

THESIS

WHAT ABOUT THE BOYS: ADOLESCENT MALE VICTIMS OF VIOLENCE,
SUBSTANCE USE, AND THE MODERATING EFFECT OF RELIGIOUS
INVOLVEMENT

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ABSTRACT

WHAT ABOUT THE BOYS: ADOLESCENT MALE VICTIMS OF VIOLENCE, SUBSTANCE USE, AND THE MODERATING EFFECT OF RELIGIOUS INVOLVEMENT

Research has shown that abuse and neglect are linked to negative outcomes in later adolescence and adulthood, such as alcohol use and marijuana use. This study examines a previously collected data set of adolescents across the United States to investigate the extent to which being violently victimized predicted increased alcohol use, drunkenness, and marijuana use across two age groups; and the extent to which these relationships varied across level of rurality or level of religious involvement. Results revealed that victimization significantly predicted increased alcohol use, drunkenness, and marijuana use among both 7th/8th graders and 11th/12th graders. These relationships did not vary by level of rurality. Religious involvement significantly decreased the magnitude of the relationship between victimization and alcohol use, drunkenness, and marijuana use in the 7th/8th grade group. In the older age group, it significantly decreased the relationship between victimization and marijuana use. Overall, results suggest that victimization and substance use are significantly related and this relationship does not vary by level of rurality, but that religious involvement may be a protective factor against substance use. Results further suggest that it is important to screen for victimization among adolescent males in therapy for substance abuse and that religious involvement may be aspect that can help adolescent male victims of violence cope with their victimization without using substances.

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Violent victimization in adolescence is a serious problem that is associated with numerous negative mental health consequences, specifically alcohol and other substance use (Brady, Tschann, Pasch, Flores, & Ozer, 2008; Ozer & Weinstein, 2004; Reed, Amaro, Matsumoto, & Kaysen, 2009). A large number of studies have found relationships between violence and substance use, particularly alcohol use, by both perpetrators and victims of violence (Boyd, 2003; Brady, Tschann, Pasch, Flores, & Ozer, 2008; Eckhardt & Crane, 2008; Gover, 2004; Huang, White, Kosterman, Catalano, Hawkins, 2001; Kaukinen, 2002a; National Institute of Justice, 1996; Pernanen, 1976; Swahn & Donovan, 2004; 2005; Swahn, Simon, Hammig, & Guerrero, 2004; Wei, Loeber, & White, 2004; Welte & Abel, 1989). Although some research has focused this discussion of substance use and violence on adolescents, relatively little work examines rural populations exclusively (Swaim, Henry, & Baez, 2004; Swaim, Henry, & Kelly, 2006; Villareal, 2004). Although common sense notions about rural locations suggest that they are “safe havens” from the problems of metropolitan areas, studies suggest similar problems (such as substance use and violence) also exist in rural areas. Recent studies have shown that there is a high prevalence of underage drinking and driving in rural areas (Muilenburg, Johnson, Usdan, Annang, & Clayton, 2007), high levels of violent victimization (Nagy & Dunn, 1999), and that some types of substance use may be

higher in rural areas than non-rural areas (Vazsonyi, Trejos-Castillo, & Young, 2008). Finally, although there is sizeable literature for female victims of violence, relatively little research has examined male victims of violence, despite the fact that some studies have found males to show significantly higher victimization than females (Cleary, 2000). Instead, research has tended to focus on males as perpetrators of violence (Cheung, Leung, & Tsui, 2009; Lisak, 1993; Reed, Raj, Miller, & Silverman, 2010). This may result from a lack of awareness of male victimization (Stewart, & Maddren, 1997); furthermore, there is an underreporting of violence against males and police are less likely to place charges if the victim is a male (Stewart & Maddren, 1997). Unfortunately, even for males who do manage to get charges placed on their attacker and have the courage to seek help, there are relatively few services provided for male victims of violence, adding to the shame and embarrassment men face in reporting violence and seeking assistance since many shelters turn away male victims of violence (Chabot, Tracy, Manning, & Poisson, 2009; Cheung, Leung, & Tsui, 2009).

Males as Target Population

As discussed briefly above, research on victimization and men often solely focuses on their role as perpetrators of violence, but infrequently studies male as victims of violence. By ignoring this domain in research, we may mirror the taboo nature of discussing men's role as victims. Men in general may be less likely to seek psychological help than women, especially if they adhere to a more "traditional masculinity" (Levant, Wimer, Williams, Smalley, & Noronha, 2009). As a group, they do not seek out therapy as frequently as women for issues such as substance abuse, stress, and depression (Andrews, Issakidis, & Carter, 2001; Husaini, Moore, & Cain, 1994; McKay, Rutherford,

Cacciola, & Kabaskalian-McKay, 1996; Thom, 1986; Wills & DePaulo, 1991. See also Cochran, 2005, for a review of literature about men and therapy). In regards to violent victimization, females are more likely to seek help from friends and family, mental health, social services, and self-help groups (Kaukinen, 2002b). This trend does not appear to occur because men do not need this assistance; there are still differences found in “help-seeking” behavior in research where men and women are matched for comparable impairment and distress (Kessler, Brown, & Broman, 1981). As stated by Lisak (1995), “[masculinity] typically demands physical strength and prowess, compels the denial of physical and emotional pain, and prohibits men from expressing or ultimately even experiencing emotions which may induce feelings of vulnerability” (p. 259). To summarize, men do suffer from violent victimization and psychological trauma, but for a variety of reasons, they are unlikely to speak about their suffering. As such, one aim of this paper is to focus explicitly on male victims of violence to decrease stigma men may feel around speaking about being victimized.

Impact of Violent Victimization

Violence and Intimate partner violence (IPV) are a serious public health concerns in North America and worldwide, with life-long impacts (Schafer, Caetano, & Clark, 1998). The National Family Violence Surveys (NFVS) of 1975, 1985, and 1992 and the National Cross-Ethnic Couples Violence Survey (NCCVS) of 1995, suggest that 16-22% of couples in the U.S. have experienced one or more episodes of IPV (as cited in Schafer, Caetano, & Clark, 1998). Specifically with women, national reports by the Department of Justice suggest that violent victimization is often repeated and is very likely to eventually result in injury and death (Bachman & Saltzman, 1995; Craven, 1996). Being victimized

and perpetrating violence have both been shown to be related to negative mental health outcomes, such as PTSD and Depression, in adolescents (Ozer & Weinstein, 2004; Gorman-Smith & Tolan, 1998; Vermeiren, Schwab-Stone, Ruchkin, King, Van Geeringen, & Deboutte, 2003). In rural areas in particular, it has been shown that violence is common in the lives of women, especially women with alcohol or other drug disorders (Boyd, 2003). One of the most widely cited epidemiological surveys of violence comes from the National Institute of Justice and Centers for Disease Control in the jointly sponsored National Violence Against Women Survey (NSAW; Tjaden & Thoennes, 2000). This study conducted phone interviews in the mid 1990s of 8,000 men and 8,000 women (older than 18) about violence and victimization. This study showed that 51.9% of women and 66.4% of men said they were raped and/or physically assaulted in their lifetime. Specifically looking at just sexual assault, 17.6% of women and 3.0% of men reported being raped in their lifetime.

These results highlight how alarmingly common violent victimization is in society in general, but recent studies show that certain types of victimization are even more pronounced among males (Cleary, 2000; Murty, Peek-Asa, Zwerling, Stromquist, Burmeister, & Merchant, 2003). While few studies have examined the outcomes of adolescent male victims of violence specifically some have examined consequences of adolescent victimization in both male and female victimization (Cleary, 2000; Caetano, Field, & Nelson, 2003). Caetano and colleagues (2003) found that childhood physical abuse and exposure to parental violence was linked to alcohol-related problems in adulthood for males. Cleary (2000) found that males who had been violently victimized showed significantly higher risk of suicide than males who had not been victimized.

Similarly, Garnefski and Arends (1998) found that sexually victimized boys showed thirteen times greater suicidal behaviors than non-victimized boys (as opposed to a five times greater increase between abused and non-abused females). Also, an unfortunate impact of male victimization that reinforces the notion that they are “hidden” victims is often isolation as they may be less likely to seek help from family, friends, self-help groups, or social services (Kaukinen, 2002b).

In addition to literature pointing to negative consequences for victimization in general, there is evidence that being victimized in adolescence may have a larger negative impact than victimization in adulthood. In multiple studies of non-rural areas, abuse and neglect experienced in childhood has been linked to higher levels of drug use later in adolescence and adulthood (Brady, Tschann, Pasch, Flores, & Ozer, 2008; White & Widom, 2008; Widom & White, 1997). This relationship seems to be found across exposure to multiple types of violence. Childhood and adolescent physical abuse and exposure to parental violence is associated with alcohol-related problems in adulthood (Caetano, Field, & Nelson, 2003). Specifically among adolescents, one study found that abused males used alcohol nearly three times as much as non-abused boys, with only a slight difference in alcohol use between sexually abused females and non-abused females (Garnefski & Arends, 1998). In college-aged populations, similar relationships are found between victimization and alcohol use for both men and women (Reed, Amaro, Matsumoto, & Kaysen, 2009). Compared to individuals victimized in either childhood or adulthood, it seems that victimization during adolescence specifically may have poorer outcomes. Some research has found that adolescent victims of violence were significantly more likely to engage in binge drinking and face consequences of drinking (such as

physical health problems, financial situation, outlook on life, work and/or studies, and friendships) than either children or adults (Kaukinen, 2002a). This is disturbing considering that some reports have found adolescents twice as likely to be victims of violent crime compared to adults (Office of Juvenile Justice and Delinquency Prevention, 1997). Of research on adolescents, very little has focused on male victims of violence, despite evidence from the National Youth Survey showing significantly higher victimization among adolescent males than females (Macmillan & Hagan, 2004).

A Note about Terminology. Violence is a concept that is often difficult to measure partially due to the different ways it is defined. In this study, Interpersonal Violence (referred to as IPV in this paper) is used synonymously with violence. Studies have conceptualized IPV to include physical violence, psychological violence, emotional violence, sexual violence, threats, denying access to resources and more (Waltermaurer, 2005). Some use a broader definition, such as “all acts or omissions that endanger [individuals] or contribute to subordination” (Ruiz-Pérez, Plazaola-Castaño, & Vives-Cases, 2007). The strength of this latter approach is in allowing a wide understanding of IPV. On the other hand, the weakness of this approach is the difficulty in measuring all of these aspects. For instance, psychological violence, such as humiliation and isolation, would be rather difficult to measure, especially in a reliable manner (see Ruiz-Pérez, Plazaola-Castaño, & Vives-Cases, 2007). For the purposes of this study, violence refers to only acts of physical aggression committed by one individual against another with the intent to cause harm, whether this be within a romantic relationship, familial relationship, male-male, female-male, female-female, or male-female.

In the therapeutic context, a widely used term referring to individuals who have been violently victimized is “violence survivor.” This term attributes an active, rather than passive, role to individuals, encouraging these individuals to feel empowered to take control in their life again. In this paper, individuals who have been recipients of violence are referred to as “victims of violence” in order to maintain consistency with the typical terminology of literature in this area, not to deny agency.

Impact of Substance Use among Adolescents

Adolescent substance use is related to poor academic performance, vocational difficulties, teen pregnancy, sexually transmitted diseases, stealing, vandalism, and violence (Sussman, Dent, & Galaif, 1997). Another problem is consuming alcohol and driving (referred to from here on as “drinking and driving” or “drunk driving”). Some literature has shown drunk driving among adolescents to be double the rate of the general population (Bennett, McCrady, Frankenstein, Laitman, VanHorn, & Keller, 1993). Adolescents who use alcohol or other drugs may develop problems with problem-solving abilities and emotional functioning, and can lead to social isolation and depression (Sussman & Ames, 2001). Furthermore, substance use in adolescence can affect functioning as far as 15 years later, such as decreased levels of education, less stable employment, and higher incidence of being a single parent (Green & Ensminger, 2006). Tying to the hypotheses of the current study, if violent victimization does indeed predict adolescent substance use, which already bears negative outcomes on its own, these youth may be faced with a “double-whammy” of potential negative outcomes.

