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# Groups of Sexual Violence Perpetration in a National Sample of Youth 13–25 Years of Age

**Michele L Ybarra, MPH PhD**[*],

Center for Innovative Public Health Research, San Clemente, CA, USA

**Hanno Petras, PhD**

American Institutes of Research, Washington DC, USA

## Abstract

Little is known about how specific forms of sexual violence (SV) perpetration group together and how youth transition between these groups over time. Between 2011 and 2016, four waves of data were collected online nationally from 1129 13–25 year-olds. Six forms of SV perpetration were assessed: sexual harassment, online sexual harassment, sexual assault, coercive sex, attempted rape, and rape. We used latent class analysis to examine how different types of SV perpetration behaviors clustered together in each of the four waves. Latent transition analysis was used to examine stability and instability in group membership between the first and fourth waves assessed. Three groups were identified in each of the four waves of data collection: 1) a "non-perpetrators" group, ranging from 69% to 81% (n: 775–912) across waves, 2) a "sexual harassment" group, ranging from 17% to 29% (n: 191–327), and 3) a "multiple perpetration" group that engaged in all types of SV perpetration, ranging from 1% to 3% (n: 12–28). Most youth persisted in their behavior over time, which was true for each of the three groups (ranging between 60 and 72%). Desistence was less common, ranging from 35% of those who transitioned from sexual harassment to non-perpetration to 20% for those who transitioned from multiple perpetration to sexual harassment, and from multiple perpetration to non-perpetration. Escalation was least common, ranging from 2% who transitioned from non-perpetration to multiple perpetration to 26% who transitioned from non-perpetration to sexual harassment. Youth who perpetrate SV are heterogeneous; SV perpetration is not persistent for all youth.



[*]**Corresponding author**: Michele@InnovativePublicHealth.org.

Compliance with Ethical Standards

**Ethical approval:** All procedures performed in this study were in accordance with the ethical standards of the institutional research committee, with the Belmont Report, and with the 1964 Helsinki declaration and its later amendments.

**Informed consent:** Informed assent / consent was obtained from all individual participants included in the study.

**Conflicts of interest:** The authors declare they have no conflict of interest.

**Keywords**

Sexual violence; Sexual harassment; Rape; Youth violence; Longitudinal

Sexual violence (SV) is a severe public health concern (CDC 2018a). Extant research has described the short- and long-term consequences of SV on victims' physical, mental, sexual and reproductive health (Basile and Smith 2011; Bonomi et al. 2013; Campbell and MacPhail 2002; Choi et al. 2017; McFarlane et al. 2005; Weaver 2009; Zinzow et al. 2010; Jina and Thomas 2013; Smith et al. 2017). Studies suggest that SV perpetration is not uncommon: 24% of college males in a study conducted by Swartout et al. (2015b) reported perpetrating sexual assault, attempted or completed rape sometime during adolescence. In Ybarra and Mitchell's (2013) study, 9% of male and female adolescents, who were between 10 and 21 years of age, reported perpetrating sexual assault, attempted and completed rape, or coercive sex in their lifetime. Differences in prevalence rates between the two studies may be due to different age groups (college versus childhood and adolescence), the setting (one college versus national), and the focus on males versus both sexes.

Adolescent violence research has begun to capitalize on advances in person-centered methods, aiming to identify the dynamics of emergent subpopulations in a sample based on a set of chosen variables (Howard and Hoffman 2017). This shift is motivated by the fact that individuals may differ in their development and timing of engaging in different types of violence perpetration that may be masked in variable centered approaches (Choi et al. 2017; Thullen et al. 2015; Jewkes and Morrell 2018; Sessarego et al.). In the field of SV specifically, previous literature has reported varying trajectories of SV perpetrating behaviors among males. Recruited via telephone, Abbey et al., (2012) enrolled 423 men 18–35 years of age who were living in the Detroit area and had dated someone in the past 2 years. Participants were followed for 1 year. Using discriminant function analysis, four groups were identified: Non-perpetrators (49%), persistent aggressors (18%), desisters (25%), and initiators (7.5%) of a broad range of SV, including sexual touching, sexual coercion, and attempted and completed rape (Abbey et al. 2012). Between 1990 and 1995, a longitudinal study was conducted by Swartout and colleagues (2015b), with 850 college men 18–20 years of age and including both retrospective and prospective data across four time points. Using the Sexual Experiences Survey (Koss et al. 1987), sexual violence "scores" were derived from men's responses to questions about the type and frequency of different kinds of SV perpetration in which they may have engaged. Person-centered results of a latent class growth analysis identified four different groups of SV perpetrators: those who reported no perpetration, those who reported moderate levels (defined as a consistent level of sexual coercion), and those who reported decreasing or increasing levels of SV perpetration over time (defined as a low frequency of sexual aggression in adolescence followed by a sharp increase in young adulthood) (Swartout et al. 2015b). While non-perpetrators were the largest group of college men (72%), one in five (21.2%) was in the moderate perpetration class. Less than one in ten were classified in either the decreasing (4%) or increasing (3%) groups. The research team recruited another sample of male college freshmen in 2008 and followed them for three subsequent years (Thompson et al. 2013). Like the earlier study (Swartout et al. 2015b), four groups were identified using

latent growth mixture modeling. The vast majority of college men (71%) were classified as engaging in low/no levels of SV perpetration. Roughly one in ten men was classified as perpetrating increasing (8%), decreasing (12%), or high (9%) levels of SV. Analyses of the same dataset used in the 2015 study focused specifically on rape (Swartout et al. 2015a). Described as putting one's penis or fingers into a woman's vagina or anus without her consent, the researchers identified three different trajectories of male college rape behavior using latent class growth analysis: low or time-limited (93%), decreasing (5%) and increasing (2%). Taken together, these findings show that most men never perpetrate; some perpetrate less over time, some perpetrate more over time, and some are consistent in their behavior. All studies discussed above examined profiles among men so, differences by sex could not be examined. None reported how these groups varied by other demographic characteristics, such as age, nor the sex of the victims.

