents who have a high probability of having a moderate to severe substance use disorder and those having a low probability of having a moderate to severe substance use disorder. The reading level of the student necessary for the completion of the SASSI-A2 is 4.4 (Lazowski & Miller, 2001).

The SASSI's unique contribution has been to detect substance abuse problems even when the respondent denies or attempts to conceal such problems (Lazowski & Miller, 2001). In addition to the overall classification, subscale scores are Face Valid Alcohol, Face Valid Other Drugs, Family-Friends Risk, Attitudes, Symptoms, Obvious Attributes, Subtle Attributes, Defensiveness, Correctional, and Supplemental Addiction Measure. There is a validity check to detect random responding, and a Secondary Classification scale used to distinguish between substance abuse and substance dependence.

The instrument is normed on a population of 12- to 18-year-old, male and female (SASSI institute, 2001). The sample size (n = 2326) was collected from 48 treatment and correctional programs and five school systems (SASSI institute, 2001). The instrument does not require administration from a trained professional and can be completed in 15 minutes (SASSI institute, 2001). As presented by Lazowski and Miller (2001), the SASSI-A2 was found to produce reliable results using both test-retest and internal consistency methodologies. Test-retest stability coefficients for the scales used in SASSI-A2 scoring ranged from .81 to .92 (Lazowski & Miller, 2001). The overall alpha coefficient was .75, with alpha coefficients on the individual scales used in the rules ranging from .63 to .95 (Lazowski & Miller, 2001).

The write-in proportion of the SASSI-A2 asks the student in a forced choice format to provide information regarding their demographic profile such as sex and ethnicity. Students were asked to add their grade level and in a forced choice format of yes or no to indicate their athletic involvement. Data were collected via electronic survey

research methods. The site of the data collection took place in the school setting of the student.

Demographics

The demographic section of the electronic survey consisted of grade level, activity involvement, sex, and ethnicity. Grade level consisted of the student identifying themselves in a forced choice format of freshman, sophomore, junior, or senior. Activity involvements were also a forced choice format. Students were asked to answer yes or no to a question regarding if they are involved in a sport through their school. The sex choice consisted of male or female. For this study, the demographics variables collected served as independent variables.

Attitudes towards Substance Use

Students were asked to answer those items from the SASSI-A2 (Lazowski & Miller, 2001) that is designated to address attitudes towards substance use in a one-time session. The instrument does not require administration from a trained professional and can be completed in 15 minutes (SASSI institute, 2001). Clinically, the SASSI-A2 has been found to be a viable tool to decipher the possible existence of a substance use disorder designed for adolescents (Lazowski & Miller, 2001). To assess attitudes towards substance use, I used true/false items found on the SASSI-A2 that together comprise the Attitude Rating Scale (ATT). As per discussion with the publishers of SASSI-A2, permission had been granted to use items from the SASSI-A2 that contributed to the nature of the study.

Because of the nature of the current study, subscale items on the SASSI-A2 ATT subscale are deemed appropriate and only these items were used. These items in keeping

consistent with the normative data of the SASSI -A2 will utilize a true/false forced choice format. As found in the *SASSI Manual* scoring and administration section four or more items selected as *true* on the ATT subscale by the study participant would indicate that the study participant endorsed a positive attitude toward substance use (Lazowski & Miller, 2001). The internal consistency and stability coefficient for the Attitude Scale was found to be .76 (n = 2326) (Lazowski & Miller, 2001). On a test-retest trial (n = 70) internal consistency and stability coefficient for the Attitude Scale was found to be .92 (Lazowski & Miller, 2001).

Data Analysis

I reviewed the surveys for completion and entered completed data from the surveys into SPSS for statistical analysis. The data was cleaned by checking for missing responses and checked for anomalies in distribution. Data was examined to ensure that only individuals aged 13 to 18 were included in analysis. Once the data set had been cleaned, descriptive analysis such as means, ranges and percentages were run. Numbers of valid participants were used for the demographic variables of grade, athleticism, sex and ethnicity.

ANOVA was used to assess for differences between grade, sex, and athlete and non-athlete (independent variables) and attitude (dependent variable) towards the use of alcohol. Grade, sex, and athletic status were entered as continuous variables. A Tukey post hoc test was conducted if a significant result was achieved to determine if grade, sex and athleticism are significantly different from another. A second series of ANOVA was used to assess for differences between ethnicity (independent variable) and attitudes (dependent variable) towards use of alcohol and other drugs.

Threats to Validity

Threats to external validity were assumed if the results were over generalized to a population outside of the study parameters. Since the study was applicable to the private school sector in the Midwest the findings may not be applicable to educational institutions in a variety of regions. As the study was conducted in the Midwest portion of the United States, the results of the study should not be overgeneralized to other regions of the United States. The study was conducted in the Midwest portion of the United States and thereby the results of the study should not be considered applicable to other non-Western cultures. The Hawthorne effect as described in Berthelot, Le Goff and Maugars (2011) is a situational threat to validity when the participants know that they are participating in a research study. To avoid this effect, student participants did not have prior knowledge of when the survey was to be administered.

To minimize the threat to internal validity an appropriate effect size was determined to increase confidence that a relationship exists between the independent and dependent variables. To further control for a threat to internal validity, I administered the survey and stayed present while the survey was completed by participants in the school setting. The survey completion was estimated to take no more than thirty minutes to completion to avoid maturation or fatigue as a threat to internal validity. Students who did not wish to assent to the study could impact the sample size of the study and thus impact the internal validity of the study. The SASSI-A2 is a 72-item questionnaire; interwoven into the 72 items are 10 items which collectively make up the scale which purports to identify attitudes towards substance use (ATT scale) (Lazowski & Miller,

2001). Therefore, 62 of the items on the scale will not be utilized for the purposes of this study.

Protections of Participants Rights

I submitted an application to the Walden University's Internal Review Board (IRB) to guarantee that the study complied with federal law and university policies. This process ensured that my study would cause minimal harm and that the study participants would be shown respect and not coerced into participating in the study. My study adhered to the ethical parameters regarding research with a minor as outlined by the American Psychological Association written parental consent and written student assent was obtained prior to the onset of the study.

Once my study had been granted approval, prior to the administration of the questionnaire, parent consent forms were distributed by the school via parent/student messenger email which is sent on a weekly basis. The consent was considered implied. If parents were willing to provide consent for their student to partake in the study, they were asked to forward a link to the study to their student's school e-mail address. If parents chose not to provide consent for this study, they were asked to forward a separate link to their student's school e-mail address. This separate link allowed the student to complete a filler activity provided by the school on the day of the study. This step hoped to mitigate issues related to privacy for all students. Assent forms were completed electronically on the day of the study. Additionally, the researcher's contact information was provided to address any questions or concerns.

The objective of the SASSI-A2 is to identify those individuals who have a probability of a substance use disorder (Lazowski & Miller, 2001). Parents and

participants were informed that although this information is nonetheless important, for the purposes of this study this information will not be a part of the data collection. Parents and participants were assured that the nature of the study is to survey attitudes towards substance use among high school students between the ninth, 10th, 11th, and 12th grade levels.

Any individual who did not wish to participate in the study was asked to complete a filler activity as provided by the school. In cases were the student would be absent on the day of data collection, if the student so wished to, a scheduled special follow-up data collection day was offered. Any student who wished to discontinue or withdrawal from the study would not be penalized for doing so. In these instances, students were asked not to assist any of the students who wished to participate. Should the study raise emotional upset for any one individual (student or parent) I provided a contact for a local community mental health center was provided on the consent form. Any issues regarding the study which arose in which the student or the parent would want to speak to me privately, I provided my contact information on both the consent and assent forms.

Privacy was maintained during the study by asking students to sit with a seat separating them from the student next to them to avoid others from seeing their responses. Privacy was further protected by having one question on one page of the survey. Once students selected the "submit" button on the survey, the page automatically turned to the next question until all 10 questions were answered. I informed students that that their participation in the study was voluntary and if they did not wish to partake in the study that they should indicate this on the assent form. Students who chose to not be

part of the research remained present at the assembly during the data collection. These students were provided a filler activity or given the option to complete other work on their IPAD until dismissal to their next class. The uniform dismissal of students protected the privacy of those study participants who elected to not partake in the study.

The data for the study will be stored in a file that will be password protected on a computer and on a flash drive. The completed survey did not have any identifying information linked to a specific individual. I was not able to determine who answered the survey. The storage of a hard copy of the survey form complies with the American Psychological Association ethical codes of conduct which mandates that data collection from research is stored in a locked secure location for a period of five years post publication of this study.

