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Kimberly Moonan

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The Impact of After-School Programming, Neighborhood Safety, and Neighborhood Support on
Adolescent Alcohol Use

Kimberly Moonan

Senior Honors Thesis, Social Welfare

Project Advisor: Dr. Barry Loneck

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The Impact of After-School Programming, Neighborhood Safety, and Neighborhood Support on
Adolescent Alcohol Use
Kimberly Moonan

Abstract

This study seeks to evaluate the relationship between monitoring and adolescent deviant behaviors, with a specific focus on adolescent alcohol use. It is hypothesized that when community safety and support are low; after-school programming will serve as a protective factor and lower levels of alcohol use will be reported. Data were collected on a sample of 373 using the Student Success Profile. Because research shows that adolescent-report of friend behaviors is actually more reflective of their own behaviors (adolescents project their beliefs about own behaviors onto their peers), this study used adolescent-report on peer behaviors as an indicator of self-use. This study seeks to determine whether adolescent alcohol use is impacted by adolescents' participation in after-school programming and their perceived level of neighborhood safety and support.

Introduction

The use of alcohol by adolescents is widespread. In fact, alcohol is the drug most commonly used and abused drug by the adolescents (CDC, 2008). According to the Centers for Disease Control and Prevention (CDC) (2008), 11% of the alcohol in the United States is consumed by youth aged 12 to 20. This results in numerous negative consequences ranging from problems in the academic, social, and legal spheres. There are also physical effects on brain development, memory problems, unintentional injuries and potential death.

Past research has shown that there is a high correlation between adolescent alcohol use and peer alcohol use (Kandel, 1996; Bauman & Ennett, 1996; Fowler, et al., 2007; Curran, Chassin, & Stice, 1997; Harden, Hill, Turkheimer, & Emery, 2008). While there is controversy over whether this is due to peer influence, to peer selection, or if the relationship is possibly spurious is still a question for research. Whatever the causal relationship, peer use is a significant risk factor for adolescent alcohol use. Curran Chassin and Stice (1997) note that peer substance use is one of the most reliable and strongest predictors of adolescent use.

Research has also suggested that low adult supervision in the hours following school is associated with risky behaviors, including substance use (Gage, Overpeck, Nansel, & Kogan, 2005). In fact, in early adolescence the most deviant behaviors take place during these hours (Pettit, Bates, Dodge, & Meece, 1999). After school programming seeks to alleviate these problems and serve as a protective factor by providing adult supervision and safe environments. Structured programs have been shown to lead to lower levels of social and behavioral problems, including drug and alcohol use (Riggs & Greenberg, 2004a). Research further suggests that positive effects of after school programming may be elevated for children who are from low-

income families, who live in high-risk neighborhoods, or who experience a combination of the two (Posner & Vandell, 1999).

Furthermore, the environments in which adolescents reside have a compounding effect on adolescent alcohol use (Mrug & Windle, 2009; Pettit, Bates, Dodge, & Meece, 1999; Gordon-Simmons, Simmons, Conger, & Brody, 2004). Disadvantaged neighborhoods are associated with increased peer and adolescent alcohol use. However, parental monitoring in these environments is associated with decreased levels of alcohol use (Chuang, Ennett, Bauman, & Foshee, 2005).

This investigation sought to determine if adolescent alcohol use is impacted based on the adolescent participation in after-school programming and on their perceived level of neighborhood safety and support.

Review of the Literature

Adolescent Alcohol Use

Adolescents have long engaged in underage drinking. Research indicates that alcohol use is an age-related phenomenon (SAMHSA, 2006). There is a positive relationship between age and the percentage of persons who have had at least one drink in their lifetime. A steep increase in alcohol use occurs during adolescence. This increase plateaus around age 21, an age when 90% of the population have had an entire alcoholic drink, a 40% increase from age 15.

While prevalence increases with age, 10% of 9 to 10 year-olds have already started drinking alcohol (Donovan et al., 2004). Research indicates that 25.6% of students drank more than just a few sips of alcohol before age 13 (CDC, 2006). Initiation of alcohol use peaks during 7th and 8th grades (Faden, 2006). According to the 2007 Youth Risk Behavior Survey, prevalence of beginning to drink alcohol before age 13 is higher for males than females. This gender

difference is seen over time. Prevalence was higher among males and females in 9th grade (36.4% and 31.3% respectively) than males and females in the 12th grade (23.2% and 15.4% respectively)(CDC, 2006). It is interesting to note that there is a significant increase in use among the 9th grade students. While this difference may be due to historical events, there is a clear trend of initiation of use at an earlier age.

According to the 2005 Youth Risk Behavior Survey, 45% of high school students drank some amount of alcohol during the past 30 days (Eaton et al., 2008). Although the percentage of adolescents who use alcohol is still high, the percentage of students who currently use alcohol has decreased from 81% in 1999 to 74.3% in 2005 (CDC, 2006). According to the 2005 *Youth Risk Behavior Surveillance*, the percentage of students who report episodic heaving drinking has decreased from 33.4% in 1997 to 25.5% in 2005. There has also been a significant decrease in the number of students who drove after drinking and in the number of students who rode with a driver who had been drinking. Therefore, while fewer students report drinking, those that do participate are initiating use before the age of 13.

Alcohol use varies across ethnicity and gender. White males report the highest level of use and lifetime alcohol use was higher with both White (75.3%) and Hispanic (79.4) students. In comparison, Black students only reported 69% lifetime alcohol use. Results illustrate that males show a higher rate of use regardless of race(CDC, 2006).

In 2002, youth aged 12 to 20 consumed 11% of the alcohol in the United States (OJJDP, 2005). Adolescents who use alcohol have extremely different drinking habits than adults who use alcohol. While fewer adolescents participate in alcohol use than adults, greater proportions engage in problematic drinking. In fact, it is estimated that of the 11% of alcohol consumed by

adolescents, 90% is consumed while binge drinking. According to a 2002 National Survey on Drug Use and Health, in the past 30 days, 10% of youth ages 15 to 17 years old and 24% of those 18 to 20 years old report binge drinking, which is characterized by having five or more drinks in a sitting (OJJDP, 2005). The *Youth Risk Behavior Surveillance* (2005) indicates that this number may be 25.5% for the general high school population. Furthermore, the rate of binge drinking is higher among males than females. Rates of binge drinking are also higher among White and Hispanic males (CDC, 2006).

Adolescents also report more frequent occasions of binge drinking than adults. According to a 2002 National Survey on Drug Use and Health, 43% of adult drinkers report heavy drinking on one or more occasions in the past month. On the other hand, 50% of 12 to 14 year-old drinkers, 65% of 15 to 17 year old drinkers, and 72% of 18 to 20 year-old drinkers report that they drank heavily within the past month. Therefore, while 72% of 15 to 17 year olds and 49% of 18 to 20 year olds did not report drinking in the past month, those adolescents who do drink alcohol display more risky patterns of use (OJJDP, 2005).

