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Sexual Harassment, Psychological Distress, and Problematic Drinking Behavior among College Students: An Examination of Reciprocal Causal Relations

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Abstract

Sexual harassment on college campuses is a frequent occurrence and serious public health concern. Victims of sexual harassment are at risk for many possible negative health consequences. In addition, certain psychological distress symptoms and/or alcohol use may put individuals at increased risk of being victims of sexual harassment. Data from over 2,000 college students in the Midwestern United States were used to examine reciprocal causal effects of the relations between (1) experiencing sexual harassment and alcohol use and (2) experiencing sexual harassment and psychological distress symptoms, specifically depression and anger/hostility. Analyses were conducted separately for sexual harassment that occurs at school and that occurs in college students' workplaces and also separately for men and women. Results of cross-lagged panel models showed that there were reciprocal causal effects between sexual harassment and alcohol problems, depression, and anger. Discussion focuses on the overall patterns of results as well as the nuances within these findings.

Keywords

sexual harassment; alcohol use; psychological distress; causal relations

The pervasive problem of sexual crimes on college campuses in the U.S. has recently been in the national spotlight, appearing in a cover story in *Time* magazine (Gray, 2014), a U.S. government public service announcement ("1 is 2 many," 2014), and several pieces on National Public Radio as well as other news outlets. Early in 2014, the White House Task Force to Protect Students from Sexual Assault was formed by the Obama administration. Later in the year, 55 initial college and universities went under investigation for illegally handling sexual assault and harassment complaints under Title IX (U.S. Department of

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Education, 2014). The increased attention is well-deserved as the prevalence of sexual crimes on college campus is distressingly high. An incredibly large and comprehensive report was released by the Association of American Universities in 2015, finding that, of over 150,000 students from 27 institutions of higher education, about 23% of undergraduate women and about 5% of undergraduate men experienced nonconsensual sexual contact by coercion (Cantor et al., 2015).

Although a great deal of attention is now focused prevalence and prevention of sexual assault on campus, sexual harassment (defined as “unwanted sex-related behavior...that is appraised by the recipient as offensive, exceeding her resources, or threatening her well-being” (Fitzgerald, Swan, & Magley, 1997, pg. 15)) remains an even more prevalent issue on college campuses, however research on SH in college settings has waned since the late 1990s. Over a decade ago, the most comprehensive study of its type that included both women and men undergraduates found that up to 62% of women and 61% of men experienced one or more forms of sexual harassment while in college, with 41% and 36% of all women and men, respectively, reporting SH experiences in the first year of school (Hill & Silva, 2005).

Sexual Harassment in the College Setting

Prior research on SH among college students has so far failed to acknowledge that there are multiple distinct environments in which college students may be exposed to SH, two of which are at school (e.g., in the classroom, in residence halls, school common areas, etc.) and in the workplace (which often is off-campus). Regarding the school environment, research on college entry suggests that this life transition may come with social and developmental challenges that often take place outside of established peer support networks (Arnett & Tanner, 2006; LaBrie et al., 2007; Schulenberg, Maggs, & Hurrelmann, 1997; Schulenberg et al., 2001). College is a time when large groups of young women and men come into contact with each other with relatively little supervision and also a time when alcohol use is pervasive (O'Malley & Johnston, 2002). Both of these circumstances may increase the opportunity and occurrence of sexual harassment and assault (Cantor et al., 2015; Clodfelter, Turner, Hartman, & Kuhns, 2010; Fisher, Cullen, & Turner, 2000).

In terms of the workplace environment, to date there has been no research specifically focused on workplace sexual harassment of college students. However, like high school students, employed college students typically have part-time jobs that are considered low-status, including retail, restaurants, grocery stores, and health care, which are types of jobs that have been found to pose increased risk for experiencing SH compared to higher status jobs (Fineran & Gruber, 2009). Early research on employed high school students indicated that approximately 30% of high school girls reported experiencing SH at their jobs (Strauss & Espeland, 1992). Later research using more detailed measures of SH experiences reported that in a sample of 393 employed high schoolers, 63% of employed adolescent girls reported one or more SH experiences, compared to 37% of employed boys, and that girls were significantly more threatened or upset by their experiences (Fineran, 2002). In another sample of students from an all-girls high school, 52% of the employed students indicated that they had experienced one or more forms of SH at work in the past year, and that a

majority of the perpetrators (56%) were coworkers rather than supervisors (Fineran & Gruber, 2009). In addition, young, unmarried women and those with low status or low seniority were more likely to experience harassment (Fitzgerald & Ormerod, 1991; Gruber, 1998; USMSPB, 1995); since these are common characteristics of college students who work, it is important to protect this population. Thus, research on sexual harassment among adolescents suggests that workplace SH affects a large percentage of employed students. The present study will be the first to directly examine SH experiences in the workplace among college students of both genders.

Reciprocal Relations: The Effect of SH on Alcohol Use and Psychological distress and Vice Versa

SH as a predictor of alcohol use and psychological distress

Research on SH has generally proceeded from within a stress framework, grounded in the work of Lazarus and Folkman (see Folkman, 1984 for a review). From this perspective, sexual harassment represents a psychological demand which exceeds or depletes the targets' coping resources and may lead to negative psychological and behavioral outcomes (e.g., Fitzgerald, Hulin & Drasgow, 1994; Richman, Rospenda & Flaherty, 1996). Consistent with a stress perspective, it is well established that experiencing SH in the workplace is associated with negative psychological distress outcomes and drinking behavior among adults (e.g., Richman et al., 1999; Rospenda, Richman, & Shannon, 2009). Similarly, among adolescents in school settings, SH has been related to future negative health outcomes such as psychological distress, including fear, anger, nervousness, and depression, nausea, sleeplessness, reduced academic satisfaction, and alcohol problems (Huerta, Cortina, Pang, Torges, & Magley, 2006; Monks, Tomaka, Palacios, & Thompson, 2010; van Roosmalen & McDaniel, 1998).

