

Interpersonal Victimization of Latino Youth: a Latent Class Analysis

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Abstract

This study identifies latent classes of interpersonal victimization among Latino youth using a national sample and then compares these latent classes on demographic characteristics, mental health (depression, anxiety, and hostility), and delinquency. We used data from the Dating Violence Among Latino Adolescents (DAVILA) study that surveyed 1525 Latino teens and their caregivers across the USA, by phone, from September 2011 to February 2012. Participants completed modified versions of the Juvenile Victimization Questionnaire and the Conflict Tactics Scales 2- Short Form. Latent class analysis examined victimization types and relationship to perpetrators. We compared latent classes on demographics, mental health, and delinquency via multinomial logistic regression. A six-class solution was found. The six classes were Multiform Victimization by Multiple Perpetrators (n = 184, 12.1%), Psychological Dating Violence Victimization (n = 99, 6.5%), Psychological Victimization by Peers (n = 236, 15.5%), Physical Victimization by Peers (n = 127, 8.3%), Physical Violence Victimization by Juvenile Family Members (n = 93, 6.1%) and Uninvolved (n = 786; 51.5%). Classes differed on some demographic variables, hostility scores, and the rate of delinquency. Our findings provide further evidence regarding the heterogeneity of victimization experiences among Latino youth. LCA results also suggest that victimization occurs across a range of perpetrators, both inside and outside of the home. Hostility and delinquency were central to differentiating the classes, indicating their relevance among poly-victimized Latino youth. This analysis provides further understanding of the various ways Latino youth experience victimization and what factors may differentiate the various groupings of victimization profiles.

Keywords

Latino adolescents

Interpersonal victimization

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Large national studies report disheartening rates of violence against children. The National Survey of Children's Exposure to Violence found that over half of youth (60.6%) experienced physical assault, child maltreatment, sexual victimization, property victimization, or witnessed victimization in the year prior to the study (Finkelhor et al. 2009). Each of these experiences were associated with an increased risk of another type of victimization, exacerbating vulnerabilities for child victims. About 70% of victimized youth experienced more than one victimization type (Finkelhor et al. 2007) and the average number of victimizations was three (Turner et al. 2016). The National Survey of Adolescents showed that 83% of youth were exposed to sexual or physical assault or abuse victimization, witnessing violence, disaster, serious accident, or threat of or actual serious injury (Ford et al. 2010). Again, the level of victimization was associated with more severe consequences such as greater likelihood of depression, post-traumatic stress disorder, and substance abuse disorders. The authors conclude poly-victimization is a "distinct threat to adolescents' health and development" (Ford et al. 2010, p. 549). While these numbers are staggering, many questions remain such as the dynamics of victimization (e.g., particular patterns of overlap) and how victimizations by various perpetrators are linked. Are there primary subtypes of victimization profiles? Are racial/ethnic minorities represented in these statistics and trends? Does mental health and delinquency vary according to subtypes of violence?

The current study takes up these questions by using data from a national sample of Latino youth 12–18 years old. The data offers unique benefits: 1) a particular focus on Latinos which allows examination of an understudied group, 2) inclusion of 23 violent acts spanning physical, sexual, psychological, and stalking violence, and 3) identification of perpetrators for each of these acts within the categories of dating partners, peers, youth family members, adult family members, and strangers. While

many victimization studies use a variable-centered approach (e.g., examining how physical violence victimization is related to depression), a person-centered approach would be ideal to examine the common subtypes of victimization as it examines commonalities within groups of participants. This would allow identification of common typologies and then allow us to examine the characteristics of these typologies. Typology studies often use person-centered analytic approaches, such as LCA, to identify subgroups or classes of individuals who display similar characteristics to individuals within a subgroup or class (e.g., endorsement of a particular set of indicators), but differ from individuals in other subgroups or classes. Doing so has allowed researchers to identify the extent to which types of victimizations co-occur for some youth. This person-centered approach leverages the heterogeneity of the sample and sheds light on how victimization is experienced by youth. Research on subtypes of victimization with largely White participants has tended to focus on violence perpetrated by either family members (child maltreatment), peers (peer victimization/bullying), or dating partners (dating violence). Nonetheless, youth are often victimized by various perpetrators, necessitating a broader examination of types of perpetrators and these distinctions have been useful in a recent study using LCA (Turner et al. 2016). Moreover, except for a notable few, LCA studies have tended to ignore ethnicity in their analyses. Only a couple of previous studies exclusively were based on a Latino sample (McNaughton Reyes et al. 2017; Villamil Grest et al. 2018) and these were focused on dating and intimate partner violence, thus missing the full scope of victimization. Examination of different forms of violence and various perpetrators is important because consequences of violence differ by the type of violence experienced, the severity, and the relationship to the perpetrator (Turner et al. 2016). Thus, this study addresses the limitations of previous LCA studies (i.e., focusing on limited types of victimization, excluding perpetrators) and expands the populations of study by exclusively focusing on self-identified Latino teens.

Latino Context

A quarter of the youth under the age of 18 in the USA is Latino (U.S. Census Bureau 2018). This differs drastically from the adult population in the USA, 16% of which is Latino. Latino teens can face unique risk factors such as poverty, discrimination, acculturative stress, and negative/traumatic migration experiences (Kuperminc et al. 2009). Latino youth are twice as likely to be immigrants than the general population of youth (US Census Bureau 2018), bringing issues of cultural adaptation to the forefront. Thus, omission of Latinos leads to a skewed representation of the nation's youth and the violence they experience.

Studies of Latino youth have been more common in recent decades and there are now studies on dating violence, child maltreatment, and bullying among others (Sabina, Cuevas, & Cotignola-Pickens, 2016; McNaughton Reyes et al. 2017; Peguero 2009; Ramos et al. 2011; Warner et al. 2012). A national sample of Latino teens, which employed the same dataset as the current study, revealed that about 19% of Latino teens experienced dating violence and while Latino boys were more likely to report victimization at time 1, but at time 2 there were no significant gender differences, except that girls reported more sexual victimization (Sabina et al., 2016). U.S. nativity and acculturation were found to be related to overall victimization, dating violence, conventional crime, child maltreatment, peer and sibling victimization, sexual victimization, and poly-victimization in the same sample (Sabina, Cuevas, & Ho, in press). These studies shed light on the extent of victimization among Latinos as well as some of the potential influences on this population.

