

Chronic Generalized Harassment During College: Influences on Alcohol and Drug Use

Meredith McGinley¹ · Kathleen M. Rospenda¹ · Li Liu² · Judith A. Richman¹

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Abstract The experience of chronic generalized harassment from others can have a deleterious impact on individuals over time. Specifically, coping resources may be taxed, resulting in the use of avoidant coping strategies such as substance use. However, little is known about the experience of chronic generalized harassment (e.g., verbal hostility, manipulation by others, exclusion from important events) and its impact on substance use in collegiate populations. In the current study, we examined the latent growth of generalized harassment across the transition from high school to college, whether this growth was heterogeneous, and the relationships between latent generalized harassment classifications and substance use. Incoming freshmen students ($N = 2890$; 58 % female; 53 % white) at eight colleges in Illinois completed a web survey at five points: fall 2011 (baseline), spring 2012 (T1), fall 2012 (T2), fall 2013 (T3) and fall 2014 (T4). Students were required to be at least 18 years old at baseline, and were compensated with online gift certificates. Two-part latent class growth analysis was implemented in order to examine heterogeneous growth over time. The results supported a two-class solution (infrequent and chronic classes) for generalized harassment. Growth in harassment was characterized by a decrease from baseline through college entry, with a recovery in rates by T3. Members of the chronically harassed class had greater mean generalized harassment over time, and were less likely to report zero

instances of harassment experiences. As hypothesized, membership in the chronic class predicted future binge drinking, drinking to intoxication, problems due to alcohol use, and cigarette use, but not marijuana use. Future interventions should focus on providing college students with resources to help cope with distress stemming from persistent generalized harassment from peers, faculty, and other individuals in higher-education settings.

Keywords Alcohol use · Cigarette use · Marijuana use · Harassment · Trajectories · Coping

Introduction

For many emerging adults, the transition to college is characterized by increased experimentation with drugs and alcohol (Arnett 2005; Fromme et al. 2008). Heavy episodic (e.g., binge) drinking is a particular problem (Dawson et al. 2004; Johnston et al. 2002); research shows that about 20 % of male and 10 % of female first semester college freshman regularly consume 2–3 times the standard threshold for “binge” drinking (five drinks on one occasion for males and four for females; White et al. 2006), despite increased prevention efforts by colleges over the past decade. While most prevention efforts have been directed toward curbing alcohol use in college students, the use of other substances, including cigarettes and marijuana, also increases during the emerging adulthood period (Arnett 2005; White et al. 2005). Increased substance use during the college period is of concern, given that “many developmental trajectories become established and increasingly difficult to alter” during emerging adulthood (National Research Council and Institute of Medicine 1998, pp. 110–111). These factors make the early college years

✉ Meredith McGinley
meredithmcginley@gmail.com; mmcginley@psych.uic.edu

¹ Department of Psychiatry, University of Illinois at Chicago, 1601 W Taylor St., Chicago, IL, USA

² Department of Epidemiology and Biostatistics, University of Illinois at Chicago, 1603 W Taylor St., Chicago, IL, USA

an ideal point during which to target interventions once risk factors are known (White and Jackson 2005).

One risk factor linked to substance use that is less understood in a college-aged population is generalized harassment by others (e.g., peers, teachers) in their environment. While the development and impact of generalized harassment has been examined in working adults (and a similar construct, peer victimization, has been examined in youth), little is known regarding the nature and sequelae of generalized harassment throughout emerging adulthood (Cowie et al. 2013). The current study sought to more carefully examine (1) the longitudinal development of generalized harassment in a cohort of college students, (2) possible heterogeneity in this growth, as well as (3) the extent to which chronic harassment represents a risk factor for increased substance use over the initial years of college.

Definition, Prevalence and Theoretical Perspective

Definition

Generalized harassment in higher education can be defined as any negative interpersonal interaction that creates an intimidating, hostile, or offensive environment, and/or one that may affect the conditions placed on a student as they relate to his or her academic standing, but which is not based on legally protected categories, such as gender or race (Rospenda and Richman 2004). Generalized harassment conceptually overlaps with peer victimization, a frequently examined behavior in youth, defined broadly as harm caused by other peers (Finkelhor et al. 2012). Measures of peer victimization and generalized harassment often ask similar questions regarding victimization; both tap into overt physical and verbal victimization, as well as behaviors meant to damage relationships, such as spreading rumors or exclusion from group activities (e.g., Crick and Bigbee 1998; Buhs et al. 2010; see “Appendix”). We note that generalized harassment is conceptually distinct from other similar constructs, such as sexual harassment (a legally protected category; see Walsh and Magley 2014) and bullying victimization in youth (a specific form of peer victimization defined by “intentionality, repetition, and imbalance of power” of the acts/perpetrator–victim relationship; Vaillancourt et al. 2008, p. 486). We applied the above definitions of generalized harassment, peer victimization, and bullying in our literature review, though the original scholars may have chosen differing labels.

Prevalence

While no statistics are available regarding more broadly defined generalized harassment/peer victimization, bullying victimization rates have been examined. Although

adolescent school bullying is more prevalent (approximately 35 % of students report being victims), bullying victimization continues during the college years with 21–25 % reporting having been bullied by peers (Modecki et al. 2014; Chapell et al. 2004, 2006). Modecki et al. (2014) noted that prevalence rates in adolescent bullying were higher if measured as general peer victimization (but lower if the word “bully” was included). Thus, due to its more inclusive definition, college prevalence rates of generalized harassment could be higher than previous studies assessing bullying victimization.

Theoretical Perspective

College freshman face a number of stressors as they adjust to new routines, people, and environments (Arnett 2005; Sher et al. 1996). Additionally, emerging adults at this stage are actively exploring identity issues related to romantic relationships, religion, professions, and ideologies. While successfully achieving an identity is associated with a number of positive outcomes, frustrations stemming from upheavals, failures, rejections, and confusion related to identity exploration are stressors that this population often face (Arnett 2000, 2005). Thus, it may be likely that college students, already burdened by stressors faced in this new environment and period of exploration, are particularly susceptible to the effects of other stressors, such as generalized harassment (Sher et al. 1996). As a result, they may have problems adjusting to these new routines and roles. Adjustment problems are a symptom that environmental demands, in this case generalized harassment victimization, have exceeded an individual’s coping resources, a perspective that is consistent with stress and coping theory (Lazarus and Folkman 1984). When an individual is unable to end a stressor through coping efforts, they will often turn to maladaptive or avoidant forms of coping (Smith et al. 2003). One form of avoidant coping, which is also a major public health concern in college populations, includes problematic drinking and drug use (Rohde et al. 1990). Empirical research on undergraduate populations supports these notions. For example, recalled peer victimization has been associated with adjustment problems such as current depression and social anxiety (Dempsey and Storch 2008). Further, on days in which cognitive coping-related resources are depleted, college students are more likely to use alcohol after they encountered general mistreatment (i.e., harassment) from others (DeHart et al. 2014).

Given (1) the likely prevalence of generalized harassment victimization in this population, (2) the potential impact on problematic substance use outcomes, and (3) the likely increased susceptibility to the effects of generalized

harassment victimization, a closer examination of collegiate generalized harassment victimization is warranted. Thus, our primary goal was to identify how problematic substance use behaviors are affected by generalized harassment victimization in a collegiate population. Several scholars have called for interventions due to the negative substance use outcomes associated with peer victimization in youth (Faith et al. 2008); establishing similar links among victimization and substance use in college students would underscore opportunities for intervention in this population, already at risk to engage in problematic drinking and drug use.

