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Joint Trajectories of Victimization and Marijuana Use and Their Health Consequences Among Urban African American and Puerto Rican Young Men

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Abstract

We examined the joint trajectories of violent victimization and marijuana use from emerging adulthood to the early thirties and their health consequences in the early thirties among urban African American and Puerto Rican men. Data were collected from a community sample of young men (N=340) when they were 19, 24, 29, and 32 years old. The joint trajectories of violent victimization and marijuana use were extracted using growth mixture modeling. Three distinct joint trajectory groups of violent victimization and marijuana use were identified: high violent victimization/consistently high marijuana use; low violent victimization/increasingly high marijuana use, and low violent victimization/low marijuana use. Group comparisons using regression analyses showed that men who had experienced high levels of violent victimization and were high frequency marijuana over time users experienced the most adverse psychological and physical health outcomes, including more health problems, psychological maladjustment, and substance use disorders.

Keywords

marijuana use; violence; ethnicity; longitudinal studies; mental health

Urban African American and Latino young men experience disproportionately high levels of assaultive violence/violent victimization (Logan et al., 2011; Rodriguez & Brindis, 1995). Assaultive violence has been defined as “nonfatal and fatal interpersonal violence where physical force or other means is used by one person with the intent of causing harm, injury, or death to another” (Rosenberg & Mercy, 1991). In 2007, the number of homicides per 100,000 was 41.4 for African American males and 12.5 for Latino males, compared to 3.7 for non-Hispanic White males. Homicide rates are even higher among African American and Latino males aged 15–34 (Logan et al., 2011).

Non-fatal violent victimization is associated with a host of adverse mental and physical health outcomes, including depression, anxiety, substance abuse, and illness and disease (Barker et al., 2008; Boynton-Jarrett et al., 2008; Carbone-López et al., 2006; Gros et al., 2010; Hochstetler et al., 2010; Kilpatrick et al., 2000; Resnick et al., 1997; Schneider et al., 2011; Spikes et al., 2010). Drug use is one of the most frequent correlates of having been victimized, making this a particularly important construct to be investigated in conjunction with violent victimization (e.g., Conway et al., 1994). Two mechanisms may account for the relationship between violent victimization and drug use. People who have been victimized may use drugs to ameliorate the painful psychological consequences of victimization

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(possibly to self-medicate symptoms of post-traumatic stress disorder) (Anda et al., 1999; Anda et al., 2006; Boynton-Jarrett et al., 2008; Khantzian, 1997). On the other hand, people who use illegal drugs are more likely to be exposed to dangerous contexts and come in contact with people who engage in violent behavior (Goldstein, 1985; Resnick et al., 2004). Furthermore, the use of illegal drugs is likely to interfere with rational decision making, thus heightening the chances of becoming the victim of violent assault (Goldstein, 1985; Brook et al., 1999). Recent research which examined the relationships between violent victimization and illegal drug use found that victimization predicted illegal drug use five years later, and illegal drug use also predicted later victimization (Weiner et al., 2005). Thus, the relationship between drug use and violent victimization seems to be bi-directional.

Given this dynamic relationship between drug use and violent victimization, this study examined the joint trajectories of these two phenomena over time. Of particular interest were the following questions: 1) What are the joint developmental courses of violent victimization and drug use among urban African American and Puerto Rican young men, a population at high risk for violent victimization; 2) are there distinct homogeneous subgroups of men who follow different developmental trajectories of victimization and drug use; and 3) what are the psychological and physical health consequences in young adulthood associated with membership in these conjoint trajectories of victimization and marijuana use?

A small body of research has examined the longitudinal trajectories of victimization in adolescence, typically in conjunction with offending/bullying behaviors (Barker et al., 2008; Jennings et al., 2010; Smith & Ecob, 2007). These studies have identified three to five trajectories of victimization and found that the large majority of adolescents experience no or low levels of victimization. While these studies focused mainly on the predictors of these trajectories, one study found that having been bullied was related to greater levels of self-harm among both boys and girls (Barker et al., 2008). In addition, Smith and Ecob (2007) found that victimization predicted subsequent offending. All studies focused on early to late adolescence.