Studies that compare latent classes by ethnicity show the unique profile of Latinos. A LCA analysis of the National Child Traumatic Stress Network Core Data Set (Adams et al. 2016) showed Latinos comprised 64.9% of the loss and violence subtype that was identified, although they were 35% of the sample. Latinos were identified as having high rates of traumatic loss, separation, or bereavement and community violence. Other studies have found Latino ethnicity associated with both multi-type victimization class (Curran et al. 2018) and with the minimal victimization group in another study (Holt et al. 2017). However, Latino ethnicity was also associated with being in the poly-sexual group (a group with high levels of relational victimization, dating violence, and sexual assault/ rape) compared to the peer victim or poly-victim groups (Holt et al. 2017). These differences in multi-racial/ethnic samples along with a general lack of focus on person-centered analyses among Latino victims, warrant the focused study of Latinos. We build on the previous LCA studies that have tended to focus on child maltreatment, peer victimization, dating violence, and, more recently, poly-victimization.

Previous Latent Class Analysis Studies

Child Maltreatment Studies A recent review of LCA and latent profile analysis in child maltreatment studies identified 16 empirical articles (Debowska et al. 2017). Most studies included physical abuse, emotional abuse, sexual abuse, and neglect, although studies varied on how these were measured and which behaviors

were included, especially around neglect. All but one of these studies identified three- or four-class models, generally including a non- or low-exposed class and poly-victimization class, which tended to relate to the most severe consequences. Other classes identified across studies include a high sexual abuse class, physical and emotional abuse class, and neglect classes (Debowska et al. 2017). Gender differences were apparent in the sexual abuse classes, with girls and women more likely to belong to this class than boys and men. The review shows the variety of child maltreatment profiles and reflects the trend that child maltreatment forms tend to overlap (poly-victimization).

Peer Victimization Studies Person-centered analyses focused on the peer victimization of youth also identify primary subtypes which tend to include various forms of victimization. One study (Bradshaw et al. 2013) which included 10 forms of bullying found 4-classes among middle school students (low victimization/normative; high verbal, physical, and relational bullying; verbal and relational; and verbal and physical) and 3 classes among high-school students (low victimization/normative; verbal and rumors; high verbal, physical, and relational). Girls constituted the largest percentage of the verbal and relational class in middle school (69% female) while boys predominated the verbal and physical forms class (72% male). Across both middle and high school, those in the high verbal, physical, and relational class had higher internalizing and aggression scores than those in the other classes.

Dating Violence Studies With regard to dating violence typologies, McNaughton Reyes et al. (2017) identified three patterns of teen dating violence involvement among a Latino sample: a) uninvolved, b) psychologically aggressive victims, and c) multiform aggressive victims among Latino youth. Psychologically aggressive victims had a high probability of involvement (perpetration and/or victimization) in psychological dating victimization, but a low probability of involvement in other teen dating violence (TDV) forms (34% of boys; 24% girls). Multiform aggressive victims, the smallest class, corresponded to high probability of involvement in all forms of TDV, except for physical perpetration among boys and sexual perpetration among girls (10% of boys; 11% of girls). Similarly, Choi et al. (2017) identified five dating violence classes: 1) non-violence, 2) emotional/verbal abuse victimization and perpetration, 3) forced sexual contact victimization, 4) physical and psychological violence (including emotional/verbal violence and threatening behavior) victimization and perpetration, and 5) psychological abuse, that corresponded to high probabilities on emotional/verbal victimization and perpetration, threatening behavior victimization, relational victimization, and

physical victimization. Others have found 3 to 5 classes as well (Goncy et al. 2017; Haynie et al. 2013) each calling attention to the interplay between varying types of dating violence such as physical, sexual, and psychological.

Poly-Victimization Studies While it is clear that those victimized by partners, parents, or peers may experience multiple forms of violence from that perpetrator or class of perpetrators, research also shows that forms of victimization are linked—crossing the boundaries of dating violence, child maltreatment, and peer victimization (Contractor et al. 2018). Overall, there have been nine articles on poly-victimization/poly-traumatization, that were summarized by Contractor et al. (2018). Across the nine studies, three- to four-class solutions were often identified—with high-trauma and low-trauma exposure groups being common. Two forms of victimization that were connected across studies were peer victimization and dating violence victimization (Garthe et al. 2017). Potentially, peer victimization is related to associating with aggressive and antisocial peers which then exposes youth to greater chances of dating violence victimization (Garthe et al. 2017). Research also shows a link between high victimization and aggression in childhood and hazing victimization and sexual victimization in college (Felix et al. 2019). This LCA using longitudinal data showed how the continuity of violence can involve varying perpetrators and types of violence (Felix et al. 2019), underscoring the need for a broad examination of victimization types as well as perpetrators. Studies exploring victimization types, however, have largely been carried out with White samples, and samples from ethnic/racial minority groups are needed.

The Need to Examine Multiple Types of Perpetrators

A consequence of focusing on one type of victimization at a time is the exclusion of multiple types of perpetrators. Evidence shows that trauma perpetrated by someone with a close relationship to the victim (i.e., high betrayal trauma) is more predictive of depression, dissociation, and post-traumatic stress disorder than trauma perpetrated by a non-close other or natural disasters (Martin et al. 2013). Similarly, a study of youth found that experiencing community violence by a known perpetrator, compared to an unknown perpetrator, was correlated with depression, aggression, and attention problems (Elsaesser 2018). Moreover, a study that spanned from pre-school to adulthood found that child maltreatment and dating violence were associated with adulthood intimate partner violence (IPV) in different ways (Herrenkohl and Jung 2016). Child maltreatment was related to adult IPV perpetration, while dating violence victimization was related to adult IPV victimization. Additionally, witnessing parental abuse was linked to perpetrating peer violence over 7-year period (McCloskey and Lichter 2003). These linkages

point to the relationship of victimization in childhood to various forms of victimization in adulthood as well as how childhood victimization by known, as opposed to unknown perpetrators may be more detrimental to well-being. Together, we see the need to examine relationship to perpetrator as an important aspect of victimization experiences.

One study used LCA to examine how subtypes of violence are informed by relationship to the perpetrator, as well as location and aggravating circumstances (Turner et al. 2016). The following perpetrator types were included: adult family perpetrator, juvenile family perpetrator, adult nonfamily perpetrator, and juvenile nonfamily perpetrator. Their six-class solution included non-victims, home victims (predominately juvenile family perpetrator), school victims (predominately juvenile nonfamily perpetrator), home and school victims, community victims, and poly-victims. Poly-victims had the highest probabilities of being victimized by adult family and non-family perpetrators compared to the other groups and also had victimizations with a sexual component and with an injury or weapon. This class had the highest percentage of girls compared to the other classes and also was related to highest levels of delinquency, adversity, trauma symptoms, and number of victimizations. These results show the meaningfulness of using relationship to perpetrator to capture the heterogeneity of victimization experiences.