Guilamo-Ramos, Turrissi, Jaccard, Wood, and Gonzalez (2004) conducted an especially interesting study to determine why some adolescents move beyond experimentation with alcohol to heavy episodic-type drinking (i.e. binge drinking). The sample included 1,420 students in grades 7 through 11. While the study demonstrated gender differences in all age groups (males were more likely than females to shift to heavy episodic drinking), there were no significant grade effects. The authors observe that the risk for heavy episodic drinking is similar across all grades once a student begins experimenting with alcohol, even if it is on a “light” basis. The buffers that prevented youth from transitioning to heavy episodic drinking included parent

parameter setting, good communication patterns, expressions of warmth and affection, and the minimizing of associations with peers who consume alcohol.

The DHHS (2007) has stated that about 5.5% of persons between the ages 12 to 17 meet the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) diagnostic criteria for alcohol abuse or alcohol dependence. This number may be seriously underestimated. The DSM-IV-TR criterion was developed for adults and does not take developmental differences between adolescents and adults into account. In order to meet the adult criterion, an adolescent must be significantly impaired as a result of their drinking.

The DHHS (2007) also reports that the highest prevalence of persons meeting the criteria for alcohol dependence is among people aged 18 to 20. Alcohol dependence is marked by increased tolerance of the effects of alcohol, withdrawal symptoms when alcohol is not consumed, and a persistent desire to cut back despite continued use. Those who meet the criteria for alcohol abuse demonstrate an inability to meet obligations and recurrent interpersonal problems as a result of drinking as well as alcohol-related legal problems and recurrent use in hazardous conditions. (American Psychological Association, 2000)

Persons who begin drinking prior to the age of 15 are five-times more likely to meet the criteria for alcohol abuse or dependence later in life than persons who begin drinking at or after age 21 (Hawkins et al., 1997). It is also important to note that children of alcoholics are between four and ten times more likely to become alcoholics themselves (Russell, 1990).

Often times, alcohol abuse or dependence leads to adolescents drinking alcohol in socially inappropriate situations. For example, nationwide 4.3% of students drank at least one drink on school property during the last 30 days (CDC, 2006).

Effects of Alcohol Use

There are countless negative consequences associated with underage drinking. Youth who drink alcohol are more likely to experience a range of problems, including: school problems; social problems; legal problems; physical problems; unwanted, unplanned, and unprotected sexual activity; disruption of normal growth and sexual development; physical and sexual assault; higher risk for suicide and homicide; alcohol-related car crashes and other unintentional injuries; memory problems; abuse of other drugs; changes in brain development; and death from alcohol poisoning. The risk for the occurrence of these experiences is elevated for persons who participate in binge drinking (CDC, 2008, Miller et al., 2007). This risk is present for individuals with and without a family history of alcohol problems (Hingson et al., 2002).

Adolescents are more likely to participate in risk taking behaviors after consuming alcohol and in 2005 alone, there were more than 145,000 visits to the emergency room by youth aged 12 to 20 for alcohol related causes (CDC, 2006). During the month prior to the survey, 28.5% of students rode in a vehicle driven by someone who drank alcohol one or more times and 9.9% of students drove a vehicle after drinking alcohol one or more times (CDC, 2006). This not only poses a threat to the safety of these adolescents, but it also threatens the safety of the general population. Of mortalities resulting from a crash involving a drunk driver under the age of 21, 45% are persons other than the driver (DHHS, 2007).

Alcohol use is also linked to risky-sexual behaviors (CDC, 2006). Thirty-three point nine percent of students nationwide are sexually active. Of those students who are sexually active, 23.3% had drunk alcohol or used drugs before their last occasion of sexual intercourse. Males are more likely to use drugs or alcohol before their last occasion of sexual intercourse (27.9%) in

comparison to 19% of females who reported using drugs or alcohol before their last occasion of sexual intercourse. These rates are also higher among White (25%) and Hispanic (25.6%) students than among Black (14.1%) students (CDC, 2006). These risky sexual behaviors result in elevated possibilities for unplanned pregnancies and the contraction of sexually transmitted diseases, including HIV and AIDS. The potential for an unplanned pregnancy may result in fetal alcohol spectrum disorders, a leading cause of mental retardation (Jones & Smith, 1973).

Research has shown that adolescents who engage in underage drinking are at risk for structural and functional changes to their developing brains. Animal studies have proven that binge drinking in adolescence has a detrimental effect on memory and on motor impairment. The frontal cortex is also negatively affected by alcohol consumption. Damage to the frontal cortex affects the development of self-regulation, judgment, reasoning, problem solving, and impulse control (Rodd et al., 2004).

Furthermore, the initiation of drinking at an early age is correlated with continued heavy drinking across the lifespan. This further places individuals at risk for medical consequences, including “cancers of the oral cavity, larynx, pharynx, and esophagus; liver cirrhosis; pancreatitis; and hemorrhagic stroke” (DHHS, 2007).

Morbidity and mortality rates have been shown to increase 200 percent between middle childhood and late adolescence and early adulthood. Alcohol use is entangled in the factors that contribute to the dramatic rise. Alcohol is the leading contributor to death from injuries, the main cause of death for persons under the age of 21. Each year 5,000 youth die from alcohol related injuries. Thirty-eight percent of these deaths involve motor vehicle crashes, 32 percent are a result of homicide, and 6 percent are a result of suicide. Adolescents also appear to be more

sensitive to the stimulating effects of alcohol rather than the adverse effects of alcohol. This may account for the sharp increase of alcohol related fatalities. After drinking, adolescents are more likely to partake in activities that they may be too impaired to perform, such as driving. They are also more likely than adults to drink themselves into a coma(DHHS, 2007).

Risks for Alcohol Use

Research has shown that abstinence is an achievable goal, but that long-term maintenance is a much more difficult ambition (Hawkins, J.D., Catalano, R.F., & Miller, J.Y, 1992). In response to these challenges, efforts to reduce substance abuse have shifted from identifying effective treatment programs to identifying effective prevention programs. Risk factors for substance use is generally categorized into contextual factors and individual and interpersonal factors. Contextual factors include laws and norms favorable toward behaviors, availability of substances, extreme economic deprivation, and neighborhood disorganization. Individual and interpersonal factors consist of physiological factors, family alcohol and drug behavior attitudes, poor and inconsistent family management practices, family conflict, low bonding to family, early and persistent problem behaviors, academic failure, low degree of commitment to school, association with drug using peers, alienation and rebelliousness, attitudes favorable to drug use, and early onset of drug use.

As children move from late-childhood to early adolescence, there are numerous changes that occur which elevate the risk for alcohol use. Young adolescents begin to view alcohol in a different light. By age 13, cognitions shift from a primary emphasis on the adverse effects of drinking alcohol, to a primary emphasis on the positive and arousing effects of alcohol (Dunn & Goldman, 1998). This shift helps to explain the peak in initiation of use in the 7th and 8th grades.

Bauman and Ennett (1996) note that previous research indicates that adolescents' normative expectations about drug use are important indicators of use. This is based on the concept that persons who believe that alcohol use is normal and occurs often are themselves more likely to use drugs. Conversely, adolescents who have low normative expectations are less likely to use drugs. However, these authors point out that the correlation between normative expectations and drug use may actually be due to the influence of friend selection.