Previous research has also examined homogeneous longitudinal patterns of marijuana use from adolescence into adulthood (Brown et al., 2004; Ellickson et al., 2004; Flory et al., 2004; Schulenberg et al., 2005; Windle & Wiesner, 2004). Typically, researchers have identified three to five distinct trajectories of marijuana use over time, with the majority of individuals following trajectories of no or low use. In these studies, trajectory groups were compared on indicators of psychosocial adjustment in young adulthood. Research findings suggest that differential longitudinal patterns of marijuana use are associated with different levels of psychosocial adjustment. The correlates of problematic patterns of illegal drug use in adolescence or early adulthood (i.e., with an early age of onset, for a prolonged time period, and heavy frequency of use) include lower levels of life satisfaction and mental health (Ellickson et al., 2004) and higher levels of aggression (Brown et al., 2004).

These findings of recent research highlight the importance of conceptualizing victimization and marijuana use longitudinally, rather than at only one or two points in time. Currently, there are no studies which have modeled the joint occurrence of victimization and marijuana use over time and linked them to mental and physical health in adulthood. Consequently, the purpose of the present study was to extend previous research by identifying joint developmental patterns of violent victimization and marijuana use from emerging adulthood (age 19) into the early thirties (age 32) and their relationships to depression, generalized anxiety disorder, antisocial personality disorder, nicotine dependence, alcohol use disorders, and self-reported health problems among African American and Puerto Rican young men. We hypothesized that: 1) there would be at least two developmental patterns of both violent

victimization and marijuana use (high versus low), 2) high levels of violence would co-occur with high levels of marijuana use, while low levels of victimization would co-occur with lower levels of marijuana use, 3) individuals in trajectories characterized by high levels of victimization and high frequency of marijuana use over time would report significantly more health problems and depression, and be at greater risk for generalized anxiety disorder (GAD), antisocial personality disorder (ASPD), nicotine dependence (ND), and alcohol use disorders (AUDs) than individuals in trajectory groups characterized by low levels of victimization and lower frequencies of marijuana use.

Method

Participants

The sample for the current study was selected from the Harlem Longitudinal Development Study (HLDS), which follows African American (AA) and Puerto Rican (PR) young adults from the East Harlem area of New York City. The study began when participants were 14 years old on average (T1), and has had another four waves of data collection through mean age 32 years (T5). Included in this research were data collected at T2, T3, T4 and T5 from the male participants who took part at T5 (N = 340). At T1, no questions about violent victimization were included in the questionnaire. Of the 340 male participants eligible for inclusion in this research, 3.0% had participated in two waves of data collection, 28.2% had participated in three waves, and 68.8% had participated in all four waves. Their mean ages were 19.1 years (SD = 1.5) at T2, 24.5 years (SD = 1.4) at T3, 29.1 years (SD = 1.6) at T4, and 32.5 years (SD = 1.5) at T5.

We compared demographic variables collected for this study at T1 (1990) to data from the 1990 Census for the East Harlem area. Information was compiled from several area profile tables (i.e., population by sex; population by race; population by Hispanic origin; place of birth; Infoshare.org/Community Studies of New York, Inc., n.d.). The larger sample (males and females) for this study at T1 was 55% female. This gender distribution is identical to that reported by the 1990 Census for all residents of East Harlem. Fifty-three percent of the original sample for this study reported being Black and the rest (47%) identified as Puerto Rican. The 1990 Census identified 41.8% of the East Harlem population as Black and 40.4% as Puerto Rican. Approximately 11.0% of the participants in this study was born in Puerto Rico, compared to 18% of East Harlem's entire population according to the 1990 Census (Infoshare.org/Community Studies of New York, Inc., n.d.). Attrition analyses indicated that men who were seen only at T2 did not differ in terms of marijuana use and incidences of victimization at T2 from those who were seen at both T2 and T5 ($t_{\text{marijuana}} = 1.19$, $p > .05$; $t_{\text{victimiztion}} = 1.46$, $p > .05$). Sample characteristics are displayed in Table 1.