The Present Study

Person-centered analyses have shed light on how victimization is experienced by youth. These approaches prioritize the commonalities within groups of participants, instead of organizing data by variables. Doing so has allowed researchers to identify the extent to which types of victimizations co-occur for some victimized youth. These analyses have centered on subtypes of abuse (physical, verbal, sexual) and have additionally shown the need to examine relationship to perpetrator. This study takes up both of these aims using an exclusively Latino sample. Thus, this study extends previous LCA research in three ways: 1) including a range of victimization types, 2) specifying relationship to the perpetrator, and 3) examining classes among an understudied population by using an exclusively Latino sample. We first identify latent classes among Latino youth using a national sample and then compare these latent classes on gender, U.S. nativity, mental health (depression, anxiety, and hostility), and delinquency to address the following research questions: 1) Are there distinct groups of Latino youth based on their profiles of past-year victimization in terms of victimization type and relationship to perpetrator? 2) Are there significant differences among these subgroups regarding

psychosocial factors (youth's sex, age, sexual orientation, and U.S. nativity as well as parent's U.S. nativity, education, and marital status)? 3) Are there subgroup differences regarding youth's mental health (depression, anxiety, and hostility), and 4) Are there subgroup differences regarding youth's delinquency?

Method

Participants and Procedure

This study used data from the Dating Violence Among Latino Adolescents (DAVILA) study that surveyed 1525 Latino teens and their caregivers across the USA. Data were collected from September 2011 to February 2012 and a detailed description is available in the study final report (Sabina, Cuevas, & Bell, 2013; Sabina, Cuevas, & Rodriguez, 2014). Households consisting of a self-identified Latino youth between the ages of 12 and 18 and a caregiver were eligible for participation. The response rate for the sample was 36% and is defined as the ratio of completed interviews and partial interviews to all interviews, non-interviews, and a proportion of cases of unknown eligibility (American Association for Public Opinion Research, 2009). The cooperation rate was 55% and is defined as the ratio of completed interviews and partial interviews to all interviews, refusals, and break-offs (American Association for Public Opinion Research, 2009).

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Demographics are presented for the full sample and for the victimized subsample in Table 1. On average, the sample was about 15 years old, born in the USA (76.5%), and were in households that earned \$10,000 to \$19,999 in 2010 (25.5%).

Table 1

Weighted descriptives for full sample

	Full sample % (<i>N</i> = 1549)
	M (SD)
Age	14.99 (1.94)
SES	-.05 (.99)
Depression	45.24 (9.43)
Anxiety	43.84 (9.27)
Hostility	44.53 (9.18)

	Full Sample %
Gender	
Male	47.2
Female	52.8
Employment status	
Not employed	92.7
Employed part-time	6.3
Employed full-time	0.6
Seasonal	0.4
Sexual orientation	
Heterosexual	94.5
Gay or Lesbian	1.1
Bisexual	1.3
Not sure/transitioning	3.2
Place of birth	
USA	76.5
Mexico	18.1
Other	5.4
Parental education level (%)	
Less than high school	39.2
High school grad/GED	32.2
Some college/trade school	11.8
Two-year college graduate	6.0
Four-year college graduate	6.1
Some graduate school	0.9
Graduate degree	3.8
Parental relationship status	
Single (never married)	11.6
Married	70.1

Cohabiting/committed relationship	8.3
Divorced	4.6
Separated	4.4
Widowed	0.9
Other	0.1
Household income 2010	
Under \$9999	14.7
\$10,000 – \$19,999	25.5
\$20,000 – \$29,999	20.2
\$30,000 – \$39,999	16.3
\$40,000 – \$49,999	8.0
\$50,000 – \$59,999	4.2
\$60,000 – \$69,999	1.8
\$70,000 – \$79,999	2.6
\$80,000 or more	6.8
Victimization types	
Physical victimization	35.4
Sexual victimization	8.5
Stalking victimization	8.9
Psychological victimization	37.6
Perpetrator	
Dating partner perpetrator	19.5
Stranger perpetrator	12.8
Peer perpetrator	24.9
Adult relative perpetrator	10.3
Youth relative perpetrator	22.3
Delinquency	
Physical delinquency	27.8
Property delinquency	37.3
Drugs delinquency	15.4

Detailed study procedures are available in the final report (Sabina et al., 2013). Briefly, research participants were contacted through list-assisted Spanish surname sampling procedures ($n = 1424$) as well as random dialing procedures within Latino-dense communities consisting of 80% or more Hispanic individuals ($n = 111$), which was used initially, but proved inefficient. Bilingual interviewers from a survey research center were trained on the study protocol and conducted all phone interviews. Households were screened for Latino adolescents between the age of 12 and 18 and a caregiver. If there was more than one eligible adolescent, the next/more recent birthday method was used to select the participant. Caregivers were asked about their views of the state of youth safety, their child's school performance, and demographic information (average = 12 min). Adolescents were asked about demographics, acculturation, past-year victimization, help-seeking behavior, school connectedness, familism, psychological functioning, and delinquent behavior (average = 33 min). Upon completion of the survey, adolescent participants were paid \$10 for their participation and parent participants were paid \$5 for their participation. In addition, all participants were offered a national hotline number, a follow-up call if they felt distressed due to the protocol, and a Privacy Certificate was obtained to protect the data. IRB approval was obtained by all related universities.

Measures

Demographic Information Demographic information was collected from the parent including their age, level of education, employment status, marital status, household income and composition, and birthplace of themselves, their child, and their parents. Adolescents were asked about their age, gender (male = 0; female = 1), and sexual orientation (heterosexual = 0; gay, lesbian, bisexual, or unsure = 1). All children and parents not born in the U.S. were coded as foreign-born (U.S. born = 0; foreign-born = 1). Parental education was dichotomized (high school and below = 0; higher education = 1) due to multicollinearity. Parental marital status was dichotomized (single, divorced, or separated = 0; married or cohabitating = 1). SES corresponded to z scores computed using education and income. Considering that there was minimal missing data in the dataset (<5%), the listwise approach was used. No other imputation or transformation procedures were used.

Victimization The Juvenile Victimization Questionnaire (JVQ, Hamby et al. 2005) and the Conflict Tactics Scale 2- Short Form (CTS2S, Straus and Douglas 2004) were used to assess victimization within the previous 12 months. The

original JVQ consists of 34 questions, 17 of which were used in DAVILA. A “time bounding” procedure was used to help participants define the past year and minimize the possibility of inappropriately including or excluding events within the prescribed time frame. If participants answered affirmatively to the behaviorally worded screener, additional questions were asked about the perpetrator(s), weapon use, injury, and potential conjunction with one of the other victimization events of the survey. The 17 screening questions were categorized into physical, sexual, stalking, and psychological violence and each participant was designated as having experienced (1) or not (0) each form of violence. Then the responses to the perpetrator questions were coded to designate yes or no (1/0) for victimization by each of the following persons: dating partner, stranger or non-family adult, peers (juvenile non-family), siblings or other related youth (juvenile family), or parent or adult relative (adult family). Validity and reliability of the JVQ has been established with test-retest reliability and in its association with trauma symptoms (Finkelhor et al. 2005). For the current study, the overall alpha was 0.79.