Personality traits also increase an individual's propensity to use alcohol (DHHS, 2007). Depression and anxiety have been identified as risk factors for alcohol use. In general, adolescents suffering from mental disorders have significantly higher rates of alcohol use than the normative population. Other individual factors that influence alcohol use include high levels of impulsiveness and aggressions, conduct problems, novelty seeking, and low harm avoidance. Research has shown that early-maturing girls who have an older boyfriend are also at a greater risk for alcohol use (DHHS, 2007).

The genetic makeup of a person may potentially increase the risk for alcohol use. However, research shows that genes are more influential when it comes to developing problematic use rather than in the initiation of alcohol use. It appears that the environment plays a larger role in the initiation of alcohol use (Rhee et al., 2003).

Theoretical Framework for Adolescent Alcohol Misuse

Petraitis, Flay, and Miller (1995) conducted an in depth review of 14 of the most prominent theories of adolescent substance use. The authors acknowledge that there is currently no model that sufficiently explains the relationship or causal ordering of the correlates with drug use. Existing theories can be categorized into cognitive affective theories, social learning theories, conventional commitment and social attachment theories, theories that place emphasis

on the role of intrapersonal characteristics, and theories that seek to integrate the aforementioned paradigms. For the purpose of this study, ecology of human development theory, social cognitive/learning theory, and social control theories will be discussed.

Bronfenbrenner's (1981) ecology of human development theory posits that adolescents are affected by their social contexts and the relationships that these contexts have with each other. Bronfenbrenner suggests that individuals should be viewed from a person-in-environment framework. He argues that environmental events have the strongest effects on individual development. There are four systems that affect the individual: the microsystem, the mesosystem, the exosystem, and the macrosystem. The microsystem is comprised of principal and immediate socialization contexts. These include family, peer, and school contexts. Interactions that occur in the mesosystem are comprised of the same contexts; however, these processes take place between two or more settings in which the developing person becomes an active participant. This emphasizes the idea that functions in different contexts are not mutually exclusive. For example there are interconnections between family and school contexts that affect the development of an individual. The exosystem consists of social environments in which a child may not frequently interact, but that still affect the child's development. This includes the neighborhoods in which children live. The macrosystem is the largest system and affects the child through the laws and the cultural values of the society. Accordingly, human development takes place within these systems and the relations between these systems shape behavior. He argues that active engagement or even exposure to what others are doing inspires the individual to employ similar activities (Bronfenbrenner, 1981).

Bandura's (1986) social cognitive/learning theory posits that role models, specifically close friends and parents, influence adolescents' behavior. Bandura argues that adolescents'

beliefs can be both positively and negatively shaped based on their exposure to people in their environment who either use or refuse to use substances. Adolescents' outcome expectations are directly shaped by their observations of these events. Observations of important others directly shapes adolescents' expectations about social, personal, and physiological consequences of substance use (Bandura, 1986).

According to Petraitis, Fray, and Miller (1995), Bandura's model calls for prevention efforts to focus on making enhancing substance-abstaining role models and making substance-using role models less influential. The focus should be on teaching refusal skills and enhancing refusal self-efficacy. Studies have found that nearly half of the variance in alcohol use could be predicted from adolescents' perceptions that significant others approve of alcohol use.

Elliott's (1985) social control theory targets weak bonds to conventional society and institutions and individuals who discourage deviant behaviors as the cause of deviant behaviors. A weak bond to conventional society is developed when there is little commitment to the values, institutions, and socialization forces (such as schools and religions), which comprise conventional society. He argues that these weak bonds result in adolescents establishing emotional attachments to substance using peers. This is based on the assumption that when bonds to conventional society are weak, adolescents will not internalize conventional values or standards for behavior. Instead of attaching to conventional role models, such as parents or teachers, those adolescents with weak bonds to conventional society will become attached to substance-using peers.

Elliot (1985, 1989) also asserts that weak social bonds are formed when there is strain and breakdown of established institutions and ineffective socialization to conventional society.

Strain is defined as the discrepancy between an adolescent's aspirations and his perceptions about the opportunities to achieve such aspirations. Strain can occur in three spheres: in the home, in school, and within the adolescent's occupation. The breakdown of established institutions is occurs in disorganized neighborhoods characterized by crime, unemployment, ineffective schools, and failed social institutions. Disorganized families, where traditional family structure is disrupted (i.e. single parent households or divorced families), are also characteristic of the breakdown of established institutions. Ineffective socialization may result in adolescents becoming attached to substance-using peers.

A study by Ennett et al. (2008) utilized a conceptual framework based on social ecology, social learning, and social control theories to identify the joint effects of social contexts and contextual attributes on the development of adolescent alcohol misuse. The study confirms the merit of the aforementioned theories and the influence of multiple social contexts in the development of adolescent alcohol misuse. Thus the development of adolescent alcohol use occurs across the contexts of peers, family, community, and schools.

Hawkins, Catalano, and Miller have integrated control theory and social learning theory to from the social development model in order to guide efforts to prevent substance use. The model emphasizes the important function of bonding to prosocial aspects of society in protecting adolescents from the aforementioned risk factors. The model stresses the need for prosocial bonds to family, school, and peers as a direct form of protection from substance use. The model defines bonding as similar to Bowlby's concept of attachment. Strong parental attachment, commitment to schooling, and the belief in generalized social expectations, norms and values are inversely related to drug use. Specifically, the model theorizes "interactions among (a) opportunities for involvement offered in each social unit, (b) the skills used by individuals in

these social units, and (c) the reinforcements offered in these units” will result in the adolescent bonding to a social unit and “produce belief in the values of the social units in which young people develop” (Hawkins et al., 1992, 87). The authors argue that youth who develop bonds to social units that perpetuate negative norms about drug abuse are unlikely to abuse drugs.

Social development model, therefore, suggests that prevention strategies need “(a) to make available opportunities for children to be involved in prosocial activities, (b) to provide skills needed to undertake these activities successfully, and (c) to provide positive reinforcement for successful involvement” (Hawkins et al., 1992). These strategies should be implemented across a variety of social settings and be based on research of risk and protective factors.

Peer Influence

During adolescence, youth begin to seek more autonomy and begin to spend more time with their peers. Research has consistently identified peer substance use as a predictor of adolescent use (Curran, Chassin, & Stice, 1997). In fact, peers have been identified as a central, if not the most important, risk factor in adolescent use of both legal and illegal drugs (Kandel, 1996; Bauman & Ennett, 1996; Fowler, et al., 2007; Curran, Chassin, & Stice, 1997; Harden, Hill, Turkheimer, & Emery, 2008). Another important risk factor is adolescents’ perceived beliefs of peer attitudes towards alcohol use (Fowler, et al., 2007).

Peers have direct and indirect influences on adolescent drug use by modeling drug use, shaping norms, attitudes, and values surrounding drug use, providing opportunities for use, access to alcohol, and by encouraging alcohol use (Elliott, 1985). Furthermore, in adolescence group membership identification is centrally defined by drug use or drug non-use (Bauman & Ennett, 1996; Fowler, et al., 2007; Bauman & Ennett, 1996). The strong correlational

relationship between adolescent and peer alcohol use supports the argument of social cognitive/learning theory.

