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Pathways to Violence-Related Behaviors among Dominican and Puerto Rican Adolescents

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Abstract

Previous studies found links between victimization, drug use, and violence for youth, which also has detrimental effects on emotional and social functioning. Considering that Latino youth are at a higher risk of violent offending than White youth, this study examines pathways from victimization to violence-related behaviors among Dominican and Puerto Rican youth. Adolescents who experienced victimization were more likely to have engaged in violence-related behaviors both directly and indirectly. For both groups, more victimization predicted higher rates of alcohol and drug use which, in turn, predicted more violent behaviors. For Dominicans, more experiences of victimization also increased depressive symptoms, decreased school importance, and in turn, increased marijuana use and violence-related behaviors. Although both models share similar risk factors, the study findings show the importance of tailoring prevention and intervention programs to the needs of youth from different Latino ethnicities.

Pathways to Violence-Related Behaviors among Dominican and Puerto Rican Adolescents

Youth violence continues to be a significant public health concern. In a nationally representative sample of high school youth, over a third of the students reported participating in a physical fight in the previous year and one-fifth reported carrying a weapon in the previous month (Centers for Disease Control and Prevention [CDC], 2008). For both behaviors, males had higher rates than females with over 40% of males engaging in fighting and almost 30% carrying a weapon (CDC, 2008). Youth violence also encompasses other behaviors, such as bullying, assault, and robbery. Previous studies have found links between victimization, drug use, and violence (Nofziger & Kurtz, 2005; Vermeiren et al., 2003), which also has detrimental effects on emotional and social functioning. Considering that Latino youth are at a higher risk of violent offending than White youth (Nofziger & Kurtz, 2005), it is important to have a clearer understanding of the pathways to violence. This study builds on past research conducted on Dominican youth that found victimization and substance use were significant predictors of violent behaviors (Reid, Garcia-Reid, Klein, & McDougall, 2008). This study furthers this research by examining pathways from victimization to violence-related behaviors among Dominican youth and whether the same model holds true for Puerto Rican youth.

Violence-Related Behaviors

Youth who engage in violence-related behaviors are more likely to engage in drug use, drug selling, nonviolent felonies, school dropout, have poor mental health, and future adult violence (Ellickson, Saner, & McGuigan, 1997; Farrington, 1998; Shepherd, Sutherland, & Newcombe, 2006; Wagner, 1996). In a middle school sample, earlier onset of marijuana, alcohol, and other substance use was related to carrying guns and other weapons to school (DuRant et al., 1999). The relationship

between marijuana use and violence is stronger for youth in early adolescence (White, Loeber, Stouthamer-Loeber, & Farrington, 1999). However, in a review of the literature, Parker & Auerhahn (1998) found that violent behavior was more highly associated with alcohol use and not drug use. While studies have found that alcohol use contributes to later delinquency in youth, other studies have found the reverse relationship (Newcomb & McGee, 1989; Bui, Ellickson, & Bell, 2000), a reciprocal relationship (White et al., 1999), or that alcohol predicted both delinquency and drug use (Barnes, Welte, & Hoffman, 2002). While the literature warrants further clarification on the direction of the relationships between violence, alcohol, substance use, and other behaviors, it is clear that a relationship does exist between these behaviors in youth.

Risk factors for youth violence have been classified as either individual (e.g., internalizing or externalizing behaviors, biological factors, or low intelligence), family (e.g., poor parenting practices and poor parent-child relationship), school (e.g., poor academic achievement, truancy), peer (e.g., association with delinquent peers or siblings), or community (e.g., poverty and community disorganization) factors (Hawkins et al., 2000; Farrington, 1998; Herrenkohl et al., 2003; Ellickson & McGuigan, 2000). Generally, research has also shown that the more risk factors an individual experiences, the more likely they are to participate in violence (Hawkins et al., 2000; Department of Health and Human Services [DHHS], 2001). However, Lipsey and Derzon (1998) found that predictors varied by age group. The strongest predictors for younger children (ages 6-11) were committing any offense and substance use while the strongest predictors for 12-14 year olds were poor social ties and involvement with antisocial peers (Lipsey &Derzon, 1998). Furthermore, youth may also participate in multiple risk behaviors with studies showing ranges from 4% to 30% (Ellickson, Saner, & McGuigan, 1997; Dryfoos, 1990; Barone et al., 1995). Contrastingly, Willoughby, Chalmers, and Busseri (2004) found that only a minority of their large sample of adolescents reported multiple problem behaviors. In