Upon the introduction into the on-line survey, the participants were informed that the study was completely confidential and that at no time will the information be linked to any one individual. It was explained to the participants that the data will not be shared with anyone. It was explained to the participants that I do not have any knowledge of the individual participants. For students who did not have access to an IPAD, an electronic device in the form of a Laptop was provided by the school. Upon completion of the survey, the class was thanked for their time and offered a brief description of how the data will be used. The outcome of the study will be shared with school administration, parents and students upon request.

Summary

The goal of my study is to examine how attitudes towards substance use differ over time between the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels in high school students.

Covariate consideration included grade level, sex, athletic status and ethnicity. Use of the quantitative research study yielded the best possible answers from the subjects used. It is hoped that the findings from my study will help determine the points in time in which attitudes toward substance use begin to change among the adolescent population. In determining this, prevention and intervention measures could be targeted to specific grade level, sex, athletic status and ethnicity as they relate to the use of alcohol and other drugs. Chapter 4 provides a description of the study results.

Chapter 4: Results

Introduction

The purpose of this study was to isolate when differences in attitudes toward substance use occur between the ninth, 10th, 11th, and 12th grade levels among high school athletes and non-athletes with consideration to sex and ethnicity. Differences in gender and ethnicity were also examined. The central research question was whether attitudes regarding substance use differ between the ninth, 10th, 11th, and 12th grade levels in high school students. There were three sub-research questions of interest in this study:

1. Do attitudes regarding substance use in high school students differ between the ninth, 10th, 11th, and 12th grade levels?

$H_1$1: Attitudes are different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$1: Attitudes are not different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

2. Do attitudes regarding substance use differ for high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels?

$H_1$2: Attitudes are different regarding substance use in high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels.

$H_0$2: Attitudes are not different regarding substance use in athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels.

3. Do attitudes regarding substance use differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels?

$H_1$3: Attitudes toward substance use will differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$3: Attitudes toward substance use will not differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels.

4. Do attitudes regarding substance use differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels?

$H_1$4: Attitudes toward substance use will differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels.

$H_0$4: Attitudes toward substance use will not differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels.

In this chapter, demographics of study participants are summarized by discussing grade, gender, age, and ethnic affiliation. Also discussed is the data collection and data cleaning process where details are given on the target population and the questionnaire that was used for the study. Finally, a written presentation of the results and summary complete the chapter.

Demographics

The study participants were comprised of adolescent males and females who attended a Midwestern Catholic Diocesan high school. Students who attended grades ninth through 12th grade were eligible to participate in the study. These students were between the ages of 13-years-old and 18-years-old. A total of 357 survey responses were collected from students attending Catholic diocesan high school in a midsized Midwestern town. Of these students surveyed, approximately 343 students of 917 students attending Catholic diocesan schools in a midsized Midwestern town agreed to

participate (37% response rate). Forty-five students were found to be duplicate participants, and their first survey responses were subsequently omitted from the final data collection resulting in a student participant number of 298 students (32% response rate). I made this decision in an effort to adhere to ethical standards regarding participant rights and as a measure to protect confidentiality. For those initial responses by this group of study participants to be included in the data, students would have had to identify themselves to me and possibly to faculty and peers as having already completed the survey. It was determined that their participants rights would be protected if their initial responses were omitted from the final data collection rather than risk a violation of participant rights and confidentiality. As study participants, students were given the option to exit the study at any point in time. Of those 298 students who agreed to participate, 22 students of varying grades, sex, ethnic background, and athletic status opted out of the study prior to survey study completion (7%). I found through review of the data collected that these participants started the survey but did not complete the all of the survey items from start to finish. One student opted to complete the filler activity in lieu of participation in the survey study. A final total of 276 student responses were eligible for data analysis.

A cross-sectional study design was used in this study to examine the differences in attitudes toward substance use that might occur among adolescent high school students who are in the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels. Because he subethnic groups that are included within the independent variable ethnicity, separate demographic tables were used. Table 1 shows the demographics of the 276 student responses that were eligible for data analysis. Of the 276 student participants 18% (n = 51) identified themselves as being

in the ninth grade level. Twenty-one percent (*n* = 59) identified themselves as being in the 10th grade level, while 26% (*n* = 74) identified themselves as being in the 11th grade level. A final 34% (*n* = 92) identified themselves as being in the 12th grade level. Of these 276 student participants 48% (*n*=128) of the student participants identified themselves as male, while 56% (*n*=148) of the student participants identified themselves as female. There were 231 (87%) student participants who met the inclusion criteria to consider themselves an athlete at their school. Forty-five (16%) of the students surveyed did not classify themselves as student athletes. Table 2 shows the demographics of the 276 student study participants by ethnicity and grade. Ethnically, 276 students who participated in the survey 83 % (*n* = 228) classified themselves as White; 7% (*n* =19) classified themselves as Black; 1% (*n* = 3) classified themselves as Asian, 6% (*n* =17) classified themselves as Hispanic, and 3% (*n* =9) classified themselves as other.

Table 1

Demographics of Participants in the Study by Grade, Sex and Athletic status (n = 276)

Grade Level	Total by grade	Male	Female	Athlete	Non-athlete
9th	51	22	29	11	7
10th	59	23	36	49	10
11th	74	38	36	58	16
12th	92	45	47	80	12

Table 2

Demographics of Participants by Grade and Ethnicity (n = 276)

Grade Level	Caucasian	Black	Asian	Hispanic	Other
9th	46	2	0	1	2
10th	47	4	0	4	4
11th	62	6	0	5	1
12th	73	7	3	7	2

Data Collection

A letter of cooperation was sent to and signed by the superintendent of Midwestern Catholic Diocesan high schools. Students who attended grades ninth through 12th grade were eligible to participate in the study. These students were between the ages of 13-years-old and 18-years-old. A research agreement was signed between the publishers of the SASSI- A2, which enabled me to collect data regarding attitudes towards substance use in high school students using the ATT scale from the SASSI-A2. The objective of the SASSI-A2 is to identify those individuals who have a probability of a substance use disorder. Parents and participants were informed that although this information is important, for the purposes of this study, this information was not a part of the data collection. Parents and participants were assured that the nature of the study was to survey attitudes towards substance use in ninth, 10th, 11th, and 12th grade high school students. The SASSI-A2 is a 72-item questionnaire; interwoven into the 72 items are 10 items that collectively make up the scale that purports to identify attitudes towards substance use (ATT scale). These items, in conjunction with four demographic questions, were encompassed together to create an electronic survey to survey attitudes towards substance use in ninth, 10th, 11th, and 12th grade high schools.

The parent consent forms were distributed to the parents of students electronically. Informed consent was provided by the parents as they provided the electronic link to the survey via their child's school e-mail address. The assent form, and for those who were 18-years-old or 19-years-old the adult consent form were also distributed electronically so that the students would be able to read about the study and decide as to whether they wanted to participate. On the day of collection, informed

consent and assent forms were reviewed, and the electronic survey was administered to those who agreed. The survey consisted of four demographics questions and 10 statements related to beliefs regarding the use of alcohol and illicit substances. The survey was rated on a true/false forced choice format.

Results

ANOVA was used to assess for differences between grade, sex, and athlete and nonathlete (independent variables) on attitudes (dependent variable) towards the use of alcohol. Grade, sex, and athletic status were entered as categorical variables. A Tukey post hoc test was conducted to see if a significant result was achieved to determine if grade, sex, and athleticism are significantly different from another. A second series of ANOVA was used to assess for differences between ethnicity (independent variable) on attitudes (dependent variable) towards the use of alcohol and other drugs.

Grade

Research question number 1: Do attitudes regarding substance use in high school students differ between the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels?

Table 3 indicates the means of each frequency of attitudes towards substance use and how they compared between the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels. The means between the groups were similar for each of the respective categories. A one-way ANOVA was conducted to compare the effect of grade on attitudes towards substance use. Levene's test for homogeneity of variance with a statistical significance value of .001 indicated that variance for means of frequency of attitudes towards substance use by grade do not differ significantly. In Levene's test for homogeneity, I found that the

distribution for measures of normality were equal and without skewness or kurtosis. As a result, the ANOVA analysis was considered valid.

Table 4 shows that the independent variable of grade evinced significance. Findings between grade and attitudes towards substance abuse evinced a statistically significant effect of grade on the dependent variable of attitudes towards substance use at the $p < 0.001$ level [$F(3, 272) = 6.933$ $p = .001$].

Table 3

Means of Frequency of Attitudes Towards Substance Use by Grade

Grade Level	*N*	Mean	Std. Deviation
9th	51	1.78	.415
10th	59	1.61	.492
11th	74	1.47	.503
12th	92	1.42	.497
Total	276	1.54	.499

In review of Table 4, when post hoc test (Tukey) was conducted, I found a statistically significant finding between the means in Grades 9 (freshman), 11 (junior), and 12 (senior) at the $p < 0.05$ level. According to these data, juniors ($M = 1.47$) and seniors ($M = 1.42$) had a more positive or favorable attitude towards substance use that was significantly greater than freshman ($M = 1.78$). Students in 11th grade (junior) and 12th grade (senior) had a more positive or favorable attitude towards substance use than students in the ninth grade (freshman).