Not all adolescents are equally vulnerable to the power of peer influence. According to Allen, Porter, and McFarland (2006) there is a normative increase in deviant behavior during adolescence. Therefore, the majority of peer groups will expose adolescents to problematic behavior. However, the effects of this exposure are mediated by individual characteristics. When at-risk and deviant adolescents are exposed to non-deviant peer groups they are less likely to display deviant behaviors. Likewise, when a non-deviant adolescent is exposed to a deviant peer they are then more likely to display deviant behaviors. This is especially true for adolescents with moderate levels of behavior problems. The two adolescents may then tend towards the middle of the spectrum of deviance.

It is important to note that peer influences may not affect all ethnic groups equally. Research suggests that the relationship is weaker among African American adolescents than among Caucasian adolescents (Curran, Chassin, & Stice, 1997). Individual characteristics such as self-esteem, insecure attachment style, and previous drinking behaviors also affect the magnitude of influence that peers have on an adolescent (Harden, Hill, Turkheimer, & Emery, 2008).

Susceptibility for peer influence tends to be a slippery slope. According to Allen et al. (2006), adolescents considered to be highly susceptible to peer influence have less stable friendships and become less popular over time. This increases the uncertainty of relationships and social status, which over time increases the occurrence of validation seeking and increases

the power of peer influence. This elevated susceptibility is associated with increased problems as a result of drug and alcohol use(Allen, Porter, & McFarland, 2006).

Allen et al. (2006) also suggest that adolescents who are highly susceptible to peer influence face considerable challenges formulating their own opinions about problematic behaviors. Expectedly, these adolescents are more likely to have drug and alcohol behaviors that are more directly reflective of peer patterns of drug and alcohol use. Conversely, those adolescents who are able to assert influence over their friends display lower levels of problematic behavior and lower levels of drug and alcohol use. Because the most influential adolescents display fewer problems, one can theorize that the most negative peer influences do not always come from the most influential adolescents(Allen, Porter, & McFarland, 2006).

Jaccard, Blanton, and Dodge (2005) hypothesized that the influence of a peer is highly dependent on the extent to which the adolescent identifies with that friend. When an adolescent closely identifies with a peer, the influence of that peer is strengthened. However, their study revealed that while there are consistent changes over time in adolescent behavior in response to peer behavior, the effects are not strong and an adolescent's closest friend does not have pervasive peer influence. Alternatively, the study supported the idea that peer influences are stronger when an adolescent is dissatisfied with their maternal relationship. The authors suggest that when parental bonds are strained adolescents identify more with their peers. This supports Elliot's social control theory. There is also an increase in the likelihood of peer effects when peers share similar behavioral histories.

It is important to note that an adolescent's exposure to deviant peers is prejudiced by his genetic makeup. The theory of the gene-environment correlation postulates that a person's

genetic predispositions affect the probability of exposure to environmental risks (Harden, Hill, Turkheimer, & Emery, 2008). In other words, some adolescents are at a genetic risk of associating with peers who use alcohol. Furthermore, the same genes that place a person at risk for exposure to using peers may also influence personal use. The dual effects of genetics help explain the similarities between adolescent and peer alcohol use.

The results of a study by Harden et al. (2008) suggest that genetic risk also moderates the effects of peer behaviors. For example, high-risk adolescents display a strong positive correlation with best friend substance use. Conversely, low-risk adolescents show minimal substance use across the spectrum of friend substance use. It may be that peer influence is strong amongst treatment populations, but has relatively little effect on the general population (Harden, Hill, Turkheimer, & Emery, 2008).

The literature suggests that peer selection interacts with peer influence to create the high correlation between peer and adolescent alcohol use (Fowler, et al., 2007; Curran, Chassin, & Stice, 1997). This is based on the theory that adolescents select peers who have patterns of substance use similar to their own. These adolescents are simultaneously susceptible to peer pressure to conform to these selected friends. Therefore the adolescent selecting peers with patterns drug behaviors similar to their own skews the correlation between peer and adolescent alcohol use (Curran, Chassin, & Stice, 1997).

Bauman and Ennett (1996) also place increased emphasis on the role of friend selection in association between adolescent and peer use. The authors argue that: “(a) drug users choose other users to be friends; (b) non-users choose other non-users to be friends; (c) friendships dissolve when the drug behavior of friends becomes dissimilar (deselection); and (d) peer groups

restrict membership to people with drug behavior like their own” (pp. 186-187). According to the selection model, drug behavior brings about friendships and plays an extensive role in the development of similar behaviors. Once the friendships are formed, influence continues through the process of reinforced common behaviors. Therefore, the authors argue that a failure to control for selection over estimates the role of peer influence (Bauman & Ennett, 1996).

In their study, Curran et al. (1997) controlled for the possibility that rebelliousness accounted for the relationship between peer use and the adolescent’s own use. The results of the study did not confirm this hypothesis, thus supporting the explanation that the association is a reflection of both peer selection and peer influence. The authors suggest that peer groups are appropriate targets for interventions.

Bauman and Ennett (1996) suggest that projection skews the results of measures used to interpret the role of peer influence. The majority of studies comparing peer and adolescent behavior ask adolescents to describe their friends’ behaviors. When answering these questions, adolescents project their own beliefs and behaviors onto their friends (Bauman & Ennett, 1996; Kandel, 1996). Studies that rely on an adolescent’s perception of their friend’s behavior, rather than on the friends self-report, find a stronger association between adolescent and peer alcohol use. Bauman and Ennett assert that the correlation for perceived reports is 0.07. However, when friends self-report, the correlation decreases significantly to 0.001 (1996). Kandel suggests that correlations that rely on the adolescent’s perceptions of peer use are two to three times greater than those reliant on self-reports (1996). These authors argue that perceived reports are more reflective of the adolescent’s own use than the use of their friends. Still, it may be argued that an adolescent’s thoughts regarding their friend’s behaviors are a more important source of influence

than is the friend's actual behaviors. As discussed below, this has implication for the selection of a proxy measure for adolescent use.

Parental Influences

Kandel (1996) also argues that peer influences have been overvalued in comparison to parental influences. The strength of parental effects is dependent on social reinforcement, role modeling, and on the quality of the parent-child interaction, especially parental monitoring of activities. Ennett et al. (2008) also found that a positive family environment, defined by both closeness and supervision, can moderate the negative effects of peers. Research by Guilamo-Ramos et al. (2004) also supports the idea that a lack of adult involvement increases the possibility for adolescents to adopt the values of peers who support heavy drinking. This supports social control theory that family disorganization may result in identification with deviant peers.

Peers and parents have increased effects in different spheres and at different ages(Kandel, 1996). While peers have greater influence in regard to deviant behaviors and short-term lifestyle issues, parents have a stronger influence on long-term goals. Parents act as role models and set normative standards for their children (Pettit, Bates, Dodge, & Meece, 1999). Their influence is the strongest while their children are young. In contrast, peers exert their influence by acting as reciprocal role models and by shaping norms for favorable alcohol use. Their influence increases with age. However, the parent can continue to indirectly influence their children by monitoring and controlling their children's access to different peer groups. Decreased parental monitoring is indicated in young adolescent's drift towards antisocial peers(Pettit, Bates, Dodge, & Meece, 1999). Therefore, peers may affect substance abuse behaviors in the short term, but lifetime behaviors are more reflective of parental influence.