addition, males are more likely to engage in violence-related behaviors than females (Ellickson, Saner, & McGuigan, 1997). Although females do share risk factors for delinquency with males, relationships with school and family and a history of experiencing assault (physical or sexual) were particularly strong predictors in females (Hubbard & Pratt, 2002).

Victimization

Youth victimization, such as being bullied, teased, or assaulted, has been strongly associated with youth violence (Malik, Sorenson, & Aneshensel, 1997; Schaeffer & Ruback, 2002). Those who were victims of violence were more likely to later commit a violent offense and to be re-victimized (Schaeffer & Ruback, 2002). Further, research has found a strong relationship between victimization and drug and alcohol use (Schaeffer & Ruback, 2002; Shepherd, Sutherland, & Newcombe, 2006). In a diverse student sample, students who felt unsafe at school or where school rules were not enforced experienced more victimization, and in turn, more drug use (Reid, Peterson, Hughey, & Garcia-Reid, 2006). Among Dominican high school students, Reid et al. (2008) found that increases in alcohol use, marijuana use on school property, and victimization increased the likelihood of participating in violence-related behaviors. Moreover, among Latino adolescents, gender was a strong predictor of victimization, and females had more instances of witnessing violence than males who experienced more direct victimization (McGee et al., 2005). In sum, victimization, substance use, and alcohol use may play a significant role in the pathway to violence-related behaviors for youth, particularly Latino youth.

Protective factors

Protective factors can be conceptualized as the opposite end of risk factors or as factors that may buffer the effect of risk (Farrington, 1994; 1998; Rutter, Giller, & Hagell, 1998). Less focus has been paid to protective factors than risk factors, but some potential areas include individual and family

factors, such as family connectedness, parental monitoring, participation in social activities, and school commitment (Resnick, Ireland, & Borowsky, 2004; DHHS, 2001). Children identified as being aggressive at an early age were less likely to engage in violence as teenagers if they attended religious services, had good school connection, and good parental management (Herrenkohl et al., 2003). Further, Herrenkohl et al. (2003) also found that having multiple protective factors at age 15 lessened the likelihood of violence at age 18. Therefore, a closer examination of the role of protective factors in the trajectory to violence-related behaviors is warranted.

Latino Youth

In the 2000 census, Latinos comprised 12.5% of the U.S. population surpassing the number of African Americans and making them the largest minority group in America (U.S. Census Bureau, 2001). Mexicans comprise more than half of the Latino population in the US followed by Puerto Ricans, Cubans, and Dominicans. Specific to violence, Latino youth generally have more reported violent behaviors than White youth but less than African American youth (Mirabal-Colon & Velez, 2006). According to the Youth Risk Behavior Survey, over 18% of Latino students had carried a weapon and used marijuana in the past month; almost 50% of Latino students had drank alcohol; and 40% engaged in a physical fight (CDC, 2007). In addition, Black and Latino adolescents were more likely to engage in weapon-related violence than White adolescents, but Latino youth were not at a higher risk for alcohol use when controlling for other factors (Blum et al., 2000). In one study that disaggregated Latinos by ethnicity, Puerto Rican adolescents were more likely than White adolescents to engage in unarmed violence, group violence, armed robbery, and minor property offenses while other Latino groups (i.e., Mexicans, Cubans, and Central Americans) showed either no difference or were less likely than Whites to do so (Felson, Deane, & Armstrong, 2008). Among Mexican American adolescents, Tschann, Flores, Pasch, and Marin (2005) determined that emotional distress (i.e., depression and anxiety) was related to later

involvement in fights and weapons exposure and was mediated by alcohol use. Those who were more distressed also reported more alcohol use and more violence. Conversely, in Reid et al. (2008)'s Dominican sample, depression reduced violence-related behaviors. In sum, Latino youth evidence high rates of violence-related behaviors and its correlates, but the patterns of risk factors may vary by Latino ethnicity.

