

Fraternalities and Sexual Coercion: A Mediation Analysis

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Raymond Knight Ph.D., Advisor

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by

Rachel Portnoy

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Committee members:

Raymond Knight, Ph.D.  
Ellen Wright, Ph.D.  
Judith Sims-Knights, Ph.D.

## Abstract

Membership in college fraternities has been found to be associated with a higher risk of sexually coercive behavior (e.g., Boeringer, 1996; Frintner & Rubinson, 1993). Alcohol use, hostility toward women, and negative masculinity have been identified as key risk factors for sexually coercive behavior (e.g., Abbey & McAuslan, 2004; Lackie & de Man, 1997; Testa, 2002); they could potentially mediate the relation between fraternity membership and coercion (Kingree & Thompson, 2013). The current study empirically examined the potential mediating roles of Alcohol Use, Hostility toward Women, and Negative Masculinity. It was hypothesized that Fraternity Membership and Sexual Coercion would be related and that these risk factors would significantly mediate this relation for all levels of Sexual Coercion. We analyzed data on 607 undergraduate males at three universities of varying sizes in the United States using the Multidimensional Inventory of Development, Sex and Aggression (MIDSA). We found that fraternity membership did in fact predict sexual coercion. Unexpectedly, Alcohol Use only mediated this relation for the less severe levels of coercion. In contrast, Hostility toward Women mediated across all levels of coercion, whereas Negative Masculinity did not mediate any levels of coercion. Thus, consumption of alcohol and hostile attitudes toward women might play key roles in facilitating sexually coercive behavior, particularly in the fraternity setting. The results from this study can be helpful in designing appropriate sexual-assault prevention programs in university settings. Future replications and expansions of the present study may seek to examine the role of other potential mediators, and it may be worthwhile to break coercion down by strategy rather than severity.

*Keywords:* fraternity, sexual coercion, alcohol, hostility toward women, masculinity

### **Fraternalities and Sexual Coercion: A Mediation Analysis**

Psychologists have long studied sexual aggression on college campuses and, more specifically, the ways in which fraternity membership, alcohol use, and rape-supportive attitudes may serve as predictors of sexual coercion (e.g., Abbey & McAuslan, 2004; Boeringer, 1996; Testa, 2002). This topic is particularly important in understanding why sexual assault occurs and which factors may contribute to the incidence of sexual assault in the university setting. Research in this area can be instrumental in creating and implementing appropriate sexual assault prevention programs on college campuses. The present study investigated the mediating roles of Alcohol Use, Hostility toward Women, and Negative Masculinity in the relation between Fraternity Membership and Sexual Coercion on three college campuses.

Previous literature has demonstrated a link between fraternity membership and sexually coercive behavior (Boeringer, 1996; Boeringer, Shehan, & Akers, 1991; Frintner & Rubinson, 1993; Martin & Hummer, 1989). Fraternity members have been found to engage specifically in nonphysical coercive behavior, such as providing victims with alcohol or drugs (Boeringer, 1996; Boeringer et al., 1991), and are often overrepresented among assailants in the university setting (Frintner & Rubinson, 1993). Further, fraternity brothers may reinforce one another for exhibiting coercive behavior, creating an environment that fosters sexual assault (Boeringer, et al., 1991). Some literature has, however, contradicted such findings. Schwartz and Nogrady (1996) found that fraternity members at a large Midwestern university were no more likely than independents to believe in rape myths or to be sexual coercers, leaving room for further investigation.

Fraternity membership has also been associated with excessive alcohol use (Frintner & Rubinson, 1993; Martin & Hummer, 1989). Although Schwartz and Nogrady (1996) failed to

find that fraternity men were no more likely than independents to exhibit excessive alcohol use, other studies have demonstrated a fairly consistent association between alcohol use and sexual coercion within the university setting (Frintner & Rubinson, 1993; Gervais, DiLillo, & McChargue, 2014; Martin & Hummer, 1989).