While these reflect significant contributions, gaps in the literature remain. Little is known about how specific behaviors (e.g., sexual assault, attempted rape) may or may not cluster together. Moreover, research suggests that SV most often emerges in adolescence (White and Smith 2009; Swartout et al. 2015b; Abbey and McAuslan 2004; Maxwell et al. 2003). This is most frequently supported by retrospective reports gathered in young adulthood. Such findings have the potential to overinflate what would be found in prospective longitudinal research. Furthermore, sexual harassment is rarely included in the study of SV perpetration, even though it is included in the CDC's definition of SV (CDC 2018b). Additionally, few SV perpetration studies include perpetrators who are female. Finally, a national perspective could increase the generalizability of findings to young people living across the USA.

We use data from Growing up with Media (GuwM), a longitudinal survey conducted in the USA to address these research gaps. The survey asked questions about SV, including sexual harassment, by both boys and girls since adolescence. First, what is the extent of heterogeneity in the six SV indicators? Second, to what degree does this clustering of SV perpetrating behaviors replicate across waves? Third, to what extent does race/ethnicity, sex, and age characterize these different groups of SV perpetrating behaviors? Fourth, what is the degree of stability and instability in group membership between waves 4 and 7?

## Methods

GuwM was designed to study the emergence of SV in adolescence. The survey protocol was reviewed and approved by the Centers for Disease Control and Prevention Institutional Review Board (IRB) for waves 1–3, by Chesapeake IRB for waves 4–7, and now by Advarra IRB. Parents provided informed consent for their participation and permission for their child's participation, and youth provided informed assent.

### Study Design

In 2006, 1,586 child-caregiver pairs were recruited through an email sent to randomly identified adult Harris Poll OnLine (HPOL) panel members who reported a child living in their household. HPOL was the most extensive online panel at the time of recruitment and included four million members. The panel was recruited through online advertising,

advertising at conferences and events, and referrals. The sample was relatively evenly split by region: 23% were from the Northwest, 25% the Midwest, 32% the South, and 21% the West.

Eligible parents or adult caregivers were equally or more knowledgeable about the youth's daily activities. Eligible youth participants were 10–15 years old, read English, lived in the household at least 50% of the time, and had used the Internet at least once in the last 6 months. Recruitment was balanced on youth age and sex; once the demographic bin was filled (e.g., for 10–12-year-old girls), subsequent youth who met those criteria were marked ineligible. Youth were surveyed again approximately 12 and 24 months subsequently (i.e., waves 2 and 3).

Youth were surveyed in 2006 (wave 1), 2007–2008 (wave 2), 2008 (wave 3), 2010–2011 (wave 4), 2011–2012 (wave 5), 2012–2013 (wave 6), and 2016 (wave 7). On average, participants were 16.7 years old in wave 4 (range: 13–20), 17.7 years old in wave 5 (range: 14–21), 18.9 years old in wave 6 (range: 15–22), and 22.1 years old in wave 7 (range: 19–25). Age ranges differed from previously published research using the same dataset due to subsequent data cleaning. Because a more extensive battery of SV questions was added at wave 4, we examine data from wave 4 onward.

The wave 1 survey response rate (31%) is consistent with well-conducted surveys using online panels at the time of baseline recruitment (Kaplowitz et al. 2004). To maximize data coverage, respondents were invited to take part in subsequent waves irrespective of their participation at previous waves. Response rates in waves 4–7 varied between 49% (wave 7) and 61% (wave 6).

## Measures

### Sexual Violence Perpetration Indicators

Per the Centers for Disease Control definition of sexual violence (CDC 2018b), we included a broad range of sexual behaviors. *Sexual harassment* perpetration was introduced with the following transition: "Next are some questions about things you may have done to someone else. Think about things you have done to anyone, including people you have dated, friends, a friend of a friend, or someone you did not really know. These things can happen in-person, on the Internet, and on cell phones or text messaging. It can happen anywhere, like at school, at home, or in other places you hang out. In the past 12 months, how often have you done the following things to someone else?" The 9-item scale was adapted from items from the Sexual Experiences Survey (Koss and Gaines 1993; Koss et al. 1987) and the AAUW survey on sexual harassment (American Association of University Women Educational Foundation 2001). An example item reads: "Spreading sexual rumors or writing sexual messages about someone in a public place such as the bathroom walls, in locker rooms, etc." The scale was adequately reliable (omega = 0.97, bootstrap corrected [BC] 95% CI [.94,.99]; McNeish 2018).