A large amount of research on substance use etiology focuses on adults, but there are important differences between adults and adolescents that must be noted (e.g.,

Sussman, Dent, & Galaif, 1997). When adolescents use substances, they use on fewer occasions than adults, but are more likely to binge (Sussman, Skara, & Ames, 2008). So, although adolescents' overall frequency of use may be lower than adult substance use, when they do use (alcohol or otherwise), they are likely to consume more in each sitting. In addition to other problems with this style of use, binge drinking increases the chance for blackouts (Arria, Tarter, & Van Thiel, 1991; Bailey & Rachal, 1993; Leccesse & Waldron, 1994). For adolescents who do use frequently, they tend to become dependent more quickly (Sussman, Skara, & Ames, 2008). Another difference is that regular substance use in adults may not be thought of as abuse, but in adolescents, it may be (which makes sense considering the intensity of binge drinking during "typical" use). Even relatively low levels of use may be problematic in adolescence due to its impacts on brain development (see Volkow, Chang, Wang, Fowler, Ding, Sedler, et al., 2001; McCann, Wong, Yokoi, Villemagne, Dannals, & Ricuarte, 1998). A final area of difference is in the relatively high levels of dual diagnosis among adolescents; the comorbidity of substance use and other mental health disorders (such as depression, anxiety disorders, conduct disorder and others) has been estimated as high as 75% (Abrantes, Brown, & Tomlinson, 2004; Tomlinson, Brown, & Abrantes, 2004; Winters, 1999).

Adolescent Substance Use and Victimization

Across a number of studies, substance use and violence is linked (Shepherd, Sutherland, & Newcombe, 2006; White & Hansell, 1998; White, Loeber, Stouthamer-Loeber, & Farrington, 1999; Zhang, Wieczorek, & Welte, 1997). More specifically, alcohol use, both by victim and attacker, is common in cases of rape, assault, robbery

with injury, and family violence (Fagan, 1993a; Pihl & Peterson, 1993a; 1993b; Rozen, 1993). There are numerous studies that suggest violent victimization in adolescence is associated with higher degrees of depressive symptoms, substance use, PTSD symptoms, suicidality, physical aggression, and delinquency (Goldstein et al., 2007; Sullivan, Farrell, & Kliewer, 2006; Champion et al., 2004; Moran, Vuchinich, & Hall, 2004; Funk et al., 2003; Grella & Joshi, 2003; NIJ 2003; Liebschutz et al., 2002; Caviola & Schiff, 2000; Cleary, 2000; Fitzpatrick & Bolidizar, 1993).

There is a burgeoning area of research which suggests that victimization may predict later substance use. In a study of Canadian adolescents, after controlling for age, income, education, employment status, rurality, and first generation immigrant status, adolescents who had been victimized were significantly more likely to be involved in binge drinking (5 or more drinks in one setting; Kaukinen, 2002a). They were also more likely to suffer from drinking-related consequences such as physical health problems, financial status, outlook on life, and school performance. In a U. S. sample, research on African-American adolescents in substance use treatment showed high links to victimization (Perron, Gotham, & Cho, 2008). In this study, 54% of participants had been victimized. Also from this study, lifetime victimization was significantly linked to major depressive disorder and conduct disorder in addition to risky behaviors such as unprotected sex, gang membership, and illegal activity. In a longitudinal study of roughly 1,800 adolescents across 10 years (ages 11-17), the National Youth Survey found similar patterns that victimization in adolescence leads to later difficulties in academic performance, educational attainment, labor force participation, occupational status, and

earnings in early adulthood (Macmillan & Hagan, 2004). Interestingly, this study also found that females reported lower victimization than males.

Purpose of the Present Study

In the current study, I intend to explore the pathway of violent victimization on substance use among adolescent males in rural areas. Although some research has examined the relationship between substance use and physical violence perpetration (Lipsey, Wilson, Cohen, & Derzon, 1997; Reiss & Roth, 1993; Rozen, 1993), this study focuses on the experience of individuals who have been victimized, specifically adolescent males in rural areas, a group about which very little is known. Research has investigated how perpetrating violence is linked to substance use (Brewer & Swahn, 2005; Fagan, 1993a; Pihl & Peterson, 1993b; Roizen, 1993) broken down to pharmacological effects by specific substance (e.g., Reiss & Roth, 1993). Research also has examined the biological/neurological components (Fishbein & Tarter, 2009), substance use leading to later victimization (Mrug & Windle, 2009), and the increased risk of substance use-based violence among individuals with dual diagnoses (Swanson, 1994). This study adds to the body of research by exploring the effect of victimization on alcohol use and marijuana use among adolescent rural males.

Rurality. As noted above, substance use and violence are significant problems in rural areas, though much less is known about substance use and violence in rural areas than in urban areas. According to data from the Monitoring the Future study, Cronk and Sarvela (1997) found higher rates of alcohol use in urban areas from 1976 to 1991, but comparable rates in 1992. However, this study also found that binge drinking and number of days drinking were higher among rural adolescents during this time period. In

terms of violence, some estimates suggest that in rural areas, 31% of female adolescents and 39% of male adolescents have been violently assaulted badly enough to need some form medical attention (Nagy & Dunn, 1999). Furthermore, this study found that rural adolescents who had initiated alcohol use were more likely to have initiated sexual behavior, have multiple sex partners, and be assaulted. To summarize, evidence is beginning to suggest that there may be similar problems with substance use and violence in rural areas as compared to urban areas.

Religiosity. Research on substance use and violence have found a wide range of risk and protective factors such as delinquent behavior (risk), involvement in school activities (protective), parent education, and religious involvement. Preliminary evidence suggests that religious involvement may be a protective factor against substance use (Hawkins, Jenson, Catalano, & Lishner, 1998; Kerestes, Youniss, & Metz, 2004; Milot & Ludden, 2009; Smith & Denton, 2005; Stewart & Bolland, 2002; Zimmerman & Maton, 1992) and a factor that increases the chances for recovery from substance use (Chu & Sung, 2009; Pardini, Plante, Sherman, & Stump, 2000). There is still much debate as to why religious involvement may be a protective factor against substance use. Some research points to “mundane” explanations (see Pargament, 2002), suggesting that religion operates as a protective factor by occupying time, increasing social support, and decreasing access or exposure to environments that are more problematic. For instance, many researchers would suggest that religious involvement may increase a sense of personal meaning and prosocial concern, which can protect against substance use (e.g., King & Furrow, 2004). Though some research assumes that the impact of religion and substance can be fully explained by mundane mediators, it is also possible that there may

be intrinsic benefits of spirituality itself that could be a protective factor against substance use. It seems that the relationship between religion and substance use may be mediated by social support and safe environments, but it is not clear that the relationships can be reduced to such mediators entirely.

In research on religion, it is often difficult to distinguish between constructs such as religiosity, religious involvement, religious importance, and spirituality (Paloutzian & Park, 2005). In the current study, I measure items that would best fit in the construct of religious involvement. One of the more inclusive definitions of religious involvement is “religious belief, attendance in church, and the taking of vows” (Mullet, Barros, Frongia, Usaï, & Shafighi, 2003, p. 2). Unfortunately, the inclusion of “taking of vows” in this definition may exclude certain religious traditions that do not involve vows (e.g. Buddhism, new age spirituality, and others). Others have used a similar definition, but do not include “taking of vows” as an important element; Gorsuch and Hao (1993) define religious involvement as belief in God and attendance in Church. Similar to problems with the first definition, utilizing terms such as “God” and “Church” fit well for Christian religions, but may not encompass the wide variety of religious traditions that exist. In recent research on religious involvement and substance use, Chu and Sung (2009) define religious involvement as frequent attendance in religious services, self-rated levels of “being religious,” and engaging in religious activities (such as prayer, reading the bible, or watching religious programs). In the current study, I will be utilizing this definition of religious involvement.

Toussaint (2009) examined the relationships between religiousness, drug use, and drug-related sex among greater than 12,000 individuals and found that religiousness

decreased the use of alcohol and marijuana in both women and men. This result was not found for frequency of binge drinking, except for a few religious traditions (i.e. different religions). Toussaint's results suggests that it may be beneficial to utilize multiple measures of drinking behavior (such as drinking at all, frequency of drinking, and/or binge drinking) as they may have different outcomes.

Of the greatest relevance to the current study is a recent study by Milot and Ludden (2009) who examined substance use, academic performance, religious attendance, religious importance, and gender on well-being among rural adolescents. In this study, the authors found that religious importance was a stronger protective factor against substance use than school attendance. Furthermore, religious importance had a greater effect on school bonding and self-efficacy for males than females (though this is still being debated; see Toussaint, 2009). This suggests that religious importance may be especially important to males and therefore a valuable protective factor to test in the current study.

HYPOTHESES

A large number of studies have shown that abuse and neglect in childhood has been linked to higher levels of substance use in adolescence and adulthood (Brady, Tschann, Pasch, Flores, & Ozer, 2008; Caetano, Field, & Nelson, 2003; White & Widom, 2008; Widom & White, 1997) and adolescent males have shown significantly higher victimization than females (Macmillan & Hagan, 2004). Specifically, one study has shown that males who have been violently victimized in childhood and adolescence show significantly higher substance abuse problems than non-abused males (Lisak & Luster, 1994). In this study, I hypothesized this relationship would exist across three different measures of substance use: alcohol use, drunkenness, and marijuana use.

- 1) Among rural adolescent males, victimization will predict increased alcohol use.
- 2) Among rural adolescent males, victimization will predict increased drunkenness.
- 3) Among rural adolescent males, victimization will predict increased marijuana use.

Since some research has found that certain types of substance use are higher in rural areas than non-rural areas (Vazsonyi, Trejos-Castillo, & Young, 2008), I hypothesized that the relationship between victimization and substance would differ across rurality.

- 4) All three proposed relationships will be moderated by level of rurality.

Since previous research has found that religiousness may be a protective factor against substance use (Hawkins, Jenson, Catalano, & Lishner, 1998; Kerestes, Youniss, & Mess, 2004; Milot & Ludden, 2009; Smith & Denton, 2005; Stewart & Bolland, 2002;

Zimmerman & Maton, 1992), I hypothesized that increased religiousness would decrease the strength of the relationship between victimization and substance use.

5) All three proposed relationships will be moderated by level of religious involvement, such that higher levels of religious involvement will decrease the strength of the association between victimization and substance use.

Some studies have found a stronger effect of victimization on alcohol use in adolescents than children (Kaukinen, 2002a; Reed, Amaro, Matsumoto, & Kaysen, 2009), specifically that victimization relates to much higher levels of substance use in 12th grade than 6th grade (Oetting & Beauvais, 1990). Therefore, it is possible that the different age groups will show different relationships, and therefore will be separated for analysis in this study. Similar to the above stated literature, I expect that older males will show greater levels of substance use across type of use and in this study I hypothesize that older male adolescents will have stronger links between substance use and violence than younger male adolescents.

6) All proposed relationships will be stronger among 11th and 12th graders, than 6th and 7th graders.

METHOD

Participants and Design

This analysis is from a previously collected data set (Swaim & Stanley, 2010). The original sample was drawn from a strategically developed sampling frame designed to be representative of rural locations throughout the U.S., identified across three levels of rurality based on 1990 census data: nonadjacent counties with largest place less than 2,500 population (remote); adjacent counties with either largest place less than 2,500 or counties with largest place from 2,500 to 20,000 (rural); and counties with largest place of 20,000 to 50,000 (small urban). Metropolitan counties were classified into a fourth group. All public school districts in the contiguous U.S. were then classified into one of these four rurality categories and into community ethnicity categories. Ethnic minority communities were defined as those that included 40% or more of a non-white ethnicity (e.g., 40% or more Mexican Americans).

Within each level of rurality, predominantly European-American (“White”) communities (over 60% European-American) were drawn proportionately to their level of representation in each of the four regions and each state within those regions, where possible. African-American and Mexican-American communities were oversampled. Where it was not possible to match representation for a given state (due to problems in using the protocol of consent or other recruiting difficulties), communities in nearby states within the same region were substituted. The Mexican-American communities were drawn from states in the southwest US in proportion to their representation in those

states. The rural African-American communities were selected in the same way from Southern states that include those communities. The final sample for the present study consisted of 185 predominantly European-American (“white”) communities, 40 predominantly African-American communities, and 35 predominantly Mexican-American communities.