Participants for this study were selected from schools (grades 7–10) serving the East Harlem area of New York City. The T1, T2, T3, and T5 data were collected via interviews. The T4 data collection, however, employed mailed questionnaires. The Institutional Review Board (IRB) of the Mount Sinai School of Medicine approved the study's procedures for data collections in the earlier waves (T1–T3), and the New York University School of Medicine's IRB approved the study for T4 and T5. A Certificate of Confidentiality was obtained from the National Institute on Drug Abuse. Written informed assent was obtained from all minors after the procedures were fully explained. Passive consent procedures were followed for parents of minors. For participants older than 18 years, informed consent was obtained. Additional information regarding the study methodology is available from previous reports (e.g., Brook et al., 2008).

Measures

Violent victimization was assessed by four items asking about the participants' victimization, including (1) being threatened with a weapon, (2) being hit with a weapon or shot, (3) being cut/stabbed with a knife, and (4) being beaten up ($\alpha = 0.74$ at T2, $\alpha = 0.75$ at T3, $\alpha = 0.77$ at T4, and $\alpha = 0.74$ at T5) (Chavez et al., 1989). The response options ranged from (1) *never* to (5) *five or more times*. Marijuana use at each time point was measured by an item asking how often in the past year the respondent had used marijuana. Answering options were (0) *never*, (1) *a few times a year or less*, (2) *about once a month,* (3) *several times a month*, and (4) *once a week or more*. A similar measure, with four response options, was used by Fergusson and Boden (2008). Table 2 lists all outcome measures, sample items, and their psychometric properties.

Presence of ASPD, GAD, and AUDs in the past 12 months was assessed by the Mini-International Neuropsychiatric Interview (M.I.N.I.) (Sheehan et al., 1998). Questions assessed all criteria for each of the diagnoses specified by DSM-IV-TR (American Psychiatric Association, 2000). A diagnosis of the disorder was assigned if the minimum number of criteria were met. The M.I.N.I. has demonstrated good reliability and validity (Sheehan et al., 1998). A measure of ND, based on the criteria specified for substance use disorders, was adapted from DSM-IV-TR (see Table 2).

We calculated the correlations for violent victimization and for marijuana use across time points. We then employed growth mixture modeling (GMM) using the MPlus software (Muthén & Muthén, 2010) to identify the joint longitudinal trajectories of marijuana use and victimization from emerging adulthood (mean age 19.1 years) to the early thirties (mean age 32.5 years). The joint trajectory variables, victimization and marijuana use, were treated as censored normal variables. We established the number of trajectories using several criteria: 1) the Bayes information criterion (BIC; the most parsimonious model has the smallest absolute value of the BIC) (Raftery, 1985; Schwartz, 1978), 2) the entropy (values closer to 1 indicate better fit) (McLachlan & Peel, 2000), and 3) the Lo-Mendell-Rubin likelihood ratio test (LMR-LRT; Lo et al., 2001). Using the LMR-LRT, a low p value indicates that the model with one less class should be rejected in favor of the estimated model. We also considered the accuracy of group classification indicated by the average Bayesian posterior probability (BPP) for each latent class. Average posterior probabilities of 0.70 or higher are considered sufficient to avoid classification error (Nagin, 2005). The observed trajectories for a group were the averages of victimization and marijuana use scores at each time point for the participants assigned to a group (see Figure 1).

Next, we conducted multiple linear and logistic regression analyses with depressive symptoms and symptoms of ill health, ND, AUDs, GAD, and ASPD, respectively, at T5 as the dependent variables. To address the issue of uncertainty of assignment to a latent class, we used the BPPs, rather than the class assignments as independent variables, when predicting adjustment outcomes. Race/ethnicity (dummy coded), age, and educational involvement measured at T2 were included as covariates (see Table 2).

Results

Means and standard deviations, as well as the percentages of all independent and dependent variables, separately by ethnicity, are displayed in Table 1. T tests comparing African American and Puerto Rican men indicated no statistically significant differences in levels of violent victimization or marijuana use at any time point. In addition, there were no ethnic/racial differences in levels of health problems or depressive symptoms, or in the prevalence of ASPD, GAD, ND, or AUDs at T5. The correlations of violent victimization across time points were r(T2, T3) = 0.47, $p < .0001$, r(T3, T4) = 0.53, $p < .0001$, and r(T4, T5) = 0.19,

$p < .01$. The correlations of marijuana use across time points were r (T2, T3) = 0.35, $p < .0001$, r (T3, T4) = 0.59, $p < .0001$, and r (T4, T5) = 0.66, $p < .0001$.