Based upon questions developed for the Youth Internet Safety Surveys (Finkelhor et al. 2001), *online unwanted sexual behaviors* were indicated if teens reported (1) Trying to get someone to talk about sex when they did not want to, (2) Asking someone for

sexual information about themselves when they did not want to, or (3) Asking anyone to do something sexual online when that person did not want to. This scale was reliable (omega=0.94, bootstrap corrected [BC] 95% CI [.86, .98]).

In both cases, a respondent was scored as having engaged in that behavior, respectively, if any level of perpetration was reported for any one item.

*Sexual assault* was measured by asking participants if "you kissed, touched, or done anything sexual with another person when you think they did not want you to." A similarly worded item has been used in the Adolescent Sexual Experiences Survey (Young et al. 2009). *Attempted rape* was measured by querying whether youth had "tried, but was not able, to make someone have sex with me when I knew they did not want to?" *Rape* was measured by whether youth had "made someone have sex with me when I knew they did not want to?" *Coercive sex* was indicated for those who said they had "gotten someone to give in to sex with me when I knew they did not want to." These measures were developed for children and thus used developmentally appropriate language (e.g., sex instead of sexual intercourse). Lack of consent, described as "I knew they did not want to," is similar to "against their will," which has been used with adults (Hoertel et al. 2012). They have been used in several previous SV analyses (Ybarra and Langhinrichsen-Rohling 2019; Ybarra and Mitchell 2013; Ybarra and Thompson 2018).

For each of the six sexual violence perpetration types, we created a binary indicator for which a score of "1" indicates that one or more of the type-specific variables were endorsed.

**Sociodemographic Information—**Caregivers reported the child's sex and age, and youth reported their race and Hispanic ethnicity (yes/no). At wave 4, the sample consisted predominantly of White (71.6%) and Black/African American (13.1%) youth. Representation by other races was as follows: Asian: 1.4%; Native Hawaiian: 0.6%; Native American: 1.3%; mixed: 7.9%; other: 3%. As such, race was dichotomized as White versus all other. Across the four time points, 6.3% to 18.1% identified with belonging to a sexual minority group.

## Data Analysis

Mplus, version 8.4, was used for analyses (Muthén and Muthén 1998–2017), and models were estimated using the MLR estimator. We used 500 random starts, of which 100 were carried forward for optimization.

To assess the *extent of heterogeneity in the six SV indicators*, latent class analysis (LCA) was conducted (available online: see Supplementary Figure 1 for a path diagram of the LCA model). LCA uses the joint distribution of observed responses across all individuals on a set of items (i.e., types of SV) to characterize an underlying categorical latent variable that subdivides the given population into a smaller number of groups using modal class assignment (Collins and Lanza 2010; Hagenaars & McCutcheon 2002; Kaplan 2008). Since the number of profiles is unknown apriori, statistical comparisons of model fit, based primarily on the log-likelihood value, are used to compare models with an increasing number of groups. The Vuong-Lo-Mendell-Rubin test (Lo et al. 2001) analytically

approximates the LRT distribution when comparing a (*k*-1)-class model (the null model) with a *k*-class model (the alternative, less restrictive model). A statistically significant *p*-value suggests that the (*k*-1)-class model can be rejected in favor of the *k*-class model at the standard significance level. In addition to these tests, likelihood-based information indices, such as the Bayesian Information Criterion, or BIC (Schwarz 1978), are used in model selection. This index and similar ones (e.g., sample-size adjusted BIC, consistent Akaike Information Criterion, and the Approximate Weight of Evidence Criterion) are computed as a function of the log-likelihood, with a penalty for model complexity (e.g., the number of estimated parameters). In addition to these statistical considerations, substantive interpretability, profile frequency, and uniqueness of profiles are considered in identifying the "optimal" model.

To investigate the second research question, *the degree to which the SV perpetrating behavior groups replicates across waves*, we utilized multiple group analysis to compare class means as well as class-specific thresholds. Specifically, we estimated the optimal latent class model for each wave simultaneously and compared results across waves. We then compared the degree of invariance of class means and item thresholds across waves via likelihood ratio as well as Wald tests. We corrected conventional significance to account for repeated significance testing (Sidak, 1967). The overall alpha of .001 for each test was lowered to 1.19E-5.

To answer the third research question, *the extent to which race/ethnicity, sex, and age characterize these different groups of SV perpetrating behaviors*, we used the 3-step approach that was originally developed by Vermunt (2010). Briefly, this approach (Asparouhov & Muthén 2014) involved estimating the latent class model (Step 1), using modal class assignment based on estimated class probabilities (Step 2), and relating auxiliary variables to the modal class variable using multinomial logistic regression, while accounting for probabilities of class membership uncertainty (Step 3).

To examine the degree of stability and instability in group membership between waves four and seven, Latent Transition Analysis (Collins and Lanza 2010) was used. LTA is a longitudinal extension of LCA and identifies movement between groups over time.

### Conceptual Overlap of SV Perpetration Variables

Because there is a conceptual overlap in the definitions of sexual assault (e.g., unwanted sexual touching) and rape, attempted rape, and coercive sex, we also examined responses across these multiple perpetration types to explore whether there is evidence that youth may be endorsing multiple types when considering one event (see Supplementary Table 1).

### Missing Data and Other Statistical Consideration

Of the 1,129 youth who participated in at least one wave of data collection, half (50.5%) participated in all four waves of data collection. To assess evidence for systematic attrition, we estimated the log odds of wave participation predicted by being sex and race. Results suggested that the log odds of participating in a particular wave were slightly higher for females, ranging from 1.01 to 1.22 depending on wave; and for White youth, ranging from

1.06 to 1.23, by wave, compared to males and non-White youth, respectively. Neither were statistically significant.