Parental modeling also has a significant impact on adolescent behaviors (Kandel, 1996). Adolescents not only model after the delinquent behaviors of their friends, but they also model after their parent's delinquency and drug use. Parental drug use is associated with the initiation of drug use by adolescents (Hawkins et al., 1992). Thus, modeling is reliant on parental behaviors and norm setting (Kandel, 1996). This is reflective of Bandura's social cognitive/learning theory.

The family unit also affects the power of parental influences (Pettit, Bates, Dodge, & Meece, 1999). Structural deficiencies, for instance a single-parent household, and functional deficiencies, such as decreased parental involvement, serve as indirect influences on affiliation with deviant peers. Family conflict has also been shown to increase the risk for delinquency and illegal drug use (Hawkins et al., 1992). This further supports social control theory's position that disorganized families have negative consequences on adolescents and result in weakened bonds to society.

Parenting practices and the degree of bonding between children and parents also affects adolescent alcohol abuse (Hawkins et al., 1992). Family management practices marked by poor monitoring of behavior, unclear expectations for behavior, few and inconsistent rewards for positive behavior, and excessively severe and inconsistent punishment for unwanted behavior increase the risk of adolescents abusing alcohol. A portion of variance in alcohol use is explained by reported parental trust, warmth and involvement. When there is a low level of bonding to family there is an increased risk for the initiation of drug use.

Community Influences

The community that the family resides in also plays a substantial role in shaping adolescent behavior. In fact, neighborhood influences have been found to affect adolescent behaviors more than parents (Kandel, 1996). According to Kandel, communities function as

either open or closed networks. In accordance with social control theory and ecology of human development theory, closed networks boost the development and enforcement of social norms, which in turn limit adolescents' involvement in deviant activities. However, in open networks there is a lack of interaction between parents and children, and between parents and other adults in the community. The low level of interaction results in diminutive levels of communication and in the erosion of norms and family control. Disorganized communities provide children with increased opportunities to develop antisocial behavior.

According to the 2000 U.S. Census, neighborhood concentrated poverty is associated with high levels of childhood externalizing behaviors (Mrug & Windle, 2009). The effect, however, was mediated by neighborhood social processes and by the quality of parenting. Reports of low levels of perceived informal social control of children is linked with higher rates of adolescent delinquency. Self-reported aggressive behavior is predicted by children's reports of neighborhood danger. It appears that structural disadvantage does not directly have an effect on youth behavior, but instead affects behavior indirectly through weakened social organizations.

In accordance with social control theory, a weakened social organization predicts lower levels of parental monitoring, which in turn predicts more youth problem behaviors (Mrug & Windle, 2009). Adolescents living in neighborhoods with low social control and low social cohesion associate with more deviant friends and engage in more problem behavior. Mrug and Windle (2008) also suggest that social control, not social cohesion, has stronger effects on parenting, child behavior, and peer groups in the community.

However, Gordon-Simmons et al. (2004) found support for an inverse relationship between collective socialization and conduct problems. The authors focus on social

disorganization theory, which posits that collective socialization influences child antisocial behavior. The theory emphasizes the influence of adults in a neighborhood on children who are not biologically theirs. Collective socialization is defined by networks with intergenerational closure between children and adults. Accordingly, parents know their children's friends, the parents of their friends, and other adults and children in the neighborhood. There is then a collaborative effort to control and socialize children in the neighborhood. It is proposed that deviance will remain low if adults in the community take responsibility for monitoring and correcting all children in the community (Gordon-Simmons, Simmons, Conger, & Brody, 2004).

A study by Gage et al. (2005) reinforces the importance of parental and neighborhood characteristics. The study proposes that the frequency of spending evenings out with friends is correlated with increased risk for alcohol and tobacco use, aggression, and violence. This risk is elevated when there is low parental involvement, difficulty communicating with parents, and low perceived neighborhood safety and trust. In support of Kandel's (1996) claim that neighborhood influences supersede parental characteristics, the highest level of problem behaviors were seen in children who were closely monitored but living in high-danger neighborhoods. In analyzing their results, Pettit, Bates, Dodge, and Meece (1999) found that high levels of problem behaviors were associated with an increased frequency of unsupervised activity with peers, lower levels of monitoring, low neighborhood safety, lower socio-economic status, single-parent status, and male children. It was found that the behavioral problem scores of these high-risk adolescents were reduced significantly when parental monitoring was increased. This suggests that supervision is negatively correlated to adolescent behavioral problems and is thus the proper venue for intervention.

Influences of After-School Programming

Research has indicated that low supervision during the hours after-school is associated with early incidences of sexual activity, substance use, risk taking, lower academic grades, and vulnerability to peer pressure (Gage, Overpeck, Nansel, & Kogan, 2005; Riggs & Greenberg, 2004a). Specifically, the highest rate of juvenile crime and violence occurs between the hours of two and eight in the afternoon (Sarampote, Bassett, & Winsler, 2004; Riggs, 2006; Riggs & Greenberg, 2004a). This relates directly to social control theory's arguments that decreased ties to the community evince greater levels of deviance.

Research suggests that involvement in after-school programming acts as a protective factor for children. There is evidence of increased resilience variables including: bonding to school, perception of parents, and teacher-rated behavior (Morrison, Storino, Robertson, Weissglass, & Dondero, 2000). There is also evidence that attendance is related to decreases in behavior problems and to increases in social competence (Riggs & Greenberg, 2004a). Participation in school-based after-school programs is associated with lower rates of initiation of alcohol use and truancy. In fact, after-school care has been demonstrated to be a protective factor for fifth and sixth graders at risk for substance abuse (Sarampote, Bassett, & Winsler, 2004). Children who participate in after-school activity are also more likely to report a sense of competence and pride in school, to appropriately channel anger, and to pay attention in class (Riggs & Greenberg, 2004a).

In 2001, there were more than 28 million school-age children with both or all parents in the work force. However, in 2000, there were over 11 million children who were not in some kind of after-school programming (Riggs & Greenberg, 2004b). After-school programs are expensive and can take up a substantial portion of a family's income (Sarampote, Bassett, &

Winsler, 2004). Working families spend about 9% of their monthly earning on child-care. In comparison, child-care can cost up to 23% of monthly earnings for families with income levels below the federal poverty level. It is estimated that 86% of families pay the full fee for their children to be in after-school programming. It is not surprising, then, that low-income families use relative care more often than high-income families who are more likely to place their children in non-relative after-school care.

Research indicates that low-income children experience strong positive effects as a result of participating in formal after-school programming (Posner & Vandell, 1999). Participation has been associated with improved behavior in school, grades, and emotional adjustment and peer relations (Sarampote, Bassett, & Winsler, 2004). Unfortunately, it is likely that high costs disproportionately exclude low-income children from non-relative after school care.

It has also been demonstrated that self-care has more negative effects for children from low-incomes. These children displayed more adjustment problems and increased behavior problems if they were allowed to interact with peers while they were in self-care (Sarampote, Bassett, & Winsler, 2004).