We computed solutions for up to five trajectory groups. We decided on a three-group model by balancing the three criteria of model fit described in the *Methods* (i.e., The BIC, the entropy, and the LMR-LRT). While the BIC was lowest for the 4-group model (6073) and the entropy was highest for the two-group model (0.87), the statistical significance levels of the LMR-LRT indicated that a three-group model provided the best fit for our data ($p < .001$ for three versus four groups; $p > .05$ for four versus three groups and five versus four groups). In addition, the BIC for the three-group model (6103) was between that for the two-group model (6167) and that for the four-group model (6073), while being considerably lower than that for the two-group model. The entropy values for the three-, four-, and five-group models were identical (0.83). Another consideration in favor of the three-group model, compared to the four-group model, was the distribution of participants across the trajectory groups. The four-group solution included one group with a very small number of participants (n = 27).

For each group, the mean Bayesian posterior probabilities (BPPs) of trajectory group memberships ranged from 0.88 to 0.97, which indicates good classification (Nagin, 2005). Figure 1 presents the observed joint trajectories and membership percentages for the trajectory groups.

We named the three joint trajectory groups “low victimization/low marijuana use” (LL, 51%, mean BPP = 0.97), “low victimization/increasingly high marijuana use” (LI, 31%, mean BPP = 0.88), and “high victimization/consistently high marijuana use” (HH, 18%, mean BPP = 0.89). As shown in Figure 1, the LL group reported low levels of violent victimization at age 19, which slightly increased until mean age 29 and then decreased thereafter, in conjunction with low levels of marijuana use at age 19 that decreased further until age 32. The LI group followed essentially the same trajectory of violent victimization as the LL group, but in conjunction with increasingly high levels of marijuana use between ages 19 and 32. The HH group experienced the highest levels of victimization, with an increase between ages 19 and 24, followed by a decrease between ages 29 and 32, in conjunction with consistently high, but slightly decreasing levels of marijuana use between ages 19 and 29. There were no ethnic differences in trajectory group memberships ($\chi^2 = 1.21$, $df = 2$, $p > .05$).

Table 3 presents the regression coefficients (*b*s) and adjusted odds ratios (*AOR*s) obtained from the multiple linear and logistic regression analyses predicting physical and mental health outcomes at T5 from the trajectory group memberships. The HH group reported significantly more health problems and symptoms of depression and was more likely to meet DSM-IV-TR criteria for ASPD, GAD, ND, and AUDs than did the LL group. Compared to the LI group, the HH group also reported more health problems and was more likely to meet DSM-IV-TR criteria for ASPD and AUDs. The LI group reported more depressive symptoms and was more likely to meet DSM-IV-TR criteria for ND than the LL group.

Discussion

Our findings indicated that approximately a fifth of urban African American and Puerto Rican young men were exposed to high levels of violence over an extended period of time during emerging and young adulthood. This finding is in accord with studies that have found that urban African American and Latino males, particularly those of low SES, are at the highest risk for violent victimization (Conway et al., 1994; Logan et al., 2011; Rodriguez & Brindis, 1995). This finding is of concern given the high psychological and physical cost

associated with experiencing violent victimization (e.g., Barker et al., 2008; Carbone-López et al., 2006; Hochstetler et al., 2010; Spikes et al., 2010). Only after age 29 was there a substantial decline in experiences of violent victimization in the HH group.

The large decline in levels of victimization between ages 29 and 32 observed in men in the HH group may be due to a number of reasons. One of them may have been an increase in adult responsibilities experienced during this transition to thirty (Levinson, 1978). Many of the men in the sample became fathers between T4 (mean age 29) and T5 (mean age 32). At T4, 165 participants reported having at least one child, while 225 did so at T5. Greater adult responsibilities may affect increased withdrawal from contexts in which victimization is likely to occur. This idea was supported by post-hoc analyses, which showed that reports of neighborhood crime and deterioration declined between T4 and T5, while self-reported income increased for all trajectory groups. Possibly, these urban African American and Puerto Rican men transitioned into more stable and less threatening life situations, characterized, in part, by greater financial security and safer neighborhoods. A lack of ties to the community, on the other hand, has been identified as a risk factor for being a victim of violence (Conway et al., 1994).