Hypotheses

The extant literature provides us with a framework for understanding risk and protective factors of violence-related behaviors within individual, family, and social/community domains. This study will examine the pathways between victimization and violence-related behaviors, including risk (i.e., depression, alcohol use, marijuana use) and protective factors (family cohesion, community participation, school importance). Furthermore, this study will examine whether the pathways to violence-related behaviors are different for Dominican and Puerto Rican adolescents. A strength of this study is the large Latino sample of adolescents that allows for disaggregation of ethnic groups for more in depth analysis. It further clarifies potential points for intervention in working with Latino youth.

Methods

Sample

The data for this study were collected in 2007 as part of a larger evaluation for the development of a prevention initiative targeting substance abuse and sexual-risk taking behaviors among urban minority adolescents. The sample was collected from high schools within a large urban city in the northeastern United States considered to be one of the top poorest districts in the area. This school district is considered to have one of the highest rates of substance abuse in the state, and the city is identified as having high crime rates. Student assent and signed parental consent were obtained prior to

the survey. The survey was self-administered in English to students in randomly selected health education classes at several high schools throughout the city. A total of 991 adolescents participated in the study with approximately 56% of the sample identifying as having Latino ethnicity (n = 559). Of those who identified as Latino, 310 were Dominican (55%), 108 were Puerto Rican (19%), 82 were Central or South American, 30 were Mexican, 23 identified as multiple Latino ethnicities (e.g., Mexican and Puerto-Rican), 4 identified as Latino but did not specify the ethnicity, and 2 identified as Cuban. Table 1 describes the demographic characteristics of the full Latino sample, Dominicans, and Puerto Ricans. Each of the groups shares similar characteristics.

Measures

This study used a cross-sectional survey design. The survey was conceptualized using a risk and protective factor framework targeting individual, peer, family, school, and community influences. The survey was developed through a collaborative effort with school staff and researchers to assess student risk behaviors. The survey was self-administered in English.

Criterion. Violence-related behaviors were assessed using five items asking how often the adolescent carried a weapon in the past month or participated in physical fights in the past year on and off of school property. These items were adapted from the Youth Risk Behavior Survey (CDC, 2007). Response categories ranged from “0 days” (1) to “6 or more days” (5) for items about weapons and from “0 times” (1) to “12 or more times” (8) for physical fighting. The items were aggregated by recoding to either 0 (never carried weapons or participated in physical fights) or 1 (did carry weapons and participated in physical fights). The scores were summed and ranged from 0 to 5 with higher score meaning more involvement in violence-related behaviors. Tables 2 and 3 present the means, standard deviations, and Cronbach’s alpha for each study variable among Dominican and Puerto Ricans.

Predictors – risk factors. Victimization was assessed using 10 items asking about how often the adolescent had experienced such things as teasing, pushing, and threatening. The response items ranged from “0 times” (1) to “6 or more times” (7) with higher scores meaning more experiences of victimization.

Depression was assessed using six items asking about symptoms, such as loneliness, crying, guilt, and sadness, which were adapted from the Child Behavior Checklist (Achenbach & Edelbrock, 1983). Response options ranged from “not true” (1) to “very true” (3) with higher scores meaning more depressive symptoms.

Marijuana and alcohol use items were adapted from the Youth Risk Behavior Survey. Marijuana use was based on two items asking how often the adolescent used marijuana in general and on school property in the past 30 days. Response options ranged from “0 times” (1) to “40 or more times” (6) with higher scores meaning more marijuana use. Alcohol use was based on three items asking how often the adolescent drank alcohol in general, on school property, and participated in binge drinking in the past 30 days. Response options ranged from “0 days” (1) to “30 days” (7) with higher scores meaning more alcohol use.