Moreover, many studies with adults have documented the negative consequences of SH in terms of professional, personal and educational functioning (see Hill & Kearn, 2011; Pina, Gannon, & Saunders, 2009). Among adolescents, some of the consequences of SH at school included staying home from school, quitting activities, trouble studying, and trouble sleeping (Hill & Kearn, 2011) whereas adolescents who were sexually harassed at work also had significantly higher levels of school avoidance and academic withdrawal compared to other employed teenagers (Fineran & Gruber, 2009). Thus, it is likely that SH among college students would have similar negative consequences.

Alcohol use and psychological distress as predictors of SH

Whereas much research has focused on the consequences of SH, it is possible that alcohol use or psychological distress may predict future victimization (Gibb & Alloy, 2006; Gidycz, Loh, Lobo, Rich, Lynn, & Pashdag, 2007; Monks et al., 2010; Rothman & Silverman, 2007). Also, much of the work in which alcohol use or psychological distress has been conceptualized as a predictor variable has focused on sexual *assault* rather than SH. For example, research has shown that women drinkers, compared to abstainers, were more likely to report physical or sexual victimization during their first year at college (Parks, Romosz, Bradizza, & Hsieh, 2008) and that alcohol use by either the perpetrator or the victim may be

a risk factor for sexual violence (Collins & Messerschmidt, 1993). A similar pattern may also be true for SH; drinking may increase risk for experiencing SH victimization, although this has not been studied in college populations. Other research has implicated specific environments or contexts in which alcohol use is common and thus may pose a higher risk for experiencing SH compared to alcohol-free environments. For example, research on alcohol use in public settings, such as bars or college parties, has found that social environments that promote drinking along with increased sexualization are strongly related to experiences of sexual aggression (Becker & Tinkler, 2015). Substance use may also exacerbate existing risk factors (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2001) for example by altering perceptions of risk, increasing the likelihood for becoming a target, and making it more difficult to resist sexual advances due to impaired cognitive and motor skills (Gidycz et al., 2007; Gidycz, Orchowski, King, & Rich, 2008). The present study builds on this body of research on sexual aggression, but takes the novel approach of examining relationships between alcohol use and psychological distress as potential predictors of SH, which has been conceptualized as a manifestation of aggression (O'Leary-Kelly, Paetzold, & Griffin, 2000).

Psychological states, such as depression, have been shown to predict sexual harassment among adults and relational victimization among children and adolescents (Nielsen & Einarsen, 2012; Tran, Cole, & Weiss, 2012). To our knowledge, there is currently no research examining psychological distress as a predictor of SH among college students. Studies with adolescents found reciprocal relations between psychological distress and relational victimization (Sweeting, Young, West, & Der, 2006). Depressed individuals may display behaviors that can lead to negative life events and attributional styles (Gibb & Alloy, 2006), potentially increasing the risk of becoming targets for SH.

Anger/hostility is another psychological state that may predict experiences of SH. Berdahl (2007) reported that SH is more common among college women whose personalities violate gender norms (e.g., "uppity women"). Thus women who display anger and hostility may be seen as threatening and be targeted by perpetrators of SH as an attempt to enforce traditional gender norms. Individuals of either gender who exhibit anger or hostility may be perceived by others as being more dominant, tough, or strong (Clark, Patacki & Carver, 1996) or in other words, they may be perceived as exerting, or attempting to exert, social power (Teidens, 2001). Because SH has been theorized to be inextricably linked to power (Cleveland & Kerst, 1993), an individual who is expressing anger or hostility might be targeted with SH by those to whom anger has been directed, as a way for the recipient of hostility or anger to exert their own power and shift the power dynamics in their favor. This may be particularly true of situations in which an angry woman is targeted with SH by a man who wishes to assert his social power (conferred by his gender). However, a recipient of male anger might use SH to assert their power either by using forms of SH that challenge the angry man's masculinity, or by using sexually coercive tactics (e.g., to promise better treatment on the job in exchange for sexual favors). In the present study, by using cross-lagged panel models, we simultaneously examined both potential causal directions: (1) SH predicting future alcohol use and psychological distress symptoms and (2) alcohol use and psychological distress predicting future SH.

Sex Differences in Experience and Effects of SH

Since men are often excluded from SH research, less is understood about the prevalence of SH and its effects on alcohol use and psychological distress problems, and vice versa, for men. In the research that has been conducted with both genders, men are more commonly seen as the perpetrators of SH against women (Ménard, Hall, Phung, Gherbail, & Martin, 2003), but men do also report experiencing sexual harassment (see Hill & Silva, 2005; Pina et al., 2009). Cultural myths regarding sexual crimes against men (including that men are not vulnerable to SH or other crimes, that experiences of sexual coercion (a type of SH) would not bother them, that it only happens to gay men, and that women cannot be aggressors, among others (Kalof, Eby, Matheson, & Kroska, 2001; Turchik & Edwards, 2012)) imply that men may be less likely to report their experiences of sexual victimization (Turchik & Edwards, 2012) which may partially account for lower numbers of reported SH incidences among men.