Item-level missing data were present for both the wave-specific and the longitudinal analysis. Item-level missingness was about 2% at each wave: wave 4: 2.2%; wave 5: 2.9%; wave 6: 1.9%; and wave 7: 2.3%. For the LTA analyses, we included every individual who participated in either or both waves 4 and 7. The covariance coverage for the 12 indicators (i.e., six in each wave) ranged from 57.5 to 83%. Both sources of missingness were addressed using Full Information Maximum Likelihood (Muthén and Shedden 1999).

Except for the wave-specific characteristics (see Table 1) and the class enumeration (see Table 2), remaining results, including group profiles, impact of covariates, and invariance testing used the multiple group model, thereby maximizing sample size (n=1129).

We accounted for the complex sampling design and non-response overtime by applying appropriate sampling weights in all analyses (Schonlau et al. 2004; Berrens et al. 2003).

## Results

Demographic characteristics can be found in Table 1. Between 10 and 16% of youth reported sexual harassment perpetration across waves. Between 1 and 8% reported perpetrating online unwanted sexual experiences, sexual assault, coercive sex, and attempted rape, respectively. Rape was reported by 1–2% of youth across waves. Between 82 and 85% did not report any type of SV perpetration, based upon wave.

### How different SV perpetration behaviors cluster together

We estimated exploratory LCA models in each wave, examining one-, two-, three-, and four-group solutions. Except for wave 4, fit indices (e.g., BIC) pointed to a two-group solution. Since a large portion of youth did not engage in any SV perpetration (i.e., there was a preponderance of zeros (Kreuter and Muthén 2007), we additionally estimated a semi-confirmatory 2+1 model, in which the item thresholds in the no perpetration group were fixed at a logit of 15, indicating an item probability of 0. Across the four waves, this model outperformed the exploratory model with two groups and thus was selected as the final unconditional model (see Table 2).

Across the four waves, most participants were classified as being in the “Non-perpetrators” group, with prevalence rates ranging from 69% (n = 775) in wave 7 to 81% (n = 912) in wave 6. The second largest group, “Sexual harassment,” consisted of participants who primarily engaged in sexual harassment but not necessarily online sexual harassment. Prevalence rates ranged from 17% (n = 191) in wave 6 to 29% (n = 327) in wave 7. Notably, this group became larger in wave 7, the last wave. The prevalence rates in the smallest group, “multiple perpetration,” ranged from 1% (n = 12) in wave 5 to 3% (n = 29) in wave 4. This group consisted of participants who engaged in all types of SV perpetration (See Supplementary Table 2 for item probabilities).

### The Degree to Which the Perpetration Groups Replicate Across Waves

We conducted multiple group comparisons to assess the degree to which wave-specific groupings were replicated (Finch 2015; Kankaraš et al. 2010). In the first comparison, an omnibus test was performed, whereby the most unconstrained model (i.e., class variant item thresholds and group prevalence across waves) was compared to the most constrained model (i.e., wave invariant item threshold and group prevalence). This comparison yielded a significant likelihood ratio test ($\chi^2$ = 316.26, df = 42, $p$<.001), indicating that at minimum, item thresholds or group prevalences varied significantly across waves. Two additional comparisons indicated that both one or more group prevalences ($\chi^2$ = 20.85, df = 6, p=0.002) and item thresholds ($\chi^2$ = 277.57, df = 36, $p$<.001) differed across waves (see Supplementary Table 3). To further pinpoint differences, we assessed 84 Parameter-level comparisons (i.e., 12 group means and 72 item thresholds), of which only 6 (6%) reached significance; none remained significant after applying the multiple testing correction (see Supplementary Table 4).

### Differences in Groups by Demographic Characteristics

Compared to youth in the non-perpetrator group, females had 72% lower odds than males (OR = 0.28, p<.0001) to be in the multiple perpetration group, and 45% lower odds (OR = 0.55, p=.007) to be in the sexual harassment group at wave 4 (see Table 3). Sex differences were also noted in waves 5 and 7. Additionally, compared to non-White youth, the odds of White youth were 79% lower (OR = 0.21, $p$<.001) to be in the sexual harassment and 78% lower (OR=.22, p<.001) to be in the non-perpetration group versus being in the multiple perpetration group at wave 4. Similar findings were noted at wave 7. At wave 6, White youth were significantly less likely than non-White youth to be in the multiple perpetration or no perpetration group compared to being in the sexual harassment group. Finally, in wave 4, with each additional year in age, participants were 1.4 times less likely to be in the no sexual harassment group compared to the multiple types group (OR=0.708, p=.009)

### The Extent to Which Youth Stay in Their Perpetration Group over Time

As shown in Table 4, most youth who reported perpetrating a given behavior persisted in that behavior: 60%, 13 of 22 youth, who were classified in the multiple perpetration group at wave 4 were also classified in the multiple perpetration group at wave 7. A similar rate of persistence over time was noted for those classified in the sexual harassment group (60%; 122 of 207 youth; note these percentages vary from Table 4 because they use a different denominator). A higher percentage of persistence was noted for youth who were classified in the no perpetration group at both waves 4 and 7 (72%; 582 of 810 youth). De-escalation over time was somewhat common: One in five youth (20%; 5 out of 22 youth) transitioned from the multiple perpetration group into the sexual harassment group, and a similar percentage (20%; 4 of 22 youth) transitioned from sexual harassment to no perpetration group over time. Roughly one in three youth (35%; 73 of 207 youth) transitioned from the sexual harassment to the no perpetration group. Escalation was least common: One in four (26%; 213 of 810 youth) who were in the no perpetration group at wave 4 transitioned to the sexual harassment group, and one in fifty (2%; 15 of 810) transitioned to the multiple perpetration

group at wave 7. One in 20 (5%; 11 of 207 youth) transitioned from the sexual harassment group at wave 4 to the multiple perpetration group at wave 7.