Identified Gaps in the Current Literature

Generalized Harassment Across the College Transition

Researchers have yet to investigate how generalized harassment victimization experiences unfold over time in undergraduate students. Previous longitudinal investigations of peer victimization in youth have often noted declines in overall peer victimization following school transitions, most likely due to the realignment of peer relationships upon entering the new environment (e.g., Gage et al. 2014; Shell et al. 2014). It is unclear how generalized harassment victimization may be experienced, given that a school transition may offer a novel opportunity to create new peer relationships, but may also introduce new (or amplify previous) stressors during a time of personal upheaval in their environment and identities (Arnett 2000, 2005; Sher et al. 1996). The current study adds to the literature by examining longitudinal trends in generalized harassment during the transition from high school to college.

Generalized Harassment and Substance Use

As previously noted, learned ineffective or limited coping responses stemming from generalized harassment experiences are key vulnerability factors for substance use in response to stress. Research on young adolescents has demonstrated a link between peer victimization or generalized harassment and increased alcohol and drug use. Three separate studies examining the impact of peer victimization on early adolescents found that self-reported victimization significantly predicted self-reported alcohol, cigarette and marijuana use, even after controlling for prior use (Sullivan et al. 2006; Tharp-Taylor et al. 2009; Wormington et al. 2013; though Wormington et al. combined measures of peer and bullying victimization). Similar research on adult workers has found strong links among workplace generalized harassment and problematic drinking (e.g., Rospenda et al. 2000, 2008). McGinley et al. (2011) reported that chronic workplace harassment class

predicted problem drinking behaviors (binge drinking, escapist drinking, quantity of drinking) at the final year of assessment, controlling for prior drinking behaviors. Moreover, recalled peer victimization has also been linked to earlier onset of alcohol use and lifetime alcohol use in adults seeking clinical treatment for alcohol dependence (Potthast et al. 2014).

Few studies to date have examined the role of generalized harassment on alcohol use in college students. Using a daily diary design, DeHart et al. (2014) reported that students were more likely to consume alcohol or binge drink when they reported high levels of general mistreatment from others, as well as high ego-depletion (e.g., low mental energy, low ability to control urges). Using the first two waves of data in the current study, Rospenda et al. (2013) found that generalized harassment in the first 4 months of college was associated with increased alcohol consumption and problem drinking, beyond the effects of other stressors. While these studies have used shorter-term longitudinal designs, no studies have attempted to understand the long-term effects of generalized harassment. Moreover, no studies have closely examined other substance use (e.g., cigarette use, marijuana use) in response to generalized harassment experienced during college. Given that peer victimization has been consistently related to cigarette and marijuana use outcomes in youth (Sullivan et al. 2006; Tharp-Taylor et al. 2009; Wormington et al. 2013), studies are needed to understand whether similar relations exist in a collegiate population.

Chronic Generalized Harassment

Researchers have especially highlighted the need to identify *chronic* stressors over time. Experiencing stressors, such as generalized harassment, repeatedly over time can have consequences; they may contribute to physiological changes that affect sensitivity to stress and decrease emotional processing (i.e., via changes in gray matter; Ansell et al. 2012) and overall physical or mental health (i.e., via elevated levels of cortisol; Dickerson and Zoccola 2013), or contribute to cognitive changes such as the construal of harm or threat appraisals (Glomb and Cortina 2006). These mechanisms could ultimately place an individual in a position to less effectively cope with stressors, turning instead to avoidant approaches such as substance use (DeHart et al. 2014; Lazarus and Folkman 1984; Smith et al. 2003). Accordingly, negative substance use outcomes have been uniquely linked to participants who are chronically harassed. For example, in a study of adult workers, those who had self-reported experiencing generalized harassment in the workplace at two points in time (vs. no harassment) were at greater risk of reporting problems due to alcohol use (Rospenda et al. 2000). No effects were

found for those who only reported harassment at the first time point (harassment in remission) or the second time point (onset of harassment).

Indeed, there appears to be high stability in peer victimization or harassing experiences across settings; scholars have reported significant bivariate relations between these stressors across the lifespan (e.g., Juvonen et al. 2000). Further, studies implementing latent growth modeling techniques have also identified chronically victimized preschoolers (Barker et al. 2008) and elementary school students (Biggs et al. 2010), as well as chronically harassed adult workers (McGinley et al. 2011). For example, McGinley et al. (2011) reported two latent harassment groups that emerged over time: chronic and infrequent. Over the course of 10 years, the chronic group reported consistently higher mean workplace generalized harassment, though the frequency of harassment decreased over time for both groups. Yet, no studies have implemented this latent modeling technique to identify victims of chronic harassment as experienced by undergraduate students. The current study sought to assess *chronic* harassment experiences using advanced growth modeling techniques, and how this latent classification was linked to future substance use.

The Current Study

As several scholars have theorized and established links between generalized harassment/peer victimization and substance use with younger and older populations (e.g., McGinley et al. 2011; Tharp-Taylor et al. 2009), we hypothesized that experiencing increased levels of generalized harassment in college would predict future substance use and problems (binge drinking, drinking to intoxication, problems due to alcohol use, marijuana use, cigarette use). We believed these links would be positive and significant, even after controlling for previous substance use and bidirectional effects, given that college students are especially susceptible to stressors (Sher et al. 1996), thus placing them at risk for using avoidant coping strategies (e.g., DeHart et al. 2014; Smith et al. 2003). We also believed these effects would be over and above those of gender and race as found in other studies examining the effects of generalized harassment on substance use (e.g., McGinley et al. 2011; Rospenda et al. 2000). Typically, men have overall higher rates of substance use than women, and White students have reported overall higher levels of substance when compared to their non-White peers (Goldstein et al. 2007; O'Malley and Johnston 2002). Thus, we included these variables as control variables.

Given that *chronically* experienced stress especially has profound implications on coping and health (e.g., Glomb

and Cortina 2006), we investigated the links between chronic generalized harassment and substance use. Previous research has identified at least two latent trajectories of generalized harassment/peer victimization (e.g., Barker et al. 2008; Biggs et al. 2010; McGinley et al. 2011), with one trajectory labeled “chronic”. Thus, we expected to identify *at least* two trajectories in the growth of generalized harassment, with one class being characterized by chronically experienced generalized harassment. However, we had no a priori hypotheses regarding the exact number of generalized harassment latent trajectories we would identify. Instead we relied on model fit indices and predictive validity of the identified latent trajectory classes (see “Data Analysis Plan”).

We had no a priori hypotheses regarding the growth of generalized harassment over time, particularly within each trajectory. However, since prior research has indicated that bullying victimization rates are lower in college relative to high school (Chapell et al. 2004, 2006; Modecki et al. 2014), we anticipated that rates of generalized harassment would likewise decrease upon college entry. Further, as we had more than the minimum number of data points needed to identify quadratic trends (i.e., curvilinear growth), we tested this possibility. Again, we relied on growth model fit parameters to identify the model that best fit the data.

Method

Sampling and Data Collection

Study participants were recruited from a sample of 9100 incoming freshmen at eight colleges and universities in the Midwestern United States. Six schools provided us with a random sample of students, and two schools chose to allow us to sample all freshman students. Electronic and mail survey (for students for whom schools provided us with a postal address) invitations to complete a web survey were sent out at four points in time: at the very beginning of students' first year of college in the fall of 2011 (baseline), the spring of 2012 (T1) about 4 months after baseline, the beginning of fall 2012 (T2) about 4 months after T1, the beginning of fall 2013 (T3), about 12 months after T2, and the beginning of fall 2014 (T4), about 12 months after T3. Students were required to be at least 18 years old at baseline in order to complete the survey. Students were sent a \$25 Amazon gift certificate for completing the baseline survey, a \$30 certificate at each time point for completing the T1, T2, and T3 surveys, and a \$40 certificate for completing the T4 survey. The study was reviewed and approved by the IRB at the authors' institution, as well as the IRB at each school (although some schools deferred to the authors' institution and waived review). Informed

consent was obtained from all individual participants included in the study.