There is an association between adolescents who participate in self-care in the presence of peers and the incidence of behavior problems (Pettit, Bates, Dodge, & Meece, 1999). Teachers rate adolescents who report participating in this type of self-care as exhibiting behavior problems. The extent of the behavior problems is dependent on the level of parental monitoring and perceived neighborhood safety. High levels of monitoring can buffer the negative effects of unsupervised peer contact. The opposite holds true for low levels of monitoring. Neighborhood characteristics can also serve to mediate the effects of unsupervised time spent with peers. When

positive role models are accessible there is a decrease in the negative effects of unsupervised time spent with peers. (Pettit, Bates, Dodge, & Meece, 1999).

A study by Urban, Lewin-Bizan, and Lerner (2009) suggests that involvement in extracurricular activities has differential outcomes depending on neighborhood assets. The study found that girls living in low asset neighborhoods had fewer risk behaviors when they participated in extracurricular activities. The same effect was not found in girls from high asset neighborhoods. In fact, these girls displayed higher levels of risk behaviors when they had moderate to high levels of activity involvement. The inverse was true for boys. The authors explain these differential effects with two separate theories. They argue that girls from high asset neighborhoods likely experience the negative effects of over-scheduling. It is proposed that over involvement in activities erodes family functioning by decreasing the amount of time that adolescents spend with their family, which is often combined with increased pressure from adults to achieve. In contrast, males from low asset neighborhoods may experience “deviancy training,” and actually learn deviant behavior from interacting with deviant peers. Urban et al. (2009) suggest that extracurricular activity facilitates informal interactions among peers who are vulnerable to the peer effects on risk behaviors. Sarampote et al. (2004) also highlight that there may be a stigma associated with day-care attendance as children get older.

Summary

Adolescent alcohol use is a serious concern for today’s society and has negative effects on the development and functioning of adolescents. Ecology of human development theory, social cognition/learning theory, social control theory, and social development model help to explain the interconnected effects of peers, parents, neighborhood, and community on adolescents’ decisions to drink alcohol and provide directions for preventative efforts. Research

demonstrates that low supervision in the hours following school is also associated with increased alcohol use and other risky behaviors (Gage, Overpeck, Nansel, & Kogan, 2005). The environments in which adolescents reside also have a compounding effect, with an increase in peer and adolescent alcohol use in disadvantaged neighborhoods (Chuang, Ennett, Bauman, & Foshee, 2005). It appears that structural disadvantage does not directly affect youth behavior, but instead has an indirect effect on behavior through weakened social organizations. After-school programming seeks to alleviate these problems and serves as a protective factor by providing adult supervision and safer environments. Participation in structured school-based after-school programs is associated with lower rates of initiation of alcohol use and truancy (Riggs & Greenberg, 2004a).

In the current study, it was hypothesized that when community safety and support are low, after-school programming would serve as a protective factor for adolescent alcohol use. Thus, this study sought to determine whether the impact of after-school programming on alcohol use is moderated by perceived level of neighborhood safety and support.

Methods

Research Design

The hypothesis was tested by conducting a secondary analysis of the University at Albany's Student Success Profile (SSP) data. The primary investigation is being overseen by principal investigator Laura Hopson, who is an Assistant Professor in the School of Social Welfare.

Research Procedures

Data were collected by Professor Laura Hopson from the University at Albany and I obtained Institutional Review Board approval to utilize the data. Participants originally filled out a survey during class time in local schools and participation was voluntary. The survey took about 45

minutes to complete and included an introduction detailing an explanation of the Student Success Profile, what was required for participation, who would view the answers, and notification that the responses were anonymous.

Sample

The sample included 373 students from a school district in upstate New York. It was comprised of students from grades 7 to 10; 25.8% were in 7th grade, 26% were in 8th grade, 22.4% were in 9th grade, and 25.8% were in 10th grade. The age distribution is 12.1% twelve year olds, 24.7% thirteen year olds, 21.2% fourteen year olds, 21.4% fifteen year olds, 18.7% sixteen year olds, 1.6% seventeen year olds, and 0.3% eighteen year olds. The sample was made up of 53.8% females and 46.2% males and the ethnic distribution was 81.5% White, 5.4% multiracial, 4.9% Black, 3% Hispanic, 1.1% Native American, 1.1% Asian or Pacific Islander, and 3% other. The proportion of students receiving free lunch, an indicator of poverty [Morrison et al., 2000] was 46.4%. The family constellation of these students was 22.9% living with one parent, 67.7% living with two parents, and 9.4% living in another situation.

Survey

The SSP used an ecological framework to assess students' perceptions about microlevel processes in their neighborhoods, schools, peer groups, and families (Bowen et al., 2008). It included 220 multiple-choice items that were grouped into 22 summary measures. Research supports high levels of reliability and validity on these measures (Bowen et al., 2008). Tests of reliability confirm internal consistency; 18 of the 22 dimensions have reliability coefficients greater than .80 (Bowen & Richman, 2007). The SSP has been shown to have good content validity and face validity. Tests have also confirmed that the indicators of contextual risks, social capital assets, and internal assets have good discriminate validity and the measure's core profile

Table 1. Distributions of Demographic Variables

Variables	n	%
Age		
12	44	12.1
13	90	24.7
14	77	21.2
15	78	21.4
16	68	18.7
17	6	1.6
18	1	0.3
Grade		
7	93	25.8
8	94	26
9	81	22.4
10	93	25.8
Ethnicity		
White	300	81.5
Multiracial	20	5.4
Black	18	4.9
Hispanic	11	3
Native American	4	1.1
Asian or Pacific Islander	4	1.1
Other	11	3
Gender		
Male	171	46.2
Female	199	53.8
Free Lunch (poverty measure)		
Yes	172	46.4
No	199	53.6
Living Situation		
Two Parents	251	67.7
One Parent	85	22.9
Another Situation	35	9.4

dimensions demonstrate good construct validity. A study conducted by Bowen et al., supports the idea that friend behavior, parental expectations, and neighborhood support have a positive impact on trouble avoidance.

The current study used adolescent-report of peer behaviors as an indicator of adolescent use.

Research has demonstrated that when answering questions about their peers, adolescents project their own beliefs and behaviors onto their friends (Bauman & Ennett, 1996; Kandel, 1996). In fact, studies that rely on an adolescent's perception of their friend's behavior, rather than on the friends self-reporting, are more strongly associated with the adolescents alcohol use. Therefore this study used adolescent report of peer behaviors as a proxy measure for adolescent alcohol use.

Measures

This study focused on 3 SSP scales: neighborhood safety, neighborhood support, and alcohol use. (See the appendix for a full list of the scales)

After-School Program

Students were asked to respond (1) "no" or (2) "yes" the question "do you currently take part in any school activities that are not part of class work, such as sports or school clubs?"

Neighborhood Safety

Students responded to 8 questions regarding the incidence of safety related factors in the past 30 days. Response options were: (1) "never," (2) "once or twice," or (3) "more than twice." Higher scores are associated with increased risk. The highest possible value is 28 and the lowest possible value is 8. This scale was a true measure of risk, in order to convert it to measure safety the

individual score was subtracted from 24 (the highest possible value in the scale). A value of 0 reflects low safety and a value of 16 reflects high safety.

Neighborhood Support

This scale consisted of 7 questions. Students responded to a Likert scale answering that they (1) “strongly disagree,” (2) “disagree,” (3) “agree,” or (4) “strongly agree” with a statement regarding the level of support the respondent perceives in his neighborhood. Higher scores indicate higher neighborhood support.