Although rural communities were first selected for the sample based on population and proximity to a metropolitan area, the level of rurality was further refined by adding accessibility in travel time to the definition instead of miles to a metropolitan area. Communities were classified into four levels of rurality (based on 1990 census data): remote, medium rural, small urban, and metro. A remote community has population less than 2,500 and is located more than 2 hours driving time from a metropolitan area. A medium rural community either has population between 2,500 and 20,000 or population less than 2,500 but is located less than 2 hours driving time from a metropolitan area. A small urban community has a population between 20,000 and 50,000. The classification of each community was based on both map and census data and interviews with community members that addressed true accessibility and drive time to urban areas and services. (In the current study, metro schools were not included in the analysis since the focus is on rural communities). Within each community, surveys were administered at a single public high school (determined to be the most representative of the community, based on ethnicity) and the public feeder junior high/middle school(s). All schools were surveyed during the time period 1996-2000. The percent of students surveyed in nearly all schools ranged from 75-100%, with approximately 4% of schools

having a participation rate slightly lower than 75%. The final sample of 7th through 12th graders consisted of 211,862 students.

For this analysis, I analyzed two groups of students, 7th and 8th graders, and 11th and 12th graders. As stated in the hypotheses, there are often higher levels of substance use among 12th grade than 6th grade (Oetting & Beauvais, 1990) and older adolescents may face greater consequences for their use than younger adolescents (Kaukinen, 2002a). It is possible that the different age groups will show different relationships and will be separated for analysis in this study.

Instrument

Students were administered the Community Drug and Alcohol Survey (CDAS). This instrument consists of 99 items that ask various questions related to substance use and other risk factors related to use. The CDAS is a variation of the American Drug and Alcohol SurveyTM, (Beauvais & Oetting, 2002; Beauvais, Chavez, Oetting, Deffenbacher, & Cornell, 1996; Oetting, Beauvais, & Edwards, 1985; Rocky Mountain Behavioral Science Institute, n. d.), an instrument that has been in use since the mid-1980s. The instrument is listed in SAMHSA's Measures and Instruments Resource guide (SAMHSA, n. d.). In regards to reliability, the Cronbach Alpha for alcohol scales range from .88-.92 across ethnicities, .78-.95 for drunkenness, and .87-.94 for marijuana use. The scales examined in the current study are as follows (Oetting & Beauvais, 1990).

Control Variables. In this study, I include ethnicity and parents' highest levels of education (used to serve as a measure of socioeconomic status) as control variables. Ethnicity is coded as White, Black, African- American, American Indian, Alaska Native, Asian-American, Mexican-American, Spanish-American, Puerto Rican-American, and

other ethnicity. Parents' highest levels of education is made up of a sum of the highest level of education of the mother and father (7th & 8th grade . $\alpha = .687$, 11th & 12th grade . $\alpha = .763$) . Both father's and mother's highest education is coded as "I don't know," "6 years or less," "7," "8," "9," "10," "11," "12," "1 year of college," "2 years of college," "3 years of college," "4 years of college," and "5+ years of college."

Predictor Variables. The predictor variable in this study is a dichotomous measure of victimization, which examines whether participants have been violently victimized or not. The items in this scale include "ever been beaten up by someone your age," "ever been beaten up by a boyfriend or girlfriend," "ever been beaten up by someone else," "ever been hurt by a weapon," "ever been sexually assaulted," and "ever been robbed." For the analysis, the variable will be scored "0" if there is no report of any violence, and "1" if the participant reported being violently victimized (7th & 8th grade . $\alpha = .561$, 11th & 12th grade $\alpha = .575$).

Interaction Terms. The two proposed interaction terms are level of rurality and religiosity (a continuous scale made up of 3 variables). As defined above, four levels of rurality will be used in this study: remote area (nonadjacent counties with a population of 2,500 or less), rural area (adjacent counties with the largest population less than 20,000), small urban (counties with largest population 20,000-50,000), and metropolitan area (population greater than 50,000). The remote level of rurality will be used as a comparison group. Three separate variables will be combined to form a scale that is a coarse measure of religious involvement. The three variables are "are you religious?," "do you participate in religion?," and "how important is religion in your life?" Response options to "Are you religious?" and "Do you participate in religion?" item, responses are

“no, not much, some,” and “a lot.” For the “how important is religion in your life?” item, responses are “not at all, not much, some,” or “a lot.” These 3 scales will be turned into numerical responses and summed, to give a range of 0-9 with 0 representing no religious involvement and 9 representing the highest level of religious involvement (for 11th and 12th graders, $\alpha = .89$, for 7th and 8th graders, $\alpha = .89$).

Criterion Variables. There will be three criterion measures examining substance use. The first measures that amount of alcohol drank in the last month, the second examines drunkenness in the past month, and the final item examines the number of times using marijuana in the past month. Response options to all 3 variables are “none,” “1-2 times,” “3-9 times,” “10-19 times,” or “20 or more times.” Scores on these scales have been found to have strong reliability and validity evidence among non-Hispanic Whites, African-American, and Mexican-American youth (Oetting & Beauvais, 1990), the Cronbach Alpha for alcohol scales range from .88-.92 across ethnicities, .78-.95 for drunkenness, and .87-.94 for marijuana use (Oetting & Beauvais, 1990).

Power Analysis

As suggested by numerous authors (e.g., Frick, 1996; Thompson, 1998), utilizing only null hypothesis testing (NHST) may over or under-represent the actual practical significance of results based on sample size. As the current sample is quite large, it is highly likely that every relationship that will be tested for will be statistically significant, but may or may not be practically meaningful. For this reason, the current study intends to utilize measures of effect size to determine the practical significance results.

Data Cleaning and Preparation

As suggested by Frazier, Tix, and Barron (2004), continuous moderator variables were recentered at the mean. Also, for the current study I will be utilizing regression imputation to account for missing data. According to this method, a missing item will be replaced with a predicted value by regressing the missing item on all other items for participants who have no missing data (McDonald, Thurston, & Nelson, 2000; Roth, Switzer, & Switzer, 1999). McDonald, Thurston, and Nelson's (2000) review of multiple methods for dealing with missing data suggest that this method may be the preferable method for dealing with missing data as it uses information across both items and observations.

RESULTS

Hierarchical regression analyses were conducted to examine hypotheses and significant moderating effects were explored by graphing the interaction and undergoing post-hoc tests of the significance of simple slopes. Results will be described by type of substance use (alcohol frequency, drunkenness, then marijuana use) calculated for each age cohort (11th and 12th graders, then 7th and 8th graders).

Among 11th and 12th graders for alcohol use (see table 1.1 and 1.2), victimization significantly predicted the frequency of alcohol use in the last month $F(1, 15301)=184.49, p<.001$. This accounted for 3.5% of additional variance beyond control variables, a small effect size based on Cohen's evaluative criteria (Cohen, 1988). Among 7th and 8th graders (see table 1.1 and 1.2), the effect of victimization on alcohol use was significant $F(1, 13587)=269.38, p<.001$, accounting for an additional 4.2% of variance beyond control variables, also a small effect size (Cohen, 1988). The effect of victimization on drunkenness in the last month also was significant for 11th & 12th graders, $F(1, 14705)=174.03, p<.001$. This accounted for a similarly small increase in variance, 3.4%. There was a similar result among 7th and 8th graders, $F(1, 12714)=172.46, p<.001$, explaining 2.8% of variance. Finally, victimization significantly predicted marijuana use in the last month for 11th and 12th graders, $F(1, 15490)=174.12, p<.001$. This accounted for an additional 3.2% of variance beyond the control measures. Among 7th and 8th graders, victimization significantly predicted marijuana use in the last month, $F(1, 13668)=185.38, p<.001$. This explained an additional 2.9% of variance beyond the control

measures. This supports the first three hypotheses for the 7th & 8th graders; victimization predicted increased alcohol use, drunkenness, and marijuana use.

To summarize, victimization significantly predicted increases in alcohol frequency, drunkenness, and marijuana use at a small effect size. Among 11th and 12th graders, all three variables had similar effect sizes ($R^2 = .035$, $.034$, and $.032$ respectively) and a similar pattern was found among 7th and 8th graders ($R^2 = .042$, $.028$, and $.032$, respectively). Although the effects were small in magnitude, these results supports the first three hypotheses; victimization predicted increased alcohol use, drunkenness, and marijuana use.

Rurality as a moderator

11th and 12th graders. Hierarchical Regression analyses revealed that in general, rurality did not affect the relationship of victimization on substance use (see table 2.1). Among 11th and 12th graders, the interaction of victimization on substance use by rurality explained a mere .1% of variance in the model for the impact of alcohol use, drunkenness, and marijuana use. There were some significant interactions based on null-hypothesis testing; in the 11th and 12th graders group, the rural area interaction was significant at the $p < .01$ level when examining the effect of victimization on alcohol use, but based on effect size, may not be practically meaningful ($R^2 \Delta = .001$). The interaction also was significant by NHTS for the rural area and metropolitan area ($p < .05$) and the large rural area ($p < .05$), but again, these were not practically significant based on effect size ($R^2 \Delta = .001$).

7th and 8th graders. The impact of rurality was even less pronounced among the younger group (see table 2.2). In this age group, the change in R^2 was $< .001$ for all three

substance use categories. Also, even by null-hypothesis testing, only one interaction (the metropolitan area x victimization on alcohol use) was statistically significant ($p < .05$, though again, the change in effect size was not significant, $R^2 \Delta < .001$). Therefore, the hypothesis that the above relationships would be moderated by rurality for either age group was not supported.

Religiosity as a protective factor

11th and 12th graders. Hierarchical regression analyses found that the impact of religiosity was similarly small, but this time, it was less pronounced for 11th and 12th graders than among 7th and 8th graders (see table 3.1). The interaction between religiosity and victimization was significant in the drunkenness condition ($p < .05$) and marijuana use condition ($p < .001$), but may not be practically significant by effect size in any of the conditions ($R^2 < .001$, $< .001$, and $R^2 = .002$ respectively). Significant interaction terms could suggest that the slopes for high and low levels of religiosity were significantly different from each other, but do not indicate whether the slope significantly differs from zero. Thus, the interaction between religiosity and victimization on marijuana was graphed (see figure 1) and post-hoc tests of significance of simple slopes were conducted using procedures as described by Aiken and West (1991) to examine whether the slopes significantly differed from zero at low, medium, and high levels of religiosity. To explore the form of significant interaction effects, predicted values for the predictor variable (victimization) were plotted for no victimization and being victimized at low levels ($-1 SD$ from the mean), mean levels (at the mean), and high levels ($+1 SD$ from the mean) of religiosity. The unstandardized simple slope for low levels of religiosity ($1SD$ below the mean) was .49, for mean levels of religiosity was .39, and for

high levels of religiosity (1 *SD* above the mean) was .30. There was a significant slope for individuals at low ($t [15,412] = 2.13, p = .032$) and medium ($t[15,412] = 2.69, p = .007$) levels of religiosity, but not high levels of religiosity ($t[15,412] = 1.01, p > .05$). Therefore, the fifth hypothesis that the above relationships would be moderated by religiosity was partially supported for the 11th and 12th graders.

7th and 8th graders. Similarly, hierarchical regression analyses revealed that the impact of religion may be practically nonsignificant (see table 3.2) as well in impacting the relationship between victimization and alcohol use, victimization and drunkenness, and victimization and marijuana use ($R^2 = .02, .07, \text{ and } .05$ respectively). On the other hand, by null-hypothesis standards, the interaction was significant in each condition at the $p < .01$ level. Significant interaction terms suggest that the slopes for high and low levels of religiosity were significantly different from each other, but do not indicate whether the slope significantly differs from zero. Thus, the interaction between religiosity and victimization on alcohol use, drunkenness, and marijuana use was graphed and post-hoc tests of significance of simple slopes were again conducted to examine whether the slopes differed from zero. To explore the form of significant interaction effects, predicted values for the predictor variable (victimization) were plotted for no victimization and being victimized at low levels (-1 *SD* from the mean), mean levels (at the mean), and high levels (+1 *SD* from the mean) of religiosity.