Findings on the covariation between alcohol use and sexual aggression have been somewhat mixed outside of the university setting. Testa (2002) reviewed previous literature on the impact of men's alcohol use on sexual aggression and found that associational and event-based studies had mixed results about the correlation between alcohol use and sexual aggression. In contrast, experimental research has found a consistent effect of alcohol consumption on acceptance of sexual aggression and likelihood of sexually aggressive behavior within hypothetical romantic encounters. Overall, the role that alcohol use plays in the relation between fraternity membership and sexual coercion requires further research.

Fraternity membership has also been linked to certain attitudes that might promote the use of sexually coercive strategies. Hostility toward women and negative masculinity, two variables that are often grouped together in the relevant literature, reflect negative attitudes toward women, beliefs in myths about sexual assault (such as the idea that women who wear provocative attire deserve to be raped), and adherence to hyper-masculine ideals such as out-drinking others and defending one's honor. Fraternities have been associated with such attitudes in previous literature (Humphrey & Kahn, 2000; Martin & Hummer, 1989; Thompson, Koss, Kingree, & Rice, 2011). Thompson et al. (2011) found that attitudes conducive to and supportive of sexual aggression, which are closely linked to hostility toward women and negative masculinity, were associated with a sexual aggression one year later. Additionally, Martin and Hummer (1989) looked at the norms and dynamics of fraternities that might be conducive to

sexual aggression and found that fraternity members treat women as commodities, specifically as bait for new members, as sexual prey, and as servers of their needs. Humphrey and Kahn (2000) added an interesting component to their study by separating high-risk fraternities and athletic teams from low-risk ones based on student perceptions. They found that high-risk groups scored higher on sexual aggression and hostility toward women than low-risk groups and independents, and that hostility toward women predicted high-risk group membership (Humphrey & Kahn, 2000). Thus, hostility toward women and negative masculinity seem to be key features of fraternities, particularly those deemed dangerous by their relevant student population.

Hostility toward women and negative masculinity have also been directly linked to sexual aggression (Abbey & McAuslan, 2004; Lackie & de Man, 1997) and rape myth acceptance (Lonsway & Fitzgerald, 1995). In a meta-analysis, Murnen, Wright, and Kaluzny (2002) examined eleven different measures of masculine ideology to see how strongly they related to sexual aggression. They found that the largest effect sizes were for a few variables including hostile masculinity, which reflects the desire to be dominating and controlling as well as a distrustful attitude toward women (Malamuth, Sockloski, Koss, & Tanaka, 1991, as cited in Murnen et al., 2002). They also found this for hyper-masculinity, which reflects beliefs that violence is manly, as well as sexually callous attitudes (Mosher & Sirkin, 1994, as cited in Murnen et al., 2002).

Despite all these findings a few studies failed to find a link between hostility toward women, masculine attitudes, and sexual aggression. Abbey, Parkhill, Clinton-Sherrod, and Zawacki (2007) studied 163 men in the Detroit area and found no differences between the perpetrator group and non-perpetrator group in hostility toward women. It is worth noting, however, that this study did not look exclusively at university students, suggesting that the

relation between hostility toward women and sexual aggression might be specific to college populations. Senn, Desmarais, Verberg, and Wood (2000) also found that hostility toward women was not a predictor of sexual aggression, but this study looked at the population in a small Canadian city and not a university, and thus the results might not carry much weight in the university context.

It is important to consider individual differences among the universities that have been studied, particularly the number of undergraduates enrolled at each institution, which might play a role in the associations among fraternity membership, sexual coercion, alcohol use, hostility toward women and negative masculinity. Two studies looked at how fraternity membership correlated with these variables in a smaller university setting. Eberhardt, Rice, and Smith (2003) examined the effects of fraternity and sorority membership on a number of variables at a small liberal arts institution. They found that Greek membership was associated with alcohol abuse but were similar to independents in unsafe sexual behaviors (Eberhardt et al., 2003). A few years later, Murnen and Kohlman (2007) performed a meta-analysis of the data on fraternity membership, athletic involvement, and sexually aggressive attitudes. Importantly, this meta-analysis considered size of the college as a potentially influential variable as well. Overall, they found a correlation between fraternity membership and belief in rape myths, but the effect sizes were larger for smaller schools. They also found a correlation between fraternity membership and hyper-masculinity, as well as self-reported sexual aggression, again with larger effect sizes at smaller schools (Murnen & Kohlman, 2007). Murnen and Kohlman argued that these larger effect sizes at smaller universities could be explained by the idea that group norms and masculine behaviors can be more easily defined at small schools and in this way, peer pressure is greater at smaller universities. Additionally, smaller schools may have fewer social outlets,