Table 4

Post Hoc: Tukey for Mean Comparisons Between Grade and Attitudes Towards Substance Use

(I) Grade Level	(J) Grade	Mean Difference (I-J)	Std. Error	Sig.
Freshman	Sophomore	.174	.092	.237
	Junior	.311*	.088	.003
	Senior	.360*	.084	.000
Sophomore	Freshman	-.174	.092	.237
	Junior	.137	.084	.366
	Senior	.186	.081	.098
Junior	Freshman	-.311*	.088	.003
	Sophomore	-.137	.084	.366
	Senior	.049	.075	.916
Senior	Freshman	-.360*	.084	.000
	Sophomore	-.186	.081	.098
	Junior	-.049	.075	.916

Note. * The mean difference is significant at the 0.05 level.

Athletes

Research question number 2: Do attitudes regarding substance use differ for high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels?

A one-way ANOVA was conducted to compare the effect of athletic status (athletic and non-athletic) on attitudes towards substance use by the ninth, 10th, 11th, and 12th grade levels. Based upon the Levene's test for homogeneity of variance at a statistically significance value of .05 with a significance value of .766, I concluded that the variances in the different groups were not different (p >.05). The Levene's test for homogeneity of variance distribution evinced that the measures of normality were equal and without skewness or kurtosis across the athletic population. As a result, the ANOVA analysis was considered valid. Table 5 shows that the independent variable of athlete evinced no statistical significance. Findings between athlete and attitudes towards

substance abuse evinced no statistically significant effect of athlete on the dependent variable of attitudes towards substance use (p <0.05 level for [F(1, 274) = .022 p=.882]). Although a Tukey ad hoc is usually calculated for further analysis, it could not be done with athletes because there were only two elements, and this can only be done with three or more.

Table 5

Attitudes by Athletes Towards Substance Use

	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	.006	1	.006	.022	.882
Within Groups	68.473	274	.250		
Total	68.478	275			

Table 6 shows a mean comparison between athletes and grade level on the dependent variable. Levene's test for homogeneity produced a significance value of .001. As a result, failure to reject the null hypothesis was supported, and I concluded that there was insufficient evidence to claim that variances are equally distributed between athletes and grade ($p < 0.05$).

Table 7 provides an overview of a two-way ANOVA that was conducted to indicate if there were significant main effects and/or if there were significant interactions between the variables. From the descriptive mean analysis, I identified the mean total of attitudes towards substance use by grade and by athletic status.

Table 6

Means by Athletes and Grade Level on the Dependent Variable

Grade	Athlete	Mean	Std. Deviation	*N*
9th	Yes	1.81	.394	43
	No	1.63	.518	8
	Total	1.78	.415	51
10th	Yes	1.63	.487	49
	No	1.50	.527	10
	Total	1.61	.492	59
11th	Yes	1.45	.502	58
	No	1.56	.512	16
	Total	1.47	.503	74
12th	Yes	1.42	.497	81
	No	1.45	.522	11
	Total	1.42	.497	92
Total	Yes	1.55	.499	231
	No	1.53	.505	45
	Total	1.54	.499	276

Research question 2 asks if attitudes regarding substance use differ for high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels. To answer this question, a two-way ANOVA was used. From the two-way ANOVA, I concluded that there was no statistically significant difference by a student's athletic status in conjunction with his or her grade level and attitude towards substance use $F(3, 268) = 1.93$, $p = .125$.

Table 7

Two-way ANOVA Attitudes Towards Substance Use by Grade and by Athletic Status

Source	Type III Sum of Squares	*df*	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Powerb
Corrected Model	5.466a	7	.781	3.321	.002	.080	23.247	.958
Intercept	343.552	1	343.552	1461.174	.000	.845	1461.174	1.000
Grade	1.362	3	.454	1.931	.125	.021	5.793	.496
Athlete	.066	1	.066	.280	.597	.001	.280	.082
Grade * Athlete	.552	3	.184	.783	.504	.009	2.350	.218
Error	63.012	268	.235					
Total	726.000	276						
Corrected Total	68.478	275						

Note. A.R Squared = .080 (Adjusted R Squared = .056) b. Computed using alpha = .05

Sex

Research question number 3: Do attitudes regarding substance use differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels?

Table 8 shows the mean comparison between the two genders. From this analysis, I concluded that there was no statistically significant difference between the means for attitudes towards substance use by gender. For males, the mean was 1.53 and for females it was 1.55 in identifying attitudes towards substance use. Based upon the Levene's test for homogeneity of variance at a significance value of .05 with a significance value of .473, I concluded that the variances in the different groups were not different (p >.05). I concluded that the distribution for measures of normality were equal and without skewness or kurtosis across the sex (gender) population. As a result, the ANOVA analysis is considered valid. Table 9 displays the findings from a one-way ANOVA

statistical method that was employed. In the findings from the ANOVA, I revealed that there were no statistically significant differences regarding attitudes towards substance use by gender at the $p<0.05$ level for [F (1, 274) =.143 p=.706]. Although a Tukey ad hoc is usually calculated for further analysis, it could not be done with gender because there were only two elements, and this can only be done with three or more.

Table 8

Mean Comparison Between Genders

Gender	Mean	Std. Deviation	*N*
Male	1.53	.501	128
Female	1.55	.499	148
Total	1.54	.499	276

Table 9

Attitudes Towards Substance Use by Gender

	Sum of Squares	*df*	Mean Square	F	Sig.
Between Groups	.036	1	.036	.143	.706
Within Groups	68.443	274	.250		
Total	68.478	275			

Ethnicity

Research question four: Do attitudes regarding substance use differ by ethnicity for high school students between the 9th, 10th, 11th, and 12th grade levels?

Table 10 shows the sample of ethnicity in the 9th, 10th, 11th, and 12th grade levels. The table reveals that the Caucasian community was largely represented in the sample population (M = 229). The Levene's test for homogeneity revealed that the study did not

statistically sufficiently support enough statistical evidence to conclude that the error of variance of the dependent variable was equal across groups ($p < .05$). In my study, it appeared that the Caucasian population was over-represented. The findings of my study cannot conclude that the populations of other ethnicities included in the study such as the Black/African American, Asian, Hispanic and other ethnicities are equally represented by my study. I conducted a one-way ANOVA was to assess for differences in the means. The one-way ANOVA revealed that despite this difference in representation, among the ethnic populations that participated in the study, there were statistically significant differences in the attitudes towards substance use in the sample population by ethnicity at the $p < 0.05$ level for [F (4, 271) =1.146 p =.335].

Table 10

Sample by Ethnicity

		Value Label	*N*
Ethnicity	1	Caucasian	229
	2	Black/African American	18
	3	Asian	3
	4	Hispanic	17
	5	Other	9

Summary

This chapter presented the results of my study by statistically examining whether attitudes towards substance use are impacted by one's grade, gender, athletic involvement or ethnicity in the 9th, 10th, 11th, and 12th grade level. A total participant sample yielded a value of 276 ($N = 276$) usable sample participants. A total of 357 survey responses were collected from students attending Catholic diocesan high school in a mid-sized Midwestern town. Of these students surveyed approximately 343 students of 917 students

attending Catholic diocesan schools in a mid-sized Midwestern town had agreed to participate (37% response rate). Forty-five students were found to be duplicate subjects and their initial survey answers were subsequently omitted from the final data collection resulting in a student participant number of 298 students (32 % response rate). I made this decision in an effort to adhere to ethical standards regarding participant rights and as a measure to protect confidentiality. For those initial responses by this group of study participants to be included in the data, students would have had to identify themselves to me and possibly to faculty and peers as having already completed the survey. I determined that participant rights would be protected if their initial responses were omitted from the final data collection. As study participants, I provided an outlet for students exit the study at any point in time. Of those 298 students who agreed to participate, 22 students of varying grades, sex, ethnic background and athletic status opted out of the study prior to survey study completion (7 %). I found through review of the data collected that these participants started the survey but did not complete the all the survey items from start to finish. A final total of 276 student responses were eligible for data analysis.

School principals were assured that the nature of the study was not to cause harm to their school or the student population. Of the three schools selected to partake in the study, one of the school principals opted to not partake in the study. The Catholic community takes pride in their faith and education of their students. As of late the Catholic community has withstood public scrutiny regarding their practices and behavior from those in the Priesthood. This issue could have been a factor for this one principal to not partake in the study.