The joint developmental patterns of violent victimization and marijuana use were, in part, predicted by our hypotheses: those exposed to high levels of victimization over time were also using marijuana at high levels, while the majority of those not exposed to high levels of victimization followed a developmental pattern of low marijuana use between ages 19 and 32. However, there was a sizable minority of men (over 30%) who were not exposed to high levels of victimization and followed a pattern of increasingly high levels of marijuana use that only leveled off after age 29.

The co-occurrence of illegal drug use and victimization has been demonstrated by other research (Schneider et al., 2011; Weiner et al., 2005) and is most likely bi-directional. Individuals who are victimized may use drugs to self-medicate (Anda et al., 1999, 2006; Boynton-Jarrett et al., 2008) and those who use illegal drugs are at greater risk for victimization due to the perils associated with illegal drug use and the trade of illegal drugs (Goldstein, 1985; Weiner et al., 2005). Our results confirm and extend these previous findings by demonstrating a pattern of co-occurring victimization and marijuana use over the course of emerging and young adulthood for a sizable minority of young men.

Although our results also show that for approximately a fifth of urban African American and Puerto Rican young men victimization and illegal drug use are linked, other factors, such as contextual (e.g., familial, peer, and school factors) and individual characteristics (e.g., sensation seeking; self-esteem) are predictive of patterns of increasing marijuana use (e.g., Brook et al., 2010; Flory et al., 2004). For example, recent research has identified self-control as an important individual risk factor for substance use, including marijuana use, over time (Moffit et al., 2011; Otten et al., 2010). Deficits in self-control may manifest in a range of problems, including substance use (Davey et al., 2008; Magar et al., 2008; Steinberg, 2005).

We did not find differences in trajectory group membership between African American and Puerto Rican men. This may be due to the fact that men in this urban sample of Puerto Ricans and African Americans shared similar socio-economic backgrounds. Participants attended the same schools and lived in the same or adjacent neighborhoods, which exposed them to the same risk factors for violent victimization and marijuana use.

Group differences in mental and physical health outcomes

The results of the present study also supported our hypotheses in that the combination of high levels of violent victimization and high levels of marijuana use over time was associated with the most adverse mental and physical health outcomes. Men who had experienced high levels of violent victimization and were high frequency marijuana users over time (HH) were at higher risk for ASPD, AUDs, GAD, and ND and reported higher levels of depressive mood and self-reported health problems than men who had experienced low levels of violent victimization and did not use marijuana frequently between the ages of 19 and 32 (LL).

The HH group was also at higher risk for externalizing outcomes, including ASPD and AUDs, as well as reported more physical health problems than those who had experienced low levels of violent victimization and were high-frequency marijuana users over time (LI). However, men in the HH and LI groups shared elevated levels of depressive mood and a greater risk for nicotine dependence, compared to the LL group.

Men in the LI group also reported greater depressive mood and were more likely to be nicotine dependent as young adults, than those in the LL group. Thus, men in the HH and LI groups both reported elevated levels of depressive mood and ND, compared to the LL group. What these two groups (HH and LI) had in common were their high levels of marijuana use over time, though the shapes of their developmental trajectories differed. The main difference found between the HH and LL groups was in their levels and developmental patterns of victimization. This suggests that the higher levels of depression and greater prevalence of ND found among the HH and LI trajectory groups, compared to the LL group, may be largely explained by the high levels of marijuana use that characterized both the HH and LI groups' trajectories.

This notion is in accord with previous research which has found a link between marijuana use and depression (Ellickson et al., 2004; Hayatbakhsh et al., 2007; Patton et al., 2002; van Laar et al., 2007), and a high prevalence of co-occurring marijuana and tobacco use (Brook et al., 2010; Lai et al., 2000). The association between long-term high frequency of marijuana use and depressive symptoms could be mediated socially (e.g., by impaired functioning in adult roles; Degenhardt et al., 2003). It is also possible that a common liability, such as low self-control or a genetic factor, predisposes individuals to both marijuana use and psychological maladjustment (Otten et al., 2010; Sullivan et al., 2000).

The strong association between marijuana use and ND is not surprising given the prevalence of co-occurring marijuana use and cigarette smoking (Brook et al., 2010; Jackson et al., 2008). The most common way of using marijuana is by smoking it, thus heightening the likelihood of individuals engaging in both behaviors.