Alcohol Use

Students were asked how much the statement “I have friends who drink alcoholic beverages (beer, wine, or liquor)” described them. Responses included: (1) “not like me,” (2) “a little like me,” or (3) “a lot like me.” The responses were used to reflect: (1) no/low alcohol use, (2) moderate alcohol use, and (3) heavy alcohol use.

Statistical Analysis Plan

Data analysis included univariate and bivariate analysis to discern trends in the data to utilized multinomial logistic regression to test the hypothesis. Data analysis was overseen by Associate Professor Barry Loneck in the School of Social Welfare and consultation with Associate Professor Glenn Deane in the Department of Sociology.

Results

Univariate Analysis Alcohol Use

The possible values for alcohol use ranged from 1 to 3. The sample mean was 1.8 with a standard deviation of 0.79, and a median of 2. The skewness was 0.36 and Kurtosis was -1.84. Regarding

the statement “I have friends who drink alcohol,” 42.9% answered that this is “not like me,” 33.8% answered that this is a little like me, and 23.3% answered that this is “a lot like me.” This suggests that a majority, 57.1%, of the sample have at least moderate rates of alcohol (beer, wine, or liquor) consumption.

Neighborhood Safety

The possible values for neighborhood safety ranged from 0 to 16. The sample mean was 14.1 with a standard deviation of 2.9, and a median of 15. The skewness was -2.207 and Kurtosis was 5.159. Results show that a high percentage of students sampled are living in high safety neighborhoods, with 65.2% of students having values between 15 and 16. Only 3.2% of the sample reported values of 0 through 6 indicating that they are living in neighborhoods with extremely low rates of safety.

Neighborhood Support

The possible values for neighborhood support ranged from 7 to 28. The sample mean was 19.15 with a standard deviation of 4.44, and a median of 20. The skewness was 0.126 and Kurtosis was 0.119. Results indicate that 14.2% of the sample experience low levels of neighborhood support (values between 7 and 14), while 40.9% of the sample experience high levels of support (values between 21 and 28).

After-School Program

The majority of students in the sample participated in an after-school program. Of 373 students, 222 (59.8%) participated while 151 (40.2%) did not. The possible values for neighborhood support ranged from 1 to 2. The sample mean was 1.59 with a standard deviation of 0.49, and a median of 2. The skewness was -0.43 and Kurtosis was -1.31.

Table 2. Distribution of School Activities

School Activities	n	%
No	149	40.2
Yes	222	59.8

Table 3. Distribution of Statistics for Neighborhood Support and Safety

Variable	Mean	Median	Minimum	Maximum	SD
Neighborhood Support	19.1555	20.0000	7.00	28.00	4.44832
Neighborhood Safety	14.1635	15.0000	0.00	16.00	2.91226

Table 4. Distribution of Alcohol Use

Alcohol Use	n	%
No/little	160	42.9
Moderate	126	33.8
Heavy	87	23.3

Bivariate Analysis: Correlations

The Pearson correlations were computed to determine the correlations among the variables. The Pearson correlation was found to be $r = 0.297$ ($p = .01$) between neighborhood support and neighborhood safety. This indicates a positive relationship between these two variables.

The Spearman correlation were done to assess the extent of relationship among the remaining pairs of variables. The correlation between extra-curricular activities and neighborhood support was significant ($r = 0.109$, $p < .05$) as was the correlation between neighborhood support and alcohol use ($r = -0.183$, $p < .01$). There was also a significant correlation of between neighborhood safety and alcohol use ($r = -0.380$, $p < .00$). However, there was no significant correlation between participation in extra-curricular activities and alcohol use.

Multinomial Logistic Regression

Due to the categorical nature of the dependent variable, multinomial logistic regression tests were also conducted. The overall model achieved statistical significance, with a chi-square of 60.38 ($df=6$, $p < .001$). Of the three variables in the model, only neighborhood safety had a significant impact on drinking behaviors. For every one unit increase in neighborhood safety students were 1.432 times more likely to be in the no/low use group than the heavy use group ($p < .0005$). Similarly, for every one unit increase in neighborhood safety, respondents were 1.221 times more likely to be in the moderate use group than the heavy use group ($p < .0005$). Neither participation in after-school programs nor neighborhood support had a significant impact on alcohol use.

Table 5. Spearman's Rho Correlations Among Variables

Variables	School Activities	Alcohol Use
Neighborhood Support	0.109*	-0.183**
Neighborhood Safety	-0.029	-0.380**
School Activities		0.085

*Correlation is significant at the 0.05 level (2-tailed)

**Correlation is significant at the 0.01 level (2-tailed)

Table 6. Multinomial Logistic Regression

Alcohol Use _a		B	Std. Error	Wald	df	Sig.	Odds
No/low use	Intercept	-5.727	1.047	29.919	1	0.000	
	Neighborhood Support	0.056	0.035	2.585	1	0.108	1.058
	Neighborhood Safety	0.359	0.065	30.370	1	0.000	1.432
	No After-School	0.574	0.307	3.487	1	0.062	1.775
Moderate Use	Intercept	-2.589	0.827	9.797	1	0.002	
	Neighborhood Support	0.012	0.034	0.117	1	0.732	1.012
	Neighborhood Safety	0.200	0.051	15.389	1	0.000	1.221
	No After-School	0.193	0.309	0.389	1	0.533	1.213

a. The reference category is: Heavy Use

Discussion

Given the unexpected results of the present study, a re-cupping of the theoretical and research literature is important. Existing theoretical frameworks emphasize the destructive effects of impoverished social contexts. Ecology of human development theory argues that social contexts and environmental events have strong affects on individual development. Accordingly, the exosystem affects adolescent drinking behaviors through exposure to safe and dangerous neighborhoods. Social control theory posits that the breakdown of neighborhoods characterized by crime, unemployment, ineffective schools, and failed social institutions result in adolescents becoming attached to substance-using peers. Social cognitive/learning theory further argues that adolescent beliefs about the social, personal, and physiological consequences of alcohol use are developed based on observations of people in their environment who either use or refuse to use alcohol. Social development model further argues that poor bonds to a variety of positive social units results in increased substance abuse. According to these theories, dangerous neighborhoods affect adolescents on multiple levels and result in increased levels of alcohol use.

Previous research supports these theories and stresses the importance of neighborhood influences. In fact, it has been found that neighborhood influences supersede parental influences (Gage, Overpeck, Nansel, & Kogan, 2005; Kandel, 1996). Kandel (1996) found that disorganized communities, marked by open networks with low interaction between parents and children and parents and other adults in the community, result in higher levels of antisocial behavior. Gaige et al. (2005) also indicates that children who are closely monitored but live in high-danger neighborhoods have the highest levels of problem behaviors. Mrug and Wingle (2009) further suggest that social control has stronger effects on parenting, child behavior, and peer groups in the community than social cohesion.