At baseline, 2984 students responded to the invitation. Data was excluded from analysis for various reasons, including age less than 18 at baseline ($n = 2$), age greater than 20 at baseline ($n = 72$), erratic responses to items ($n = 1$), and non-freshman status ($n = 1$). Additionally, $n = 9$ students did not report any school information needed to address possible clustering effects in the data, and an additional $n = 9$ students did not report generalized harassment at any of the four time points. A total of 2890 (58.3 % female) participants were retained in the final analysis of generalized harassment. Of those who reported information on ethnicity ($n = 63$ participants left this question blank), 54.0 % reported White, 8.2 % reported African American, 17.0 % reported Asian/Pacific Islander, 13.2 % reported Hispanic/Latino, and 7.6 % reported multiracial/other. Overall retention rates for subsequent time points were as follows: 71 % (T1), 72 % (T2), and 64 % (T3), and 66 % (T4). The use of full maximum likelihood (a modern missing data technique) allowed for the majority of the sample to be retained, however. Full maximum likelihood is less biased than traditional approaches to handling missing data (e.g., listwise deletion) and produces estimates for missing data based on known information (Enders 2006).

Additionally, due to an oversight in the data collection, age was not collected from every respondent at baseline, and age information was missing for 683 participants. Preliminary statistics revealed that those with missing age data were more likely to use cigarettes (baseline, T1) and marijuana (baseline, T4) (p 's < .05). Additionally, those with missing age data had higher mean binge drinking or drinking to intoxication (baseline) and problem drinking scores (baseline, T4) (p 's < .05). No pattern was found between final harassment classification or T4 harassment and missing age status. We accounted for these differences using a dummy variable representing missing age status in the final regression analyses.

Measures

Generalized Harassment

We used a modified version of the Generalized Workplace Harassment Questionnaire (GWHQ; 20 items; see “Appendix”) to assess generalized harassment at college. The GWHQ was developed based on input from a series of focus groups, including two groups of students, and is comprised of four factors: covert hostility (e.g., being excluded from important meetings or events, three items), verbal hostility (e.g., being yelled at, talked down to, seven items), manipulation (attempts at controlling the target's

behavior, e.g., through threats or bribes, four items), and physical aggression (e.g., pushed, hit, kicked, 1 item) (Richman et al. 1999; Rospenda and Richman 2004). We added items to tap more “passive” forms of harassment, such as failing to respond to requests for help, and items to measure experiences particularly relevant to a college population, such as (a) “cyber bullying”—e.g., through e-mail, text-messaging, or online sites such as Facebook or MySpace, (b) being the target of pranks or practical jokes that the target did not think were funny, (c) pressure from others to do something that the student didn't really want to do. Respondents rated each experience as to the frequency of occurrence (0 = “never,” 1 = “once,” or 2 = “more than once”) during the past 12 months (baseline, T3, T4) or past 4 months (T1, T2) of school (this scale was log transformed for the current analysis; see the “Data Analysis Plan”). Since the modified GWHQ has not been fully investigated with a college sample, we conducted a Confirmatory Factor Analysis (CFA) to validate its use in the current form. Using baseline items, this CFA revealed that all item loadings were significant, positive and large (loadings ranged from .63 to .79) in a one-factor model that fit the data well ($\chi^2(170) = 1791.61$, $p < .01$, CFI = .96, RMSEA = .06; full details are available from the first author). Additionally, coefficient alpha reliabilities ranged from .89 to .92 across all time points.

Binge Drinking and Drinking to Intoxication

We measured drinking using two separate items from Wilsnack et al. (1991), revised to measure drinking in the past 12 months (baseline, T3, T4) or 4 months (T1, T2) to reflect the length of time between time points. The first question, “About how often in the last XX months did you drink enough to feel drunk, that is, where drinking noticeably affected your thinking, talking, and behavior?” (drinking to intoxication) and “About how often in the last XX months did you have 5 or more drinks (males)/4 or more drinks (females) of any alcoholic beverage on the same occasion?” (binge drinking). Respondents indicated the extent of drinking on a 6 point scale, with “0” reflecting no binge/drinking to intoxication drinking, and “5” reflecting five times a week or more (this scale was log transformed for the current analysis; see the “Data Analysis Plan”).

Problem Drinking

Social problems, legal problems, problems at work or school (missing work, missing school, getting fired, getting bad grades, workplace injuries), health consequences/medical problems (vomiting, blackouts, hangovers, injuries/accidents, drinking despite health problems) resulting

from alcohol use were measured with the Rutgers Alcohol Problems Index (RAPI), a 23-item self-administered questionnaire for assessing problem drinking during adolescence. The RAPI is unidimensional and possesses good reliability (White and Labouvie 1989). Coefficient alpha reliabilities ranged from .91 to .92 across all time points. Respondents indicated how often in the last 12 months (baseline, T3, T4) or 4 months (T1, T2) they experienced problematic behaviors related to alcohol use (0 = never; 1 = 1–2 times; 2 = 3–5 times; 3 = 6–10 times; 4 = more than 10 times; this scale was log transformed for the current analysis; see the “Data Analysis Plan”).

Cigarette and Marijuana Use

Participants were asked to indicate whether or not they had ever used “cigarettes or other tobacco products” and “marijuana or hashish (pot, grass)” during their lifetime at baseline, in the last 4 months at T1 and T2, and in the last 12 months at T3 and T4. However, these response options at T3 and T4 were expanded from a binary (yes or no) response to a seven-point scale to capture more variability in responses (1 = never, 7 = every day). In order to increase comparability among all time points, T3 and T4 responses were recoded into a binary response (0 = never, 1 = any use). Thus, all cigarette and marijuana use measures were analyzed using a binary outcome. Table 2 indicates that these outcomes were positively skewed (i.e., a majority of the participants reported no cigarette or marijuana use across all time points).

Data Analysis Plan

Growth modeling for baseline, T1, T2, and T3 measures of generalized harassment was conducted in order to better establish causality among prior harassment and subsequent (i.e., T4) substance use. Prior to conducting this analysis, a preliminary examination of the data indicated that a large proportion of the cases reported no (i.e., zero) generalized harassment at a given timepoint. About one-tenth to one-half of all participants with available data reported *no* generalized harassment at baseline (12 %), T1 (30 %), T2 (42 %), T3 (47 %), and T4 (39 %). In order to examine longitudinal growth with a preponderance of zeroes, and possible heterogeneity in this growth, we used the Mplus program (version 7.2) to conduct our data analysis. In addition to its ability to estimate missing data using full-information maximum likelihood estimation, Mplus can accommodate growth in continuous variables characterized by a large proportion of zeroes with two-part growth modeling [Muthén and Muthén 1998–2012; see Runions and Shaw (2013) for an application of two-part growth modeling investigating peer victimization].