For alcohol use (see figure 2), the unstandardized simple slope for low levels of religiosity (1SD below the mean) was .36, for mean levels of religiosity was .30, and for high levels of religiosity (1 *SD* above the mean) was .23. There was a significant slope for individuals at low ($t [13,442] = 2.23, p = .025$) and medium ($t[13,442] = 2.20, p =$

.027) levels of religiosity, but not high levels of religiosity ($t[13,442] = .86, p > .05$).

For drunkenness (see figure 3), the unstandardized simple slope for low levels of religiosity (1SD below the mean) was .23, for mean levels of religiosity was .15, and for high levels of religiosity (1 SD above the mean) was .06. There was not a significant slope at any level. For marijuana use (see figure 4), the unstandardized simple slope for low levels of religiosity (1SD below the mean) was .30, for mean levels of religiosity was .21, and for high levels of religiosity (1 SD above the mean) was .12. There was a significant slope for individuals at low levels of religiosity ($t[13,519] = 1.99, p = .047$), but not at medium ($t[13,519] = 1.68, p > .05$) or high levels of religiosity ($t[13,519] = .45, p > .05$). Therefore, the fifth hypothesis that the above relationships would be moderated by religiosity was partially supported for the 7th and 8th graders.

Strength of relationships among older group versus younger group.

The final set of hypotheses in this study proposed that all relationships would be stronger in the older age group than the younger age group. With regard to the main effect (see table 1.2), 7th and 8th graders showed higher adjusted R^2 change values on certain variables than 11th and 12th graders (Alcohol use: .042, .035 respectively), but lower adjusted R^2 change values on others (Drunkenness: .028, .034 respectively; Marijuana Use: .029, .032 respectively). As such, the results only partially supported the final hypothesis.

With regard to rurality, no interactions were significant; therefore, no attempt was made to examine the differences in strength. Results also fail to support the final hypothesis that all relationships would be stronger for 11th and 12th graders than 6th and 7th graders. With regard to the interaction with religiosity, the impact of victimization on

alcohol use and marijuana use was significantly moderated by religiosity for 7th and 8th graders. In the 11th and 12th graders, the only significant interaction was found for the impact of victimization on marijuana use being moderated by religiosity. This fails to support the final hypothesis that any effect would be stronger for the older cohort than the younger cohort.

DISCUSSION

The results from the hierarchical regression models in this study suggest that being victimized significantly predicts increased substance use (across multiple forms of use) among adolescent males. With regard to interaction effects, the data suggests that this relationship does not vary by rurality. The results do suggest that religiosity moderates the effect of victimization on substance use with regard to alcohol use and marijuana use for 7th and 8th graders and for marijuana use for 11th and 12th graders. This means that the first three hypotheses were supported, the fourth and sixth were not supported, and the fifth hypothesis was only partially supported. Although effect sizes are small (R^2 ranging from .028 to .048), results still bear important clinical and research implications. As suggested by Cohen (1988), smaller effect sizes are common in field studies where control is limited; in the current study, it would be grossly unethical and harmful to utilize experimental methods that increase control, because it would mean inducing physical victimization on participants. The effect size in the current study is consistent with other research examining the links between substance use and victimization which also show small to moderate effect sizes (Perron, Gotham, & Cho, 2008).

The results of the study bear important implications for men and masculinity. With the current data set, it is unclear of the temporal relationship between substance use and violence; in other words, it is unclear if the substance use caused the victimization, the victimization caused the substance use, or if the two were caused by another factor

entirely. Alternately, there may be a reciprocal relationship where both variables affect each other. But, if this same effect was found with victimization preceding substance use, the substance use may be a style of coping with the violence for men. As discussed by numerous authors, men may be less likely to seek psychological help than women (Andrews, Issakidis, & Carter, 2001; Levant, Wimer, Williams, Smalley, & Noronha, 2009); therefore, their difficulties in seeking help may manifest in their increased substance use as a means of coping in response to violent victimization. As stated by Lisak (1995), masculinity prohibits men from expressing vulnerabilities, which make sharing any feelings of being hurt or victimized even more difficult for boys and men. The current study was unable to differentiate the relationship of the perpetrator to the victim; there may be different effects of victimization when done by a same-aged peer, older peer, romantic partner, parent, or other relationship. For instance, male victims of violence may feel more emasculated (and presumably face greater stigma for seeking help) when the perpetrator is a female (Allen-Collinson, 2009).

With regard to rurality, this research suggests that substance use and violence are significant problems in rural areas, showing similar relationships to those found in urban areas. This fits with previous research that suggest high rates of violent victimization of male adolescents in rural areas (Nagy & Dunn, 1999) and high rates of binge drinking among this group (Cronk & Sarvela, 1997). By examining rural areas, this research can provide valuable information about an important, but underserved population.

The evidence about religious involvement is mixed, providing a more complex picture than other previous studies. Previous work has suggested that religious involvement has a more uniform protective effect against multiple categories of

substance use. In some work, religious involvement has been shown to be a significant protective factor against substance use across marijuana use, alcohol use, and binge drinking (King & Furrow, 2004; Milot & Ludden, 2009; Toussaint, 2009). The evidence from the current study found that for 11th and 12th graders, religious involvement significantly reduced the effect of victimization on marijuana use at low and medium levels. With regard to 7th and 8th graders, results revealed that religious involvement significantly protected against alcohol use at low and medium levels of religious involvement and against marijuana use at low levels of religiosity. One way to interpret these results is that there is a difference in substance use between individuals who any level of religious involvement and those show no religious involvement, but that these differences do not continue to increase with greater religious involvement. In other words, the greatest benefit may be attained by being religious at all, but not how involved the individual is.

The possible lack of practical significance (effect sizes of less than .01) for a majority of the relationships does not necessarily suggest the lack of an impact of religious involvement on substance use patterns. For instance, it could be that religious involvement can be an important protective factor for individuals who have been violently victimized in decreasing the amount of time an individual uses substances (which cannot be tested by the current study). Alternately, religious involvement may not directly affect the substance use, but could still assist in the speed of healing, in increasing well-being, or other indicators of positive physical and mental health that could be measured in future studies. Another possibility is that the measures in this study do not accurately test the constructs they were intending to, possibly leading to type II

errors. Religious involvement may indeed be a protective factor against all categories of substance use, but, the measures in this study may not sample the intended behaviors.

As stated previously, previous research has found religious involvement to be a protective factor against marijuana use, alcohol use, and binge drinking (King & Furrow, 2004; Milot & Ludden, 2009; Toussaint, 2009), but the current study found mixed results. First, it is important to note that the current study did not examine the effect of religious involvement on merely substance use, but whether religious involvement weakened the relationship between victimization and substance use. In other words, this study looked at whether religious involvement protected against negative effects from victimization. When viewed through this lens, the current data is congruent with the work of Hunter, Durkin, Heim, Howe and Bergin (2010). These authors found that strength of religious identity buffered the negative effects of peer-victimization. However, prior to the present study, no research has examined whether religious involvement may buffer negative outcomes of victimization.

With regard to the lack of a uniform effect of religious involvement on reducing the relationship between victimization and substance use, a few hypotheses are plausible. In the current study, religious involvement did have an effect for the younger age group, but not the older age group. It is possible that the older age group may have experienced more chronic levels of victimization and negative outcomes from being victimized that could not be buffered as easily by religious involvement. This could mean that religious involvement has no effect, or that the effect of religious involvement alone is not enough to protect against substance use. Alternately, it may be that if there were additional methods of assessing the role of religiousness, such as examining ritualism (Dudley &

Kosinski, 1990), connection to a religious community (Regnerus & Elder, 2003), or intrinsic and extrinsic religiosity (Gruner, 1985), there may be an even stronger link between religious involvement and decreased relationship between victimization and substance use. With regard to marijuana use, it is possible that since marijuana is an illicit substance, it may be more taboo than alcohol. As such, adolescents who have been victimized may use alcohol rather than an illicit substance, such as marijuana, because it is legal, less taboo, and more accessible. Data from the National Survey on Drug Use and Health does not necessarily confirm this notion, but it does demonstrate that 12-17 year olds use alcohol at far higher levels than marijuana (51% v. 8.2% respectively; SAMHSA, 2009).

Implications for Future Research

Future research should work to tease apart the causality in the relationship between substance use and violence, examining the temporal relationship between the two variables. Since it would not be ethical to experimentally induce violent victimization and allow for substance use as a response, longitudinal models would be a good test of directionality. Such research strategies would provide valuable information for research, community impacts, and psychological treatment. Beyond simply understanding the nature of this relationship, future research should focus on understanding potential primary prevention and tertiary treatment options for this societal problem. What are strong protective factors against substance use among male adolescents who have been violently victimized? What factors are associated with healing from violent victimization in adolescence?

It would also be beneficial to utilize additional measures of religiousness which examine aspects such as spirituality in addition to religiosity, ritualism (Dudley & Kosinski, 1990), connection to a religious community (Regnerus & Elder, 2003), and intrinsic and extrinsic religiosity (living versus using one's religion; Gruner, 1985). It would be useful to explore whether, when utilizing a more broad measure, increased religiousness would even more strongly decrease the strength of the association between victimization and substance use. Also, if future research finds religiousness as a significant protective factor against substance use, then future research should also aim to tease apart why religiosity acts as a protective factor. If future studies find the effect of religious involvement to be only partially explained by mundane mediators (e.g. social support or morals about substance use), then it would suggest that there may be an intrinsic benefit of religious involvement. Furthermore, future research should investigate whether religious involvement protects against substance use (or other negative outcomes related to victimization). If the results from the current study are replicated, future research should also attempt to explore whether it has a uniform protective effect, or if the effect again varies by type of substance. And finally, if this does vary by type of substance, then is this because marijuana is more taboo? Do older age groups who have been victimized show more chronic forms of abuse than younger age groups and as such, have more deleterious outcomes of being victimized?

There is also a possibility that there are other mediators were not tested in this study. Some research has pointed out how in younger adolescence, there may be more concrete thinking as the prefrontal cortex has not fully developed (Steinberg, 2005). It is plausible that younger adolescents, or those with incomplete prefrontal cortex

development, may not use abstract coping strategies (such as religiosity or help-seeking). Specifically, researchers have examined the development of the ventromedial area of the prefrontal cortex, which may be damaged by substance use in adolescence. If this were the case, it could have important implications for treatment where using concrete strategies may show greater treatment efficacy.

Similar to other forms of self-harm, I propose that although there are numerous negative consequences, for some individuals, substance use may be one step in the process of recovery that is a cry for help for male victims of violence who are not allowed any other methods of communicating about their pain (Kaukinen, 2002b). This could be framed as a defense mechanism towards a threat to the self (such as threat of harm from victimization), such as in Clark (1998). There is a broad range of literature that suggests that self-harm behaviors may be a “cry for help” (Scoliers et al., 2008). Some authors have specifically distinguished self-harm from suicidal behavior when the intent is not death, but self-preservation (Motz, 2009). However, future research would need to be conducted to test whether substance use in response to trauma could be understood as a “cry for help,” especially by individuals who may be limited by cultural expectations (e.g., gender roles) from seeking help.

With regard to masculinity and violence, future research on male victims of violence should measure masculinity with scales such as the Masculine Role Norms Scale (MRNS; Thompson & Pleck, 1986), a 26 item scale that measures beliefs about appropriate behaviors and roles for men. It would be important to explore whether male victims of violence vary in their help-seeking behaviors by level of masculinity. Specifically with the MRNS, one relevant aspect it measures is “toughness,” which may

relate to beliefs about being able to “handle” victimization. It will also be valuable to explore whether male-help seeking would vary by the sex of the perpetrator. For instance, would males be less likely to seek help for violent victimization if the perpetrator was a female? Male victims of violence may feel further emasculated by having a female perpetrator because men may receive messages that they should be able to fight back. (Allen-Collinson, 2009). These assumptions may lead to disbelief, insensitivity, and possibly ridicule by legal and healthcare professionals to act as a significant deterrent to male help-seeking (Macchieto, 1992). As such, future research should examine whether having a female perpetrator of violence to a male victim may further increase stigma against seeking help for victimization. Finally, the way victimization is conceptualized by the victim may alter the outcome. For instance, as suggested by a case example in one researcher’s work (Allen-Collinson, 2009), being cornered and scratched could be seen as an act of sexual seduction or victimization. It would seem that conceptualizing these types of violence differently may lead to different outcomes.