Kalof and colleagues (2001) found that women were more likely to have experienced SH at school in general, but that nearly 30% of men in their sample had experienced some form of SH, whereas Hill and Silva (2005) found double that rate of SH at school (61%) among male students in their study. Both of these studies found that women experienced more gender harassment in particular, but that men were equally as likely to experience sexual coercion (Kalof et al., 2001; Hill & Silva, 2005). Although men experienced similar rates of SH in Hill and Silva's study, they found that women overwhelmingly reported worse reactions to their experiences of SH compared to men, including feelings of anger, embarrassment, loss of confidence, and fear. By contrast, in research on adult workers, adult men showed similar negative outcomes from experiencing workplace SH as women did, including depression, anxiety, hostility, and drinking (Richman et al., 1999). Thus, further research is needed in college samples to clarify whether men and women students have different reactions to SH at school versus at work, and whether SH is more harmful to men when it occurs at work rather than at school.

Reciprocal effects may also differ depending on gender. One prospective study found that SH predicted psychological distress among women whereas psychological distress predicted SH among men (Nielsen & Einarsen, 2012). Similarly, in a sample of adults, experiencing SH was associated with future drinking among women but the reverse was true for men (Freels, Richman, & Rospenda, 2005), again highlighting both the importance of looking at reciprocal effects and gender differences. In the present study analyses were conducted separately for men and women in order to more fully capture the potentially diverse experiences and reactions to SH as well as ameliorating the dearth of research on SH among men.

Types of Sexual Harassment

The most commonly used measure of SH, the *Sexual Experiences Questionnaire* (Fitzgerald et al., 1988), includes separate theoretical dimensions of SH (Fitzgerald, Gelfand, & Drasgow, 1995; Gelfand, Fitzgerald, & Drasgow, 1995). Gender harassment refers to verbal and nonverbal behavior that conveys insulting, hostile, and degrading attitudes about

members of a specific sex. Unwanted sexual attention refers to verbal and nonverbal behavior that is offensive, unwanted, and unreciprocated. Sexual coercion is the classic *quid pro quo* type of sexual harassment in which sexual cooperation is expected for job-related benefits (Fitzgerald et al., 1995; Gelfand et al., 1995). The most common type of SH is gender harassment (see Berdahl, 2007).

These different types of sexual harassment are likely an important consideration. Some have suggested that the most common type(s) of harassment may have less psychological or work-related impact (Fineran & Gruber, 2009; Pina et al., 2009) whereas more severe SH may have more serious consequences. However, in a study of workplace harassment among university employees, Richman and colleagues (1999) found that, for women, only gender harassment had effects on problematic drinking and prescription drug use whereas unwanted attention and coercion were unrelated to outcomes. For men, gender harassment was most strongly associated with problem drinking behaviors, while unwanted sexual attention and sexual coercion were most strongly associated with prescription drug use. Hill and Silva (2005) found that although male and female students experience SH at the same rate overall, men and women experience different types of SH more frequently, and react differently to these different types of SH. In order to tease apart these effects, we investigated relations among the full SH scale as well as each subscale separately.

The Present Study

The present study was designed to determine the causal reciprocal effects between (1) SH experiences and alcohol use and (2) SH experiences and psychological distress symptoms, specifically depression and anger/hostility. We hypothesized that SH and alcohol use as well as SH and psychological distress would be reciprocally related to each other. In other words, experiencing SH will significantly predict increased alcohol use/psychological distress and alcohol use/psychological distress will significantly predict more experiences of SH. In addition, we explored the notion that reciprocal effects may exist only in certain circumstances. For instance, college students may differ in terms of whether they consider school or work as a more central aspect of their lives and therefore be more affected by harassment in one of those domains. Additionally, we explored effects for men as well as women since harassment may affect the genders differently. Finally, because previous literature suggests that some types of harassment may be more detrimental, we examined each subscale of SH separately.

Method

Sample

The present study utilizes data from Wave 1 (W1) and Wave 2 (W2) of a larger study. Study participants were recruited via e-mail from a sample of 9,100 incoming freshmen at eight colleges and universities in the Midwestern United States. Individual schools provided the research team with random samples of approximately 1,000 incoming freshman. In some cases, if there were not 1,000 possible participants, the schools allowed us to sample all incoming freshman E-mailed invitations and follow-up postcards (for students for whom schools provided us with a postal address) were sent to students to complete a web survey.

Students were required to be at least 18 years old and received an Amazon gift certificate for completing the surveys. The study was reviewed and approved by the IRB at the University of Illinois at Chicago, as well as the IRB at each school (although some schools chose to waive review and defer to the University of Illinois at Chicago IRB). The total sample at the baseline measurement was 2,984, resulting in a response rate of 32.8%, which is consistent with other research using web surveys (see Kaplowitz, Hadlock, & Levine, 2004; Shih & Fan, 2008). To be included in analyses on SH at school, students had to have attended school at one of the Waves. To be included in the analyses on work, students had to have worked for pay in the months prior to the survey at either Wave. See Table 1 for demographic information about the samples of those who went to school and those who worked. In attrition analyses, at W2, both genders were equally likely to still be present, but African Americans were more likely to have dropped out. Also, SH at work, depressive and anger symptoms, and alcohol problems were predictive of dropping out at W2 whereas SH at school, anxiety, and binge drinking did not predict attrition.