Two-part growth modeling allows for the simultaneous examination of (1) binary and (2) continuous aspects of growth, which yields a more nuanced approach to modeling growth. The binary aspect of growth is characterized by the *likelihood* of individuals experiencing any harassment. Data is coded as “0” (no harassment) and “1” (any harassment). Thus, this aspect of growth can be interpreted as growth in whether individuals said “yes” (i.e., any score above zero) to experiencing any level of harassment. It answers the question “Does the probability to report any harassment increase or decrease over time?” In the continuous aspect, the *magnitude* of growth of those individuals who said “yes” to experiencing harassment is examined (Muthén and Muthén 1998–2012). In other words, Mplus will model the magnitude/extent of growth *only* for those individuals responding “yes” (i.e., any score above zero) to the binary question. This growth can be interpreted as the growth in the magnitude or extremity of scores. It answers the question “Does the level of harassment experienced decrease or increase over time?” (i.e., a more traditional approach to growth modeling). All scores in the continuous aspect of growth are automatically log transformed in Mplus.

After establishing overall growth in the two-part model, we then examined possible heterogeneity in this growth using both latent class growth analysis (LCGA) and growth mixture modeling (GMM; Muthén and Muthén 1998–2012). Both approaches allowed us to identify potential subgroups of individuals with different developmental growth trajectories in generalized harassment. However, the GMM allows for growth to be different across individuals (i.e., the variance and covariance components are freely estimated). GMM was examined with the best-fitting LCGA model by estimating all intercept and slope variances simultaneously, then the intercept and slope covariance, followed by quadratic variance, and finally both quadratic covariance components. We applied this approach starting in the first class for the continuous aspect first, followed by the binary aspect. This approach was repeated for the second class.

Preliminary analyses indicated that the design effect for clustering at the school level was greater than 2. Thus, we used the type = complex option to correct for independence violations (Muthén and Muthén 1998–2012). Finally, growth was modeled to reflect the varying units of time between measurements (e.g., past 4 months, past 12 months).

In order to model heterogeneity in growth for harassment we employed a two-part growth model (LCGA or GMM) analysis for one class, two classes, and three classes (though we were unable to compute solutions beyond a two class solution). We allowed the growth parameters to be freely estimated. In order to determine the best fitting model, we used several assessments: the Log Likelihood, the Bayesian information criterion (BIC), the Sample Size Adjusted BIC

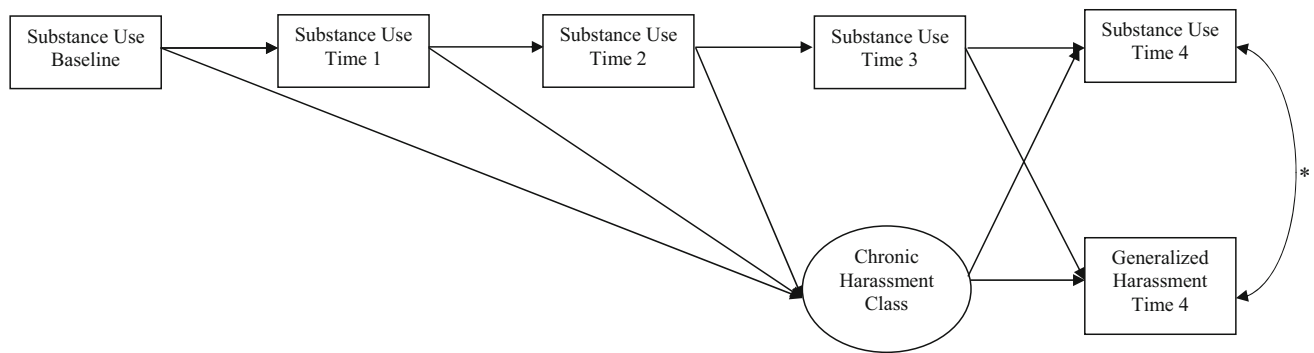


Fig. 1 Regression model examining the bidirectional relations among substance use and generalized harassment. *Note* Chronic Harassment Class was assessed using Baseline, T1, T2 and T3 generalized harassment measures. All variables were regressed onto gender and race (assessed at baseline). Baseline substance use variables were regressed onto dummy variables indicating missing age information. Substance use was regressed onto all other previous measures of substance use (e.g., T4 substance use was regressed onto T3, T2, T1 and baseline substance use). Additionally, we simplified

the above model for regressions using two-part modeling of outcomes (e.g., generalized harassment at T4; all drinking outcomes). For these regression models, variables were separated into binary and continuous components. * We were able to correlate only the continuous components at T4 due to model restrictions. We were not able to correlate T4 outcomes in the models for cigarette or marijuana use. However, we regressed substance use onto generalized harassment at T4 and found no differences in the overall model

(SSABIC), entropy, posterior class probabilities, and the Adjusted Lo-Mendell-Rubin (LMR) test (Duncan et al. 2006; Muthén and Muthén 2000; Tofiqhi and Enders 2007). Lower BIC and SSABIC values indicate better model fit, and are appropriate indicators to use when comparing mixture models that vary in the number of classes being estimated. Similarly, higher Log Likelihood values are a descriptive way to identify the best fitting model. Entropy values and posterior class probabilities (along the diagonal) closer to one indicate better classification by the model. Significant LMR values reflect that the current solution fits better than the solution with one fewer (i.e., $k - 1$) class. Additionally, we also determined the best fitting model based on the uniqueness, stability and predictive utility of the emerging classes (Muthén and Muthén 2000).

After determining the final growth modeling solution, we imported the estimated classes into a new data file. We then used Mplus-generated harassment categories to predict T4 binge drinking, drinking to intoxication, problem drinking, cigarette use, and marijuana use by creating four separate regression models in Mplus (see Fig. 1). We used two-part modeling to model drinking behaviors due to the large proportion of “0” responses at each time point for drinking outcomes. The binary and continuous aspects of drinking and the binary variables of cigarette and marijuana use were regressed onto harassment class, controlling for previous (i.e., baseline, T1, T2 and T3) substance use. Additionally, we included T4 harassment as an outcome (which was correlated with T4 substance use; see Fig. 1 Notes). We regressed T4 harassment onto T3 substance use and the harassment class variable onto baseline, T1 and T2 substance use in order to account for potential bidirectionality in the model. Substance use and harassment

variables were regressed onto dummy variables representing gender and race (control variables) as well as a variable indicating whether the participant had full or missing age data (see “Method”; Fig. 1 Notes). We note that both logistic and linear regressions were conducted, depending on whether the outcome was binary or continuous. All binary variables listed above were defined as categorical outcomes in Mplus, and thus logistic regression was conducted. All continuous variables were (by default) defined as continuous outcomes in Mplus, and linear regression was conducted with these outcomes.

Latent Class Growth Analysis Results

All univariate statistics for main study variables (Baseline—T4, overall and by gender and ethnicity) can be found in Tables 1 and 2. We initially conducted the two-part LCGA models with and without the quadratic terms as we had no a priori hypotheses regarding the shape of the growth. However, the models including the quadratic terms (which were significant for both classes) had lower BIC, SSABIC values and higher Log Likelihood values (though comparable entropy and average posterior probabilities) compared to models with only the linear terms. Given the quadratic terms were consistently statistically significant across classes, and these models provided better fit to the data, we proceeded with the models capturing quadratic growth.