On the other hand, the greater number of health problems and the greater risk of externalizing problems (i.e., ASPD and AUDs) experienced by the HH group, compared to both the LI and LL groups, may be explained mainly by exposure to high levels of violent victimization over time. What differentiated these two groups most prominently were their developmental trajectories of victimization, with the HH group reporting higher levels of violent victimization than the LI group, especially from age 19 through emerging adulthood.

This interpretation is consistent with research that has found associations between victimization and outcomes on the externalizing spectrum (e.g., bullying, offending; Barker et al., 2008; Smith & Ecob, 2007), substance abuse (Schneider et al., 2011; Weiner et al., 2005), and poor self-rated health (Boynton-Jarrett et al., 2008; Carbone-López et al., 2006; Resnick et al., 1997). The association between victimization and antisocial behavior has

been explained in terms of retaliatory violence (Jacobs & Wright, 2006; Pellegrini et al., 1999), as well as within the framework of routine activities theory (Mustaine & Tewksbury, 2000). According to routine activities theory, spending time in dangerous contexts gives rise to both victimization and antisocial behavior (Osgood et al., 1996).

Another longitudinal study of violence exposure found that cumulative exposure to violence was related to poorer self-rated health among youth. The authors found a dose-response relationship between exposure to violence and self-rated health, with each additional exposure to violence increasing the risk of poor health by 38% (Boynton-Jarrett et al., 2008).

A possible mediating mechanism between violent victimization and substance use, as well as poor health, may be post-traumatic stress. In a review of the research literature, Spikes et al. (2010) note that victimization is among the most common predictors of post-traumatic stress disorder (PTSD), which, in turn, is associated with substance use and health risk behaviors (Boynton-Jarrett et al., 2008). Trauma, as a result of victimization, may increase substance use and health risk behaviors, which may lead to lower levels of self-rated health (Boynton-Jarrett et al., 2008). Others have also found that the presence of PTSD symptoms is related to the severity of drug use (Clark et al., 2001). Thus, the higher levels of health problems and the elevated risk for AUDs in the HH group, compared to both the LL and LI groups, may potentially be explained by victimization-induced post-traumatic stress.

Interestingly, GAD was the only measure of psychological health that differentiated solely between the HH and LL groups, suggesting that the joint occurrence of high levels of violent victimization and marijuana use over time is an important risk factor for this psychiatric disorder among urban African American and Latino men. Previous research has found that both Latinos and African Americans are at lower risk for GAD than non-Hispanic Whites (Breslau et al., 2006). However, urban African American and Latino males exposed to high levels of violent victimization who engage in high levels of marijuana use may constitute a group that is at high risk for this disorder. Future research should continue to explore these associations, especially in conjunction with PTSD.

To our knowledge, this is the first study to examine the joint longitudinal trajectories of violent victimization and marijuana use in urban African American and Puerto Rican young men. A history of violent victimization co-occurred with frequent use of marijuana over the course of emerging adulthood among a sizable minority of men. This combination, in turn, was associated with the most adverse outcomes on measures of psychological and physical health in the early thirties. While these relationships cannot be considered causal, the fact that we chose to assess adjustment in young adulthood supports the idea that the combination of victimization and marijuana use over time may contribute to men’s maladjustment in young adulthood.

One limitation of this research was our sole reliance on self-report measures. Violent victimization, in particular, is frequently underreported in community studies (Conway et al., 1994). Thus, we must consider the possibility that there is an even greater prevalence of violent victimization among young urban African American and Puerto Rican men. Similarly, it has been argued that reports of the use of illegal drugs underestimate actual levels of use (e.g., Fendrich & Rosenbaum, 2003). However, a recent study by Harrison and colleagues(2007) showed that most marijuana users reported their use accurately. Another limitation of this study is its limited generalizability to men with different demographic characteristics. However, our focus on urban Latino and African American men is justified in light of the high levels of violent victimization to which these men are exposed (Conway et al., 1994; Logan et al., 2011; Rodriguez & Brindis, 1995).