The CTS2S is a shortened version of the CTS2 and the version adapted for this study queried past year physical, sexual, and psychological dating violence victimization and perpetration among those who reported rating in the past year. Response choices were 1, in the past year, 2, before, but not in the past year, and 3, no, this never happened. Violence by a dating partner in the last year was coded into the “dating partner” perpetrator variable, as well as the corresponding type of violence (physical, sexual, or psychological). The scale is highly correlated with the CTS2 victimization subscales, ranging from 0.67 to 0.94 (Straus and Douglas 2004), however the authors advise that an alpha score is not appropriate for the measure given that there is no intended total score (Straus and Douglas 2004).

The CTS2S and the JVQ items were split into victimization types. Across the two measures, there were 9 items pertaining to physical violence, 7 pertaining to sexual violence, 1 for stalking, and 6 for psychological violence. All CTS2S items were coded as having been perpetrated by a dating partner. Additionally, any JVQ item that was reported as being perpetrated by a boyfriend or girlfriend or ex was coded as having been perpetrated by a dating partner. JVQ follow-up questions included perpetrator and these were grouped as peer non-family (someone you know such as a friend, neighbor, or someone from school under 18 years old), adult non-family (grown-up you know but do not live with, such as teacher, coach, neighbor, or babysitter; stranger), juvenile family (brother/ step-brother; sister/ step-sister; another child who lives with you such as a cousin or foster-sibling, young relative such as cousin or young uncle who does not live with you under the age of 18), and adult family (father, step-father, mother, step-mother, foster mother, parent’s

boyfriend or girlfriend who lives with you, grown-up relative such as uncle, aunt, grandparent who does not live with you). The Listwise approach was used to handle missing data considering that the most missing data per item was 4 for the JVQ (.3%), and 3 for the CTS (.4%), administered only to those in a relationship in the last year.

Psychological Functioning The Brief Symptom Inventory (BSI) scale (Derogatis 1993) is a 53-item self-report instrument that assesses psychiatric symptoms in adolescents and adults. DAVILA participants responded to the depression, anxiety, and hostility subscales. Participants reported how much each problem bothered or distressed them in the past seven days on a scale ranging from 0, *not at all*, to 4, *extremely*. Convergent validity was shown with significant correlations with other similar measures such as the MMPI (Derogatis 1993). In our sample, the overall reliabilities were 0.81, 0.73, and 0.75 for the depression, anxiety, and hostility scales respectively. Total scores were used in analyses. We used Listwise approach to handle missing data ($n = 15$, 1%) for the BSI. No other transformation procedures were used.

Delinquency The Frequency of Delinquent Behavior (FDB, Loeber and Dishion 1983) was used to measure self-reported delinquent behavior in the previous year. The measure's most recently published format (Dahlberg et al. 1998) was adapted for this study by removing certain questions and combining others to reduce participant burden resulting in 13 questions. Participants indicated how many times they did each delinquent act within the past year. Delinquent acts included physical crimes (e.g., hit, slap or shove other kids/ boyfriend/ girlfriend/parents), property crimes (e.g., take something from a store without paying for it), and substance use (e.g., smoke marijuana or drink alcohol). For this analysis, we dichotomized the responses as 1, *yes*, engaged in delinquent behavior or 0, *no*. The original FDB has shown adequate test-retest reliability of 0.71 (1-year interval) and moderate correlations with peer-nominated aggression (Loeber and Stouthamer-Loeber 1987). In this study, internal consistency ranged from 0.61 for drug-related crime to 0.70 for property crime. Listwise approach was used for missing data ($n = 31$, 2%). No other transformation procedures were used.

Analyses

First, descriptive characteristics for the sample were calculated (Table 1). Second, a series of LCAs were conducted in Mplus 8 (Muthén and Muthén 2019). We fit models with one to seven classes, in order to identify respondents with similar response patterns in the nine variables described before, corresponding to

victimization type, including physical violence, psychological violence, sexual violence, and stalking victimization, and perpetrator type, including dating partner, juvenile family, adult family, juvenile non-family, and adult non-family. To identify the optimal number of latent classes, we assessed the model fit of these seven models using the Bayesian Information Criterion (BIC), where lower values indicate better fitting models (Nylund et al. 2007). We used the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR-LRT) to determine when an additional class represented a significant improvement to the model fit (Nylund et al. 2007). We also evaluated the quality of the classification through entropy scores, by which the best delineation of classes is indicated by values approaching 1, and we considered the substantive interpretation of the item response probabilities (Collins and Lanza 2009), informed by parsimony and theoretical considerations. In addition, we examined the average latent class probabilities (ALCPs) for most likely membership. We ran each of the models with 2500 randomly selected starting values to check for model identification with each specified number of classes and examined the percentage of times that the model converged to the highest log likelihood value.

Once we identified the best fitting model and decided upon the number of classes, we classified each individual into their most likely class for which they had the highest posterior probability of membership. We then examined differences in classes across covariates (youth's sex, age, immigrations status, and sexual orientation, and parent's U.S. nativity, marital status, and level of education) and mental health (depression, anxiety, and hostility) and delinquency (physical, property, and drug-related) correlates, which were entered simultaneously in a multinomial logistic regression model in SPSS. This analysis provided odds ratios for each covariate, after controlling for the rest of the covariates in the model. Odds ratios greater than 1 represent higher odds of class membership compared to the reference group (uninvolved class) whereas odds ratios less than 1 represent lower odds (Mertler and Vannatta 2013).

In addition, we used the "knownclass" option, which we used to estimate a latent class model for multiple groups (Muthén and Muthén 2019). In this mixture model, we used g , the grouping variable to predict the probability of class membership in c ($c = 6$), which means that the probability of being in a class was allowed to vary by the observed variable group (gender). Likelihood ratio chi-square was used to test model fit for the grouping variable.

Results

As shown in Table 1, the victimization rates ranged from 8.5% for sexual to 37.6% for psychological across all perpetrators. Victimization was perpetrated by peers (24.9%), another youth within the family (22.3%), a dating partner (19.5%), a stranger or non-family adult (12.8%), and an adult family member (10.3%).

Research Question 1: Latent Class Analysis

Latent class models were estimated, ranging from one to seven classes (see Table 2). The six-class model provided the best fit, considering that it had a significant VLMR-LRT, indicating that the sixth class significantly improved the model fit. The six-class model had a smaller BIC value than the five-class solution and although it had a similar BIC value to the seven-class solution, the additional class (class 7) did not significantly improve the model fit. Indeed, the seven-class solution did not have a significant VLMR-LRT and the additional class was small, making the seven-class model less parsimonious than the six-class model. Importantly, the six-class solution provided an interpretable solution. The six meaningful classes identified are presented in Fig. 1.