Predictors – protective factors. Family cohesion was assessed using six items asking whether family members felt close to each other or spent time together. Response options ranged from “not true” (1) to “true a lot” (4) with higher scores meaning more cohesion. School importance was assessed using four items asking about how important it was to the adolescent to finish school and obtain life goals. Response options ranged from “not important” (1) to “very important” (5) with higher scores meaning more importance. Community participation was assessed using five items asking about

participation in sports, activities, or communicating with adults. Response options ranged from "never" (1) to "almost every day" (5) with higher scores meaning more participation.

Results

For replication purposes, means, standard deviations, and correlations for both Dominicans and Puerto Ricans are show in Tables 2 and 3. The correlation between marijuana and alcohol use was high at .796 but did not exceed .80 which is considered to be a cutoff for potential problems with multicollinearity (Olobatuyi, 2006). To examine the relationship between victimization and violence-related behaviors, path analyses tested fully saturated models including risk and protective factors for both Dominican and Puerto Rican samples. In the analysis, estimated means and intercepts were used to account for missing data. The variance-covariance matrix was analyzed using maximum likelihood estimation. The over-identified path model, shown in Figure 1 and 2, includes only significant paths at the $p \leq .05$ level. The path coefficients shown are statistically significant standardized beta weights.

For Dominicans (see Figure 1), the model was found to fit the sample well, $X^2(7) = 9.64$, $p = .21$; NFI = .975; RFI = .926; and accounted for 49% of the variance in violence-related behaviors, 62% of the variance in alcohol use, 44% of the variance in marijuana use, 11% of the variance in school importance, and 13% of the variance in depression. Victimization was found to predict violence-related behaviors directly and indirectly. Adolescents who experienced more victimization also experienced more violence-related behaviors. Adolescents who experienced more victimization evidenced more depression, decreased school importance, increased marijuana use, and increased violence-related behaviors. Further, from marijuana use, violence-related behaviors occurred directly or through increased alcohol use. For Dominicans, neither family cohesion nor community participation was significant in the pathway between victimization and violence-related behaviors.

For Puerto Ricans (see Figure 2), the presented model fit the sample well, $X^2(2) = 1.42$, $p = .49$; NFI = .99; RFI = .95, although it differed from the Dominican path model. For Puerto Ricans, it accounted for 48% of the variance in violence-related behaviors, 63% of the variance in alcohol use, and 8% of the variance in marijuana use. Victimization was only found to predict violence-related behaviors indirectly through marijuana and alcohol use. Adolescents who experienced more victimization had higher levels of marijuana use. Those who used marijuana more often also used alcohol more often and had more violence-related behaviors. Although more victimization evidenced an increase in depression, it dropped out of the path to violence-related behaviors. For Puerto Ricans, family cohesion, community participation and school importance were not significant in the path from victimization to violence-related behaviors.

Discussion

The results of this study partially support our hypotheses on the relationships between violence-related behaviors and its risk and protective factors. Dominican and Puerto Rican adolescents experience different pathways to violence-related behaviors (i.e., carrying weapons and fighting). Victimization directly predicted violence-related behaviors among Dominican adolescents but not among Puerto Ricans. For both groups, victimization had indirect paths to violence-related behaviors through marijuana and alcohol use. However, for Dominicans, more experiences of victimization increased depressive symptoms, decreased school importance, and in turn, increased marijuana use on its way to an increase in violence-related behaviors. For Puerto Ricans, victimization did increase depression but the path did not continue to alcohol use, marijuana use, or violence. Of note, both models accounted for about half of the variance in violence-related behaviors. Unexpectedly, the relatively simple trajectory between victimization and alcohol use accounted for almost two-thirds of the variance in alcohol use. Although both models share similar risk factors, the study findings show the

importance of tailoring prevention and intervention programs to the needs of youth from different Latino ethnicities.