### Potential Definitional Overlap

As shown in the online Supplemental Table 4, 48% of those who reported perpetrating sexual assault also reported perpetrating rape; 43% reported perpetrating both sexual assault and coercive sex, and 62% reported perpetrating both sexual assault and attempted rape perpetration. In addition, 6 of the 21 youth who reported perpetrating sexual assault did not report perpetrating of the other three forms of SV. Given the variation in patterning, there does not appear to be sufficient evidence that youth are responding “yes” to multiple types of perpetration when referring to a single incident.

## Discussion

Data from over 1,100 13–25 year olds from across the USA suggest that there are three different groups of youth based upon their SV perpetration behavior: youth engaging in no SV perpetration, youth engaging primarily in sexual harassment, and youth engaging in multiple perpetration types. As with other studies (Koss et al. 1987; Thompson et al. 2013; Swartout et al. 2015b), non-perpetrators are the largest group of youth. A clinically important percentage of youth is in the sexual harassment group, however. Identifying this group is a unique contribution of this study. It is debatable whether this means that sexual harassment is a more significant adolescent health issue than other forms of SV that have been consistently linked to severe sequelae for victims (Basile and Smith 2011; Bonomi et al. 2013; Campbell and MacPhail 2002; Choi et al. 2017; McFarlane et al. 2005; Weaver 2009; Zinzow et al. 2010; Jina and Thomas 2013; Smith et al. 2017). It does support the need for simultaneously exploring a full spectrum of SV behaviors (CDC 2018b), including sexual harassment, in research that endeavors to understand the full scope of SV.

The percentage of youth in the multiple perpetration group varied from 1–3% across waves. The identification of this small group of perpetrators is congruent with the vast body of knowledge on delinquent behavior, which finds that most antisocial behaviors are committed by a relatively small number of individuals (Vaughn et al. 2011). From an epidemiological perspective, it is essential to document a parallel trend for SV perpetration.

Contrary to previous hypotheses (Ybarra and Thompson 2018), sexual harassment did not appear to be a ‘gateway’ into more severe forms of SV perpetration for the majority of youth. Instead, the opposite may be true. Sexual harassment may be a gateway for those in the multiple perpetration group to de-escalate their SV behavior in some way. It also is notable that two in three youth who were in the sexual harassment group transitioned to no perpetration over time. This suggests lability in SV perpetration behavior that could be better addressed in interventions.

Notably, three in five youth who reported engaging in multiple perpetration types persisted in this behavior over time, as did three in five youth engaging in sexual harassment. Previous research on typologies and pathways to SV perpetration among adolescents- including victim age, victim-perpetrator relationship, situational and circumstantial dynamics, and the

nature of the offending behaviors has linked these characteristics to different subtypes and developmental trajectories among adolescents who perpetrate sexually (Cale et al. 2016; Fanniff and Kolko 2012; Hunter et al. 2003; Lussier et al. 2012). It may be that variables specific to the victims targeted by SV perpetrators may further illuminate important differences between the three identified groups and their likelihood of persistence versus desistence over time. Future research should examine this as well as how the psychological, developmental, peer, family, and other characteristics of perpetrators contextualize the SV groups, and how their compositions change over time.

Another significant contribution of the current study is the finding that unwanted online sexual behaviors appear to be distinct from sexual harassment, which can be expressed through any mode, including the Internet. Indeed, few youth in the sexual harassment group also engaged in unwanted sexual behaviors online. It seems that asking about behaviors online versus behaviors expressed anywhere identifies different groups of youth, even if the behaviors are conceptually overlapping. It may also be that an essential pathway to querying and identifying behaviors that represent sexual offense is to first query behaviors that tend to have less social stigma, such as acting out sexually online. Future research might examine the relative sensitivity and specificity of a screener using the current behaviors to identify youth in need of intervention.

Findings suggest that White youth are more likely than non-White youth to be engaging in multiple perpetration compared to sexual harassment as well as no perpetration. These data do not support an assumption, based upon the over-representation of Black/African American and Hispanic youth in the adjudicated population (Greenfield 1997), that minority race/ethnicity youth are more likely to perpetrate SV. This suggests that prevention researchers may need to assess and perhaps challenge assumptions about sexual perpetration as an ill conscripted particularly to Black and Brown people. It also provides further support that the US justice system could benefit from structural change that leads to greater racial equity. Future research, particularly that which can examine race at a more granular level, could help illuminate how perpetration may indeed vary by race in community-based samples.