Table 2

Model fit statistics for latent class analysis models specifying one to seven classes

	Number of classes						
	1	2	3	4	5	6	7
Log likelihood	-6005.48	-4856.58	-4744.82	-4667.34	-4599.22	-4552.13	-4513.55
Information criteria							
N of free parameters	9	19	29	39	49	59	69
Akaike (AIC)	12,028.96	9751.15	9547.63	9412.68	9296.43	9222.25	9165.10
Bayesian (BIC)	12,076.92	9852.42	9702.20	9620.54	9557.59	9536.71	9532.85
Sample-Size ABIC	12,048.33	9792.06	9610.07	9496.65	9401.93	9349.28	9313.66
ACPs	–	0.99– 1.00	0.85– 0.997	0.85– 1.00	0.90– 0.99	0.86– 0.99	0.85–1.00

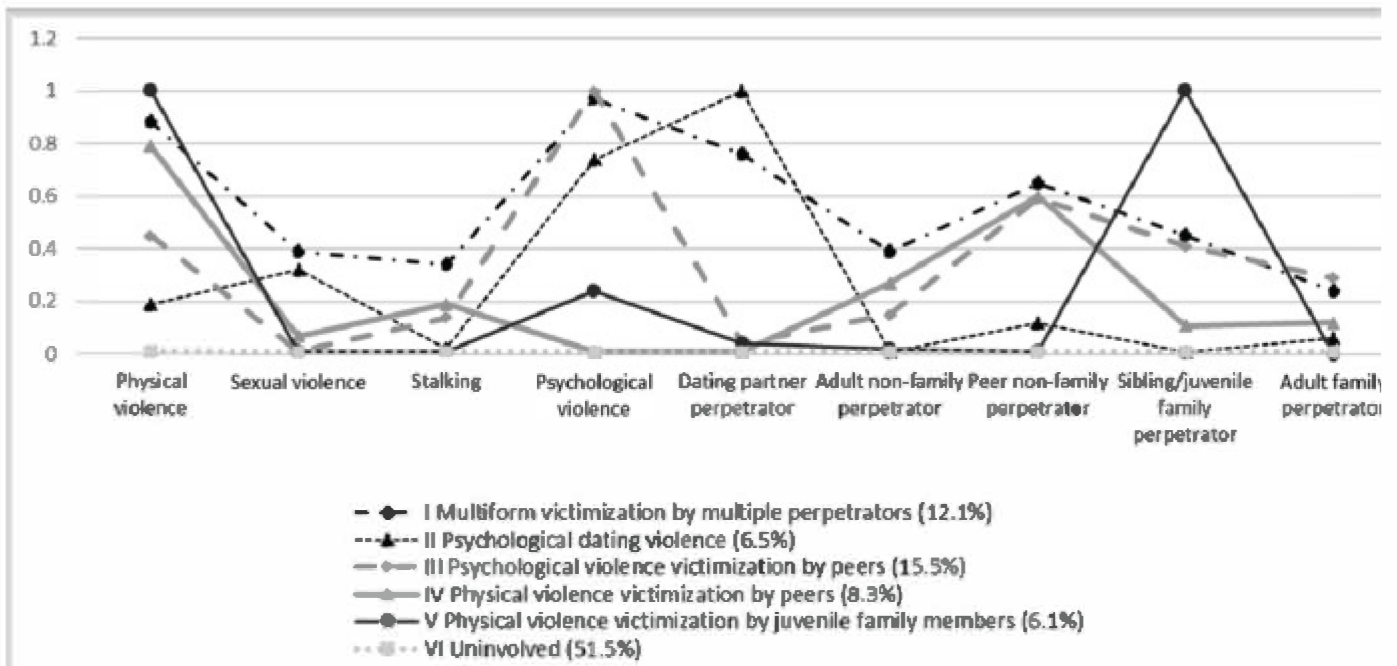
N = 1525; *AIC* Akaike's information criteria, *BIC* Bayesian information criteria. *ABIC* = Sample-size adjusted BIC; *ACPs* = Average latent class probabilities for most likely latent class membership; *VLMR-LRT* = Vuong-Lo-Mendell-Rubin Likelihood Ratio Test

	Number of classes						
	1	2	3	4	5	6	7
Entropy	–	0.959	0.907	0.93	0.923	0.921	0.933
VLMR-LRT	–	2297.80 $p < 0.001$	223.52 $p < 0.001$	154.95 $p < 0.001$	136.25 $p < 0.001$	94.18 $p < 0.01$	77.147 $p = 0.37$

$N = 1525$; *AIC* Akaike's information criteria, *BIC* Bayesian information criteria. ABIC = Sample-size adjusted BIC; ACPs = Average latent class probabilities for most likely latent class membership; VLMR-LRT = Vuong-Lo-Mendell-Rubin Likelihood Ratio Test

Fig. 1

Response patterns for latent classes



As Table 3 shows, the six classes included: I) Multiform Victimization by Multiple Perpetrators: This was the third largest class ($n = 184$, 12.1%), in which youth had high probabilities to have experienced physical ($\rho = 0.88$) and psychological violence victimization ($\rho = 0.97$) by multiple perpetrators, including dating partners and peers. II) Psychological Dating Violence Victimization ($n = 99$, 6.5%) which was characterized by high probabilities of dating partner perpetrator ($\rho = 1.0$) and psychological ($\rho = 0.74$), violence victimization. III) Psychological Violence Victimization by Peers ($n = 236$, 15.5%) which included psychological victimization ($\rho = 1.00$) by peer non-family members ($\rho = 0.59$). The last groups

were IV) Physical Violence Victimization by Peers ($n = 127$, 8.3%), which included high probabilities of physical violence perpetration ($\rho = 0.79$) by non-family youth, ($\rho = 0.60$) V) Physical Violence Victimization by Juvenile Family Members ($n = 93$, 6.1%) with high probabilities of physical violence victimization ($\rho = 1.00$) by juvenile family members, and VI) Uninvolved ($n = 786$, 51.5%).