The study findings fall in line with past research or further enhance previous findings. Generally, our findings show a strong relationship between victimization, drug use, and alcohol use (Schaeffer & Ruback, 2002; Shepherd, Sutherland, & Newcombe, 2006; Reid et al., 2006). In addition, the relationship between risk factors and violence found in previous studies was also confirmed here (DuRant et al., 1999; Reid et al., 2008). However, in this study, depression did not have a direct relationship with alcohol use or violence that Tschann et al. (2005) found with their Mexican American youth sample. It is possible that these variations could be due to measurement differences. However, considering that our sample showed different models for both ethnic groups, it is possible that Mexican American youth also may evidence a different trajectory to violence-related behaviors.

Based on previous work on protective factors, this study included family cohesion, community participation, and school importance as potential protective factors from violence (Resnick et al., 2004; DHHS, 2001; Herrenkohl et al., 2003). Each of these factors represented areas of risk or protection (i.e., family, community/social, and school). Yet, only school importance was significant in the path to violence-related behaviors and marijuana use for Dominican youth and not Puerto Rican youth. The greater the importance of school for a Dominican adolescent, the less the adolescent engaged in marijuana use and violence-related behaviors. It is also important to note that the more depression the youth experienced, the less importance placed on school. It is unclear why family cohesion and community participation did not play a significant role in the reduction of violence-related behaviors. Considering that Latino cultural beliefs hold the family in high regard, one would expect that family cohesion would play a protective role. Further research can be conducted that includes more culturally-specific variables, such as acculturation and *familismo*, to analyze how culture plays a role.

Victimization and its related risk factors have a significant role in the development of violence-related behaviors. Multiple approaches are necessary in preventing future violent behaviors, especially at the school, peer, and individual level. The effects of victimization put Latino youth at risk for depression, alcohol and marijuana use, and violence. Intervention at the start of signs of bullying or fighting may prevent an escalation of negative behaviors. There are few prevention programs tailored for Latinos that focus on youth violence (Mirabal-Colon & Velez, 2006). When programs are modified for Latinos, oftentimes programs include broad Latino cultural values but do not attempt to adapt the model for specific ethnicities. A prevention program targeting Dominicans may need to take into account the individual's immigration experience, whether or not they are documented, specific Dominican cultural beliefs, and family structures. A difference for Puerto Ricans, for example, is that documentation may not be a concern as they are considered US citizens. However, it is possible that there are more similarities than differences across Latino ethnic groups, and that generally, the risk factors are the same across race/ethnicity. Perhaps the focus here should not only be on reducing risk but identifying and promoting protective factors for Latinos. Tailored multisystemic programs that work to address risk and protective factors within specific cultural contexts may be beneficial in targeting the different trajectories across these groups.

Several limitations of this study should be noted. This study used a cross-sectional design that limits causal inferences of the data and allows for the possibility of alternative explanations. Since temporal precedence could not be determined between the predictors and criterion, it is possible that the model could be more reciprocal (e.g., victimization leads to violence which leads to more victimization). Further, it is possible that other variables could better explain the relationships between the studied risk and protective factors (e.g., gender variations, community context, and family context). Future research can employ more rigorous designs to better tease out the relationships between these

variables, especially with larger samples of youth from different Latino ethnicities to better compare these groups. Furthermore, some of the measures were partial scales and not fully validated. It is possible that these measures did not capture the full representation of the variable (e.g., violence-related behaviors were defined as carrying weapons and fighting). Further, the survey was dependent on self-report data in which the adolescents may not have given accurate representations of their behaviors.

Despite these limitations, this study's strengths are in its identification of a variation in risk and protective factors for different Latino ethnic groups. It has become customary to combine different Latino ethnic groups which presumes that all groups are similar and reduces their diversity. Furthermore, oftentimes we are comparing Latinos and other minorities groups with White counterparts limiting the understanding we may have of the groups to just comparisons with others. This study highlights potential paths to violence specific to Dominican and Puerto Rican adolescents in an urban city. Each of these pathways contains potential targets of intervention to reduce their risk for engaging in violence-related behaviors. Considering the multisystemic nature of these pathways, a combined effort between school, community, and family may be needed to improve these youth's opportunities and reduce risk behaviors.