The results indicated that the null hypothesis was rejected for one of the four research questions. The null hypothesis is rejected when examining analysis of attitudes towards substance use between the 9th, 10th, 11th, and 12th grade levels. This finding indicated that as an adolescent progress through high school that a change in attitudes towards substance use occurs. My study found that the most significant change occurred between students from the 9th grade level to students in the 11th grade level. I did not reject the null hypothesis for the following: athletic involvement, gender and ethnicity. In the next chapter, I addressed future recommendations and conclusions.

Chapter 5: Discussion, Conclusions and Recommendations

Introduction

The purpose of this study was to isolate when differences in attitudes toward substance use might occur in high school students between the ninth, 10th, 11th, and 12th grade levels among high school athletes and non-athletes with consideration to sex and ethnicity. Having this insight could have positive social effects in understanding an aspect of the social and cognitive development processes of adolescents. Educational programs that target attitudes toward substance use could be implemented. Furthermore, the research could provide justification for policy decisions regarding the continued funding of athletic programing in high schools. The implication for positive social change for the study is to provide further understanding of how the function of attitude could contribute to the cycle of substance use of alcohol and other drugs among adolescents.

Researchers (Gould, 2010; Hartwell et al., 2009; Winters et al., 2014) suggested that the younger adolescents begin using alcohol and other drugs, they are more likely to develop an addiction and are more likely to suffer cognitive deficits in the areas of executive functioning necessary for learning and emotional regulation necessary to manage life stressors. Terry-McElrath et al. (2011) and Johnston et al. (2012) identified the preventive efficacy of PSAs, but suggested that as the adolescent ages, PSAs lose their efficacy. Despite the knowledge of the impacts on the biological processes of the brain Lazowski and Miller (2001), Lazowski and Miller (2001), some students continue in engage in substance use practices.

Adolescents by nature, as described by Berk (2010), are developmentally caught in a period time that is characterized by high risk-taking behavior. As presented in Court

(2013), the adolescent's behavior, thoughts and feelings are dominated by the reward circuitry of the brain. As further explained by Court Lazowski and Miller (2001), the developing adolescent is likely to engage in behavior, such as substance use, because of the immediate rewards associated with use. This problematic thinking and behavior might contribute to the high mortality rate and emergency room visits that are related to substance abuse (SAMHSA, 2010). Johnston et al. (2012) specified that substance abuse is a health problem that has far reaching effects on families and communities, as well as being a leading contributor to morbidity and high mortality rates. Winters et al. (2014) alleged that survey methods based upon self-report might minimize the scope of the problem. The SAMHSA (2010)) reported that in 2010, 4.9 million visits to the ED were drug related. Of those persons aged 20 years old or younger treated in the ED, 18.8% of these ED visits were drug-related visits. Winters et al. (2014) stated that substance abuse leads to social and personal problems, educational problems, death, and legal problems. Researchers have not defined variables that predict changes in attitudes toward substance use among high school students.

The central research question in this study asked if attitudes regarding substance use differ between the ninth, 10th, 11th, and 12th grade levels in high school students. Three additional research questions addressed differences in athletes and nonathlete student, differenced by the sex of the student and differences across the ethnicity of the student. As indicated by Johnston et al. (2012), attitudes toward substance use may reflect personal perceptions about the risks associated with negative effects of substance use. Attitudes toward substance use might explain not only decisions to begin use but explain the continued use despite known negative effects.

There was no significance between a student's athletic status and having a positive attitude towards substance use. Likewise, the sex of the student did not have bearing on having a positive attitude towards substance use. I did not find evidence for ethnicity as a covariate as having a significant bearing on a student having a positive attitude towards substance use. However, I found that there was significance between the grade level of the student and a positive attitude towards substance use among the Grade levels ninth, 10th, 11th, and 12th grades at the $p < 0.001$ level [$F(3, 272) = 6.933$, $p = .001$]. Further analysis was conducted and significance was found between ninth graders and 11th graders in their attitudes towards substance use and between ninth graders and 12th graders in their attitudes towards substance use. .

Interpretation of Findings

In the first study question, I sought to answer is if there was difference in attitudes between the ninth grade level, 10th grade level, 11th grade level, and the 12th grade level among high school students towards substance use. The null hypothesis stated that attitudes are not different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels. The alternative hypothesis implicated attitudes as different regarding substance use in high school students between the ninth, 10th, 11th, and 12th grade levels.

Johnston et al. (2012) suggested that not all adolescents who make the decision to use alcohol and other drugs begin using substances at the same time. Some adolescents will begin use during middle school, and others will begin use during the high school years. However, by the time a child has reached graduation from high school, he or she

may have experienced either being drunk from alcohol or have reported on at least one occasion as having experienced the effects of other substances.

The CASA Columbia (2011) found that 90% of people in the United States who meet the medical criteria for addiction started smoking, drinking, or using other drugs before age 18-years old. Tyler et al. (2007) indicated that initiation of use of alcohol and other drugs among adolescents will occur between the ages of 13-years-old and 15-years-old. During this age span the brain undergoes a period of rapid growth and development. Gould (2010) indicated that the age of onset of use with alcohol and other drugs has been linked to the disruption of cognitive development and can do long-term, irreparable damage to neurological cognitive processes in substance dependent individuals.

The findings from my study supports evidence from prior studies that differences in attitudes towards substance use are existent among the adolescent population. I found that there was significance in the difference in attitudes towards substance use among those adolescents in a ninth grade level of education to those adolescents in an 11^{th} grade level of education. Additionally, I found significance in the difference in attitudes towards substance use among those adolescents in the ninth grade level of education to those adolescents in the 12^{th} grade level of education. Findings from my study suggested that a change in substance using attitudes occur when a student is in between grades 9 and 11.

In the second study question, I sought to answer whether attitudes regarding substance use differ for high school athletes and non-athletes between the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels. The null hypothesis stated that attitudes are not different regarding substance use in athletes and non-athletes between the ninth, 10^{th}, 11^{th}, and 12^{th}

grade levels. The alternative hypothesis stated that attitudes are different regarding substance use in high school athletes and non-athletes between the ninth, 10th, 11th, and 12th grade levels. Athletic involvement bears some social status significance among high school students, but athletic involvement will not act as a protective factor against substance use. Naylor et al. (2001) questioned if high school athletes are more resistive to the harmful effects of substance use. Naylor et al. found that despite the efforts of educational programs geared toward intervention and student awareness of sanctions for substance abuse, high school athletes continued to report breaking rules regarding substance abuse in their school. Naylor et al. found that high school student athletes are more selective in the type of substances that they will use and/or abuse. According to Naylor et al., students involved in athletic programs tended to avoid the use of less socially acceptable drugs, such as cocaine and psychedelics than their non-athlete counter parts. Pandina et al. (2005) reported that athletes use alcohol and other drugs at higher quantities than their nonathlete counterparts, and they are more likely to engage in high risk behaviors such as driving while intoxicated.

My study supported past findings regarding attitudes towards substance use in high school athletes. I found no statistically significant differences in attitudes towards substance use between high school students who also identified themselves as an athlete. I evinced a finding using Levene's test for homogeneity of variance at a significance value of .05 with a significance value of .766 that those students who identified themselves as athletes were equally distributed across each of the grade levels. I concluded that the variances in the different groups were equal and without skewness or kurtosis across the athletic population (p >.05). Findings between athlete and attitudes

towards substance abuse evinced no significant effect of athlete on the dependent variable of attitudes towards substance use (p <0.05 level for [F(1, 274) = .022 p=.882]). I found that attitudes towards substance use are not different among high school athletes.

In the third study question, I sought to answer whether there was any significance between sex and attitudes towards the use of alcohol. The null hypothesis stated that attitudes toward substance use will differ by sex for high school students between the ninth, 10th, 11th, and 12th grade levels. The alternative hypothesis that that there would be no difference in attitudes towards substance use by sex for high school students between the ninth, 10th, 11th, and 12th grade levels. According to the findings in this study, there were no differences in attitudes towards substance use by sex.

SAMHSA (2013) indicated that the sex of an adolescent is not a protective factor against the decision to use substances. The SAMHSA found that the rate of current illicit drug use among persons aged 12 or older was higher for males (11.5%) than for females (7.3%). Males were more likely than females to be current users of several different illicit drugs, including marijuana (9.7 vs. 5.6%), cocaine (0.8 vs. 0.4%), and hallucinogens (0.7 vs. 0.3%).

What is noteworthy in the literature is that chronologically the earlier an adolescent initiates substance use the more likely they are to engage in high risk behavior, experience issues related to loss of control and the building of tolerance (Faden 2006). Continued use despite these types of consequences as reported in Volkow (2010) could lead to the onset of addiction as the adolescent ages. These findings do not discriminate by the sex of the adolescent (Faden, 2006). Findings in the literature show that females use alcohol and illicit substances as methods to navigate fluctuating

emotions, weight control and mood states (Black et al. 2010; Stice et al. 2001; Waller et al. 2006). Substance use among male adolescents have been linked to competitive behaviors including binge drinking (Denham 2014; Matsen et al. 2009). What can be summarized from the literature is that perhaps substance use differs by gender as it relates to the type substance of used and the reasons why an adolescent uses substances of abuse. The implementation of sex specific education prevention programs might prove valuable in addressing attitudes towards substance use which are sex specific.