Measures

Sexual harassment—Sexual harassment was measured with a modified version of the widely-used Sexual Experiences Questionnaire (SEQ) (Fitzgerald et al., 1988), re-worded to make items applicable to both males and females. This scale was comprised of 13 items that behaviorally depict three types of sexual harassment: gender harassment, unwanted sexual attention, and sexual coercion. Gender harassment encompasses crude sexual comments or comments that demean the target's gender, for example, "Put you down or was condescending to you because of your sex." Unwanted attention encompasses unwanted touching and repeated requests for dates, for example, "Stared at, leered at, or ogled you in a way that made you feel uncomfortable." Sexual coercion involves demands for sexual favors, "Treated you badly for refusing to have sex with them." Two items were added to the full scale to address the potential problem of cyber-harassment, for example, "Sent you offensive e-mails or text messages that were sexual in nature." One item assessed teasing due to participants' real or perceived sexual orientation. Response options were "never," "once," or "more than once." This scale appeared twice in the survey, once for SH at work and once for SH at school. The items regarding questions at work were asked with the prompt: "During the last 12 months at work, how often have you been in a situation where any of your bosses, co-workers, or customers/clients did any of the following?" The items for SH at school were asked with the prompt: "During the last 12 months at school, how often have to you been in a situation where any of your fellow students or teachers did any of the following?" Coefficient alpha reliabilities for the overall sexual harassment scale at school for men and women, respectively, were .83 and .87 at W1, and .85 and .87 at W2. At work for men and women, respectively, alphas were .85 and .87 at W1, and .83 and .84 at W2. For the subscales, coefficient alpha reliabilities were as follows: gender harassment at school, $\alpha = .56$ for men and $.76$ for women at W1, $\alpha = .60$ for men and $.78$ for women at W2; gender harassment at work, $\alpha = .46$ for men and $.73$ for women at W1; $\alpha = .61$ for men and $.69$ for women at W2; unwanted attention at school, $\alpha = .69$ for men and $.80$ for women at W1, $\alpha = .72$ for men and $.83$ for women at W2; unwanted attention at work, $\alpha = .67$ for men and $.81$ for women at W1, $\alpha = .72$ for men and $.83$ for women at W2; sexual coercion at school, $\alpha = .66$ for men and $.76$ for women at W1, $\alpha = .78$ for men and $.73$ for women at

W2; sexual coercion at work, $\alpha = .84$ for men and $.73$ for women at W1, $\alpha = .82$ for men and $.63$ for women at W2.

Depression—Depression was measured with seven items, which were averaged, from the Center for Epidemiologic Studies-Depression (CES-D; Radloff, 1977), which correlated highly with the overall CES-D (Mirowsky & Ross, 1990). An example item is “I felt lonely” and response options ranged from 1 (*rarely or none of the time*) to 4 (*most or all of the time*). Internal consistency was as follows: α at W1= $.84$ (men) and $.83$ (women); α at W2 = $.88$ (men and women).

Anger—Anger was measured with the anger/hostility subscale of the Profile of Mood States, which includes 12 items that were averaged (McNair, Lorr, & Droppleman, 1971). Example items were “Grouchy,” “Spiteful” and response options ranged from 1 (*not at all*) to 5 (*extremely*). Internal consistency was as follows: α at W1= $.91$ (men) and $.90$ (women); α at W2 = $.90$ (men) and $.91$ (women).

Alcohol-related measures—Two alcohol-related measures were used. The first was a measure of alcohol-related problems, the Rutgers Alcohol Problems Index (RAPI; White & Labouvie, 1989; α at W1= $.91$ (men and women); α at W2 = $.90$ (men) and $.93$ (women)) which includes 23 items measuring various negative consequences of alcohol use. Example items are “neglected your responsibilities” and “passed out or fainted suddenly.” Due to the bimodal distribution of this count variable, it was modeled as a zero-inflated negative binomial distribution (ZINB), which simultaneously estimates two equations: one for the logit portion of the model, which determines whether or not the participant experienced any alcohol problems vs. none, and a second equation that estimates the count or negative binomial portion of the variable, in other words, the number of problems the participant had (Atkins & Gallop, 2007; Simons, Neal, & Gaher, 2006). Response options were 0 (*never*) to 4 (*more than 10 times*). The second alcohol-related measure was a single item measuring heavy episodic (binge) drinking, “How often in the last 4 months have you had 4 (for women) or 5 (for men) drinks in a single sitting?” Response options were 0 (*never*) to 5 (*5 times a week or more*).

Data Analytic Plan

Primary analyses were two-wave cross-lagged panel models. Cross-lagged panel models allow the examination of causal reciprocal relations. Each variable at W2 is predicted by its previous (W1) value (thus controlling on prior levels of that variable) as well as the other variable of interest at W1 (Finkel, 1995; Figure 1). In other words, it is possible to determine if sexual harassment predicts change in alcohol use or psychological distress variables and if alcohol use or psychological distress variables predict change in sexual harassment. Reciprocal causal relations were present when SH both *predicted* alcohol use or psychological distress and *was predicted by* alcohol use or psychological distress.

To minimize potential bias resulting from missing data in the final sample, we used full information maximum likelihood (FIML) in Mplus version 7.2 software. FIML utilizes all available data from participants at each time point. Using all available data results in less

bias compared to listwise deletion (Enders, 2001). Analyses were conducted with men and women separately and for harassment at work and school separately. Also, analyses were conducted first on the full SH scale and then on each harassment subscale (gender harassment, unwanted attention, and sexual coercion). Due to a very small number of men reporting experiences of sexual coercion (under 6%), analyses were not conducted on the sexual coercion subscale with men.

Results

Zero-order correlations were estimated as preliminary analyses (see Table 2). At the bivariate level, among women at both work and school, overall SH and the subscales were positively correlated with alcohol problems, binge drinking, depression, and anger with a few exceptions. Among men, results were less consistent. Overall SH and the subscales were generally related to alcohol problems and depression at both work and school. Anger was related to SH and all subscales for men at work only. SH was not related to binge drinking for those who worked, but some subscales were related to binge drinking at school. Anger was also occasionally related to SH at work.

Sexual Harassment at Work and Alcohol Use

Unless otherwise noted, all reported effects are positive. See Tables 3 and 4 for full results. Because analyses with the logit portion of the model for problem drinking yielded no significant results (in other words, SH did not predict whether or not students experienced any vs. no alcohol problems), only results for the count portion (where SH predicts the number of alcohol problems experienced) of the model are discussed (though coefficients for the logit models are shown in Tables 3 and 4).