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Table 1. Demographic Characteristics of All Latinos, Dominicans, and Puerto Ricans

	All Latinos (N=559)	Dominican (N=310)	Puerto Rican (N = 108)
Mean Age (SD)	16 (.99)	16 (.91)	16 (1.02)
Gender (%)			
Male	42	43	35
Female	58	57	65
Mean Grade (SD)	11(1.10)	11(1.03)	11(1.12)
Reduced-price lunch (%)	67	66	68

Table 2. Descriptive Statistics, Alpha, and Correlations of the Study Variables among Dominicans

	Mean	SD	Alpha	1	2	3	4	5	6	7	8
Violence-related behaviors	1.00	1.61	.88	-							
Victimization	1.97	1.37	.93	.47**	-						
Depression	1.42	.46	.79	.28**	.37**	-					
Marijuana use	1.54	1.30	.92	.67**	.43**	.38**	-				
Alcohol use	1.74	1.32	.87	.63**	.37**	.29**	.80**	-			
Family cohesion	2.88	.71	.83	-.13	.05	-.13*	-.16	-.05	-		
School importance	4.54	.88	.91	-.51**	-.25**	-.35**	-.60**	-.48**	.15*	-	
Community participation	2.63	1.09	.77	-.08	-.11	-.00	-.14	-.17*	-.03	-.05	-

Table 3. Descriptive Statistics, Alpha, and Correlations of the Study Variables among Puerto Ricans

	Mean	SD	Alpha	1	2	3	4	5	6	7	8
Violence-related behaviors	.93	1.38	.77	-							
Victimization	1.81	1.08	.87	.27*	-						
Depression	1.41	.48	.84	.05	.36**	-					
Marijuana use	1.27	.82	.61	.66**	.28*	.08	-				
Alcohol use	1.49	.95	.79	.65**	.21	.11	.80**	-			
Family cohesion	2.85	.66	.82	-.21	-.29**	-.25*	-.18	-.12	-		
School importance	4.61	.72	.85	.02	.14	.06	-.19	-.22	-.05	-	
Community participation	2.30	.92	.57	-.06	.03	-.23*	.05	.10	.14	-.06	-