A two-class, two-part quadratic growth model representing those who were either *chronically* or *infrequently* harassed fit the data best (see Table 3 and Fig. 2). BIC and SSABIC were notably lower for the 2-class LCGA model when compared to the 1-class model. In contrast, the drop in BIC and SSABIC was less steep comparing the 2-class

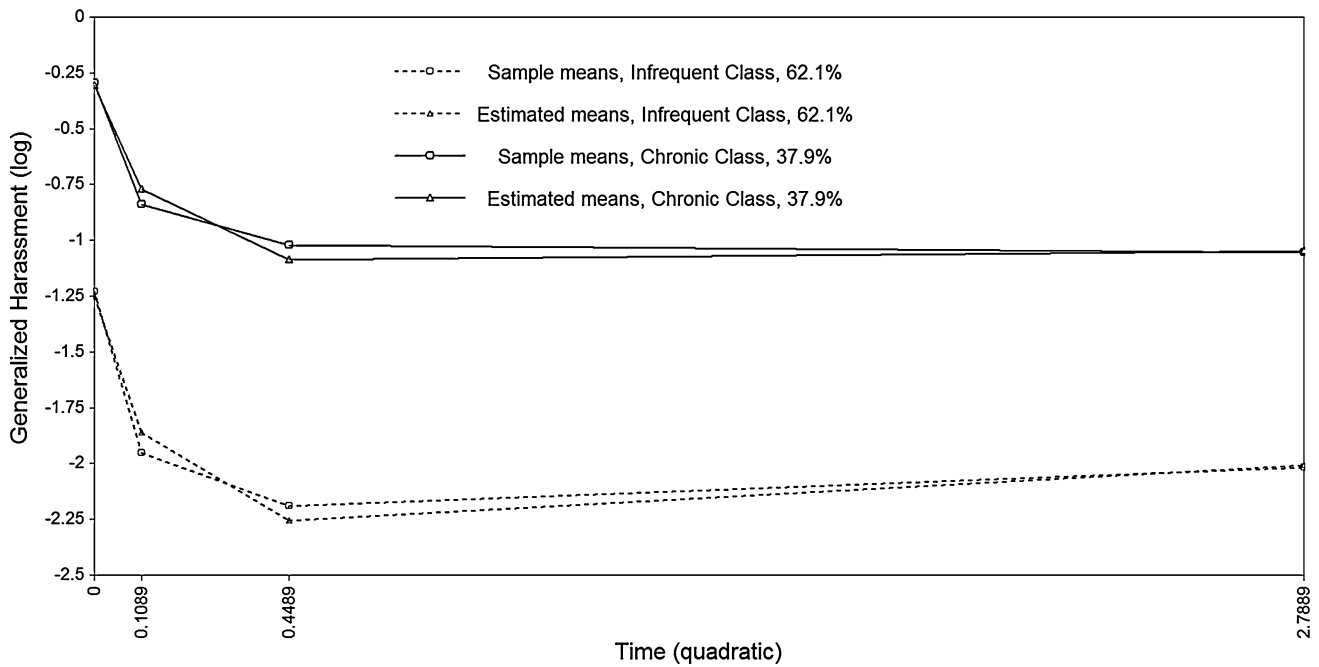


Fig. 2 Two-class, Two-Part LCGA solution (with Estimated and Sample Means) for Generalized Harassment

Table 1 Means and standard deviations for generalized harassment, binge drinking, drinking to intoxication, and problems due to alcohol use, across all time points, for the overall sample and by gender and by race (White vs. Non-white)

	Baseline	Time 1	Time 2	Time 3	Time 4
<i>Generalized harassment</i>					
Overall	.52 (.46)	.26 (.33)	.20 (.31)	.18 (.29)	.22 (.33)
Men	.51 (.46)	.27 (.35)	.20 (.31)	.19 (.31)	.22 (.35)
Women	.54 (.45)	.26 (.32)	.20 (.31)	.18 (.28)	.22 (.32)
White	.55 (.46)	.28 (.34)	.22 (.32)	.19 (.28)	.24 (.34)
Non-white	.50 (.45)	.24 (.33)	.18 (.30)	.17 (.31)	.19 (.33)
<i>Binge drinking</i>					
Overall	.62 (.84)	1.06 (1.18)	1.13 (1.19)	1.01 (1.05)	1.20 (1.04)
Men	.62 (.87)	1.09 (1.24)	1.13 (1.26)	1.03 (1.12)	1.28 (1.13)
Women	.63 (.81)	1.05 (1.13)	1.12 (1.14)	1.00 (1.00)	1.14 (.96)
White	.74 (.89)	1.29 (1.20)	1.37 (1.22)	1.25 (1.10)	1.42 (1.06)
Non-white	.48 (.73)	.78 (1.09)	.81 (1.08)	.71 (.89)	.89 (.93)
<i>Drinking to intoxication</i>					
Overall	.58 (.81)	1.04 (1.18)	1.12 (1.15)	1.00 (1.01)	1.20 (1.01)
Men	.58 (.84)	1.06 (1.24)	1.11 (1.21)	1.04 (1.10)	1.30 (1.11)
Women	.58 (.79)	1.03 (1.13)	1.12 (1.12)	.97 (.94)	1.13 (.92)
White	.73 (.88)	1.31 (1.20)	1.39 (1.19)	1.24 (1.06)	1.44 (1.02)
Non-white	.39 (.67)	.71 (1.06)	.77 (1.02)	.69 (.85)	.88 (.89)
<i>Problems due to alcohol use</i>					
Overall	.11 (.26)	.14 (.30)	.17 (.31)	.17 (.33)	.20 (.36)
Men	.11 (.27)	.15 (.32)	.16 (.31)	.18 (.34)	.21 (.35)
Women	.12 (.25)	.14 (.28)	.17 (.31)	.16 (.32)	.20 (.37)
White	.13 (.28)	.16 (.31)	.19 (.32)	.19 (.34)	.23 (.37)
Non-white	.10 (.23)	.12 (.28)	.13 (.30)	.14 (.31)	.17 (.33)

Table 2 Frequency (percentage) of use for cigarette and marijuana use across all time points, for the overall sample and by gender and by race (White vs. Non-white)

	Baseline	Time 1	Time 2	Time 3	Time 4
<i>Cigarette use</i>					
Overall	980 (34.7 %)	501 (24.8 %)	593 (29.6 %)	511 (28.0 %)	512 (27.0 %)
Men	454 (38.7 %)	227 (26.9 %)	287 (34.5 %)	240 (32.8 %)	269 (34.3 %)
Women	525 (31.9 %)	273 (23.2 %)	304 (26.1 %)	269 (24.7 %)	241 (21.8 %)
White	611 (40.2 %)	324 (29.0 %)	377 (34.2 %)	320 (31.8 %)	341 (32.0 %)
Non-white	366 (28.2 %)	171 (19.3 %)	209 (23.8 %)	186 (23.2 %)	163 (20.2 %)
<i>Marijuana use</i>					
Overall	893 (31.7 %)	484 (24.0 %)	612 (30.5 %)	557 (30.5 %)	587 (31.1 %)
Men	383 (32.7 %)	220 (26.1 %)	274 (32.8 %)	242 (33.1 %)	263 (33.7 %)
Women	507 (30.9 %)	262 (22.4 %)	335 (28.8 %)	313 (28.7 %)	323 (29.3 %)
White	533 (36.5 %)	319 (28.5 %)	392 (35.6 %)	350 (34.9 %)	371 (34.9 %)
Non-white	337 (26.0 %)	161 (18.2 %)	212 (24.0 %)	201 (25.1 %)	208 (25.9 %)

All variables were coded into binary variables (0 = no use, 1 = any use)

Table 3 LCGA model fit indices for generalized harassment class solutions

	Log likelihood	Number of parameters	BIC	SSA BIC	Entropy	Posterior possibilities	Adjusted LMR
<i>LCGA models</i>							
1 class	−13,192	11	26,470	26,436	–	–	–
2 classes	−12,398	22	24,972	24,902	.63	.91/.85	<i>p</i> < .01
3 classes	−12,147	33	24,558	24,453	.61	.76/.79/.85	<i>p</i> = .24
<i>LCGA final model (Roy drop-out)</i>							
2 classes	−12,395	25	24,988	24,909	.63	.91/.85	<i>p</i> = .01

Bold values indicate lowest BIC or SSABIC value, or highest Log Likelihood, Entropy or Posterior Possibilities value, or significant Adjusted LMR test

and 3-class solutions (1.4 and 1.8 % respectively) than the drop in BIC and SSABIC comparing the 1-class and 2-class solutions (5.7 and 5.8 %). Similarly, the increase in the Log Likelihood was minimal when comparing the 2-class and 3-class model solutions (2.1 %) versus the 1-class and 2-class solutions (6.1 %). The 2-class model had slightly higher entropy than the 3-class model, and higher average posterior probabilities than the 3-class model. Finally, the Adjusted LMR test was statistically significant only for the 2-class solution. Taken together, the 2-class model was retained as the best fitting model.