Among women at work, the cross-lagged paths between the full SH scale as well as each subscale and the count (i.e., number) of alcohol problems were all significant, supporting the hypothesis. In other words, there were significant reciprocal causal effects showing that being sexually harassed at work predicted the number of alcohol problems among women and vice versa. For the analyses with binge drinking among women, binge drinking at W1 predicted W2 workplace SH (and each subscale) but SH at W1 did not predict W2 binge drinking. Among men, the full SH scale predicting number of alcohol problems at W2 was the only significant effect for that pair of variables. Unexpectedly, W1 gender harassment at work predicted less binge drinking at W2 for men. Similar to the results for women, binge drinking predicted unwanted attention at work at W2 for men.

Sexual Harassment at Work and Psychological distress

Among women, the cross-lagged paths between the full sexual harassment scale as well as gender harassment and depression were significant, signaling reciprocal causal relations between overall SH and gender harassment at work and depression among women, again in support of the hypothesis. With the other subscales in the model, depression at W1 predicted unwanted attention at work at W2 whereas workplace sexual coercion at W1 predicted depression at W2. When anger was in the model, there were reciprocal relations between only gender harassment at work and anger for women. Anger predicted overall workplace

sexual harassment at W2, unwanted attention, and sexual coercion, but not vice versa for women. Among men, there were no significant unidirectional or reciprocal effects between workplace SH and depression. However, similar to the effects for women, anger at W1 predicted the full SH scale, gender harassment, and unwanted attention at work at W2. SH did not predict anger for men at work.

Sexual Harassment at School and Alcohol Use

Among women, there were reciprocal relations between overall SH at school and number of alcohol problems. Each harassment subscale at W1 also predicted number of alcohol problems at W2 but not vice versa, partially supporting the hypothesis. With binge drinking among women, the full W1 SH scale, gender harassment, and sexual coercion at school predicted W2 binge drinking, whereas W1 binge drinking predicted unwanted attention at school at W2. Like the results for women, among men there were reciprocal relationships between the full SH scale and number of alcohol problems. Also similar to women, unwanted attention at school at W1 predicted W2 count of alcohol problems. Unlike the results for women, however, there were reciprocal relations between gender harassment at school and the count of alcohol problems. There were no significant effects between binge drinking and school SH for men

Sexual Harassment at School and Psychological distress

Among women, there were reciprocal causal effects between depression and gender harassment at school, supporting the hypothesis. The full W1 SH scale, unwanted attention, and coercion at school predicted depression at W2. For anger, there were reciprocal relations with overall SH and each subscale for women again supporting the hypothesis. Among men, with the exception of coercion, the reciprocal relations between each of the SH scales and both depression and anger were all significant.

Discussion

In this study, we examined the causal reciprocal, or cross-lagged, associations between experiencing sexual harassment and two health outcomes: (1) alcohol use, specifically binge drinking and alcohol problems; and (2) psychological distress problems, specifically depression and anger. We hypothesized that SH would predict alcohol use and psychological distress outcomes and also that alcohol use and psychological distress problems would predict SH experiences. This hypothesis was partially supported. There were reciprocal effects between all SH scales and alcohol problems for women at work, between all SH scales (except coercion, which was not examined for men) and depression for men at school, and between all SH scales and anger for both men and women at school. Additionally, there were reciprocal relations for both sexes between the full SH scale at school and alcohol problems, between gender harassment at school and alcohol problems for men, between gender harassment at school and depression among women, and between overall SH and depression, gender harassment and depression, and gender harassment and anger for women at work. These results indicate that SH and both kinds of health problems can be cyclical, with each serving as a potential risk factor for the other.

There were no reciprocal relations involving binge drinking, which was surprising considering past research finding relations between SH and binge drinking among adults (e.g., McGinley, Richman, & Rospenda, 2011; Richman et al., 1999). Perhaps binge drinking is so common among college students that associations with specific risk factors like SH are diluted by the stronger risk factor of merely being in college. Previous research has shown that there is a marked increase in drinking during the transition to college (Jager, Keyes, & Schulenberg, 2015; Sher & Rutledge, 2007). Rates of binge drinking (in the past 30 days) for several years up through 2011 among college students have held steady at nearly 40% in the past 30 days (White & Hingson, n.d.). Often, binge drinking rates decline after age 22 (Jager et al., 2015). Therefore, among college students in particular, it may be that more serious alcohol use problems, such as those measured by the RAPI, are better indicative of relations with significant interpersonal stressors like SH victimization.

An interesting finding emerged among the results for the psychological distress outcomes. For SH at work, when reciprocal relations did *not* emerge, anger predicted SH for both genders. Conversely, for women only, SH predicted depression. This suggests that anger is more often a precursor to SH than depression for both genders, whereas depression is more often a consequence of SH than anger for women. This may be because SH is not about sexual arousal but rather power or domination (Berdahl, 2007; Pina & Gannon, 2012). Those who express their feelings of anger may be perceived as less likeable or as attempting to exert power, and SH may be an attempt to “put them in their place” as the recipients of anger attempt to assert their own power over the angry or hostile individual, regardless of gender of the individuals involved.