Implications for Practice

This study suggests that there is a high prevalence of substance use among victims of violence. While it may be problematic to not fully understand the causality in this relationship, it can still inform psychological treatment. It suggests that victims of violence are likely to also be misusing substances, that individuals who abuse substances may be prone to violent victimization, or both; in any case, this highlights the importance of assessing both these areas of concern. In previous studies of victimization among substance use populations, up to 60% of participants who had been victimized reported

they had not received help for their experience of victimization (Perron, Gotham, & Cho, 2008). Furthermore, previous evidence has found that adolescents who were violently victimized showed near three times greater risk of suicidal thoughts and behaviors than their non-abused peers (Cleary, 2000). Since, as highlighted above, men may be less likely to seek help for violent victimization (Kaukinen, 2002b) and discuss vulnerability (Andrews, Issakidis, & Carter, 2001; Lisak, 1995), it may be doubly important to screen for violent victimization in clinical populations of male substance abusers. Though the current study does not present evidence that can test causality, it is consistent with research that has found that physical abuse in adolescence can lead to later substance use (Brady, Tschann, Pasch, Flores, & Ozer, 2008; White & Widom, 2008; Widom & White, 1997). With regard to therapy implications, it would be useful for clinicians to explore the motivational purposes behind substance use, differentiating between use self-preserving purposes (e.g., cry for help) versus self-destructive purposes. In cases where substance use does serve as a defense mechanism against perceived threats to the self among males, it would be useful to help male clients explore how their substance use is helping them in addition to the negative impacts. It would be beneficial to understand the positive rewards they gain from their substance use, to then be able to find alternate methods of coping/defense mechanisms that do not have as high of associated health risks.

If substance use is indeed serving as a cry for help for male victims of violence who cannot communicate about their pain (Kaukinen, 2002b), it would be useful to explore the intentions behind these behaviors in the clinical settings. It may be valuable to work with these men on overcoming the stigma related to reporting being victimized,

developing additional coping skills that do not involve self-harm, improving self-esteem, and self-efficacy for seeking help both in the clinical setting and their larger social lives. With regards to assessment, it would be useful to screen for victimization since the results of this study suggest that it can be an important correlate of substance use. One such measure that was used in one substance use treatment facility that may be useful is the General Victimization Scale (Perron, Gotham, & Cho, 2008). At this time, none of the mainstream measures of substance use have items ask about victimization (Donovan & Marlatt, 1988), which, based on the results of this study, appear to be very important.

Though not directly focusing on specific services offered in the community for male victims of violence, this study highlights the need of services for male victims of violence. Male victims of violence do exist, but are often overlooked. They must face not being believed, the shame of being a man who was a “victim,” certain cultural expectations that men are only perpetrators of violence and not victims of violence, and the lack of appropriate services (Tilbrook, Allan, & Dear, 2010). It is possible that some of the links between substance use and violence occur for the males in this study because they feel unable to talk about their experiences and seek support, leading to substance use. The results of this study suggest that victimization among boys is an important issue for clinicians to consider, but little if any training is offered in this area for psychologists (Meth & Pasick, 1990).

Limitations

The results of this study should be interpreted with appropriate caution in light of certain methodological limitations. This current study examines self-report data collected at a single point in time. Relying on self-report allows for greater access to hard to reach

communities, but may increase potential bias in reporting of actual substance use patterns. This may also affect reporting of violent victimization, especially for males. As discussed above, males often face stigma in reporting being victims of violence, which could result in reporting lower victimization than occurs in the population. With regard to relationships between variables, the current study only tested for linear relationships between predictor and criterion variables. It is possible that there could be nonlinear relationships (such as parabolic relationships) between variables that were not tested in the current analysis.

With regard to victimization, this study measures only physical victimization, and only severe forms of physical victimization. It is possible that different relationships may exist when accounting for less severe forms of physical victimization, such as grabbing, pushing, slapping, kicking, or shoving. And beyond physical victimization, these patterns may change if victimization was expanded to include psychological or sexual victimization, and neglect. In future studies, it would also be beneficial to assess who was the perpetrator and the relationship between perpetrator and victim; for instance, it is plausible that there may be different outcomes if the individual was a peer, a romantic partner, a parent, or otherwise.

In the current study, the measures are brief to keep the survey to a manageable length, but may show lower reliability coefficients as a result. Utilizing longer scales with higher reliability coefficients may lead to different relationships between the variables. As suggested above with regard to victimization, the scope of religious involvement in the current study is somewhat limited and may only tap a small part of the construct. Utilizing broader measures of religious involvement may yield different

results. With regard to scale design, the measure was designed from a theoretical perspective, rather than a factor analytic perspective. It is possible that scales of victimization, substance use, and religious involvement designed through factor analytic methods may better represent the construct they intend to measure. As this study is correlational, it cannot be utilized to determine causation of the variables. It is possible that substance use actually caused victimization, leading to entirely different interpretations of the main effects and protective effects of religiosity.

Summary of Results and Conclusions

In summary, this study found that violent victimization significantly predicted substance use for both the older and younger males, across all three types of use. This relationship did not vary by level of rurality. For 11th and 12th graders, low and medium levels of religious involvement significantly decreased the magnitude of the relationship between victimization and marijuana use. For 7th and 8th graders, low and medium levels of religious involvement significantly decreased the magnitude of the relationship between victimization and alcohol use. Also in this age group, low levels of religious involvement significantly decreased the magnitude of the relationship between victimization and marijuana use. These results suggest that victimization and substance use frequently co-occur; when one is present, the other is likely also to be present. As such, it is important for clinicians working with adolescent males to screen for both victimization and substance use as part of their initial intake or assessment. It is important to note how aspects of masculinity may increase feelings of stigma associated with being victimization and substance use; it will be useful to examine whether adolescent male victims of violence utilize substance use as a coping mechanism (cry for

help). It will also be useful to explore if religious involvement can be used as a strength to help these boys cope.

References

- Abrantes, A. M., Brown, S. A., & Tomlinson, K. L. (2004). Psychiatric comorbidity among inpatient substance abusing adolescents. *Journal of Child and Adolescent Substance Abuse, 13*(2), 83-101.
- Allen-Collinson, J. (2009). A marked man: Female-perpetrated intimate partner abuse. *International Journal of Men's Health, 8*(1), 22-40.
- Andrews, G., Issakidis, C., & Carter, G. (2001). Shortfall in mental health utilization. *British Journal of Psychiatry, 179*, 417-425.
- Arria, A. M., Tarter, R. E., & Van Thiel, D. H. (1991). Vulnerability to alcoholic liver disease. *Recent Developments in Alcoholism, 9*, 185-204.
- Bachman, R., & Saltzman, L. (1995). *Violence against women: Estimates from the redesigned survey*. (Research Report NCJ 154348). Washington, DC: U.S. Department of Justice, National Institute of Justice.
- Bailey, S. L., & Rachal, J. V. (1993). Dimensions of adolescent problem drinking. *Journal of Studies on Alcohol, 54*, 555-565.
- Beauvais, F., & Oetting, E. R. (2002). Variances in the etiology of drug use among ethnic groups of adolescents. *Public Health Reports, 117*(Supplementary 1), S8-S14.
- Beauvais, F., Chavez, E., Oetting, E. R., Deffenbacher, J., & Cornell, G. R. (1996). Drug use, violence, and victimization among White American, Mexican American, and American Indian dropouts, students with academic problems, and students in good academic standing. *Journal of Counseling Psychology, 43*(3), 292-299.

- Bennett, M. E., McCrady, B. S., Frankenstein, W., Laitman, L. A., VanHorn, D. H. A., Keller, D. S. (1993). Identifying young adult substance abusers: The Rutgers Collegiate Substance Abuse Screening Test. *Journal of Studies on Alcohol*, 54, 522-527.
- Boyd, M. (2003). Vulnerability to alcohol and other drug disorders in rural women. *Archives of Psychiatric Nursing*, 17(1), 33-41.
- Brady, S., Tschann, J., Pasch, L., Flores, E., & Ozer, E. (2008). Violence involvement, substance use, and sexual activity among Mexican-American and European-American adolescents. *Journal of Adolescent Health*, 43(3), 285-295.
- Brewer, R., & Swahn, M. (2005). Binge Drinking and Violence. *JAMA: Journal of the American Medical Association*, 294(5), 616-617.
- Caetano, R., Field, C., & Scott, N. (2003). Association between childhood physical abuse, exposure to parental violence, and alcohol problems in adulthood. *Journal of Interpersonal Violence*, 18(3), 240-257.
- Caviola, A. A., & Schiff, M. M. (2000). Psychological distress in abused, chemically dependent adolescents. *Journal of Child and Adolescent Substance Abuse*, 10(2), 81-92.
- Chabot, H., Tracy, T., Manning, C., & Poisson, C. (2009). Sex, attribution, and severity influence intervention decisions of informal helpers in domestic violence. *Journal of Interpersonal Violence*, 24(10), 1696-1713.
- Champion, H. L. O., Foley, K. L., DuRant, R. H., Hensberry, R., Altman, D., & Wolfson, M. (2004). Adolescent sexual victimization, use of alcohol and other substances, and other health risk behaviors. *Journal of Adolescent Health*, 35(4), 321-328.

- Cheung, M., Leung, P., & Tsui, V. (2009). Asian male domestic violence victims: Services exclusive for men. *Journal of Family Violence, 24*(7), 447-462.
- Chu, D., & Sung, H. (2009). Racial differences in desistance from substance abuse: The impact of religious involvement on recovery. *International Journal of Offender Therapy and Comparative Criminology, 53*(6), 696-716.
- Clark, A. J. (1998). *Defense mechanisms and the counseling process*. Thousand Oaks, CA: Sage.
- Cleary, S. D. (2000). Adolescent victimization and associated suicidal and violent behaviors. *Adolescence, 35* (Winter), 671-682.
- Cochran, S. V. (2005). Evidence-based assessment with men. *Journal of Clinical Psychology, 61*(6), 649-660.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd Ed). Hillsdale, NJ: Erlbaum.
- Craven, D. (1996). *Sex differences in violent victimization*. (Research Report NCJ 164508). Washington, DC: U.S. Department of Justice, National Institute of Justice.
- Cronk, C. E., & Sarvela, P. D. (1997). Alcohol, tobacco, and other drug use among rural/small town and urban youth: A secondary analysis of the Monitoring the Future data set. *American Journal of Public Health, 87*(5), 760-764.
- Donovan, D. M., & Marlatt, G. A. (1988). *Assessment of addictive behavior*. New York: Guilford.
- Dudley, M. G., & Kosinski, F. A. (1990). Religiosity and marital satisfaction: A research note. *Review of Religious Research, 32*, 78-86.

- Eckhardt, C., & Crane, C. (2008). Effects of alcohol intoxication and aggressivity on aggressive verbalizations during anger arousal. *Aggressive Behavior*, 34(4), 428-436.
- Ehrensaft, M., & Vivian, D. (1996). Spouses' reasons for not reporting existing marital aggression as a marital problem. *Journal of Family Psychology*, 10(4), 443-453.
- Fagan, J. (1993a). Interactions among drugs, alcohol, and violence. *Health Affairs*, 12(4), 65-79.
- Fishbein, D., & Tarter, R. (2009). Infusing Neuroscience into the study and prevention of drug misuse and co-occurring aggressive behavior. *Substance use & Misuse*, 44(9&10), 1204-1235.
- Fitzpatrick, K. M., & Bolidizar, J. P. (1993). The prevalence and consequences of exposure to violence among African-American youth. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32(2), 424-430.
- Frazier, P. A., Barron, K. E., Tix, A. P. (2004). Testing moderator and mediator effects in counseling psychology. *Journal of Counseling Psychology*, 51(1), 115-134.
- Frick, R. W. (1996). The appropriate use of null hypothesis testing. *Psychological Methods*, 1, 379-390.
- Funk, R. R., McDermeit, M., Godley, S. H., & Adams, L. (2003). Maltreatment issues by level of adolescent substance abuse treatment: The extent of the problem at intake and relationship to early outcomes. *Child Maltreatment*, 8(1), 36-45.
- Garnefski, N. & Arends, W. (1998). Sexual abuse and adolescent maladjustment: Differences between male and female victims. *Journal of Adolescence*, 21(1), 99-107.