Next, we attempted to examine growth using the GMM approach, in which the variance and covariance terms were freely estimated for the best-fitting LCGA model. However, we were only able to estimate variance and covariance components in the continuous aspect of those classified as chronically harassed (other variance components could not be estimated as they were functionally zero). The resulting growth mixture model for the 2-class solution result in an entropy score that was notably lower (.57) than the LCGA model (.62). All other fit indices were comparable. Given the relative poorer fit, as well as our inability to estimate the majority of variance and

covariance components, we retained the 2-class LCGA model as the model which best fit the data (Tables 3 and 4).

After we determined the final 2-class LCGA model, we noted that the latent classes may include missing data that was non-ignorable, such that the missingness was potentially dependent on the latent harassment classes. In other words, we believed it was possible that those who were placed in the latent chronic harassment class were more likely to drop out of the study and/or provide missing data due to their chronic harassment experiences. Thus, we conducted a Roy Latent Dropout Pattern-Mixture Modeling analysis (Muthén et al. 2011; Roy 2003) to account for this potential non-ignorable missingness. The resulting model yielded comparable fit indices observed in the initial 2-class LCGA model (see Table 3).

Regression Model Results

Main regression results are presented in Tables 5 and 6. Membership in the chronic harassment class predicted an increase in the magnitude of all three T4 alcohol-related outcomes (binge drinking, drinking to intoxication and problems due to alcohol use), as well as an increase in the

likelihood to report any T4 problems due to alcohol use. Interestingly, being chronically harassed predicted a *decreased* likelihood to binge drink at T4. Being chronically

harassed moreover significantly predicted increased likelihood of T4 cigarette use, but not T4 marijuana use.

Table 4 Growth parameters (and standard errors) for the two-class, two-part LCGA solution for generalized harassment

	Generalized harassment class	
	Infrequent	Chronic
<i>Binary aspect</i>		
Latent mean/slopes		
Intercept	1.18 (.09)**	3.25 (.25)**
Linear growth	-4.04 (.21)**	-2.76 (.34)**
Quadratic growth	1.70 (.12)**	.91 (.18)**
<i>Continuous aspect</i>		
Latent mean/slopes		
Intercept	-1.25 (.07)**	-.31 (.04)**
Linear growth	-2.20 (.12)**	-1.64 (.26)**
Quadratic growth	1.04 (.06)**	.72 (.13)**

** $p < .01$

Though not presented in Tables 5 and 6, we did control for bidirectional relations (see Fig. 1). Chronic harassment class was predicted by earlier measures of binge drinking (T1 continuous, T2 binary), drinking to intoxication (all T1 and T2 measures), problems due to alcohol use (all baseline, T1, T2 measures), cigarette use (T1), and marijuana use (T2) (p 's $< .05$). T3 (binary) binge drinking and T3 (binary and continuous) problems due to alcohol use predicted T4 harassment (p 's $< .05$).

Being male was significantly related to increased magnitude in T4 binge drinking and drinking to intoxication, as well as the increased likelihood to report cigarette use at T4. Being White was significantly related to the increased likelihood to report any T4 binge drinking, drinking to intoxication, problems due to alcohol, and cigarette use. Typically, previous reports of substance use positively predicted respective T4 substance use measures, though these relations were less likely to be significant at baseline.

Table 5 Unstandardized regression results (standard errors) and corresponding odds ratios for time 4 alcohol use outcomes

	Time 4 outcomes					
	Binge drinking		Drinking to intoxication		Problems due to alcohol	
	Likelihood	Magnitude	Likelihood	Magnitude	Likelihood	Magnitude
<i>Unstandardized model results</i>						
Chronic generalized harassment	-.05 (.03)*	.05 (.02)**	.02 (.19)	.05 (.02)*	.47 (.07)**	.21 (.09)*
Gender	-.02 (.11)	-.08 (.02)**	-.01 (.08)	-.08 (.01)**	-.06 (.12)	-.08 (.07)
Race	-.62 (.13)**	-.05 (.03)	-.79 (.14)**	-.04 (.03)	-.50 (.15)**	-.04 (.05)
(Prior self reports of substance use)						
T3	2.26 (.23)**	.37 (.03)**	2.43 (.21)**	.43 (.02)**	1.53 (.16)**	.44 (.04)**
T2	.73 (.20)**	.14 (.02)**	.76 (.24)**	.17 (.05)**	.65 (.17)**	.14 (.06)**
T1	.93 (.17)**	.10 (.03)**	.96 (.14)**	.06 (.05)	.57 (.20)**	-.01 (.03)
Baseline	.09 (.26)	.08 (.03)**	.04 (.12)	.05 (.03)	.49 (.09)**	.08 (.06)
<i>Corresponding odds ratios</i>						
Chronic generalized harassment	.95		1.01		1.61	
Gender	.98		.99		.94	
Race	.54		.46		.61	
(Prior self reports of substance use)						
T3	9.57		11.42		4.61	
T2	2.07		2.14		1.92	
T1	2.53		2.61		1.77	
Baseline	1.09		1.04		1.63	

Standard errors are presented in parentheses. T4 Generalized Harassment (assessed as two-part data) was also included as an outcome in the model. T4 Generalized Harassment was regressed on T3 substance use. Chronic Harassment class was regressed onto T2, T1, and baseline reports of substance use. The covariate representing those missing age data (0 = no, 1 = yes) was included as a predictor of baseline substance use. Only the main regression results of interest are reported above. Logistic regression was conducted for the Likelihood outcomes; Linear regression was conducted for the Magnitude outcomes

Chronic Harassment class coded as 0 = *Infrequent*, 1 = *Chronic*; Gender coded as 0 = *male*, 1 = *female*; Race coded as 0 = *White*, 1 = *Non-white*

* $p < .05$; ** $p < .01$

Table 6 Unstandardized logistic regression results (standard errors) and corresponding odds ratios for time 4 cigarette and marijuana use outcomes

	Time 4 outcomes	
	Cigarette use (binary outcome)	Marijuana use (binary outcome)
<i>Unstandardized model results</i>		
Chronic generalized harassment	.40 (.14)**	.20 (.14)
Gender	-.52 (.14)**	-.13 (.13)
Race	-.37 (.14)**	-.13 (.13)
(Prior self reports of substance use)		
T3	1.89 (.18)**	2.14 (.17)**
T2	.82 (.19)**	.55 (.22)*
T1	.52 (.20)**	.75 (.23)**
Baseline	.31 (.17)	.27 (.19)
<i>Corresponding odds ratios</i>		
Chronic generalized harassment	1.49	1.22
Gender	.60	.88
Race	.69	.87
(Prior self reports of substance use)		
T3	6.64	8.46
T2	2.27	1.73
T1	1.68	2.18
Baseline	1.37	1.31