We conducted analyses separately for two contexts: work and school. Work and school are two distinct environments which may put individuals at risk. There were more significant effects in the workplace among women and fewer for men in terms of depression and alcohol use, perhaps because the types of jobs that college students typically hold tend to be contexts in which harassment against women rather than men is more likely to occur (e.g., serving or retail jobs) (Fineran & Gruber, 2009). However, harassment at school and health outcomes were reciprocally related more often for men than for women. Perhaps there is less awareness of SH as a problem for men at school compared to women, leading to an environment where the causes and effects of SH are not well known or addressed. Indeed much of the media attention surrounding the problem of sexual crimes and harassment on college campuses is focused on women. Alternatively, perhaps specific environments at school provide settings where SH and alcohol use are likely to co-occur for men, such as fraternity houses/parties. In research on middle school students, boys were more likely to have experienced gender harassment from other boys rather than girls or adults (Bucchianeri, Eisenberg, Wall, Piran, & Neumark-Sztainer, 2014). If this pattern is continued into the college years, perhaps the those who display mental health symptoms are harassed more often for violating gender norms (e.g., appearing less masculine or manly), leading to increased feelings psychological distress. It is clear that future research is needed to pinpoint the perceptions of SH in various contexts and understanding the wide array of potential consequences and antecedents.

We believed it was important to examine the overall SH scale as well as the subscales separately because certain types of SH may be more upsetting than others (Fineran & Gruber, 2009; Pina et al., 2009; Richman et al., 1999). The overall SH scale and gender harassment had similar results, suggesting that the overall SH results may have been driven by gender harassment, perhaps because gender harassment is typically more common than the other types (Berdahl, 2007). Otherwise there did not seem to be much of a discernable pattern; though it is clear that different types of sexual harassment are related to different variables.

Limitations and Future Directions

The results should be considered in light of several limitations. First, all data were self-report, resulting in potential mono-method bias. Second, response rates were fairly low at 32.8%, though not unreasonable for a web survey. A meta-analysis on response rates found a wide range of response rates to web surveys (11% – 88%) with an average of 34% (Shih & Fan, 2008), which is similar to our response rate. Third, creating latent change scores with dynamic systems modeling would have allowed examination of the effect of changes in each variable on the other, however, the non-normal distribution of the alcohol problems variable was a concern and limited the type of analyses that were possible. Fourth, the internal consistency for men reporting experiences of gender harassment (a three item subscale) was very low, potentially calling into question the findings with this particular construct. Finally, for some of the analyses of men at work experiencing sexual harassment, the sample size was low, potentially introducing a problem with statistical power.

An important consideration for future work will be to assess potential moderators. The relation between harassment and health outcomes is likely to be more complex given individuals' personality characteristics, coping styles, family history of alcoholism or mental health, and race to name a few. In fact, some research has found race differences in prevalence of and reaction to different types of SH (Yoon, Funk, & Kropf, 2010; Kearney & Gilbert, 2012). Additionally, research has shown that previous SH is one of the best predictors of future victimization. Gidycz and colleagues (2007; 2008) found that alcohol use exacerbated the effect of previous sexual victimization on future victimization. Thus, future research to examine more complex longitudinal models of reciprocal effects is warranted. For example, it would be important to examine indirect effects in which health problems might mediate the effect of prior SH on future SH. Such research would help clarify the strength and longevity of the cyclical nature of the relationships between SH and health outcomes, in addition to identifying potential effective intervention points.

In addition, there may be definitional issues with SH in a college sample because young adults in a college environment are more likely to be dating casually (Bogle, 2008) and certain behaviors, such as flirting or telling jokes of a sexual nature, may be viewed as welcome and typical (see Pina et al., 2009 for an in-depth discussion of definitional issues). Future research should consider how experiences as well as *perceptions* of SH contribute to the effects and predictors of SH in this age group.

Conclusions and Implications

The current research showing that SH and alcohol use and psychological distress are reciprocal and causally related is an important step in understanding the effects and the potential causes of SH for prevention and intervention efforts. Alcohol problems and psychological distress measures both contribute to, and are affected by, SH in various forms. Moreover, it has been argued that harassers have some similar characteristics to those who commit more serious sexual offenses and that harassers may switch or escalate their behaviors (Lucero, Allen, & Middleton, 2006; Pina et al., 2009), meaning that harassment could be a precursor to sexual violence, thus highlighting the need to intervene and prevent SH as one component of sexual violence prevention on campus. Those involved in prevention efforts must be aware of potential precursors to harassment and those involved in intervention efforts must be aware of potential consequences. Success in treating harassed individuals would clearly be enhanced by understanding the complex nature of predictors and consequences of SH. Clodfelter et al. (2010) reported that the majority of individuals who were harassed at a college campus discussed it with someone outside the university, not with officials. Also, in the AAU investigation, only 44.3% of students thought campus officials would take action against an offender of sexual assault and 63.6% believed the report would be taken seriously by officials (Cantor et al., 2015). If officials remain unaware of SH at their institution, perhaps partly because of the rather pervasive belief that offenders would not be reprimanded and reports would not be taken seriously, the issue is clearly more difficult to address. Certainly, an important step to curb the occurrence of sexual victimization is for university officials to be diligent in their efforts to be available to those who want to report cases and take them seriously. Efforts must be combined and holistic in order to prevent and treat the problem of sexual victimization of college students.