- Goldstein, A. L., Walton, R. M., Cunningham, M. A., Trowbridge, M. J., & Maio, R. F. (2007). Violence and substance use as risk factors for depressive symptoms among adolescents in an urban emergency department. *Journal of Adolescent Health, 40*(3), 276-279.
- Gorman-Smith, D., & Tolan, P. H. (1998). The role of exposure to community violence and developmental problems among inner-city youth. *Developmental Psychopathology, 10*, 101-116.
- Gorush, R. L., & Hao, J. Y. (1993). Forgiveness: An exploratory factor analysis and its relationships to religious variables. *Review of Religious Research, 34*, 333-347.
- Gover, A. (2004). Risky lifestyles and dating violence: A theoretical test of violent victimization. *Journal of Criminal Justice, 32*(2), 171-180.
- Green, K. M., & Ensminger, M. E. (2006). Adult social behavior effects of heavy adolescent marijuana use among African Americans. *Developmental Psychology, 42*, 1168-1178.
- Grella, C. E., & Joshi, J. (2003). Treatment processes and outcomes among adolescents with a history of abuse who are in drug treatment. *Child Maltreatment, 8*(1), 7-18.
- Gruner, L. (1985). The correlation of private, religious devotional practices and marital adjustment. *Journal of Comparative Family Studies, 16*, 47-59.
- Hawkins, J. D., Jenson, J. M., Catalano, R. F., & Lishner, D. M. (1988). Delinquency and drug abuse: Implications for social services. *Social Service Review, 62*, 258-284.
- Husaini, B. A., Moore, S. T., & Cain, V. A. (1994). Psychiatric symptoms and help-seeking behavior among the elderly: An analysis of racial and gender differences. *Journal of Gerontological Social Work, 21*, 177-195.

- Huang, B., White, H., Kosterman, R., Catalano, R., & Hawkins, J. (2001). Developmental associations between alcohol and interpersonal aggression during adolescence. *Journal of Research in Crime and Delinquency*, 38(1), 64-83.
- Kaukinen, C. (2002a). Adolescent victimization and problem drinking. *Violence and Victims*, 17(6), 669-689.
- Kaukinen, C. (2002b). The help-seeking decisions of violent crime victims: An examination of the direct and conditional effects of gender and the victim-offender relationship. *Journal of Interpersonal Violence*, 17(4), 432-456.
- Kerestes, M., Youniss, J., & Metz, E. (2004). Longitudinal patterns of religious perspective and civic integration. *Applied Developmental Science*, 8(1), 39-46.
- King, P. E., & Furrow, J. L. (2004). Religion as a resource for positive youth development: Religion, social capital, and moral outcomes. *Developmental Psychology*, 40(5), 703-713.
- Kessler, R. C., Brown, R. L., & Broman, C. L. (1981). Sex differences in psychiatric help-seeking: Evidence from four large-scale surveys. *Journal of Health and Social Behavior*, 22, 49-64.
- Lardner, G. (1997, August 15). Violent injuries far surpass estimates, study finds. *The Washington Post*, p. A6.
- Levant, R., Wimer, D., Williams, C., Smalley, K., & Noronha, D. (2009). The relationships between masculinity variables, health risk behaviors and attitudes toward seeking psychological help. *International Journal of Men's Health*, 8(1), 3-21.

- Liebschutz, J., Savetsky, J. B., Saitz, N. J., Horton, R., Lloyd-Travaglini, C., & Samet, J. H. (2002). The relationship between sexual and physical abuse and substance abuse consequences. *Journal of Substance Abuse Treatment*, 22(3), 121-128.
- Leccese, M., Waldron, H. B. (1994). Assessing adolescent substance use: A critique of current measurement instruments. *Journal of Substance Abuse Treatment*, 11, 553-563.
- Lipsey, M., Wilson, D., Cohen, M., & Derzon, J. (1997). Is there a causal relationship between alcohol use and violence? A synthesis of evidence. *Recent developments in alcoholism, Vol. 13: Alcohol and violence: Epidemiology, neurobiology, psychology, family issues* (pp. 245-282). New York, NY US: Plenum Press.
- Lisak, D. (1993). Men as victims: Challenging cultural myths. *Journal of Traumatic Stress*, 6(4), 577-580.
- Lisak, D. (1995). Integrating a critique of gender in the treatment of male survivors of childhood abuse. *Psychotherapy: Theory, Research, Practice, Training*, 32(2), 258-269.
- Lisak, D. (1997). Male gender socialization and the perpetration of sexual abuse. In R. F. Levant & G. R. Brooks (Eds.), *Men and sex* (pp. 156-177). New York: Wiley.
- Lisak, D. & Luster, L. (1994). Educational, occupational, and relationship histories of men who were sexually and/or physically abused as children. *Journal of Traumatic Stress*, 7(4), 507-523.
- Lynch, J. & Kilmartin, C. T. (1999). *The pain behind the mask. Overcoming masculine depression*. Binghamton, NY: Haworth.

- Macchietto, J. (1992). Aspects of male victimization and female aggression: Implications for counseling men. *Journal of Mental Health Counseling, 14*, 375-392.
- Macmillan, R., & Hagan, J. (2004). Violence in the transition to adulthood: Adolescent victimization, education, and socioeconomic attainment in later life. *Journal of Research on Adolescence, 14*(2), 127-158.
- McCann, U. D., Wong, D. F., Yokoi, F., Villemagne, V., Dannals, R. F., Ricuarte, G. A. (1998). Reduced striatal dopamine transporter density in abstinent methamphetamine and methacathinone users: Evidence from positron emission tomography studies with [11C] WIN-35, 428. *Journal of Neuroscience, 18*(20), 8417-8422.
- McDonald, R. A., Thurston, P. W., & Nelson, M. R. (2000). A monte carlo study of missing item methods. *Organizational Research Methods, 3*, 71-92.
- McKay, J. R., Rutherford, M. J., Cacciola, J. S., & Kabaskalian-McKay, R. (1996). Gender differences in the relapse experiences of cocaine patients. *Journal of Nervous and Mental Disease, 184*, 616-622.
- Meth, R., & Pasick, R. (1990). *Men in therapy: The challenge of change*. New York: Guilford Press.
- Milot, A. S., & Ludden, A. B. (2009). The effects of religion and gender on well-being, substance use, and academic engagement among rural adolescents. *Youth & Society, 40*(3), 403-425.
- Moran, P. B., Vuchinich, S., & Hall, N. K. (2004). Associations between types of maltreatment and substance use during adolescence. *Child Abuse & Neglect, 28*(5), 565-574.

- Motz, A. (2009). Self-harm as a sign of hope. *Managing self-harm: Psychological perspectives* (pp. 15-41). New York, NY US: Routledge/Taylor & Francis Group.
- Mrug, S., & Windle, M. (2009). Initiation of alcohol use in early adolescence: Links with exposure to community violence across time. *Addictive Behaviors*, 34(9), 779-781.
- Muilenburg, J., Johnson, W., Usdan, S., Annang, L., & Clayton, D. (2007). Prevalence of impaired driving behaviors in a diverse, rural, southern middle school. *Accident Analysis and Prevention*, 39(6), 1080-1087.
- Mullet, E., Barros, J., Frongia, L., Usaï, V., & Shafighi, S. (2003). Religious involvement and the forgiving personality. *Journal of Personality*, 71(1), 1-19.
- Murty, S., Peek-Asa, C., Zwerling, C., Stromquist, A., Burmeister, L., & Merchant, J. (2003). Physical and emotional partner abuse reported by men and women in a rural community. *American Journal of Public Health*, 93(7), 1073-1075.
- Nagy, S., & Dunn, M. (1999). Alcohol behaviors and deviant behaviors among adolescents in a rural state. *Journal of Alcohol and Drug Education*, 44(3), 1-9.
- National Institute of Justice. (1996). *Drug use forecasting: 1995 annual report on adult and juvenile arrestees. Research report*. Washington, DC: US Department of Justice, Office of Juvenile Programs, National Institute of Justice.
- National Institute of Justice (2003). *Youth Victimization: Prevalence and Implications*. Washington, DC: Department of Justice, Office of Justice Programs.
- Newcomb, M. D., Bentler, P. M. (1988). *Consequences of adolescent drug use*. Newbury Park, CA: Sage.

- Oetting, E. R., Beauvais, F., Edwards, R. W. (1985). *The American Drug and Alcohol Survey*. Fort Collins, CO: Rocky Mountain Behavioral Science Institute, Inc.
- Oetting, E. R., & Beauvais, F. (1990). Adolescent drug use: Findings of national and local surveys. *Journal of Consulting and Clinical Psychology*, 58(4), 385-394.
- Office of Juvenile Justice and Delinquency Prevention (2000). *Children as Victims*. Washington, DC: OJJDP.
- Ozer, E.J., & Weinstein, R.S. (2004). Urban adolescents' exposure to community violence: The role of support, school safety, and social constraints in a school-based sample of boys and girls. *Journal of Clinical Child Adolescent Psychology*, 33, 463-476.
- Paloutzian, R. F., & Park, C. L. (Ed.). (2005). *Handbook of the psychology of religion and spirituality*. New York: Guilford Press.
- Pardini, D. A., Plante, T. G., Sherman, A., & Stump, J. E. (2000). Religious faith and spirituality in substance abuse recovery: Determining the mental health benefits. *Journal of Substance Abuse Treatment*, 19, 347-354.
- Pargament, K. (2002). Is religion nothing but ...? Explaining religion versus explaining religion away. *Psychological Inquiry*, 13(3), 239-244.
- Pernanen, K. (1976). Alcohol and crimes of violence. In B. Kissen, & H. Begleiter (Eds.), *The biology of alcoholism: social aspects of alcoholism*. New York: Guilford.
- Perron, B. E., Gotham, H. J., & Cho, D. (2008). Victimization among African-American Adolescents in Substance Abuse Treatment. *Journal of Psychoactive Drugs*, 40(1), 67-75.

- Pihl R., & Peterson, J. (1993a). Alcohol and aggression: three potential mechanisms of drug effect. In S.E. Martin (Ed.), *Alcohol and interpersonal violence: fostering multidisciplinary perspectives* (pp. 1-36). Rockville, MD: US Department of health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism.
- Pihl R., & Peterson, J. (1993b). Alcohol/drug use and aggressive behavior. In S. Hodgines (Ed.), *Mental disorder and crime* (pp. 263-283). Newbury Park, CA: Sage.
- Pleck, J. H. (1995). The gender role strain paradigm: An update. In R. F. Levant & W. S. Pollack (Eds.) *A new psychology of men*, (pp. 11-32). New York: Basic Books.
- Reed, E., Amaro, H., Matsumoto, A., & Kaysen, D. (2009). The relation between interpersonal violence and substance use among a sample of university students: Examination of the role of victim and perpetrator substance use. *Addictive Behaviors*, 34(3), 316-318.
- Reed, E., Raj, A., Miller, E., & Silverman, J. (2010). Losing the “gender” in gender-based violence: The missteps of research on dating and intimate partner violence. *Violence Against Women*, 16(3), 348-354.
- Reiss, A. J., & Roth, J. A. (1993). Alcohol, other psychoactive drugs and violence. In A. J. Reiss, & J. A. Roth (Eds.), *Understanding and preventing violence* (pp. 182-220). Washington, DC: National Academy Press.
- Regnerus, M. D., & Elder, G. H. (2003). Staying on track in school: Religious influences in high- and low- risk settings. *Journal for the Scientific Study of Religion*, 42(4), 633-649.