Table 3

Probability of membership in latent class

	I	II	III	IV	V
	Multiform victimization by multiple perpetrators ($n = 184$, 12.1%)	Psychological dating violence victimization ($n = 99$, 6.5%)	Psychological violence victimization by peers ($n = 236$, 15.5%)	Physical violence victimization by peers ($n = 127$, 8.3%)	Physical violence victimization by Juvenile family members ($n = 93$, 6.1%)
Physical violence	.88	.19	.45	.79	1.00
Sexual violence	.39	.32	< .01	.07	< .01
Stalking	.34	.02	.14	.19	< .01
Psychological violence	.97	.74	1.00	< .01	.24
Dating partner perpetrator	.76	1.00	.04	< .01	.04
Adult non-family perpetrator	.39	< .01	.15	.27	.02
Peer non-family perpetrator	.65	.12	.59	.60	< .01
Juvenile family perpetrator	.45	< .01	.41	.11	1.00
Adult family perpetrator	.24	.06	.29	.12	< .01

Research Question 2: Latent Class Analysis with Psychosocial Factors

Youth's sex, age, sexual orientation, and U.S. nativity as well as parent's U.S. nativity, education, and marital status were included as covariates in the six-class model (see Table 4). Compared to the Uninvolved class, youth in class III, Psychological Violence Victimization by Peers (OR = 1.60, $p < 0.01$), were more likely to be female and youth in class IV were more likely to be male (OR = .56, $p < 0.01$). Class III, Psychological Violence Victimization by Peers, was 62% female, class IV was 34% female, and the Uninvolved class was 50% female. Those in class I, Multiform Victimization by Multiple Perpetrators (OR = 1.17, $p < 0.01$), and II, Psychological Dating Violence Victimization (OR = 1.80, $p < 0.001$), were more likely to be older compared to the Uninvolved class and those in classes III, Psychological Violence Victimization by Peers (OR = 0.87, $p < 0.001$), and V, Physical Violence Victimization by Juvenile Family Members (OR = 0.88, $p < 0.05$), were more likely to be younger compared to the Uninvolved class. Youth with foreign-born parents had lower odds of being in class I, Multiform Victimization by Multiple Perpetrators (OR = 0.52, $p < 0.001$), II, Psychological Dating Violence Victimization (OR = 0.40, $p < 0.001$), or V, Physical Violence Victimization by Juvenile Family Members (OR = 0.56, $p < 0.001$), compared to the Uninvolved class. Almost 90% of the Uninvolved class had foreign-born parents (86.5%), compared to 76% for class I, Multiform Victimization by Multiple Perpetrators, and 75% for classes II, Psychological Dating Violence Victimization, and III, Psychological Violence Victimization by Peers. Lastly, youth whose parents had at least some higher education were more likely to be in class I, Multiform Victimization by Multiple Perpetrators (OR = 1.62, $p < 0.001$), compared to the Uninvolved class.

Table 4

Multinomial regression comparing latent classes (uninvolved as the reference class)

	I		II		III		IV	
	Multiform victimization by multiple perpetrators ($n = 184$, 12.1%)		Psychological dating violence victimization ($n = 99$, 6.5%)		Psychological violence victimization by peers ($n = 236$, 15.5%)		Physical violence victimization by peers ($n = 127$, 8.3%)	
	% or M	OR	% or M	OR	% or M	OR	% or M	OR
*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$								

	I		II		III		IV		
	Multiform victimization by multiple perpetrators (<i>n</i> = 184, 12.1%)		Psychological dating violence victimization (<i>n</i> = 99, 6.5%)		Psychological violence victimization by peers (<i>n</i> = 236, 15.5%)		Physical victimization by peers (<i>n</i> = 127, 8.3%)		
	% or <i>M</i>	OR	% or <i>M</i>	OR	% or <i>M</i>	OR	% or <i>M</i>	OR	
Age	15.39	1.17**	16.40	1.80***	14.39	.87***	14.98	1.06	1
Female	44.6	1.297	53.5	1.19	61.9	1.60**	33.9	.56**	.
Gay	10.9	.62	8.1	1.04	6.9	.75	2.4	.45	5
Foreign-born child	20.9	1.00	16.1	.54	19.7	.69	22.2	.88	2
Foreign-born parent	76.1	.52*	75.3	.40**	85.2	1.00	83.3	.78	7
Married parent	74.0	.76	74.2	.87	79.0	1.03	72.2	.67	7
Higher education parent	42.4	1.62*	27.3	.57	30.2	1.06	30.2	.98	3
Depression	50.7	1.04**	46.5	1.02	47.98	1.02	43.05	.98	4
Anxiety	49.34	.99	44.47	.97	47.08	1.02	43.20	1.01	4
Hostility	50.99	1.09***	47.32	1.10***	47.88	1.06***	44.05	1.03	4
Delinquency-physical (%)	60.3	4.54***	32.3	2.01*	31.8	1.87**	44.9	4.18***	2
Delinquency-property (%)	64.7	1.67*	42.4	1.18	41.9	1.23	48.0	1.39	3
Delinquency-drugs (%)	38.0	3.51***	30.3	3.43***	14.4	2.02*	16.5	1.56	8

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$

In addition, we used the “knownclass” option to estimate the six-class solution, in which the probability of being in a class was allowed to vary by gender. The Likelihood Ratio Chi-Square Test was not significant (AIC: 11298.23; BIC: 11932;

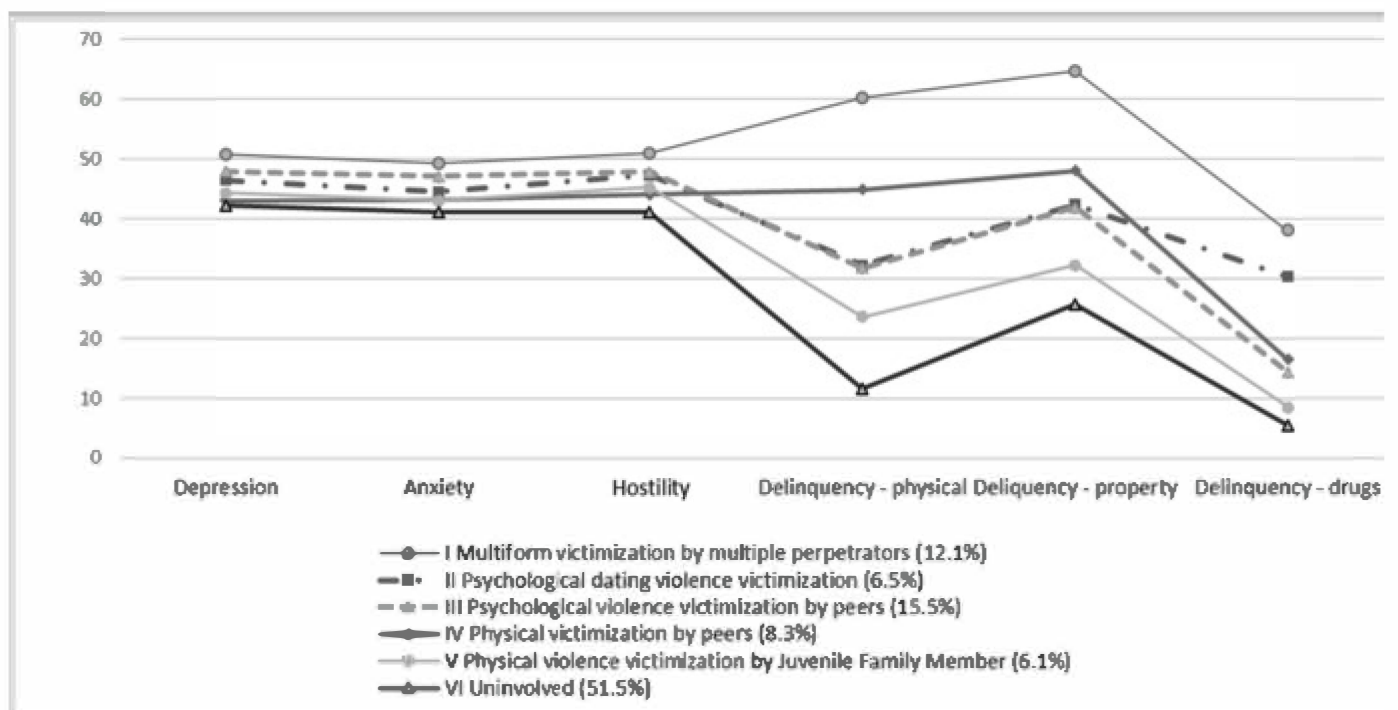
SABIC: 11554.44; Likelihood Ratio Chi-Square = 770.34, $p = 0.99$), suggesting that there were not significant gender differences in the probability of being in a given class in the six-class model.