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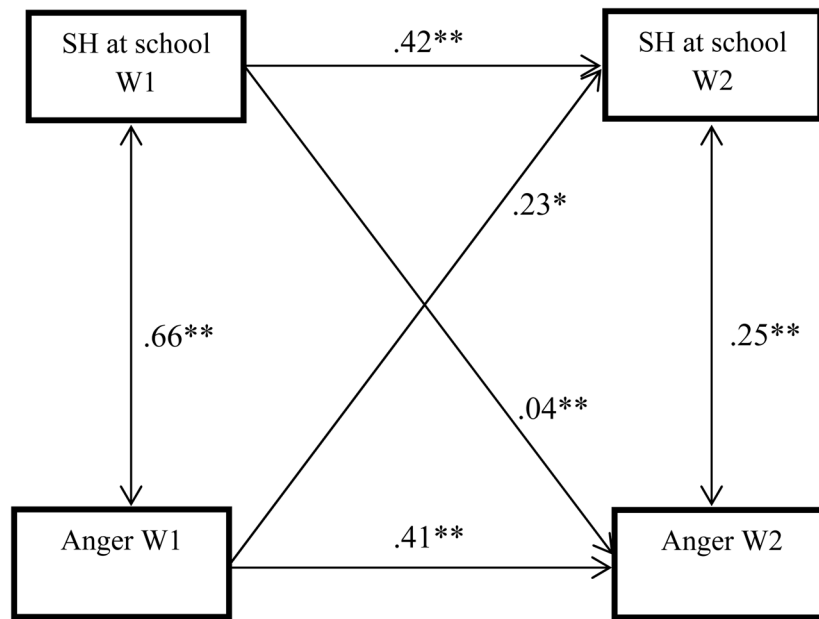


Figure 1. Cross-lagged panel model depicting the reciprocal causal relations between the overall sexual harassment scale and anger for men at school (estimates were similar for women). Sexual harassment at school at W1 predicted anger at W2 controlling for anger reported at W1. Similarly, anger at W1 predicted experiencing SH at W2 controlling for SH experiences at W1. This shows causal reciprocal causal relations among SH and anger.

Demographic Variables at Baseline Separated by those who were in School and those who Worked

Table 1

Variable	Students in school (<i>n</i> = 2,327)		Students who worked (<i>n</i> = 1,716)			
	<i>M</i>	<i>SD</i>	<i>n</i> (%)	<i>M</i>	<i>SD</i>	<i>n</i> (%)
Gender						
Women			1,339 (57.5)			1,022 (59.6)
Men			982 (42.2)			689 (40.2)
Age	18.60	1.72		18.61	1.74	
Race/Ethnicity						
White			1,286 (55.3)			1,027 (59.8)
Black			170 (7.3)			118 (6.9)
Latino			308 (13.2)			226 (13.2)
Asian			365 (15.7)			206 (12.0)
“Other”			171 (7.3)			119 (6.9)

Note: the percentages for gender and race/ethnicity do not add up to 100% due to missing data on those items

Table 2

Zero-order Correlations between Sexual Harassment and Health Indices

	Alcohol Problems		Binge Drinking		Depression		Anger/hostility	
	W1	W2	W1	W2	W1	W2	W1	W2
Women - Work (n's = 396-943)								
Overall Sexual Harassment W1	.24**	.29**	.20**	.11*	.16**	.18**	.23**	.15**
Overall Sexual Harassment W2	.22**	.30**	.17**	.15**	.10**	.18**	.19**	.16**
Gender Harassment W1	.19**	.24**	.16**	.08	.14**	.17**	.18**	.17**
Gender Harassment W2	.16**	.27**	.13**	.13**	.12**	.20**	.17**	.16**
Unwanted sexual attention W1	.18**	.23**	.19**	.15**	.17**	.14**	.21**	.12**
Unwanted sexual attention W2	.20**	.22**	.17**	.14**	.08*	.14**	.15**	.15**
Sexual Coercion W1	.20**	.21**	.09*	.01	.06	.13**	.16**	.07
Sexual Coercion W2	.16**	.25**	.09*	.08*	.04	.10**	.14**	.08*
Men - Work (n's = 190-640)								
Overall Sexual Harassment W1	.28**	.22**	.08	-.05	.12*	.20**	.10	.07
Overall Sexual Harassment W2	.18**	.35**	.09	.03	.16**	.18**	.19**	.24**
Gender Harassment W1	.32**	.12	.09	-.10	.17**	.16**	.11*	.06
Gender Harassment W2	.19**	.29**	.08	.03	.20**	.20**	.21**	.24**
Unwanted sexual attention W1	.18**	.18*	.04	-.02	.07	.13*	.05	.04
Unwanted sexual attention W2	.07	.25**	.07	.05	.11**	.14**	.13**	.18**
Women - School (n's = 661-1,180)								
Overall Sexual Harassment W1	.30**	.36**	.18**	.17**	.23**	.29**	.26**	.27**
Overall Sexual Harassment W2	.17**	.29**	.14**	.18**	.13**	.26**	.19**	.22**
Gender Harassment W1	.22**	.29**	.12**	.14**	.21**	.27**	.24**	.25**
Gender Harassment W2	.13**	.25**	.10**	.15**	.14**	.24**	.18**	.19**
Unwanted sexual attention W1	.25**	.28**	.19**	.15**	.20**	.25**	.22**	.23**
Unwanted sexual attention W2	.16**	.24**	.15**	.18**	.11**	.24**	.15**	.20**

	Alcohol Problems		Binge Drinking		Depression		Anger/hostility	
	W1	W2	W1	W2	W1	W2	W1	W2
Sexual Coercion W1	.31**	.36**	.15**	.14**	.16**	.19**	.20**	.20**
Sexual Coercion W2	.09*	.28**	.10**	.15**	.09**	.17**	.18**	.16**
Men – School (n's = 429–452)								
Overall Sexual Harassment W1	.29**	.25**	.17**	.11*	.26**	.21**	.28**	.24**
Overall Sexual Harassment W2	.21**	.28**	.05	.01	.23**	.28**	.19**	.30**
Gender Harassment W1	.25**	.28**	.17**	.12**	.25**	.20**	.26**	.22**
Gender Harassment W2	.24**	.20**	.04	.02	.24**	.23**	.17**	.26**
Unwanted sexual attention W1	.21**	.22**	.13**	.09*	.22**	.20**	.24**	.23**
Unwanted sexual attention W2	.15**	.20**	.03	.01	.18**	.27**	.14**	.26**

Note:

* $p < .01$

** $p < .05$.

W1 = Wave 1, W2 = Wave 2

Full details regarding sample sizes in each analysis is available from the first author.