- Rocky Mountain Behavioral Sciences Institute. (n.d.). Reliability and validity of the American Drug and Alcohol Survey. Retrieved January 3, 2010, from <http://www.rmbsi.com/relvalid.html>.
- Roth, P. L., Switzer, F. S., & Switzer, D. M. (1999). Missing data in multiple item scales: A Monte Carlo analysis of missing data techniques. *Organizational Research Methods*, 2, 211-232.
- Rozen, J. (1993). Issues in the epidemiology of alcohol and violence. In S. E. Martin (Ed.), *Alcohol and Interpersonal violence: fostering multidisciplinary perspectives* (pp. 1-36). Rockville, MD: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism.
- Ruiz-Pérez, I., Plazaola-Castaño, J., & Vives-Cases, C. (2007). Methodological issues in the study of violence against women. *Journal of Epidemiology & Community Health*, 61(2), 26-31.
- SAMHSA (n. d.). SAMHSA's measures and instruments resources guide. http://preventionplatform.samhsa.gov/macro/csap/mir_search_create/redesign/search_results.cfm?Category=&Row=&CategoryID=&CFID=655964&CFTOKEN=44451760&searchmode=allinstruments. Accessed February 13, 2007.
- Substance Abuse and Mental Health Services Administration. (2010). *Results from the 2009 National Survey on Drug Use and Health: Volume I. Summary of National Findings* (Office of Applied Studies, NSDUH Series H-38A, HHS Publication No. SMA 10-4856Findings). Rockville, MD.

- Schafer, J., Caetano, R., & Clark, C. (1998). Rates of intimate partner violence among U.S. couples. *American Journal of Public Health, 88*(11), 1702-704.
- Scoliers, G., Portzky, G., Madge, N., Hewitt, A., Hawton, K., de Wilde, E., et al. (2009). Reasons for adolescent deliberate self-harm: A cry of pain and/or a cry for help? Findings from the child and adolescent self-harm in Europe (CASE) study. *Social Psychiatry and Psychiatric Epidemiology, 44*(8), 601-607.
- Shepherd, J., Sutherland, I., & Newcombe, R. (2006). Relations between alcohol, violence and victimization in adolescence. *Journal of Adolescence, 29*(4), 539-553.
- Smiler, A. P. (2004). Thirty years after the discovery of gender: Psychological concepts and measures of masculinity. *Sex Roles, 50*, 15-26.
- Smith, C., & Denton, M. L. (2005). *Soul searching: The religious and spiritual lives of American teenagers*. Oxford, UK: Oxford University Press.
- Sullivan, T. N., Farrell, A. D., & Klierer, W. (2006). Peer victimization in early adolescence: Association between physical and relational victimization and drug use, aggression, and delinquent behaviors among urban middle school students.
- Stewart, C., & Bolland, J. M. (2002). Parental style as a possible mediator of the relationship between religiosity and substance use in African-American adolescents. *Journal of Ethnicity in Substance Abuse, 1*, 63-81.
- Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Science, 9*(2), 69-74.
- Stewart, A., & Maddren, K. (1997). Police officers' judgments of blame in family violence: The impact of gender and alcohol. *Sex Roles, 37*, 921-933.

- Sussman, S., & Ames, S. L. (2001). *The social psychology of drug abuse*. Buckingham, UK: Open University Press.
- Sussman, S., Dent, C. W., & Galaif, E. R. (1997). The correlates of substance abuse and dependence among adolescents at high risk for drug abuse. *Journal of Substance Abuse*, 9, 241-255.
- Sussman, S., Skara, S., & Ames, S. L. (2008). Substance use among adolescents. *Substance Use & Misuse*, 43, 1802-1828.
- Swahn, M., & Donovan, J. (2004). Correlates and predictors of violent behavior among adolescent drinkers. *Journal of Adolescent Health*, 34(6), 480-492.
- Swahn, M., & Donovan, J. (2005). Predictors of fighting attributed to alcohol use among adolescent drinkers. *Addictive Behaviors*, 30(7), 1317-1334.
- Swahn, M., Simon, T., Hammig, B., & Guerrero, J. (2004). Alcohol-consumption behaviors and risk for physical fighting and injuries among adolescent drinkers. *Addictive Behaviors*, 29(5), 959-963.
- Swaim, R., Henry, K., & Baez, N. (2004). Risk-taking, attitudes toward aggression, and aggressive behavior among rural middle school youth. *Violence and Victims*, 19(2), 157-170.
- Swaim, R., Henry, K., & Kelly, K. (2006). Predictors of Aggressive Behaviors among Rural Middle School Youth. *The Journal of Primary Prevention*, 27(3), 229-243.
- Swaim, R.C., & Stanley, L.R. (2010). Rurality, region, community make-up and alcohol use among rural youth. *Journal of Rural Health*, 00, 1-12.
- Swanson, J. M. (1994). Mental disorder substance abuse, and community violence: an epidemiological approach. In J. Monahan & H. Steadman (Eds.), *Violence and*

- mental disorder: developments in risk assessment*. Chicago, IL: University of Chicago Press.
- Thompson, B. (1998). Statistical significance and effect size reporting: Portrait of a possible future. *Research in the Schools*, 5(2), 33-38.
- Tjaden, P., & Thoennes, N. (2000). *Full report of the prevalence, incidence, and consequences of violence against women* (Research Report NCJ 183781). Washington, DC: U.S. Department of Justice, National Institute of Justice.
- Thom, B. (1986). Sex differences in help-seeking for alcohol problems. I. The barriers to help-seeking. *British Journal of Addiction*, 81, 777-788.
- Thompson, E. H., & Pleck, J. H. (1986). The structure of male role norms. *American Behavioral Scientist*, 29, 531-543.
- Tilbrook, E., Allan, A., & Dear, G. (2010). Intimate partner abuse of men. Retrieved May 25th, 2010 from http://www.oneinthree.com.au/storage/pdfs/ECU_Final_Report.pdf
- Tomlinson, K. L., Brown, S. A., & Abrantes, A. M. (2004). Psychiatric comorbidity and substance use treatment outcomes of adolescents. *Psychology of Addictive Behaviors*, 18, 160-169.
- Toussaint, L. (2009). Associations of religiousness with 12-month prevalence of drug use and drug-related sex. *International Journal of Mental Health and Addiction*, 7(2), 311-323.
- Vazsonyi, A., Trejos-Castillo, E., & Young, M. (2008). Rural and non-rural African American youth: Does context matter in the etiology of problem behaviors?. *Journal of Youth and Adolescence*, 37(7), 798-811.

- Vermeiren, R., Schwab-Stone, M., Ruchkin, V., King, R., Van Heeringen, C., & Deboutte, D. (2003). Suicidal behavior and violence in male adolescents: A school-based study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 42(1), 41-48.
- Volkow, N. D., Chang, L., Wang, G., Fowler, J. S., Ding, Y., Sedler, M., et al. (2001). Low level of brain dopamine D2 receptors in methamphetamine abusers: Association with metabolism in the orbitofrontal cortex. *American Journal of Psychiatry*, 158(12), 2015-2021.
- Waltermaurer, E. (2005). Measuring Intimate Partner Violence (IPV): You May Only Get What You Ask For. *Journal of Interpersonal Violence*, 20(4), 501-506.
- Wei, E., Loeber, R., & White, H. (2004). Teasing Apart the Developmental Associations Between Alcohol and Marijuana Use and Violence. *Journal of Contemporary Criminal Justice*, 20(2), 166-183.
- Welte J. W., & Abel, E. L. (1989). Homicide: drinking by the victim. *Journal of Studies on Alcohol*, 50(3), 197-201.
- White, H. R., & Hansell, S. (1998). Acute and long-term effects of drug use on aggression from adolescence into adulthood. *Journal of Drug Issues*, 28, 837-858.
- White, H. R., Loeber, R., Stouthamer-Loeber, M., & Farrington, D. P. (1999). *Development and Psychopathology*, 11, 785-803.
- White, H. R., & Widom, C. S. (2008). Three potential mediators of the effects of child abuse and neglect on adulthood substance use among women. *Journal of Studies on Alcohol and Drugs*, 69, 337-347.

- Widom, C. S., & White, H. R. (1997). Problem behaviours in abused and neglected children grown up: Prevalence and co-occurrence of substance abuse, crime and violence. *Criminal Behavior and Mental Health*, 7, 287-310.
- Wills, T. A., & DePaulo, B. M. (1991). Interpersonal analysis of the help-seeking process. In C. R. Snyder & D. R. Forsyth (Eds.), *Handbook of social and clinical psychology: The health perspective, Vol 162*; (pp. 305-375). Elmsford, NY: Pergamon Press.
- Winters, K. C. (1999). Treating adolescents with substance use disorders: An overview of practice issues and treatment outcome. *Substance Abuse*, 20, 203-255.
- Zhang, L., Wieczorek, W. F., & Welte, J. W. (1997). The nexus between alcohol and violent crime. *Alcoholism: Clinical and Experimental Research*, 21, 1264-1271.
- Zimmerman, M. A., & Maton, K. I. (1992). Life-style and substance abuse among male African-American urban adolescents: A cluster analysis approach. *American Journal of Community Psychology*, 20(1), 121-138.

TABLES AND FIGURES

Table 1.1

Descriptive statistics about the alcohol use in the last month, drunkenness in the last month, and marijuana use in the last month among 7th and 8th graders and 11th and 12th graders.

Age Cohort	Dependent Variable	N	Mean	Std. Dev.
11 th & 12 th grade	Alcohol Use	15,305	.8744	1.06
	Drunkenness	14,709	.4923	0.86
	Marijuana use	15,494	.5029	1.18
7 th & 8 th grade	Alcohol Use	13,591	.3638	0.75
	Drunkenness	12,718	.1215	0.49
	Marijuana use	13,672	.1580	0.67

Table 1.2

The effect of victimization on alcohol use in the last month, drunkenness in the last month, and marijuana use in the last month among 7th and 8th and 11th and 12th graders.

Age Cohort	Dependent Variable	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>F</i>	Adj. $R^2 \Delta$
11 th & 12 th	Alcohol Use <i>N</i> = 15,305	.423	.018	.187*	184.489	.035
	Drunkenness <i>N</i> = 14,709	.341	.015	.185*	174.031	.034
	Marijuana use <i>N</i> = 15,494	.449	.020	.178*	174.117	.032
7 th & 8 th	Alcohol Use <i>N</i> = 13,591	.325	.013	.207*	269.38	.042
	Drunkenness <i>N</i> = 12,718	.170	.009	.167*	172.46	.028
	Marijuana use <i>N</i> = 13,672	.238	.012	.172*	185.38	.029

* $p < .001$, ** $p < .01$, *** $p < .05$

Table 2.1

Standardized Beta Coefficients from the Hierarchical Regression examining Rurality as a moderator between victimization and alcohol use; victimization and drunkenness; and victimization and marijuana use in 11th and 12th graders (N= 15,305).

Step	Alcohol Use (N=15,305)	Drunkenness (N=14,709)	Marijuana Use (N=15,494)
<i>Step 1</i>			
Ethnicity	.006	-.008	.032*
Parental Education	-.001	.001	.008
F	1.126	.565	7.70
ΔR^2	.000	.000	.001
<i>Step 2</i>			
Ethnicity	-.007	-.019***	.019***
Parental Education	-.003	.003	.007
Ever Been Victimized	.186*	.185*	.178*
Remote Rural Area	.029*	.021***	-.001
Rural Area	.020	.015	.039*
Metropolitan Area	.040*	.000	.019
F	95.92	88.148	90.13
ΔR^2	.036	.035	.033
<i>Step 3</i>			
Ethnicity	-.768	-.018***	.019***
Parental Education	-.412	.003	.007
Ever Been Victimized	.149*	.162	.121*
Remote Rural Area	.024***	.011	-.014
Rural Area	.000	.001	.016
Metropolitan Area	.047*	.013	.005
Remote Rural x victimized	.009	.017	.025***
Rural x victimized	.052**	.041	.059*
Metropolitan x victimized	-.009	.052	.029***
F	65.92	60.574	61.37
ΔR^2	.001	.001	.001

* $p < .001$, ** $p < .01$, *** $p < .05$

Table 2.2

Standardized Beta Coefficients from the Hierarchical Regression examining Rurality as a moderator between victimization and alcohol use; victimization and drunkenness; and victimization and marijuana use in 7th and 8th graders (N= 15,305).