Standard errors are presented in parentheses. T4 Generalized Harassment (assessed as two-part data) was also included as an outcome in the model. T4 Generalized Harassment was regressed on T3 substance use. Chronic Harassment class was regressed onto T2, T1, and baseline reports of substance use. The covariate representing those missing age data (0 = no, 1 = yes) was included as a predictor of baseline substance use. Only the main regression results of interest are reported above

Cigarette Use and Marijuana Use coded as 0 = *Not used*, 1 = *Have used*

Chronic Harassment class coded as 0 = *Infrequent*, 1 = *Chronic*; Gender coded as 0 = *male*, 1 = *female*; Race coded as 0 = *White*, 1 = *Non-white*

* $p < .05$; ** $p < .01$

Discussion

Researchers have underscored the increased rates of alcohol and drug use during emerging adulthood, likely due to the transitions and upheaval characteristic of this period of development (e.g., Arnett 2000, 2005; Fromme et al. 2008). Theory and research have suggested that this critical time for emerging adults leaves them susceptible to other sources of stress, such as generalized harassment (defined as harmful negative interpersonal interactions that are not based on legally protected categories; Rospenda and Richman 2004; Sher et al. 1996). The experience of chronic stressors, and generalized harassment in particular, can lead to avoidant forms of coping, such as substance use (Lazarus and Folkman 1984; Rospenda et al. 2000; Smith et al. 2003). While preliminary evidence suggests a link between generalized harassment and substance use in college students (DeHart et al. 2014; Rospenda et al. 2013), current research has only followed the long-term development and impact of generalized harassment in youth and adults (Barker et al. 2008; Biggs et al. 2010; McGinley et al. 2011) and has yet to identify chronic

experiences of harassment throughout college using advanced statistical techniques. The current study attempted to fill these identified gaps by exploring latent trajectories of generalized harassment across the college transition, and how chronic trajectories of harassment through the college transition contribute to subsequent substance use.

Two specific goals of the current study were to examine the magnitude and nature of growth in generalized harassment across the transition to college, and whether this growth was heterogeneous. Using latent longitudinal classification procedures, two latent classes emerged: infrequently and chronically harassed groups. Patterns of growth were somewhat similar in both classes. In regards to the *likelihood* aspect of growth, both classes experienced initial decreases in ever reporting generalized harassment over time, although ever experiencing generalized harassment increased slightly by the last time point. Again, both classes reported a decrease in the magnitude of generalized harassment over time, though the magnitude increased slightly by the last time point. This initial decrease in generalized harassment during the college transition was anticipated given reported rates of collegiate

bullying victimization in the literature (Chapell et al. 2004, 2006; Modecki et al. 2014). These findings also suggest that the college transition provides an opportunity for the emergence of new peer groups (Gage et al. 2014; Shell et al. 2014). The reasons for the slight resurgence in generalized harassment could possibly signify the tensions that arise within or among peer groups over time. However, we also note that this resurgence could be a measurement artifact; the time frame for reporting generalized harassment was shorter at T1 and T2 (previous 4 months) as opposed to baseline and T3 measures (previous 12 months). Thus, additional research is needed to better explore these trends over time in college students.

Yet, these measurement artifacts do not interfere with our findings of two latent classes of growth. Results indicated that chronic class (in contrast to the infrequent class) reported consistently elevated levels of harassment across all four time points. The emergence of two generalized harassment classes is consistent with a study of adult workers and their self-reported workplace generalized harassment experiences conducted by McGinley et al. (2011). The emergence of a chronically harassed class somewhat reflects latent class solutions uncovered by other researchers investigating peer victimization in youth. For example, using growth mixture modeling, Barker et al. (2008, 2008) and Biggs et al. (2010, 2010) reported that a smaller percentage of youth experienced chronic peer victimization. Two to four additional classes emerged in their analyses, however. Given the emergence of only two total classes in the current study, this suggests another limitation of our current measure of generalized harassment: limited variability. Our measure captured frequencies for each item as either never occurring (“0”), occurring once (“1”), or occurring more than once (“2”). Still, current and previous research suggest that some individuals have the propensity to re-experience generalized harassment. Research efforts should focus on understanding this continuity, including the reasons and consequences of this continuity, in chronic generalized harassment across the lifespan.

Understanding this continuity in generalized harassment across the lifespan may lead to interventions that may help reduce substance use in emerging adulthood. In regards to examining the relations among generalized harassment and substance use, classification into the chronic (vs. infrequent) harassment class was related to problematic substance use. Chronically harassed college students experienced increased overall problems due to drinking, a higher magnitude of binge drinking and drinking to intoxication, and greater cigarette use, as predicted. This set of findings strongly resonates with stress theory and tension reduction models of alcohol use (i.e., Greeley and Oei 1999; Lazarus and Folkman 1984) and empirical research (McGinley et al. 2011; Rospenda et al. 2000) connecting chronic harassment experiences to substance use, primarily as a way to cope with persistent stress stemming from generalized

harassment. Thus, substance use appears to be a method of avoidant coping for chronically harassed college students.

Interestingly, being chronically harassed was related to a *decrease* in the likelihood (but an increase in the magnitude) to report binge drinking. Perhaps being chronically harassed, which includes exclusion from peer activities, limits one’s access to social events where binge drinking is common. If access is gained, however, these chronically harassed individuals will report greater binge drinking than their infrequently harassed counterparts. We also note that no relations among chronic harassment classification and marijuana use were found. Preliminary analyses had indicated a relation among these groups, but no relations were found in the overall regression model. Given that marijuana use has been linked to peer victimization in youth (e.g., Tharp-Taylor et al. 2009), future efforts should continue to explore whether generalized harassment contributes to marijuana use in a college student population.

While the current study utilized a longitudinal investigation examining latent, two-part growth in generalized harassment and its relations to problem drinking and drug use with a large undergraduate sample, some limitations remain. A potential limitation regards the cause-and-effect interpretation of the data. Based on coping models, our data analysis was driven by the theoretical notion that stressful generalized harassment experiences would lead to more problematic substance use. It remains possible that substance use could also influence the amount of harassment one experiences (e.g., via behavioral problems or interpersonal conflict stemming from substance use). In fact, our models explored this possibility and found evidence for bidirectional relations (i.e., earlier substance use predicted generalized harassment). Yet, chronic harassment still significantly predicted T4 substance use after controlling for bidirectional effects, earlier substance use and established demographic predictors. The links between generalized harassment victimization and substance use could also be explained by a third variable: perpetration of generalized harassment. For example, other longitudinal studies have found that perpetrator/victimization growth tends to co-occur. Still, victim-only trajectories distinctly exist, suggesting that not all victimization is intimately linked to perpetration (Lam et al. 2015). While future studies should attempt to understand the continuous interplay between substance use, generalized harassment victimization, and generalized harassment perpetration over time, we maintain that based on the temporal nature of the data and control of effects listed above, our study supports at least a partial cause and effect interpretation between generalized harassment victimization and substance use in a college student population.