Findings should be interpreted within the study's limitations. Measuring SV perpetration behaviorally (e.g., unwanted kissing, touching) and without labels (e.g., rape) is a strength. However, the questions may have been vulnerable to interpretation as a result. Moreover, given the sensitivity of the topic, observed self-reported perpetration rates might be underestimates of the true prevalence of SV perpetration, as tends to be the case with respect to under-reporting of SV experiences. As an offsetting strength, comparisons of prevalence rates observed in the current dataset are higher than lifetime rates reported in a nationally representative survey of adults who were interviewed face-to-face (Hoertel et al. 2012), suggesting that youth may have felt more comfortable to disclose in the current study.

While national, the sample may not be fully representative as it was recruited within an online panel. To increase the generalizability and minimize self-selection bias, adults were randomly invited to complete the screener, and eligibility was determined before describing the study's purpose so as not to attract participants with particular experiences.

Finally, because few youth were classified in the multiple perpetration group, power to detect differences by demographic characteristics was limited.

### Implications for Prevention Research and Intervention

Findings do not support hypotheses that adolescents and emerging adults who perpetrate sexually are a homogenous group nor that SV perpetration is necessarily persistent for all youth. Indeed, two in five youth in the multiple perpetration group transition to sexual harassment or non-perpetration, and one in three of those in the sexual harassment group transition to the non-perpetration group, suggesting that many youth de-escalate their SV perpetration over time. At the same time, more than one in four youth who were in the non-perpetration group transitioned to the sexual harassment and multiple perpetration group. This heterogeneity in behavior and trends over time suggests the need for a range of universal and targeted interventions that can address the diversity of perpetration behaviors and the risk factors associated with such behaviors. These include various approaches that include brief, psycho-educational programs, general delinquency-focused interventions, and sex offense-specific services. Decision-making about the appropriate strategies for a given person should be assessment-driven. For example, in the absence of additional SV perpetration behaviors or other delinquent conduct, youth in the sexual harassment group may benefit from minimal services that address consent and healthy boundaries. In contrast, individuals whose perpetration patterns are more persistent, versatile, and escalating are more likely to benefit from higher dosage interventions to address risk factors at the individual, family, and peer levels.

The higher prevalence rate of sexual harassment may reflect youth views that it is more socially acceptable and wholly separate from other forms of SV that carry with them widely publicized stigma and negative connotations. If true, perhaps there are fewer inhibitions around self-report. This may be a benefit from an intervention perspective, in that it may be easier to identify those who need targeted intervention programming for sexual harassment. Given the potential pervasive acceptance of these behaviors, however, universal prevention programming also is warranted. To this end, school-wide/building-level interventions such as *Shifting Boundaries* have been effective in decreasing SV perpetration at the outset and should be more widely implemented (Taylor et al. 2015; Taylor et al. 2013). In tertiary school settings, however, efforts are needed to prevent SV by addressing peer, community, and environmental influences that contribute to perpetration (DeGue et al. 2014; McMahon et al. 2018). Creating protective environments is recognized as pivotal to preventing SV perpetration, although effective strategies remain quite limited (Basile et al. 2016; DeGue et al. 2014).

## Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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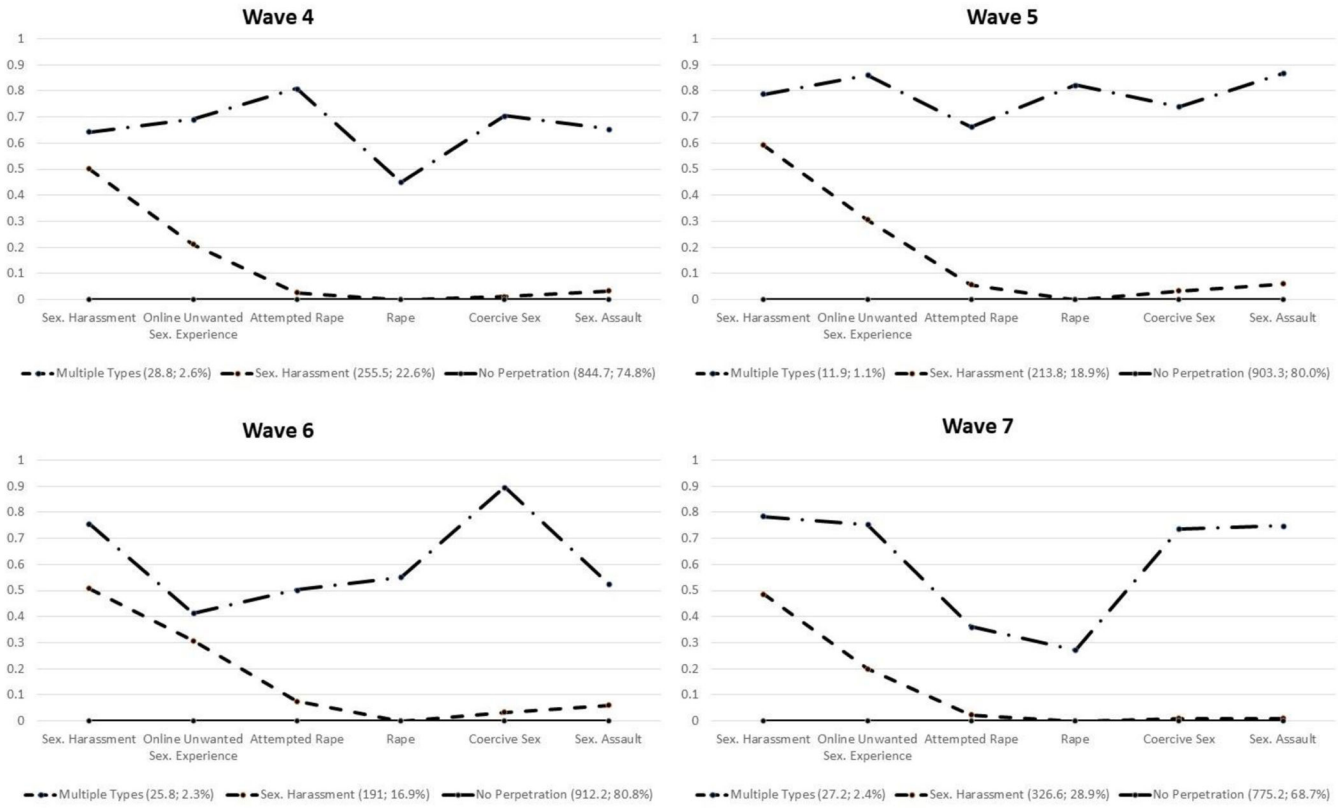