Table 3

Reciprocal Relations between Sexual Harassment at School and Psychological Distress or Alcohol Use

Sexual Harassment Scales (School)	Psychological Distress and Drinking Scales									
	RAPI count		RAPI logit [†]		Binge		Depression		Anger	
	W1 SH → W2 RAPI b(SE)	W1 RAPI → W2 SH b(SE)	W1 SH → W2 RAPI b(SE)	SH W1 → Binge W2 b(SE)	Binge W1 → SH W2 b(SE)	SH W1 → Dep W2 b(SE)	Dep W1 → SH W2 b(SE)	SH W1 → Anger W2 b(SE)	Anger W1 → SH W2 b(SE)	
Overall Sexual Harassment										
Men	.08(.03)*	.03(.01)**	.01(.13)	.02(.02)	-.08(.09)	.43(.11)**	.55(.03)**	.41(.03)**	.23(.10)*	
Women	.08(.01)**	.07(.02)**	-.11(.11)	.02(.01)*	.17(.10)	.21(.15)	.04(.01)**	.04(.01)**	.41(.12)*	
Gender Harassment										
Men	.54(.19)*	.01(.00)*	-.65(.98)	.15(.14)	-.01(.01)	.06(.01)**	.20(.07)*	.42(.03)**	.02(.01)*	
Women	.37(.09)**	.00(.00)	-.32(.46)	.17(.07)*	.02(.01)	.04(.02)*	.31(.05)**	.28(.05)**	.05(.02)**	
Unwanted Attention										
Men	.46(.16)*	.00(.00)	-1.09(1.17)	.11(.13)	.00(.01)	.05(.02)**	.20(.09)*	.31(.07)**	.03(.01)*	
Women	.32(.08)**	.00(.00)	.19(.34)	.08(.07)	.03(.01)*	.03(.02)	.26(.04)**	.24(.05)**	.04(.02)*	
Sexual Coercion										
Men	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
Women	.98(.20)**	.00(.00)	.49(.14)	.32(.16)*	.01(.01)	.01(.01)	.45(.10)**	.53(.12)**	.03(.01)**	

Note:

* $p < .05$,

** $p < .001$.

Sample sizes: $n(\text{Men}) = 871$, $n(\text{Women}) = 1,201$

[†]The inflation variable cannot be a predictor, therefore the coefficient for the logit alcohol problems variable predicting SH is not given. For each analysis, the estimates for the cross-lagged estimate are given. The SH variable is given in the left column and distress/alcohol variable in the top row. Under each distress/alcohol variable, the direction of the effect (whether SH or distress/alcohol variable is the predictor or outcome) is specified.

Table 4

Reciprocal Relations between Sexual Harassment at Work and Psychological Distress or Alcohol Use

Sexual Harassment Scales (Work)	Psychological Distress and Drinking Scales												
	RAPI count		RAPI logit [†]		Binge		Depression		Anger				
	W1 SH → W2 RAPI b(SE)	W1 RAPI → W2 SH b(SE)	W1 SH → W2 RAPI b(SE)	SH W1 → Binge W2 b(SE)	Binge W1 → SH W2 b(SE)	SH W1 → Dep W2 b(SE)	Dep W1 → SH W2 b(SE)	SH W1 → Anger W2 b(SE)	Anger W1 → SH W2 b(SE)	SH W1 → Dep W2 b(SE)	Dep W1 → SH W2 b(SE)	SH W1 → Anger W2 b(SE)	Anger W1 → SH W2 b(SE)
Overall Sexual Harassment													
Men	.09(.04)*	.03(.02)	-.13(.25)	.00(.03)	.18(.09)	.04(.03)	.16(.17)	.00(.03)	.42(.13)*				
Women	.07(.02)**	.08(.02)**	.14(.10)	.01(.01)	.32(.10)*	.03(.01)*	.42(.18)*	.02(.01)	.40(.15)*				
Gender Harassment													
Men	.28(.38)	.00(.00)	-7.29(114.04)	-.83(.30)*	.03(.02)	.10(.17)	.03(.03)	.02(.18)	.06(.02)*				
Women	.53(.15)**	.01(.00)*	.53(.60)	-.03(.13)	.06(.02)**	.21(.08)*	.07(.02)*	.22(.10)*	.06(.02)*				
Unwanted Attention													
Men	.45(.38)	.00(.00)	-.83(1.81)	-.31(.42)	.04(.02)*	.25(.22)	.02(.02)	.13(.24)	.04(.02)*				
Women	.43(.13)*	.02(.00)**	.28(.63)	.07(.12)	.08(.02)**	.14(.08)	.06(.03)*	.05(.09)	.06(.02)*				
Sexual Coercion													
Men	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a				n/a
Women	.82(.31)*	.00(.00)*	5.66(2.99)	-.17(.26)	.02(.01)*	.49(.18)*	.01(.01)	.01(.22)	.02(.01)*				

Note:

* $p < .05$,

** $p < .001$.

Sample sizes: $n(\text{Men}) = 640$, $n(\text{Women}) = 925$

[†]The inflation variable cannot be a predictor, therefore the coefficient for the logit alcohol problems variable predicting SH is not given. For each analysis, the estimates for the cross-lagged estimate are given. The SH variable is given in the left column and distress/alcohol variable in the top row. Under each distress/alcohol variable, the direction of the effect (whether SH or distress/alcohol variable is the predictor or outcome) is specified.