On a similar note, the potential mediating role of distress (e.g., depression, anxiety) was not investigated in the current study. As previously noted, experiences of peer victimization

or generalized harassment may lead to adjustment problems (e.g., Dempsey and Storch 2008), which could in turn lead to avoidant coping strategies such as substance use. Additional studies should probe the links among chronically experienced harassment and distress among college students. The authors also recognize that this data could be modeled using simultaneous latent growth curve modeling. Meaning, we could simultaneously model overall growth between the 1-class substance use model and 1-class harassment victimization model, noting the relations between the growth parameters of both models. However, this simultaneous growth curve model *would not* reflect our outlined need to identify subgroups of individuals who experience *chronic* generalized harassment. Thus, we maintain that the chosen data analytic approach best reflects the existing literature on chronic generalized harassment.

Additional limitations regarding measurement should also be noted. Race was only examined by comparing White versus non-White students, due to model complexity. Few studies have investigated the roles that race and ethnicity have on generalized harassment and substance use; efforts should be made to understand the impact race and ethnicity have on the conceptualization of generalized harassment as well as the relations among harassment and substance use. Efforts should also be made to identify and account for students who refrain from substance use entirely due to personal (e.g., religious) beliefs. The substance use behaviors of these abstainers, who may consistently self-report substance use experiences as “zero”, could be impervious to typical influences of substance use during college (e.g., social norms, generalized harassment victimization) due to strong adherence to such beliefs. Finally, student recall of generalized harassment and substance use can be subject to decay. In order to more accurately record these experiences, data could be collected on a more frequent basis, such as asking students to report these experiences on a daily basis using personal diaries or electronic devices. Such an approach would also enable researchers to understand changes in, and outcomes stemming from, generalized harassment on a “micro” time-level (e.g., DeHart et al. 2014; Sliwinski et al. 2009).

Issues relating to the representativeness of the sample may also affect the generalizability of the study. For example, due to the fact that some schools in our sample were not willing to screen for age when drawing the initial random sample of incoming freshmen, a trivial percentage of the students included in the data analysis who had missing age data may have been outside the intended age range. The college student population was additionally limited to colleges and universities in a single Midwestern state in the United States. Thus, future investigations should expand efforts to include students from other locales, domestically and internationally.

Conclusion

Using powerful within-subjects statistical techniques, this study is the first to demonstrate that, although self-reported experiences of generalized harassment wane upon college entry, *persistent* (i.e., chronic) experiences of generalized harassment remain a consequential stressor for emerging adults enrolled in undergraduate institutions. This study also contributes to the discussion of risk factors for alcohol and drug use during emerging adulthood by demonstrating that chronic generalized harassment contributes to increased likelihood and magnitude of substance use over time. DeHart et al. (2014) emphasized that, when mood or mental energy is taxed, college students will turn to alcohol when faced with generalized harassment. Taken together, generalized harassment appears to be an influential stressor that should be acknowledged by researchers attempting to understand substance use in emerging adulthood. Currently, theories have focused on searches for identity, instability in life events, and self-focus as reasons for alcohol and drug use (e.g., Arnett 2005). We argue that generalized harassment, often seen as less intense or severe compared to bullying, still has a role in explaining alcohol and drug use in an already vulnerable population. Given that these findings have important implications for improving the health of college students, we recommend that practitioners (e.g., college counseling centers) treating substance use disorders in college student populations screen for various forms of interpersonal mistreatment, including but not limited to generalized harassment. Some forms of harassment, such as those due to sex, gender, race, color, or national origin are legally prohibited at institutions that receive federal funding. These forms of mistreatment may be easier to identify and address, with clear mechanisms for reporting. Given that no laws prohibit generalized harassment, students may have greater difficulty recognizing this form of mistreatment, and there may be no mechanisms for reporting these types of experiences. Mental health practitioners working with this population can help students identify experiences as inappropriate mistreatment and determine which steps a student might take to address harassment, with the goal of ending the harassment. Chronic harassment is clearly associated with higher levels of substance use, even controlling for prior levels of substance use and potential bidirectional effects. If practitioners are unable to help students end the harassment, their focus should be on helping students cope with this type of mistreatment in a healthy way. In terms of efforts at the institutional level, generalized harassment in the school environment is a modifiable risk factor that could be addressed via prevention efforts—similar to what schools are doing to reduce the prevalence of sexual harassment and sexual assault on campus. Colleges and universities should

consider instituting anti-harassment and anti-bullying policies, including clear channels for reporting, investigating, and addressing these behaviors, with the goal of making the school environment safer and healthier for students.

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Authors' contributions M.M. participated in the study's design and statistical analysis, and drafted the manuscript; K.R. conceived of the study, participated in the design, and drafted the manuscript; L.L. participated in the statistical analysis, and interpretation and

presentation of the data analysis; J.R. conceived of the study and helped to draft the manuscript. All authors read and approved the final manuscript.

Human Rights Statement All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Appendix: Generalized Harassment Questionnaire (Modified Version—College Students)

During the last 12 months at school, how often has a fellow student or teacher...	<u>Never</u>	<u>Once</u>	<u>More than once</u>
a. Gossiped about you or spread rumors about you behind your back?.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
b. Made negative comments to you about your personality or intelligence?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
c. Made hostile or offensive gestures at you?.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
d. Labeled you a “troublemaker” if you expressed a difference of opinion?.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
e. Embarrassed, humiliated or belittled you in front of others?.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
f. Ignored you or your contributions to a school or class project?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
g. Sent you hostile e-mails or text messages?.....			
h. Turned others at school against you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
i. Talked down to you (treated you like a child or as inferior to them)?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
j. Posted offensive or hurtful comments about you on a social networking site (e.g., Facebook, MySpace, or Twitter)?			
k. Did not take action to protect you from harm?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
l. Offered you a subtle or obvious bribe to do something that you did not agree with?.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
m. Told you insulting jokes?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
n. Made you the target of a prank or practical joke that you didn't think was funny?			
o. Failed to respond to your requests for help?.....	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
p. Left notes, signs, or other materials that were meant to embarrass you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
q. Treated you unfairly compared to others?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
r. Excluded you from important school or social activities, meetings, or events?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
s. Made fun of you or threatened you for refusing to do something that you didn't want to do, or that you thought was wrong?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>
t. Hit, kicked, or pushed you, or threw things at you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>

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Dr. Meredith McGinley is a Visiting Research Specialist at the University of Illinois at Chicago. She received her doctorate in 2008 from the University of Nebraska-Lincoln. Her major research interests include the examination of social, emotional and cultural influences on helping behaviors, victimization, aggression, and mental and behavioral health, as well as the application of advanced statistical techniques (e.g., path analysis, longitudinal data analysis, measurement invariance).

Dr. Kathleen Rospenda is an Associate Professor of Psychology at the University of Illinois at Chicago. She received her doctorate in 1998 from DePaul University. Her research has focused on occupational stress and its impact on the mental health, physical health, and drinking behavior. Her research has also investigated how conflict between work and caregiving roles impacts mental health and drinking behavior in a community sample.

Dr. Li Liu is an Associate Professor of Biostatistics at the University of Illinois at Chicago. She received her doctorate in 2003 from University of Illinois at Chicago. Her major research interests include longitudinal data analysis, mixed effects modeling, mediation analysis, and statistical methods in epidemiological, social, and behavioral research.

Dr. Judith Richman is a Professor of Epidemiology in Psychiatry at the University of Illinois at Chicago. She received her doctorate in 1978 from Columbia University. Her major research interests have included macro-level stressors including the “Great Recession” and the continuing impact of the events of 9/11/01 on mental health and drinking outcomes, as well as sexual harassment and generalized harassment in the workplace as etiological determinants of depression, anxiety and deleterious drinking outcomes.