SAMHSA (2013) has suggested that substance dependence or abuse can have cultural variants. Among Asians youth aged 12-years old or older 4.6% will use alcohol and other forms of drugs. Possibly among blacks 7.4% aged 12-years old or older will use alcohol and other forms of drugs, while among Hispanic youth 8.6% aged 12-years old or older will use alcohol and other forms of drugs. In adolescent mixed ethnicities 10.9% reported the use of alcohol and other forms of drugs. Amid Native Hawaiians or other Pacific Islanders 11.3% of persons aged 12-years old or older will use alcohol and other forms of drugs. Among American Indians or Alaska Natives 14.9% of persons by the time they have reached age 12- years old or older reported that they will have already begun to use alcohol and drugs of abuse. These cultural variants suggest that educational programming targeted toward youth regarding the impacts of substance use may lose their efficacy if a "one size fits all" approach is taken. This may explain the limited success of some school-based programs (Synder et al. 2010).

The fourth research question I sought to answer was if attitudes regarding substance use differed by ethnicity for high school students between the ninth, 10^{th}, $11^{th,}$ and 12^{th} grade levels. The null hypothesis stated that attitudes toward substance use

would differ by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels. The alternative hypothesis stated that we would not find any difference in attitudes toward substance use by ethnicity for high school students between the ninth, 10th, 11th, and 12th grade levels. I found that there were no differences in attitudes by ethnicity in high school students between the ninth, 10th, 11th, and 12th grade levels. I caution against the generalization of results among all ethnicities. As I experienced in my study representation among the ethnic groups was not equal. A majority of the sample population was represented by the Caucasian ethnic group ($n = 229$). Using the Levene's test for homogeneity that I could not conclude that the error of variance of the dependent variable is equal across groups ($p < .05$). I found that the populations of the other ethnicities included in the study (e.g., Black/African American, Asian, Hispanic & other ethnicities) were not equally represented by the study.

The theoretical framework which served to guide my study was the theory of social influence described by Cialdini and Goldstein (2004). The theory of social influence (Cialdini & Goldstein, 2004) defines the degree to which individuals will strive to maintain or achieve affiliation with others. Individuals not only take pride in their affiliation to the group but membership to the group becomes an essential feature of their self-concept (Cialdini & Goldstein, 2004). In that context an individual will go to any lengths to maintain this affiliation. In some cases, as found in Caildini and Goldstein a previously held attitude or belief might be disregarded as the individual complies with a collective attitude of the group. For the purpose of my study the key meaning or definition of an attitude aligned itself with the definition presented in Baron et al., (2008). Baron et al. declared that an attitude is an internal belief system of an individual that

evidences itself in a person's behavior. According to Baron et al. an attitude can be subject and influenced by personal affiliation with a group such as a person's peer group. A gap in the research that theory of social influence can assist in closing is how attitudes about substance abuse change during the yearly progress of the high school student.

My study employed survey methods that asked questions regarding a high school student's attitude toward substance use. In addition to grade level variables of athletic status (high school athletes and high school non-athletes), sex and ethnicity were considered. Cross-sectional methods were used to gather data from the ninth, 10th, 11th, and 12th grade levels. This approach allowed data collection to be obtained in one point of time from each of the grade levels. According to Creswell (2009) a defining feature of the cross-sectional methods is to provide the researcher an opportunity to investigate how multiple variables differ while focusing on the intent of the research question. For my study, the intent of the research question was to survey high school students with regard to their attitude towards substance use in one moment of time, in this case their grade level. The advantages of this method as described by Carlson and Morrison (2009) included its cost effectiveness, taking little time to conduct, and data on all identified variables can be collected at one time.

Limitations

As a limitation of the study, some of the students were skeptical regarding the confidentiality of the study which might impact their response style. Some students queried whether their parents or principal of their school would have access to their specific information. These students may have been fearful of consequences should their parents or the administration of the school have access to their responses. In this school

system when students have been found to be using alcohol or other drugs usually sanctions are placed on them which could have impacted their participation in extracurricular student activities.

According to Creswell (2009) and Levy and Ellis (2011) the design of this study can also be a limitation. The study itself used a cross sectional study design, which captures data at one time. This is a limitation because the use of this method only allows the researcher to capture what is currently occurring and may not be a predictor of the future and does not allow the researcher to draw any conclusions about causality (Creswell, 2009). As a limitation the outcome of the study could have provided differing results if another time frame had been chosen. The observation of a single moment in time does not allow me to conclusively state that variables such as grade, sex, athletic status and ethnicity impact a student's attitude regarding use of alcohol and other drugs.

As a limitation and a delimitation of the study, results of the study cannot be overgeneralized to all athletes and sex groups. The sample of adolescents will be selected from a small Midwestern Catholic school. As a sub-population of Catholic school students may present some limits on generalizability. Therefore, the results of this study do not necessarily reflect the opinions of all students in the ninth, 10^{th}, 11^{th}, and 12^{th} grade levels. Additionally, because this is a sample of convenience, it did not reach those who are in other states. This study found that athletes as a student body represented 71 % of the sample population that participated in the study (n = 198). Because athletes were well represented across all grades this study does not offer a good comparison between athletes and non-athletes. As a limitation of the study, to suggest that all individuals involved in athletics have the same attitude toward substance use as those who are non-

athletes would reflect an overgeneralization bias. As an additional limitation, the cross-sectional method does not provide information regarding a causal relationship regarding the variables. Unlike a longitudinal study the cross-sectional method will not allow the study to infer or conclude that a change occurs from one grade level to another. However, this study method allowed for an inference to be made that there may be differences in attitudes towards substance use as the adolescent progresses in grade level during high school. For the purposes of this study one would not be able to make the inference that the sex of the adolescent, athlete status or ethnicity would illicit a more favorable attitudes towards substance use high school students between the ninth, 10th, 11th, and 12th grade levels. Instead the key research questions of the study focused on the grade level, sex, athletic affiliation and ethnicity in relation to substance using attitudes.

Findings of my study are limited since a convenience sample was used. First, only two of three schools were willing to assist with this study. These two schools were within the confines of a midsized Midwestern city. These Catholic schools unlike public schools do not have a vast cultural or ethnic population. Most of the students were athletes and the population size of the school in comparison to public schools in the area would be considered small. To calculate sample size GPower statistical analyses A priori test was used to determine the number of participants needed for the main research question. Based on a proposed ANOVA, assuming a margin of error at .05 with a confidence level of 95% and an effect size at .25 (medium effect size) a total of 251 study participants were needed. Of these students surveyed approximately 343 students of 917 students attending Catholic diocesan schools in a mid-sized Midwestern town agreed to participate (37% response rate). Forty-five students were found to be duplicate subjects and their

answers were subsequently omitted from the final data collection resulting in a student participant number of 298 students (32 % response rate). As study participants, students were given the option to exit the study at any point in time. Of those 298 students who agreed to participate, 22 students of varying grades, sex, ethnic background and athletic status opted out of the study prior to survey study completion (7 %). A final total of 276 student responses were eligible for data analysis.

Recommendations for Future

Future studies may provide further insight into attitudes towards substance use between those adolescents who reside primarily in a rural community as compared to those adolescents in a city populace. One recommendation is to explore if the residence of the adolescent could be a protective factor in their attitude towards substance use. This type of research would allow for social researchers to explore cultural variants that would impact one's attitude towards substance use. I limited the study to the exploration of attitudes towards alcohol and illicit substances. Further research should include the use of prescription medications that have addictive properties.

Although this study included athletic status and ethnicity there was not enough of a comparison between them. A majority of the students who participated in the study were athletes and Caucasian. Perhaps instead of using a midsized Midwestern community opening the study up to a larger city might yield different results that are more truly representative of a more broad-based adolescent.

This study was conducted through electronic means. A contributing factor to the 32% response rate was that some students had difficulty accessing the link to the survey from their student portal and some of these participants may have given up rather than

make the effort to access the survey. Also, the study was conducted in between class periods to not disrupt the student's time at school. This time limit may have contributed to the incomplete surveys that were found. Had students had more time to complete the survey, the response rate may have been greater.