Petit et al. (1999) similarly found that low neighborhood safety is associated with problem behaviors. The authors also stress the relationship between unsupervised peer activity, low levels of monitoring, and a high level of problem behaviors. Subsequent studies have reinforced the association between low supervision during the hours after-school and substance use (Riggs & Greenberg, 2004a; Gage, Overpeck, Nansel, & Kogan, 2005). Simmons et al. (2004) emphasized the power of collective socialization to stifle deviance when adults take responsibility for monitoring and correcting all children in the community. Similarly, Pettit et al. (1999) found that when positive role models are accessible there are diminishing negative effects of unsupervised time spent with peers.

There is evidence that after-school programming increases resilience variables and social competence and decreases the incidence of problem behaviors (Riggs & Greenberg, 2004a; Morrison, Storino, Robertson, Weissglass, & Dondero, 2000). According to Saarampote et al. (2004) after-school care has been demonstrated to serve as a protective factor for fifth and sixth graders at risk for substance abuse.

Based on the available literature it was expected that the impact of after-school programming on adolescent alcohol use would be moderated by the perceived level of neighborhood safety and neighborhood support. However, this investigation did not support the hypothesis. In fact, data trending towards significance suggest that mere participation in *any* after-school program may actually increase the odds of adolescent alcohol use.

The results of this study indicate that mere participation in arbitrary after-school activities is not a source of prevention for alcohol use. In fact, data, trending towards significance, suggest that there may be a reverse effect: adolescents who participate in after school programming

partake in more underage drinking. This evidence demonstrates that it is potentially harmful to place adolescents in after-school programming that merely occupies their time. Program planners must seek to determine which programs are effective at preventing alcohol use and be selective in allocating funds in the future. This has specific implications for future research and program planning. Prior research by Riggs and Greenberg (2004a) indicates that structured programs lead to lower levels of alcohol use, as well as lower levels of other social and behavioral problems and Petraitis et al. (1995) calls for a focus on the teaching of refusal skills and enhancement of refusal self-efficacy. It is important for future research to explore this and other possible characteristics of effective after-school programming. Despite prior research suggesting its significance (Mrug & Windle 2009 and Simmons et al.,2004), neighborhood support also did not have an impact on alcohol use in the sample.

While both neighborhood safety and support were correlated with alcohol use, only neighborhood safety demonstrates a very strong significant relationship with alcohol use with all variables included in the model. While there is a correlation between neighborhood support and neighborhood safety, the data does not support the hypothesis that neighborhood support moderates the impact of after-school programming on adolescent alcohol use. Although data are trending towards significance, at this time there is no significant correlation between participation in after-school programming and alcohol use.

Of the variables analyzed, neighborhood safety is the most salient factor for alcohol use. In the current study, it was assessed by asking students about the occurrence of the following events in the past 30 days: someone being robbing or mugged, hearing gunshots, seeing someone sell illegal drugs, having someone try to sell you illegal drugs, having someone try to get you to break the law, having a fight break out between two gangs, seeing someone threatened with a

weapon such as a gun, knife, or club, and having someone offer you an alcoholic beverage (beer, wine, or liquor).

Neighborhood safety has a negative correlation with adolescent alcohol use; specifically as neighborhood safety decreases alcohol use increases. Thus results show that neighborhood safety impacts adolescent alcohol use.

Previous research supports this contention that low neighborhood safety is a strong predictor of problem behaviors. Studies by Kandel (1996) and Gaige et al. (2005) yielded similar results. The aforesaid authors determined that the effects of neighborhood influences, especially danger, supersede parental characteristics and monitoring.

Safety is the most basic level in Maslow's hierarchy of needs; the drive to fulfill this need affects adolescent use of alcohol. It may be that adolescents from neighborhoods with low levels of safety drink alcohol as a form of self-medication in order to escape from their the chaos derived from insufficient fulfillment of their safety needs. It is also possible that adolescents from neighborhoods marked by high levels of safety are not distracted by their safety needs and are more able to focus on the needs for belongingness, love and self-esteem. The esteem needs are important in the development of self-worth, status, and recognition. Adolescents who are seeking to fulfill this need may engage in more socially acceptable behavior and therefore be less apt to drink alcohol. Future research should explore the role of these needs in the development of alcohol use.

Limitations of the research

It is important to note that the definition of after-school programming is very broad to include “any school activities that are not part of class work, such as sports or school clubs.” This definition offered no delineation between program type and structure of the after-school program. This definition necessarily includes participation in sport activities. Research has shown that athletes report slightly higher rates of alcohol use than non-athletes and are more likely to report binge drinking (Lisha & Sussman, 2010). This inclusion of athletic activities in this definition may have skewed the results. This definition also provides no information detailing the level and kind of monitoring occurring during after-school programming. Therefore, it is possible that the data has included activities that include little or minimal monitoring.

Future Research

These findings indicate that mere participation in broadly defined after-school activities does not serve as a protective factor for adolescent alcohol use. Therefore, research must devote itself to determining which programs enhance protective factors for alcohol use. Research should evaluate what level of monitoring is appropriate, as well as what program structure best enhances resilience to alcohol use. Program planners must take this into consideration when selecting and funding future after-school programs.

This study has determined that neighborhood safety is a strong predictor for adolescent alcohol use. It also identifies specific events that increase the odds of adolescent alcohol use. Due to its strong predictive value, research must also seek to determine best-practice

interventions to increase resilience to these factors and to prevent adolescents from neighborhoods with low safety from using alcohol. Future studies should also seek to determine whether the concept of Maslow's hierarchy of needs is applicable to the development and understanding of adolescent alcohol use.

Conclusion

Alcohol use continues to be a pressing concern for today's youth. Consumption of alcohol is related to numerous negative consequences and there must be efforts towards preventing its use. This study has concluded that adolescents do not benefit from participating in arbitrary after-school programming. In fact, data is trending towards significance suggest that haphazard after-school programming may be related to an increase in alcohol use. Therefore, it is important for future studies to focus on determining which after-school programs decrease risk factors and enhance protective factors for alcohol use. Further, neighborhood safety must be included as a control variable in any future research in this area.

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Appendix I
Neighborhood Support

N2. Indicate your level of agreement with each of the following statements about your neighbors:

	STRONGLY DISAGREE	DISAGREE	AGREE	STRONGLY AGREE
a. Adults in my neighborhood are interested in what young people in the neighborhood are doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. If I had a problem, there are neighbors who would help me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. People in my neighborhood really help one another out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Adults in my neighborhood encourage young people to get an education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Adults in my neighborhood would say something to me if they saw me doing something that could get me in trouble.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. Adults in my neighborhood seem to like young people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. Adults in my neighborhood can be trusted.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix II

Neighborhood Safety

N6. During the past 30 days, how often did any of the following things happen in your neighborhood?

	NEVER	ONCE OR TWICE	MORE THAN TWICE
a. Someone was robbed or mugged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
b. You heard gunshots	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
c. You saw someone selling illegal drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
d. Someone tried to sell you illegal drugs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
e. Someone tried to get you to break the law	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
f. A fight broke out between two gangs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
g. You saw someone threatened with a weapon such as a gun, knife, or club	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
h. Someone offered you an alcoholic beverage (beer, wine, or liquor)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix III

Alcohol Use

FR7. How well does each of the following statements describe you?

NOT A LITTLE A LOT
LIKE ME LIKE ME LIKE ME

d. I have friends who drink alcoholic beverages (beer, wine, or liquor).