Research Question 3: Latent Class Analysis and Mental Health Outcomes

Hostility, anxiety, and depression symptoms were included in the model to compare the mental health outcomes across classes (see Table 4). Using the Uninvolved class as reference, youth in classes I, II, III, (Multiform victimization, and psychological victimization by dating partner and peers, respectively) and V (Physical Violence by Juvenile Family Member) were more likely to have higher hostility scores (ORs from 1.06 to 1.10, $p < 0.01$). The hostility mean score for the Uninvolved class was 41.19, but the mean scores for classes I, II, III, and V respectively were 50.99, 47.32, 47.88, and 45.30. In addition, youth in class I, Multiform Victimization by Multiple Perpetrators, were more likely to have higher depression scores than those in the Uninvolved class (OR = 1.04, $p < 0.01$). That is, a depression mean score of 50.7 compared to 42.48. Figure 2 illustrates mental health mean scores by latent class.

Fig. 2

Mental health and delinquency mean scores by latent class



Research Question 4: Latent Class Analysis and Delinquency Outcomes

Three dichotomous variables corresponding to physical, property, and drug-related delinquent acts were included in the model to compare delinquency outcomes across classes (see Table 4). Using the Uninvolved class as reference, youth in classes I, II, III (Multiform Victimization and psychological victimization by dating partner and peer), and IV (Physical Violence by Juvenile Family Member) were more likely to engage in physical delinquency compare to the involved classes. Odds ratios ranged from 1.87 to 4.54, $p < .05$. While about 12% of the Uninvolved class engaged in physical delinquency, 60% of class I, 32% of classes II and III, and 45% of class IV engaged in physical delinquency. Youth in classes I, II and III were more likely to engage in drug delinquency compared to the Uninvolved class. Odds ratios ranged from 2.02 to 3.51, $p < .05$. While about 6% of the Uninvolved class engaged in drug delinquency, 38% of class I, 30% of class II, and 14% of class III engaged in drug delinquency. Lastly, those in class I (Multiform Victimization by Multiple Perpetrators) were more likely to engage in property delinquency (38%) than those in the Uninvolved class (26%; OR = 1.67, $p < .05$). Figure 2 illustrates delinquency mean scores by latent class.

Discussion

This work provides a notable contribution to the field, as there have been some efforts to use LCA in the victimization arena (Bradshaw et al. 2013; Choi et al. 2017; Contractor et al. 2018; Debowska et al. 2017; Felix et al. 2019; Garthe et al. 2017; Goncy et al. 2017; Haynie et al. 2013; Turner et al. 2016; Warmingham et al., 2019). Furthermore, LCA analyses that focus on persons of color and/or Latinos specifically are largely absent (Adams et al. 2016; Curran et al. 2018; Holt et al. 2017; McNaughton Reyes et al. 2017; Villamil Grest et al. 2018), leaving an important gap in the research for one of the fastest growing segments of the U.S. population (Patten 2016).

AQ6

AQ7

In contrast to prior research using LCA, our results suggest that a six-class model is the best fit. Prior studies using LCA have generally found three- or four-class solutions (Bradshaw et al. 2013; Debowska et al. 2017; McNaughton Reyes et al. 2017) to be the best fit. However, several studies tended to focus on one form of victimization and not include various perpetrators (Bradshaw et al. 2013; Choi et al. 2017; Debowska et al. 2017; Goncy et al. 2017; Haynie et al. 2013; McNaughton

Reyes et al. 2017). The other study to examine similar research questions found a six-class solution that included poly-victims (victimized by adult family, juvenile family, adult nonfamily, and juvenile nonfamily perpetrators), home and school victims (also victimized by all perpetrators, but with lower probabilities), home victims (primarily juvenile family perpetrators), school victims (primarily juvenile non-family perpetrators), and community victims (Turner et al. 2016). These unique profiles point to the heterogeneity of victimization experiences and the troubling circumstances that the poly-victim group faced such as low levels of family support, high levels of delinquency, and disordered neighborhoods which included witnessing violence and poor physical conditions (Turner et al. 2016).

In our study, the majority of the sample fell under the Uninvolved class (51.5%), with the least number of individuals falling in the Physical Violence Victimization by Juvenile Family Members (6.1%). Of interest, is the fact that about 12% of the sample falls in the Multiform Victimization by Multiple Perpetrators class, which is consistent with prior research on poly-victimization and the notion that there is a subgroup of individuals who are highly victimized across various forms of victimization experiences, which generally accounts for 10% of surveyed youth (Finkelhor et al. 2007, 2009). While only accounting for about 6% of the sample, Physical Violence Victimization by Juvenile Family Perpetrators indicates a group of youth who are likely primarily victimized by siblings, suggesting a form of family violence that is prevalent but has been minimized in its perceived impact on victims (Caspi and Barrios 2016; Finkelhor et al. 2009). Taken together, these results draw attention to the various groupings of victimization experiences Latino youth endure, and provide new evidence that can inform evaluation, intervention, and prevention efforts. For example, the classes that are primarily psychological and physical peer violence together account for approximately 25% of the sample. This suggests that school-level prevention and intervention efforts may capture a significant proportion of the victimization experiences for Latino youth. These efforts may be aimed at better addressing peer relationships as well as understanding the nature of these experiences (e.g., is the victimization driven by general bullying experiences? Are there race/bias-based motivations for these victimizations?). Additionally, the fact that a notable portion fell in the multiple victimization/multiple perpetrator class speaks to the need to identify the highly victimized youth within this population, as they may be particularly vulnerable to deleterious outcomes.

Hostility and delinquency are notable factors that are associated with various classes in relation to Uninvolved youth that differentiate class membership.