Step	Alcohol Use (N=13,591)	Drunkenness (N=12,718)	Marijuana Use (N=13,672)
<i>Step 1</i>			
Ethnicity	.106*	.097*	.093*
Parental Education	-.035*	-.033*	-.023**
F	94.32	74.06	68.73
ΔR^2	.014	.012	.010
<i>Step 2</i>			
Ethnicity	.084*	.082*	.079*
Parental Education	-.030*	-.027**	-.018***
Ever Been Victimized	.207*	.167*	.172*
Remote Rural Area	.003	-.005	.001
Rural Area	.000	-.009	.004
Metropolitan Area	.026***	-.004	-.004
F	136.30	86.32	92.77
ΔR^2	.043	.028	.029
<i>Step 3</i>			
Ethnicity	.084*	.082*	.079*
Parental Education	-.030*	-.027**	-.018***
Ever Been Victimized	.224*	.189*	.157*
Remote Rural Area	.013	.009	.002
Rural Area	.003	-.003	-.004
Metropolitan Area	.042*	.007	-.007
Remote Rural x victimized	-.016	-.023	-.007
Rural x victimized	-.008	-.016	.018
Metropolitan x victimized	-.028***	-.020	.005
F	91.57	58.03	61.96
ΔR^2	.000	.000	.000

* $p < .001$, ** $p < .01$, *** $p < .05$

Table 3.1

Standardized Beta Coefficients from the Hierarchical Regression examining Religiosity as a moderator between victimization and alcohol use; victimization and drunkenness; and victimization and marijuana use in 11th and 12th graders (N= 15,305).

Step	Alcohol Use (N=15,231)	Drunkenness (N=14,641)	Marijuana Use (N=15,416)
<i>Step 1</i>			
Ethnicity	.012	-.008	.032*
Parental Education	-.002	.002	.009
F	1.18	.562	7.57
ΔR^2	.000	.000	.001
<i>Step 2</i>			
Ethnicity	-.001	-.020***	.020***
Parental Education	.006	.010	.017***
Ever Been Victimized	.168*	.167*	.159*
Religiosity	-.201*	-.193*	-.199*
F	309.00	281.75	590.25
ΔR^2	.075	.071	.071
<i>Step 3</i>			
Ethnicity	-.001	-.019***	.021**
Parental Education	.006	.010	.017***
Ever Been Victimized	.168*	.169*	.163*
Religiosity	-.200*	-.178*	-.170*
Religiosity x victimization	-.003	-.025***	-.049*
F	247.20	226.73	25.61
ΔR^2	.000	.000	.002

* $p < .001$, ** $p < .01$, *** $p < .05$

Table 3.2

Standardized Beta Coefficients from the Hierarchical Regression examining Religiosity as a moderator between victimization and alcohol use; victimization and drunkenness; and victimization and marijuana use in 7th and 8th graders (N= 15,305).

Step	Alcohol Use (N=13,446)	Drunkenness (N=12,579)	Marijuana Use (N=13,523)
<i>Step 1</i>			
Ethnicity	.104*	.097*	.094*
Parental Education	-.035*	-.033*	-.023**
F	90.54	72.94	68.95
ΔR^2	.013	.011	.010
<i>Step 2</i>			
Ethnicity	.075*	.072*	.070*
Parental Education	-.017***	-.019***	-.008
Ever Been Victimized	.192*	.153*	.158*
Religiosity	-.150*	-.122*	-.124*
F	284.41	279.48	192.59
ΔR^2	.065	.042	.044
<i>Step 3</i>			
Ethnicity	.075*	.073*	.071*
Parental Education	-.017***	-.019***	-.008
Ever Been Victimized	.205*	.179*	.179*
Religiosity	-.116*	-.055*	-.067*
Religiosity x victimization	-.055*	-.106*	-.090*
F	233.07	87.86	168.33
ΔR^2	.002	.007	.005

* $p < .001$, ** $p < .01$, *** $p < .05$

FIGURES

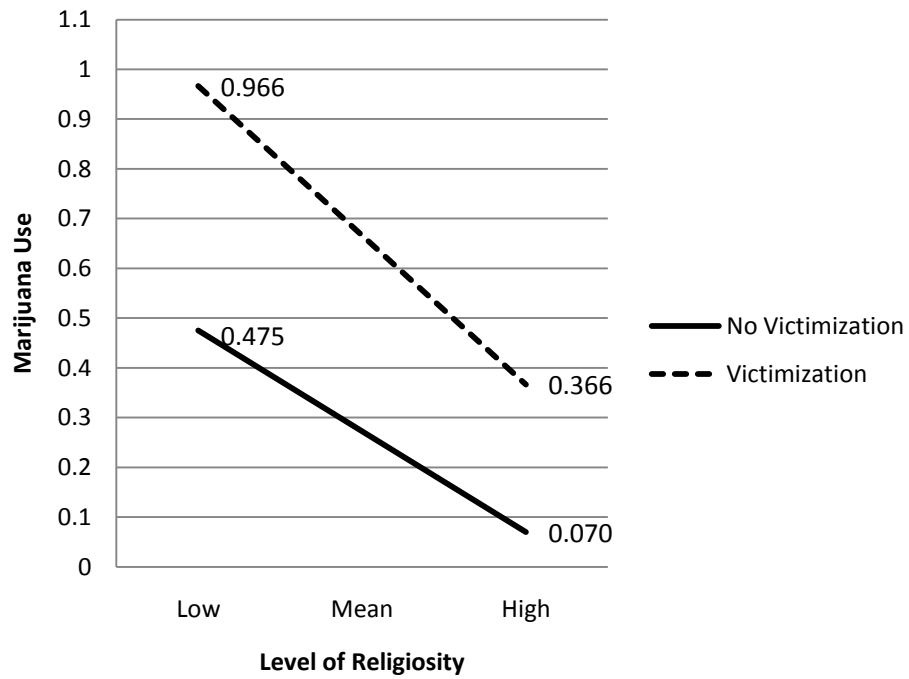


Figure 1. The Impact of Victimization on Marijuana Use by Religiosity for 11th & 12th graders.

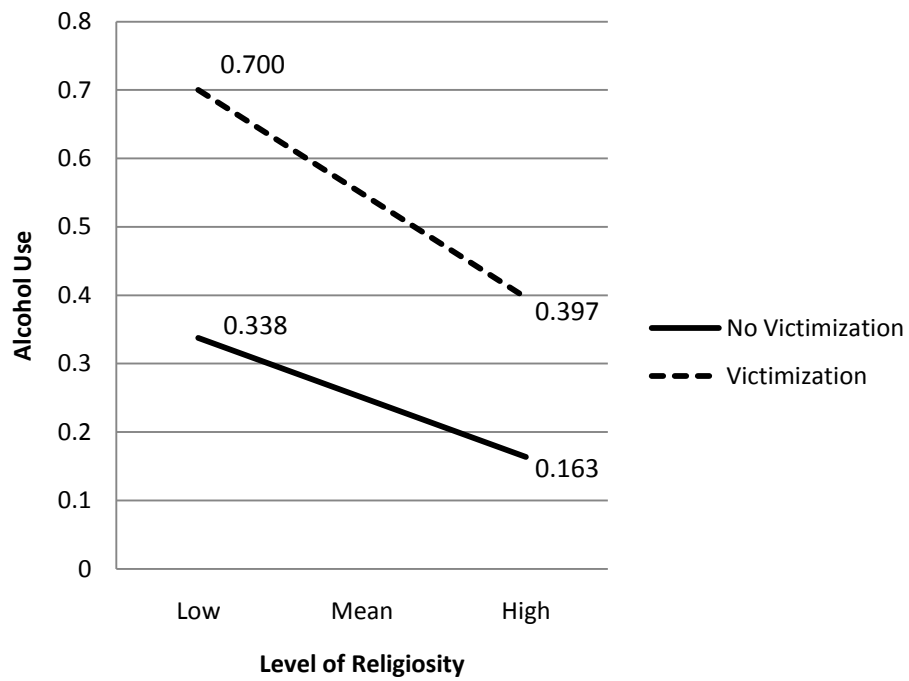


Figure 2. The Impact of Victimization on Alcohol Use by Religiosity for 7th & 8th graders.

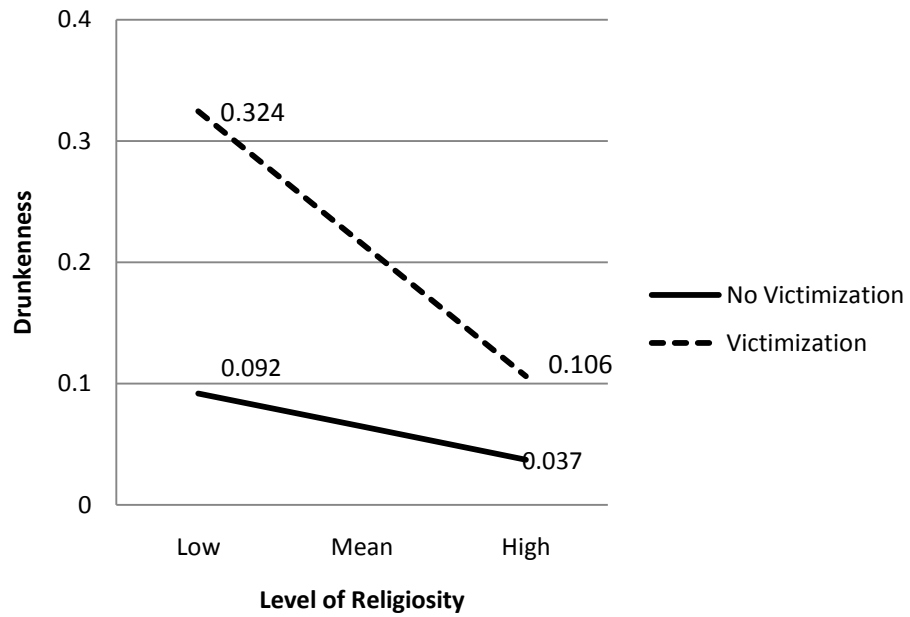


Figure 3. The Impact of Victimization on Drunkenness by Religiosity for 7th & 8th graders.

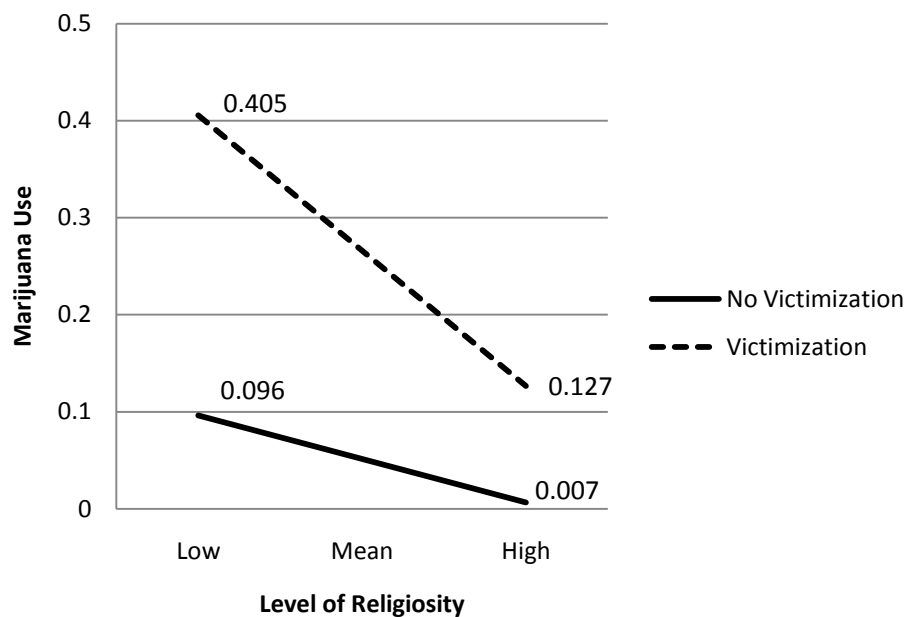


Figure 4. The Impact of Victimization on Marijuana Use by Religiosity for 7th & 8th graders.