Implications

The social impact of this study was that this community is not researched. The intent of this study was to apply quantitative cross-sectional research methods to identify if and what point in time in which attitudes towards substance use change as an adolescent progresses through the ninth grade level, the 10th grade level, the 11th grade level, and the 12th grade level. Considerations to the athletic status of the adolescent as well as consideration to sex and ethnicity were taken into account. The literature (Caildini & Goldstein, 2004; Cowley & Czellar, 2012; Olson & Fazio, 2001; Steinberg & Morris, 2001; Weisfeld & LaFrenier, 2007) has evinced that attitude formation as it impacts interpersonal behavior choices as an adolescent age is largely influenced by conformity to social norms which shift as the adolescent ages from parental influence to peer influence. Yet, little is known regarding when during the adolescent stage of development when attitudes shift. The hope of my study was to capture that period developmentally in which changes in attitudes develop in the adolescent. This hope is realized in this study. I did find in my study is that there is significance in the difference of attitudes between adolescents in the ninth, 10th, 11th, and 12th grade level. Specifically, this study revealed that significance lies in the difference between adolescent students in the ninth and 11th grade and adolescent students in the ninth and the 12th grade. Based upon the findings of the study I concluded that adolescent students in the 11th and 12th grade have a more

favorable attitude towards substance use than those adolescent students in the ninth grade.

With this expanded knowledgebase, it is hoped that information from my study might be used to create preventive educational programs that are developmentally appropriate for the adolescent regarding substance use. The theory of social influence is a relevant theory applicable when used to inform discussions regarding shifts in attitudes that impact interpersonal behavior choices. The theory of social influence and affiliation was used to hypothesize how variables of grade, sex and athletic involvement impact when attitude changes toward substance use occur as an adolescent progress through the high school years.

Positive social change can occur at the organizational or community level. My study indicated that the grade level of the adolescent evinced where there might be a shift in an attitude towards substance use. It might be beneficial for educators to incorporate teaching about being responsible when using alcohol or other drugs to students in the 11th and 12th grade.

Summary

Based on the results, it is fair to conclude that more research needs to occur on attitudes towards substance use among the adolescent community. Although the focus of this study was between grade levels of the adolescent high school student more research is needed regarding athletes, sex, and ethnicity. Future research within these populations might include attitudes towards the use of prescription medications. Many of these medications are initially prescribed for the treatment of mental health ailments such as anxiety or attention and for issues related to pain. Yet, many of the medications used to

treat these ailments contain addictive properties. This study found significant findings between adolescent students in the ninth grade, 11th, and 12th grade but further research is warranted among sex, athletic status and ethnicity since the limitations of the study may have led to non-significant findings in these domains. In summary, findings suggest that attitudes towards substance use do become more favorable between ninth grade to 11th grade and between ninth grades to 12th grade.

References

Angres, D. H., & Bettinardi–Angres, K. (2008).The disease of addiction: Origins, treatment, and recovery. *Disease-A-Month, 54*, 696-721. doi:10.1016/j.disamonth.2008.07.002

Allen, J. P., Chango, J., Szwedo, D., Schad, M., & Marston, E. (2012). Predictors of susceptibility to peer influence regarding substance use in adolescence. *Child Development, 83*(1), 337–350. doi:10.1111/j.1467-8624.2011.01682.x

Athlete. (n.d). In *Merriam-Webster.com.* Retrieved September 13, 2016, from http://www.merriam-webster.com/dictionary/athlete

Bahorik, A. L., Newhill, C. E., & Eack, S. M. (2013). Characterizing the longitudinal patterns of substance use among individuals diagnosed with serious mental illness after psychiatric hospitalization. *Addiction, 108*(7), 1259-1269. doi:10.1111/add.12153

Berk, L. E. (2010). *Development through the lifespan* (5th ed.). Boston, MA: Pearson Education.

Berthelot, J., Le Goff, B., & Maugars, Y. (2011). The Hawthorne effect: Stronger than the placebo effect? *Joint, Bone, Spine: Revue Du Rhumatisme, 78*(4), 335-336. doi:10.1016/j.jbspin.2011.06.001

Black, D. S., Sussman, S., Unger, J., Pokhrel, P., & Sun, P. (2010). Gender differences in body consciousness and substance use among high-risk adolescents. *Substance Use and Misuse, 45*(10), 1623-1635. doi:10.3109/10826081003753031

Callister, M., Coyne, S. M., Robinson, T., Davies, J. J., Near, C., Van Valkenburg, L., & Gillespie, J. (2012). 'Three sheets to the wind': Substance use in teen-centered

film from 1980 to 2007. *Addiction Research and Theory, 20*(1), 30-41. doi:10.3109/16066359.2011.552818

Carlson, M. D. A., & Morrison, R. S. (2009). Study design, precision and validity in observational studies. *Journal of Palliative Medicine, 12*(1), 77-82. doi:10.1089/jpm.2008.9690.

Centers for Disease Control and Prevention. (2012). Web-based Injury Statistics Query and Reporting System (WISQARS). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved from https://www.cdc.gov/injury/wisqars/index.html

Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology, 55,* 591-621. doi:10.1146/annurev.psych.55090902.142015

Clark, D. B., Chung, T., Thatcher, D. L., Pajtek, S., & Long, E. C. (2012). Psychological dysregulation, white matter disorganization and substance use disorders in adolescence. *Addiction, 107*(1), 206-214. doi:10.1111/j.1360-0443.2011.03566.x

Cowley, E., & Czellar, S. (2012). The moderating role of self-monitoring on the interpersonal aspects of attitude ambivalence. *Journal of Personality, 80*(4), 949-968. doi:10.1111/j.1467-6494.2011.00754.x

Court, J. M. (2013). Immature brain in adolescence. *Journal of Pediatrics and Child Health*, *49*(11), 883-886. doi:10.1111/jpc.12241

Dasgupta, N., Mandl, K. D., & Brownstein, J. S. (2009). Breaking the news or fueling the epidemic? Temporal association between news media report volume and opioid-related mortality. *Plos ONE, 4*(11). doi:10.1371/journal.pone.0007758

Denham, B. E. (2014). High school sports participation and substance use: Differences by sport, race, and gender. *Journal of Child and Adolescent Substance Abuse, 23*(3), 145-154. doi:10.1080/1067828X.2012.750974

Faden, V. B. (2006). Trends in Initiation of alcohol use in the United States 1975 to 2003. *Alcoholism: Clinical & Experimental Research, 30*(6), 1011-1022. doi:10.1111/j.1530-0277.2006.00115.x

Fine, J. G., & Sung, C. (2014). Neuroscience of child and adolescent health development. *Journal of Counseling Psychology, 61*(4), 521-527. doi:10.1037/cou0000033

Fisher, C. D. (2010). Happiness at work. *International Journal of Management Reviews, 12*(4), 384-412. doi:10.1111/j.1468-2370.2009.00270.x

Fleming, K., Thorson, E., & Atkin, C. K. (2004). Alcohol advertising exposure and perceptions: Links with alcohol expectancies and intentions to drink or drinking in underaged youth and young adults. *Journal of Health Communication, 9*(1), 3-29. doi:10.1080/10810730490271665

Gibbons, F., Pomery, E., Gerrard, M., Sargent, J., Weng, C., Wills, T. and... Yeh, H. (2010). Media as social influence: Racial differences in the effects of peers and media on adolescent alcohol cognitions and consumption. *Psychology of Addictive Behaviors, 24*(4), 649-659. doi:10.1037/a0020768

Gilpin, N. W. (2014). Brain reward and stress systems in addiction. *Frontiers in Psychiatry, 51*(2). doi:10.3389/fpsyt.2014.00079

Griswold, K. S., Aronoff, H., Kernan, J. B., & Kahn, L. S. (2008). Adolescent substance use and abuse: Recognition and management. *American Family Physician, 77*(3), 331. Retrieved from https://europepmc.org/abstract/med/18297958

Hartwell, K., Tolliver, B., & Brady, K. (2009). Biologic commonalities between mental illness and addiction. *Primary Psychiatry, 16*(8), 33.

Haynie, D. L., Farhat, T., Brooks-Russell, A., Wang, J., Barbieri, B., & Iannotti, R. J. (2013). Dating violence perpetration and victimization among U.S. adolescents: Prevalence, patterns, and associations with health complaints and substance use. *The Journal of Adolescent Health: Official Publication of The Society for Adolescent Medicine, 53*(2), 194-201. doi:10.1016/j.jadohealth.2013.02.008

Hersen, M., & Beidel, D. (2012). *Adult psychopathology and diagnosis* (6th ed.). John Wiley & Sons, Inc., Hoboken, N.J.