Specifically, hostility is associated with membership in every group, except Physical Victimization by Peers, relative to the Uninvolved class. This suggests that this emotion is particularly key in the victimization experience for Latino youth, as no other measured emotion showed this consistency in class differentiation. However, there were no significant differences in hostility scores between youth in the Physical Victimization by Peers compared to Uninvolved Youth, which warrants further exploration. Depression only did so for youth in the Multiform Victimization by Multiple Perpetrators class, corroborating literature that reported cumulative effects among poly-victims, resulting in more severe consequences, including a greater likelihood of depression (Ford et al. 2010) among those victimized by someone with a close relationship with the victim, such as a dating partner (Elsaesser 2018; Martin et al. 2013). There were no significant differences in anxiety scores across groups, which may be reflective of increased anxiety among Latinos in the U.S. associated with the social-political climate and increasing anti-immigrant policies since early 2000s (Mariscal, Johnson-Motoyama & Dettlaff, in press).

All forms of delinquency were associated with differentiating the Multiform Victimization by Multiple Perpetrators from the Uninvolved Class, where these delinquency types increased the odds of being in the Multiple Victimization class. This finding is consistent with the notion that highly delinquent youth are also likely to experience high levels of victimization, which has been found across various studies with general population samples (Cuevas, Finkelhor, Shattuck, Turner, & Hamby, 2013; Cuevas, Finkelhor, Turner, & Ormrod, 2007) and with Latino youth (Cudmore, Cuevas, & Sabina, 2017). Delinquency was also associated with differentiating the Physical Violence Victimization by Peers from the Uninvolved class, further supporting the idea that delinquency and victimization are linked, particularly for certain subgroups of victimized individuals, as Fig. 2 shows. Indeed, youth in the Multiform Victimization by Multiple Perpetrators had higher levels of depression and hostility and more engagement in all delinquent behavior categories than Uninvolved youth. Youth in the psychological violence victimization groups, by peers or dating partner, were more likely to have higher hostility scores and to engage in physical and drug-related delinquent acts, whereas youth in the physical violence victimization groups were more likely to engage in physical-related delinquent acts (peer perpetrator) or to have higher hostility scores (juvenile family member perpetrator). Of note, the physical delinquency items were largely physical violence perpetration items and thus reflect the victim-offender overlap which is commonly found in victimization research and documented in this

sample (Cuevas, Sabina, Cudmore, Picard, & Goggin, in press). There are a number of mechanisms that have been argued to explain the overlap generally (Cuevas et al., 2007) which apply to Latino youth as well (Cuevas et al., in press). Specifically, these youth tend to show high levels of psychological distress, particularly hostility/anger, and a lower degree of familial support. As such, a more wholistic and family-systems approach to intervention and prevention may be most effective for this subgroup of youth. Also, as we noted before, peer-focused and school-based approaches may provide additional avenues for prevention and intervention for this group.

Another variable that differentiates classes was having a foreign-born parent. Latino teens with foreign-born parents were less likely to be in several of the classes (I, II, V) as opposed to the Uninvolved class. Other studies have found that subsequent generations of Latino youth tend to have higher levels of victimization (Peguero 2008; Sabina et al., in press). Having a foreign-born parent potentially may be related to retention of cultural values, parental monitoring, a sense of upward mobility, a strong family bond, or other protective qualities. These youth were less likely to be in the multiform victimization class, psychological dating violence, and physical victimization by juvenile family member classes. Since research on the mechanisms at play is scant, more work is needed in this area.

The results point to a number of practice and research implications. As the LCA results highlight, we need to reject the idea that Latino youth are homogeneous in their victimization experiences, although there are some common threads within these groups connected to the degree to which they overlap with delinquency and the role that mental health factors play. That said, while some groups seem to have a significant peer role in their victimization experiences, there is clearly a distinction between experiences of psychological aggression and physical victimization. Additionally, the fact that there is a distinction between victimization by peers and by juvenile family members is striking. There is little research addressing the topic of sibling violence (Caspi and Barrios 2016), and our results suggest that this form of within-family aggression may have a prominent role for Latino youth. There is value in understanding that they may present with varying profiles, and as a result, have differing needs. For example, youth who primarily experience sexual victimization are likely to have different treatment needs than those who are victims of physical assaults, both in terms of the potentially traumatic impact as well as the therapeutic approaches used to address their

victimization experiences and related symptoms. Prevention and intervention efforts also point to the importance of addressing anger and frustration as they are key in both victimization profiles as well as potential consequences of these victimization experiences. Anger has been found to mediate the relationship between emotional regulation and depression and social anxiety and thus may better explain mental health outcomes (Asberg 2013). Moreover, anger regulation coping seems to reduce aggressive behavior of youth who have been victimized by their peers (Kaynak et al. 2015). It may be possible that anger and related coping mechanisms play a key role in the functioning of victims.

Our results suggest that future research needs to continue to understand how victimization experiences may group together as well as the utility of LCA for understanding victimization dynamics. In addition, our study promotes the importance of using this technique across a diverse variety of groups, as the results with this sample of Latino youth did not parallel some of the results found in general population surveys which often underrepresent persons of color. Furthermore, future research may also benefit from examining how variables related to culture and U.S. nativity may contribute to our understanding of class differentiation with the types of models used in this analysis. Again, the goal is to understand how the heterogeneity within the Latino community can impact victimization risk and victimization profiles.

Among the limitations, this study relied on youth and parent self-reports, which could be influenced by response biases due to the sensitive nature of the survey. While confidentiality was discussed with respondents before the survey was collected, youth may have had concerns about reporting socially proscribed or delinquent behaviors. Similarly, the victimization variables were cross-sectionally measured using a dichotomous range (yes/no), which cannot capture specific information regarding youth victimization (e.g., severity, frequency, and chronicity). Additionally, the cross-sectional nature of the data limits the ability to make any causal inferences and limit our ability to clearly identify antecedents to victimization experiences. Finally, the use of landlines for the phone interviews may not reach young participants. However, we used the landline to contact the parents and we could conduct the youth interviews on their cell phones, if they chose to do so.

This analysis furthers our understanding of the various ways Latino youth experience victimization and what factors may differentiate the various groupings of victimization profiles. The results function as a springboard for a more nuanced

understanding of victimization among this population as well as promoting the importance of more advanced analytic techniques as a way of better understanding victimization dynamics and profiles. The results underscore both the diversity of victimization experiences and the need to address common profiles such as psychological victimization by peers and multiform victimization by multiple peers. Clearly, the understanding of victimization experiences changes once various types of perpetrators are included in our conceptualization and measurement of victimization. It is imperative to examine both the various forms of violence youth experience as well as the relationships they have with perpetrators. As shown here, these experiences are related to deleterious experiences such as depression, hostility, and delinquency. Concerns about the physical and emotional well-being of youth are inextricably tied to efforts to keep children safe from a range of perpetrators.

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