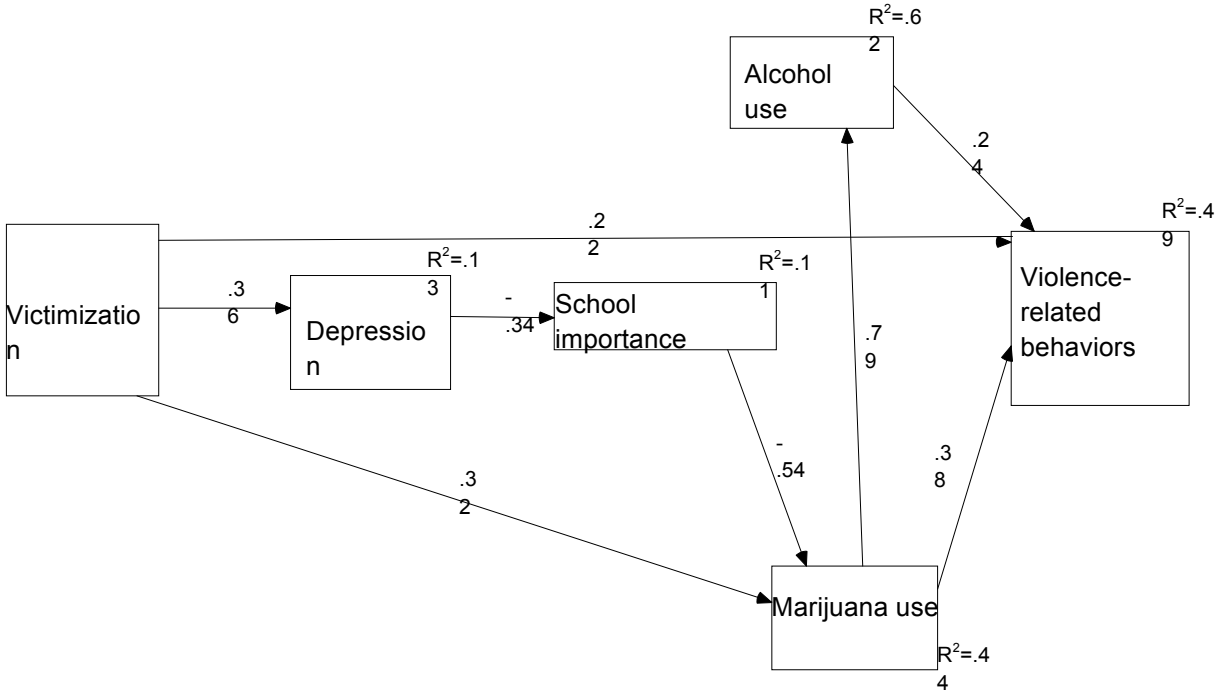

Figure 1. Path Diagram Predicting Violence-Related Behaviors among Dominican Adolescents

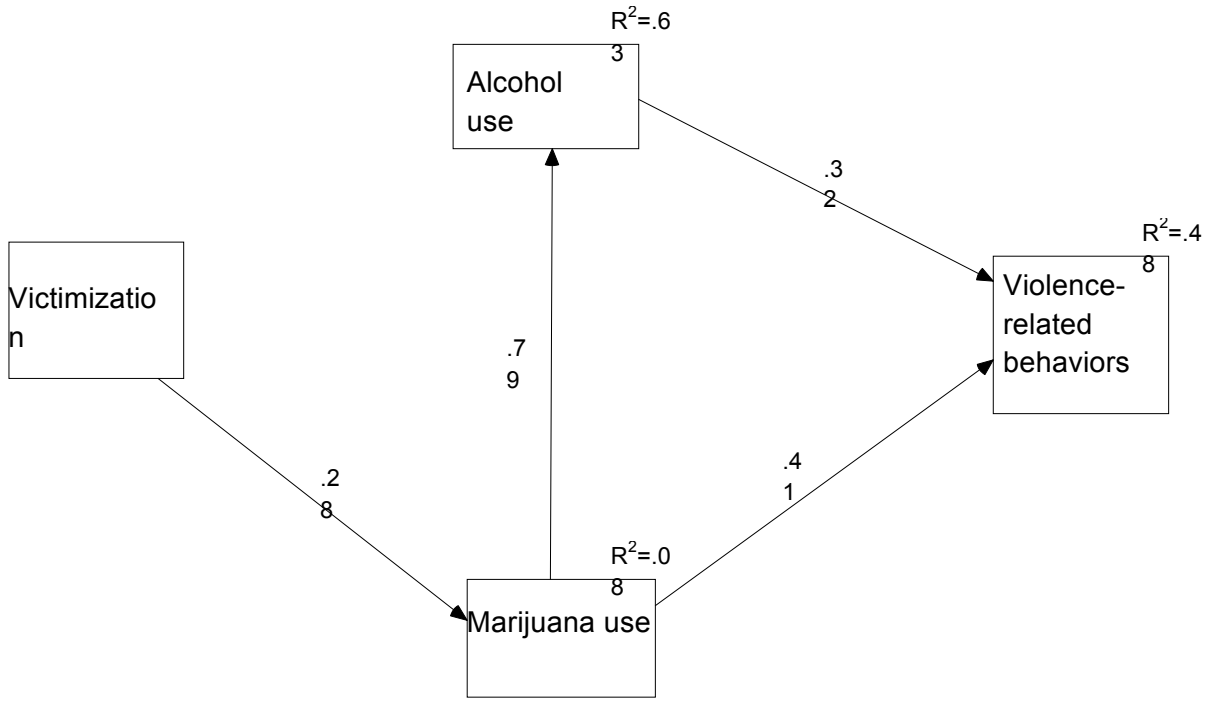

Figure 2. Path Diagram Predicting Violence-Related Behaviors among Puerto Rican Adolescents