Hooper, S. R., Wooley, D., & De Bellis, M. D. (2014). Intellectual, neurocognitive and academic achievement in abstinent adolescents with cannabis use disorder. *Psychopharmacology, 231* 1467-1477. doi:10.1007/s00213-014-3463-z

Horigian, V. E., Weems, C. F., Robbins, M. S., Feaster, D. J., Ucha, J., Miller, M., & Werstlein, R. (2013). Reductions in anxiety and depression symptoms in youth receiving substance use treatment. *The American Journal on Addictions / American Academy of Psychiatrists in Alcoholism and Addictions, 22*(4), 329-337. doi:10.1111/j.1521-0391.2013.12031.x

Jacobus, J., Squeglia, L. M., Infante, M. A., Castro, N., Brumback, T., Meruelo, A. D., & Tapert, S. F. (2015). Neuropsychological performance in adolescent marijuana users with co-occurring alcohol use: A three-year longitudinal study. *Neuropsychology, 29*(6), 829-843. doi:10.1037/neu0000203

Johnson, H. D. (2004). Gender, grade and relationship differences in emotional closeness within adolescent friendships. *Adolescence, 39*(154), 243-255.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2012). Monitoring the future national results on adolescent drug use: Overview of key findings, 2011. Ann Arbor: Institute for Social Research, The University of Michigan.

Kaigang, L., Simons-Morton, B. G., & Hingson, R. (2013). Impaired-driving prevalence among US high school students: Associations with substance use and risky driving behaviors. *American Journal of Public Health, 103*(11), e71-7. doi:10.2105/AJPH.2013.301296

Koob, G. F. & Le Moal, M. (2000). Drug addiction, dysregulation of reward and allostasis. *Neuropsychopharmacology, 24*(2), 97-129. doi:10.1016/S0893-133X(00)00195-0

Koob, G. F. & Volkow, N. (2010). Neurocircuitry of Addiction. *Neuropsychopharmacology Reviews, 35*, 217–238. doi:10.1038/npp.2009.110

Kulesza, M., Grossbard, J. R., Kilmer, J., Copeland, A. L., & Larimer, M. E. (2014). Take one for the team? Influence of team and individual sport participation on high school athlete substance use patterns. *Journal of Child and Adolescent Substance Abuse, 23*(4), 217-223. doi: 10.1080/1067828X.2013.786928

Lansford, J. E., Erath, S., Yu, T., Pettit, G. S., Dodge, K. A., & Bates, J. E. (2008). The developmental course of illicit substance use from age 12 to 22: Links with depressive, anxiety, and behaviour disorders at age 18. *Journal of Child Psychology and Psychiatry,* (8), 877. doi:10.1111/j.1469-7610.2008.01915.x

Lazowski, L. E., Miller, F. G. (2001). Estimates of the reliability and criterion validity of the adolescent SASSI-A2. Springville, IN: The SASSI Institute.

Lennox, R. D., & Cecchini, M. A. (2008). The NARCONON™ drug education curriculum for high school students: A non-randomized, controlled prevention trial. *Substance Abuse Treatment, Prevention, and Policy, 3* doi:10.1186/1747-597X-3-8

Levy, Y., & Ellis, T. (2011). A guide for novice researchers on experimental and quasi-experimental studies in information systems research. *Interdisciplinary Journal of Information, Knowledge, and Management 6,* 151-160.

Lind, G. (1984, September). Dynamic-structural attitude unit: Concept and measurement. *Psychology of Morality and Democracy and Education.* Paper presented at the European Symposium on Concept Formation and Measurement, Rome, Italy.

Litt, D. M., & Stock, M. L. (2011). Adolescent alcohol-related risk cognitions: The roles of social norms and social networking sites. *Psychology of Addictive Behaviors, 25*(4), 708-713. doi:10.1037/a0024226

Mason, M. J., Mennis, J., Linker, J., Bares, C., & Zaharakis, N. (2014). Peer attitudes effects on adolescent substance use: The moderating role of race and gender. *Prevention Science, 15*(1), 56-64. doi:10.1007/s11121-012-0353-7

Masten, A., Faden, V., Zucker, R., & Spear, L. (2009). A developmental perspective on underage alcohol use. *Alcohol Research & Health, 32*(1), 3-15. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3860500

McCambridge, J., Mitcheson, L., Winstock, A., & Hunt, N. (2005). Five year trends in patterns of drug use among people who use stimulants in dance contexts in the United Kingdom. *Addiction, 100* 1140-1149. doi: 10.1111/j.1360-0443.2005.01127.x

Miech, R. A., Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2015). Monitoring the Future national survey results on drug use, 1975–2014: Volume I, secondary school students. Ann Arbor: Institute for Social Research, The University of Michigan. Retrieved from http://monitoringthefuture.org/pubs.html#monographs

Missouri State High School Activities Association (2015). *Number of student athletes in Missouri schools.* Retrieved from https://www.mshsaa.org/

Mundt, M. (2011). The impact of peer social networks on adolescent alcohol use initiation. *Academic Pediatrics, 11*(5), 414-421. doi:10.1016/j.acap.2011.05.005

Musher-Eizenman, D. R., Holub, S. C., & Arnett, M. (2003). Attitude and peer influences on adolescent substance use: The moderating effect of age, sex, and substance. *Journal of Drug Education, 33*(1), 1-23. doi:10.2190/YED0-BQA8-5RVX-95JB

Nasim, A., Belgrave, F. Z., Corona, R., & Townsend, T. G. (2009). Predictors of tobacco and alcohol refusal efficacy for urban and rural African-American adolescents. *Journal of Child and Adolescent Substance Abuse, 18*(3), 221-242. doi:10.1080/10678280902724309

O'hare, T., & Shen, C. (2012). Substance use motives and severe mental illness. *Journal of Dual Diagnosis, 8*(3), 171-179. doi:10.1080/15504263.2012.696184

Olson, M. A., & Fazio, R. H. (2001). Implicit attitude formation through classical conditioning. *Psychological Science, 12*(5), 413. doi:10.1111/1467-9280.00376

Pujazon-Zazik, M., & Park, M. (2010). To tweet, or not to tweet: Gender differences and potential positive and negative health outcomes of adolescents' social internet use. *American Journal of Men's Health, 4*(1), 77-85. doi:10.1177/1557988309360819

Reedy, A., & Saunders, J. (2013). Peer behaviors and co-occurring disorders among adolescents. *Child & Adolescent Social Work Journal, 30*(1), 49-60 12p. doi:10.1007/s10560-012-0277-x

Russell, B., Jennings, B., & Classey, S. (2005). Adolescent attitudes toward random drug testing in schools. *Journal of Drug Education, 35*(3), 167-184. doi:10.2190/8GEA-60JH-5PPV-Q9WL

Salimian, P. K., Chunara, R., & Weitzman, E. R. (2014). Averting the perfect storm: Addressing youth substance use risk from social media use. *Pediatric Annals, 43*(10), 411. doi:10.3928/00904481-20140924-08

Saint-Jean, G., Martinez, C. A., & Crandall, L. A. (2008). Psychosocial mediators of the impact of acculturation on adolescent substance abuse. *Journal of Immigrant and Minority Health, 10*(2), 187-195. doi:10.1007/s10903-007-9060-z

Sedlak, A. J. & Bruce, C. (2010). Findings from survey of youth in residential placement. US Department of Justice, Office of Juvenile Justice and Delinquency Prevention. www.ojp.usdj.gov

Scull, T. M., Kupersmidt, J. B., & Erausquin, J. T. (2014). The impact of media-related cognitions on children's substance use outcomes in the context of parental and peer substance use. *Journal of Youth and Adolescence,43*(5), 717-728. doi:10.1007/s10964-013-0012-8

Schatzberg, A., Cole, J.O., & DeBattista, C. (2010). *Manual of clinical psychopharmacology* (7th ed.). American Psychiatric Publishing, Inc., Arlington, VA

Schepis, T., Adinoff, B., & Rao, U. (2008). Neurobiological processes in adolescent addictive disorders. *American Journal on Addictions, 17*(1), 6-23. doi: 10.1080/10550490701756146

Smelson, D., Kalman, D., Losonczy, M. F., Kline, A., Sambamoorthi, U., Hill, L. S., ... Ziedonis, D. (2012). A brief treatment engagement intervention for individuals with co-occurring mental illness and substance use disorders: results of a randomized clinical trial. *Community Mental Health Journal,* (2), 127. doi: 10.1007/s10597-010-9346-9

Stagman, S., Schwarz, S.W., Powers, D. (2011). *Adolescent substance use in the U.S.: Facts for policymakers.* Retrieved from National Center for Children in Poverty https://www.nccp.org.

Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Journal of Cognitive Education and Psychology, 2*(1), 55-87. doi:10.1146/annurev.psych.52.1.83

Stern S. (2005). Messages from teens on the big screen: Smoking, drinking, and drug use in teen-centered films. *Journal of Health Communication, 10*(4):331-346. doi: 10.1080/10810730590950057

Stern, M. K., & Wiens, B. A. (2009). Ethnic differences in adolescent perceptions of and attitudes toward substance use. *Journal of Ethnicity in Substance Abuse, 8*(1), 54-69. doi:10.1080/15332640802683417

Stice, E., Presnell, K., & Bearman, S. K. (2001). Relation of early menarche to depression, eating disorders, substance abuse, and comorbid psychopathology among adolescent girls. *Developmental Psychology, 37*(5), 608-619. doi:10.1037/0012-1649.37.5.608

Storr, C. L., Pacek, L. R., & Martins, S. S. (2012). Substance use disorders and adolescent psychopathology. *Public Health Reviews, 34*(2), 1-42.

Strada, M. J., Donohue, B., & Lefforge, N.L. (2006). Examination of ethnicity in controlled treatment outcome studies involving adolescent substance abusers: A comprehensive literature review. *Psychology of Addictive Behaviors, 20*(1), 11-27. doi:10.1037/0893-164X.20.1.11

Substance Abuse and Mental Health Services Administration, Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014.

Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality. "The DAWN Report: Highlights of the 2010 Drug Abuse Warning Network (DAWN) Findings on Drug-Related Emergency Department Visits," (Rockville, MD: July 2, 2012), p. 2. http://www.samhsa.gov/data/2k12/DAWN096/SR096EDHighlights2010.pdf

Suitor, J. J., Powers, R. S., & Brown, R. (2004). Avenues to prestige among adolescents in public and religiously affiliated high schools. *Adolescence, 39*(154), 229-241.

Swendsen, J., Conway, K. P., Degenhardt, L., Glantz, M., Jin, R., Merikangas, K. R., . . . Kessler, R. C. (2010). Mental disorders as risk factors for substance use, abuse and dependence: results from the 10-year follow-up of the National Comorbidity Survey. *Addiction, 105*(6), 1117-1128. doi:10.1111/j.1360-0443.2010.02902.x

Synder, F. J., Flay, B. R., Vuchinich, S., Acock, A., Washburn, I. J., Beets, M.W., & Kin-Kit, M.S. (2010). Impact of a social-emotional and character development

program on school level indicators of academic achievement, absenteeism and disciplinary outcomes: A matched pair, cluster randomized, controlled trial. *Journal of Research on Educational Effectiveness, 3*(1) 26-55. doi: 10.1080/19345740903353436

Terry-McElrath, Y., Emery, S., Szczypka, G., & Johnston, L. (2011). Potential exposure to anti-drug advertising and drug-related attitudes, beliefs, and behaviors among United States youth, 1995-2006. *Addictive Behaviors, 36*(1-2), 116-124. doi:10.1016/j.addbeh.2010.09.005

United States Department of Education. Institute of Education Sciences, National Center for Education Statistics (2015). *Number of students enrolled in Kansas City, Missouri schools.* Retrieved from http://nces.ed.gov

United States Census Bureau (2013). *Quickfacts Kansas City, Missouri.* Retrieved from https://www.census.gov/quickfacts/fact/table/kansascitycitymissouri/PST045216

Veliz, P. T., Boyd, C., & McCabe, S. E. (2013). Playing through pain: Sports participation and nonmedical use of opioid medications among adolescents. *American Journal of Public Health, 103*(5), e28-30. doi:10.2105/AJPH.2013.301242

Volkow, N. (2010). Drugs, brains, and behavior. The science of addiction. National Institute on Drug Addiction. Publication available on line at www.nida.gov/publicat/

Walker, M. P., & van der Helm, E. (2009). Overnight therapy? The role of sleep in emotional brain processing. *Psychological Bulletin, 135*(5), 731-748. doi:10.1037/a0016570

Waller, M. W., Hallfors, D. D., Halpern, C. T., Iritani, B. J., Ford, C. A., & Guo, G. (2006). Gender differences in associations between depressive symptoms and patterns of substance use and risky sexual behavior among a nationally representative sample of U.S. adolescents. *Archives of Women's Mental Health, 9*(3), 139-150. doi:10.1007/s00737-006-0121-4

Walther, J. B., DeAndrea, D., Kim, J., & Anthony, J. C. (2010). The influence of online comments on perceptions of antimarijuana public service announcements on YouTube. *Human Communication Research, 36*(4), 469-492. doi:10.1111/j.1468-2958.2010.01384.x

Weisfeld, G. E., & LaFreniere, P. (2007). Emotions, not just decision-making processes, are critical to an evolutionary model of human behavior. *Behavioral and Brain Sciences, 30*(1), 43. Retrieved from http://search.proquest.com/docview/212208504?accountid=14872

Witt, E. (2010). Research on alcohol and adolescent brain development: opportunities and future directions. *Alcohol, 44*, 119-124, doi: 10.1016fj.alcohol.2009.08.11

Wormington, S. V., Anderson, K. G., Tomlinson, K. L., & Brown, S. A. (2013). Alcohol and other drug use in middle school: The interplay of gender, peer victimization, and supportive social relationships. *Journal of Early Adolescence, 33*(5), 610-634. doi: 10.1177/0272431612453650

Zamboanga, B. L., Ham, L.S., Olthuis, J.V., Martens, M. P., Grossbard, J. R. & Van Tyne, K. (2012). Alcohol expectancies and risky drinking behaviors among high school athletes: "I'd rather keep my head in the game.*" Prevention Science, 13*:140–149. doi 10.1007/s11121-011-0252-3

Appendix A: Research Instructions:

ALL QUESTIONNAIRES ARE ANONYMOUS. DO NOT PUT YOUR NAME OR THE NAME OF YOUR HIGH SCHOOL ON ANY OF THE PAGES.

Once you open the online survey link provided for you, please follow the directions. The completion of the survey should take no more than 15 minutes.

Thank you for your time.

On-line Survey Questions and Demographic profile:

Please select the answer that best describes you and then select Submit to turn the page or select Withdraw from the study:

I am in the following grade:

o 9th

o 10th

o 11th

o 12th

Submit

Withdraw from study

Please select the answer that best describes you and then select Submit to turn the page or select Withdraw from the study:

I participate in the Athletic program at my school

o Yes

o No

Submit

Withdraw from study

Please select the answer that best describes you and then select Submit to turn the page or select Withdraw from the study:

o Male

o Female

Submit

Withdraw from study

Please select the answer that best describes you and then select Submit to turn the page or select Withdraw from the study:

I define my ethic background as:

o White/Caucasian

o Black

o Asian

o Hispanic

o Other

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

1. The school rules regarding getting caught with drugs are too strict.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

2. Adults shouldn't hassle kids so much about drugs.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

3. Getting caught drinking or using drugs is no big deal.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

4. Adults don't really know how much teenagers are using drugs.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

5. People who use drugs have more fun.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

6. I can see why they have laws about drugs like cocaine and heroin but outlawing marijuana is stupid.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

7. Most of the people my age drink or use drugs.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

8. Drugs help people to become creative.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

9. I think many adults who say they are against drugs probably use some kind of drugs themselves.

o True

o False

Submit

Withdraw from study

The following question asks for your opinion. If a statement is MOSTLY TRUE for you, select TRUE. If a statement is MOSTLY FALSE for you, select FALSE. Select Submit to turn the page or select Withdraw from the study:

10. The drug laws we have are stupid.

o True

o False

Submit

Withdraw from study

Filler Activity

1. Which of the following is the reason you most like school?

a. Classes

b. Teachers

c. Activities

d. Lunch

2. Why did you choose Archbishop O'Hara High School?

a. Family decision

b. Cost

c. Athletic program

d. Friends attending

3. How much do you feel you contribute to the positive culture of our school?

a. 100%

b. 75%

c. 50%

d. 25%

e. 0%

4. How often do your parents/guardians show interest in your performance at school?

a. They are obsessed.

b. They ask me about school often.

c. They ask about school once in a while.

d. They are only interested at report card or parent-teacher conference time.

e. They do not show much interest in how I do at school.

5. In which of the following areas do you feel the least safe?

a. In the parking lot

b. In the hallways

c. After 4 p.m. in the commons.

d. I feel safe at school

6. In a week, how many hours do you spend studying outside of the school day?

a. 0 hours (I don't study outside of the school day)

b. 1 - 5 hours

c. 6 – 10 hours

d. More than 10 hours a week.

7. What are your plans after high school?

a. attend a four-year college

b. attend a two-year college

c. join the military

d. work full time

e. I don't know

8. In general, what kind of grades do you get in school? Pick the choice that is closest to your level of achievement.

a. A average

b. Between an A or B average

c. B average

d. C average

e. Below a C average

9. Please select the response that best represents your current opinion.

I think that high school should start later than it does now.

a. Strongly Disagree

b. Disagree

c. Agree

d. Strongly Agree

e. No Opinion

10. In your family, do high school students help take care of younger children in the afternoons?

a. Yes

b. No