**1 .Fig.**

Latent class profiles (n = 1129; profile 1: multiple types; profile 2: sexual harassment; profile 3: no perpetration)

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**Table 1:**

Prevalence of sexual violence perpetration and sociodemographic characteristics by cohort in the Growing up with Media study

| Youth characteristics | wave 4 (*n* = 870) | | | wave 5 (*n* = 927) | | | wave 6 (*n* = 955) | | | wave 7 (*n* = 767) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **All youth** | **Male** | **Female** | **All youth** | **Male** | **Female** | **All youth** | **Male** | **Female** | **All youth** | **Male** | **Female** |
| Sexual violence perpetration | | | | | | | | | | | | |
| Sexual Harassment | 12.9% | 15.6% | 10.2%* | 11.9% | 14.7% | 9.2%* | 10.1% | 12.4% | 7.9%* | 15.9% | 19.8% | 12.4%** |
| Online unwanted sexual experience | 6.5% | 9.1% | 3.9%** | 6.6% | 7.8% | 5.5% | 3.1% | 4.0% | 2.3% | 7.6% | 9.9% | 5.5%* |
| Sexual Assault | 2.5% | 2.7% | 2.3% | 2.0% | 2.6% | 1.5% | 2.2% | 2.8% | 1.6% | 2.1% | 2.7% | 1.5%** |
| Coercive Sex | 2.2% | 3.0% | 1.4% | 1.4% | 1.7% | 1.1% | 2.8% | 3.8% | 1.9% | 3.5% | 4.7% | 2.5% |
| Attempted Rape | 2.6% | 3.4% | 1.8% | 1.7% | 3.3% | 0.2*** | 2.4% | 3.6% | 1.2%* | 2.6% | 4.9% | 0.5*** |
| Rape | 1.3% | 1.6% | 0.9% | 0.9% | 1.3% | 0.4% | 1.2% | 1.7% | 0.8% | 1.0% | 1.4% | 0.7% |
| No perpetration | 83.3% | 80% | 86.6% | 84.9% | 81.8% | 87.9% | 85.7% | 82.8% | 88.6% | 80.3% | 76.0% | 84.3%* |
| Demographic characteristics | | | | | | | | | | | | |
| Female Sex | 49.8% | | | 50.1% | | | 50.5% | | | 52.1% | | |
| White race | 73.9% | | | 74.6% | | | 75.0% | | | 75.2% | | |
| Hispanic ethnicity | 12.6% | | | 12.0% | | | 13.8% | | | 13.0% | | |
| Gender diverse | 1.1% | | | 1.1% | | | 0.8% | | | 1.0% | | |
| Sexual minority (e.g., gay/lesbian) | 6.3% | | | 7.8% | | | 7.3% | | | 18.1% | | |
| Age (M: SD) | 16.7 (1.7) | | | 17.7 (1.8) | | | 18.9 (1.9) | | | 22.1 (1.8) | | |
| Number of waves participated in: | | | | | | | | | | | | |
| 1 wave | 124 (10.8%) | | | | | | | | | | | |
| 2 waves | 182 (15.9%) | | | | | | | | | | | |
| 3 waves | 260 (22.7%) | | | | | | | | | | | |
| 4 waves | 578 (50.5%) | | | | | | | | | | | |

* $p<.05$;

** $p<.01$;

*** $p<.001$

*Notes:* Gender diverse youth include those who identify as transgender, non-binary, and any other identity other than exclusively cisgender. Data are unweighted and differ from rates reported by (Ybarra and Thompson 2018), which were lifetime rates.