Future research should explore the factors underlying the comorbidity of victimization and drug use in urban African American and Latino men with a focus on contextual and structural factors, such as social disadvantage and racial discrimination. Another focus should be on the role that post-traumatic stress may play in the relationship between comorbid victimization and drug use and physical and psychological health. This line of research can inform intervention efforts aimed at reducing victimization and drug use, as well as their health consequences among those most at risk.

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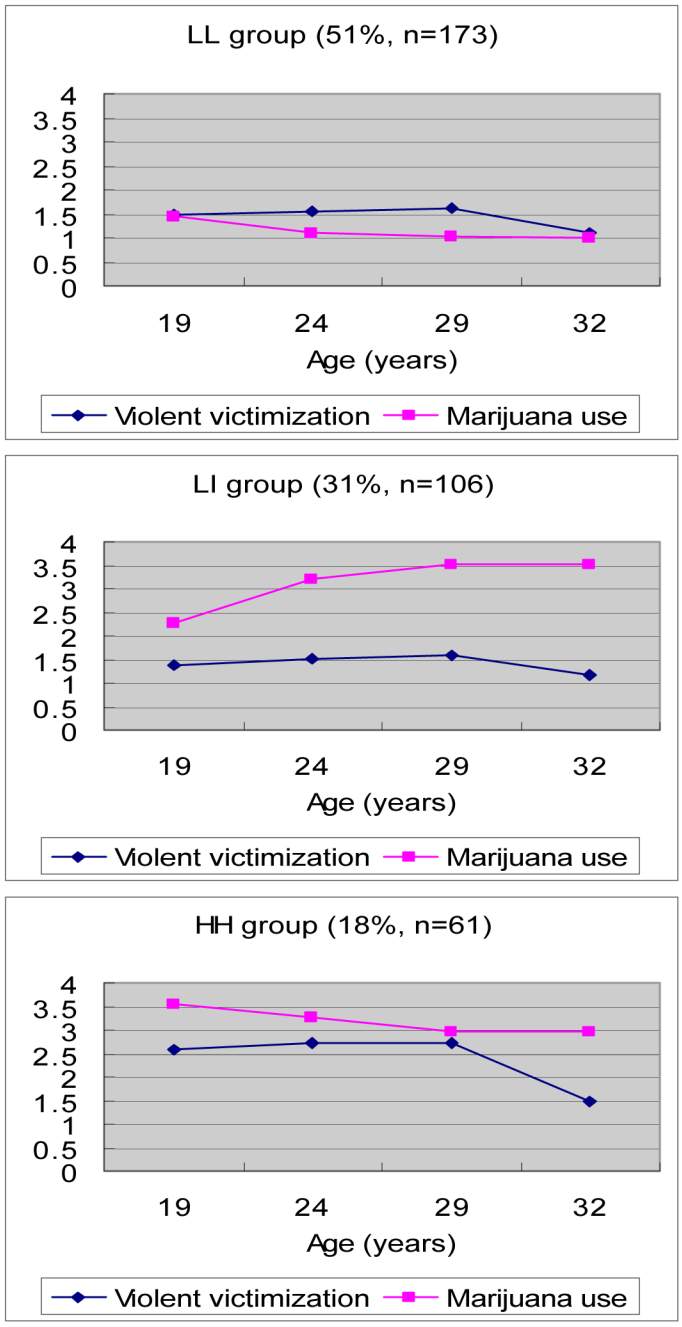

Figure 1.

Joint Trajectory Groups of Violent Victimization and Marijuana Use (N=340)

Note. LL = low violent victimization and low marijuana use; LI = low violent victimization and increasing marijuana use; HH = high violent victimization and high marijuana use

Table 1

Sample Characteristics (N=340)