**Table 2:**

Model fit for latent class models by wave

| wave | K | LL[a] | BIC[b] | SABIC[c] | CAIC[d] | AWE[e] | Entropy | r.f.[f] | LMR[g] |
|---|---|---|---|---|---|---|---|---|---|
| wave 4 n = 870 | 1 | −894.87 | 1830.35 | 1811.30 | 1813.38 | 1816.38 | 1 | 100% | na |
| | 2 | −724.10 | 1536.19 | 1494.91 | 1499.41 | 1505.91 | 0.932 | 6.4% | <.05 |
| | 3 | −684.28 | 1503.93 | **1440.41** | 1447.35 | 1457.35 | 0.948 | 2.3% | **<.05** |
| | 4 | −674.42 | 1531.58 | 1445.84 | 1455.21 | 1468.71 | 0.959 | 0.4% | ns |
| | 2+1 | −687.58 | **1403.16** | 1469.92 | **1430.31** | **1437.31** | 0.808 | 2.3% | na |
| wave 5 n = 927 | 1 | −815.47 | 1671.92 | 1652.87 | 1654.74 | 1657.74 | 1 | 100% | na |
| | 2 | −692.56 | 1473.93 | 1432.65 | 1436.69 | 1443.19 | 0.918 | 6.6% | **<.001** |
| | 3 | −672.08 | 1480.79 | 1417.27 | 1423.50 | 1433.50 | 0.912 | 0.6% | ns |
| | 4 | −663.64 | 1511.74 | 1425.99 | 1434.39 | 1447.89 | 0.973 | 0.7% | ns |
| | 2+1 | −674.87 | **1445.40** | **1400.93** | **1405.28** | **1412.28** | .825 | .9% | na |
| wave 6 n = 955 | 1 | −1034.63 | 2110.42 | 2091.36 | 2093.14 | 2096.14 | 1 | 100% | na |
| | 2 | −827.46 | 1744.11 | 1702.83 | 1706.66 | 1713.16 | 0.963 | 5.1% | **<.01** |
| | 3 | −811.15 | 1759.54 | 1696.02 | 1701.90 | 1711.90 | 0.966 | 3.0% | ns |
| | 4 | −802.51 | 1790.28 | 1704.53 | 1712.48 | 1725.98 | 0.978 | 1.0% | ns |
| | 2+1 | −820.32 | **1736.71** | **1692.25** | **1696.36** | **1703.36** | 0.594 | 4.1% | na |
| wave 7 n = 767 | 1 | −778.96 | 1597.78 | 1578.73 | 1581.23 | 1584.23 | 1 | 100% | na |
| | 2 | −667.79 | 1421.94 | 1380.66 | 1386.08 | 1392.58 | 0.945 | 5.0% | ns |
| | 3 | −650.40 | 1433.65 | 1370.14 | 1378.50 | 1388.50 | 0.979 | 0.5% | ns |
| | 4 | −642.59 | 1464.53 | 1378.80 | 1390.07 | 1403.57 | 0.980 | 0.5% | ns |
| | 2+1 | −661.275 | **1415.55** | **1371.09** | **1376.94** | **1383.94** | 0.589 | 3.2% | na |

*Notes:*

[a] Log Likelihood (Number of Parameters)

[b] Bayesian Information Criterion

[c] Sample-size adjusted BIC

[d] Consistent Akaike Information Criterion

[e] Approximate Weight of Evidence Criterion

[f] Smallest class: relative frequency;

[g] Lo-Mendell-Rubin Likelihood Ratio Test; Number of parameters estimated: K=1: 6; K=2: 13; K=3: 20; K=4: 27; K=2+1: 14

**Table 3:**

Adjusted odds ratios for covariate impact on latent class membership

| wave | Demographic characteristic | Multiple perpetration vs. no perpetration | Sexual harassment vs. no perpetration | Multiple perpetration vs. sexual harassment | No perpetration vs. sexual harassment | Sexual harassment vs. multiple perpetration | No perpetration vs. multiple perpetration |
|---|---|---|---|---|---|---|---|
| wave 4 | Female | .280*** | .551** | .508 | 1.816 | 1.969 | 3.574 |
| | White | 4.526 | .935 | 4.840 | 1.069 | .207*** | .221*** |
| | Age | 1.413 | 1.117 | 1.265 | .895 | .790 | .708** |
| wave 5 | Female | .316 | .550 | .575 | 1.820 | 1.739 | 3.165 |
| | White | 1.037 | .937 | 1.107 | 1.068 | .904 | .965 |
| | Age | 1.301 | 1.130 | 1.151 | .885 | .869 | .769 |
| wave 6 | Female | .932 | .549 | 1.689 | 1.821 | .589 | 1.073 |
| | White | .638 | 2.133 | .299** | .469* | 3.343 | 1.567 |
| | Age | .984 | 1.116 | .882 | .896 | 1.134 | 1.016 |
| wave 7 | Female | 0.116*** | 0.711 | 0.163*** | 1.407 | 6.127 | 8.622 |
| | White | 20.015 | 1.613 | 12.407 | .620 | 0.081*** | 0.050*** |
| | Age | .923 | .807 | 1.145 | 1.240 | 0.874 | 1.083 |

* *p*<.05;

** p<.01;

*** p<.001

Note: each covariate coefficient is adjusted for the impact of the other two covariates

**Table 4:**

Results of the latent transition analysis linking wave 4 and wave 7

| | | | wave 7 | |
|---|---|---|---|---|
| | | **Multiple perpetration (n=39.3; 3.8%)** | **Sex. Harassment (n=340.1; 32.7%)** | **No Perpetration (n=659.6; 63.5%)** |
| wave 4 | Multiple perpetration (n=22; 2.1% | .598 (n=13.1) | .204 (n=4.5) | .197 (n=4.3) |
| | Sex. Harassment (n=206.8; 19.9%) | .054 (n=11.2) | .591 (n=122.3) | .354 (n=73.3) |
| | No perpetration (n=810.2; 78%) | .018 (n=15) | .263 (n=213.3) | .718 (n=582) |