	African American (n=177)	Puerto Rican (n=163)	
	Mean (SD)/N (%)	**Mean (SD)/N (%)**	***t* or χ^2**
Mean Age (T5)	32.7 (1.6)	32.2 (1.2)	$t = 2.69^*$
Educational Involvement (T5)	1.6 (0.9)	1.3 (1.0)	$t = 2.68^*$
Marijuana Use			
T2	2.1 (1.6)	2.1 (1.5)	$t = 0.21$
T3	2.3 (1.6)	2.1 (1.5)	$t = 0.67$
T4	2.2 (1.7)	2.1 (1.6)	$t = 0.74$
T5	2.1 (1.7)	2.1 (1.6)	$t = 0.22$
Violent Victimization			
T2	1.6 (0.7)	1.7 (0.8)	$t = 1.28$
T3	1.7 (0.8)	1.8 (0.8)	$t = 0.67$
T4	1.8 (0.8)	1.8 (0.8)	$t = 0.13$
T5	1.2 (0.4)	1.5 (0.5)	$t = 0.61$
Health Problems (T5)	1.8 (1.7)	2.1 (1.9)	$t = 1.60$
Depressive Symptoms (T5)	4.2 (3.5)	4.0 (3.4)	$t = 0.60$
Generalized Anxiety Disorder (T5)	22 (12.4)	24 (14.7)	$\chi^2 = 0.38$
Antisocial Personality Disorder (T5)	16 (9.0)	21 (12.9)	$\chi^2 = 1.29$
Nicotine Dependence (T5)	36 (20.3)	38 (23.3)	$\chi^2 = 0.44$
Alcohol Use Disorder (T5)	40 (22.6)	44 (27.0)	$\chi^2 = 0.88$

Note.

$^*p < .05$

Table 2

Measures, Sources and Psychometric Properties

Scale (no. of items)/Variable	Cronbach's Alpha[a]	Source	Sample Item
Demographic Variables			
Age	N/A	N/A	Age at Time 2
Ethnicity	N/A	N/A	Are you Hispanic? (1: *AA*, 2: *PR*)[b]
Educational Involvement	N/A	N/A	Are you currently attending school or college? (0: *Not in school*, 1: *Part-time student*, 2: *Full-time student*)
T5 Outcomes			
Health problems (8)	0.65	Original	During past 12 months, have you had a cough, without fever, which lasted at least three weeks?
Depressive mood (6)	0.79	SCL-90-R (Derogatis, 1997)	Over the last few years, how much were you bothered by feelings of worthlessness?
Nicotine dependence (10)	N/A	DSM-IV-TR (adapted; APA, 2000)	In the past 12 months, over time, did you develop a physical tolerance for tobacco so that you smoked more in order to feel satisfied?
Antisocial personality disorder (7)	N/A	M.I.N.I. (Sheehan et al., 1998)	Since you were 15 years old, have exposed others to danger without caring?
Generalized anxiety disorder (9)	N/A	M.I.N.I. (adapted; Sheehan et al., 1998)	Have you had a period of at least 6 months when you worried excessively or were anxious about several things?
Alcohol use disorders (abuse or dependence) (12)	N/A	M.I.N.I. (Sheehan et al., 1998)	In the past 12 months, did you need to drink more in order to get the same effect that you got when you first started drinking?

Note.

[a] Cronbach's alphas are estimated from our data.

[b] AA = African American, PR = Puerto Rican

Table 3

Regression Coefficients (bs) and Adjusted Odds Ratios (AORs) predicting Physical and Mental Health Outcomes from Joint Trajectories of Victimization and Marijuana Use at Mean Age 32 (N=340)

	b (Standard Error)		AOR (95% Confidence Interval)			
	Health problems	**Depressive mood**	**Nicotine dependence**	**Antisocial personality disorder**	**Generalized anxiety disorder**	**Alcohol use disorder**
HH group vs. LL group	1.35 *** (0.32)	1.76 ** (0.62)	8.82 *** (3.93, 19.77)	4.49 ** (1.79, 11.28)	2.52 * (1.06, 5.98)	2.44 * (1.19, 4.98)
HH group vs. LI group	0.89 * (0.37)	0.53 (0.72)	1.66 (0.76, 3.62)	3.19 * (1.12, 9.05)	1.90 (0.71, 5.07)	2.41 * (1.04, 5.58)
LI group vs. LL group	0.46 (0.26)	1.23 * (0.51)	5.31 *** (2.54, 11.10)	1.41 (0.54, 3.69)	1.33 (0.58, 3.02)	1.01 (0.52, 1.96)

Note. Age at T2, ethnicity, and school status at T2 were statistically controlled in each analysis. LL = low violent victimization and low marijuana use (n=173); LI = low violent victimization and increasing marijuana use (n=106); HH = high violent victimization and high marijuana use (n=61).

* $p < .05$,

** $p < .01$,

*** $p < .001$