which may enhance the effects of all-male groups (Murnen & Kohlman, 2007). Other than these studies, there is a dearth of research on the relations between fraternity membership, sexual coercion, and our proposed mediators at small universities. For this reason, we included in our sample students from a small, private research institution.

Despite the abundance of literature on the associations between and among the variables at hand, research on the mediating roles of alcohol use, hostility toward women, and negative masculinity in the relation between fraternity membership and sexual coercion is rare. Kingree and Thompson (2013) examined several possible mediators between fraternity membership and sexual aggression at large southeastern university and found that fraternity membership was associated with sexual aggression and that high-risk alcohol use mediated this relation. In contrast, they found that hostility toward women neither correlated with fraternity membership nor mediated the relation between fraternity membership and sexual aggression, although they did find that hostility toward women correlated with sexual aggression. The results of this study argue for further investigation of the mediating roles of alcohol use, hostility toward women and negative masculinity in the relation between fraternity membership and sexual coercion.

In sum, fraternity membership has been found to correlate positively with sexually aggressive behavior, mainly for the nonphysical coercive strategies, at both large and small universities. Previous literature has also found an association between alcohol consumption and sexual aggression, and between fraternity membership and alcohol use. Further, research has demonstrated a link between fraternity membership and hostility toward women as well as hyper-masculinity, in addition to an association between these two attitudes and sexual aggression, though there is some conflicting evidence in this area. Research on the mediating role of all three variables in the relation between fraternity membership and sexual coercion is

sparse, and few studies have divided sexual coercion into subcategories to investigate differences between varying levels of sexual activities involved in coercive behavior, such as kissing, touching, oral or anal sex, or attempted or completed intercourse.

The present study sought to replicate and expand upon Kingree and Thompson (2013) by adding Negative Masculinity as a potential mediator and splitting Sexual Coercion into three severity levels<sup>1</sup>. We analyzed data from 607 undergraduate males who were administered the Multidimensional Inventory of Development, Sex and Aggression (MIDSA). We analyzed whether participants had ever been affiliated with a fraternity, their overall alcohol consumption during teenage years and adulthood, their response to Hostility toward Women and Negative Masculinity scales, and three severity-levels of Sexual Coercion. Due to the dearth of research examining the potential mediators between Fraternity Membership and Sexual Coercion, we performed mediation analyses with Fraternity Membership as the predictor; Alcohol Use, Hostility toward Women, and Negative Masculinity as the mediators; and three levels of Sexual Coercion as the outcomes.

It is important to note our reasoning behind looking at three levels of coercion based on severity (the specific sexual act involved such as touching versus intercourse). An alternative would have been to break coercion down by strategy (such as physical force versus provision of alcohol or drugs). Initial IRT analyses of the coercion scales in the MIDSA indicated that the coercion continuum broke down into factors based on strategy (Guay, McPhail, & Knight, 2015). Thus, running our mediation analyses using strategy rather than severity scales would have potentially truncated the categories of coercion and resulted in very little variance within each

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<sup>1</sup> Note that Kingree and Thompson (2013) did include measures for different forms of coercion but ultimately collapsed these measures into a dichotomous scale due to a small number of respondents who endorsed certain types of coercion



individual coercion scale, reducing the likelihood of finding any significant results. Further, some strategy-related items were not introduced into the MDSA until after Version 3, significantly reducing our sample for the “manipulated/bribed” scale, one of five possible strategy scales, and effectually eliminating an entire outcome variable. For these two reasons, we chose to focus on severity rather than strategy

### **Hypotheses**

1. We predicted that Alcohol Use would mediate the relation between Fraternity Membership and all three levels of Sexual Coercion, consistent with Kingree and Thompson’s (2013) finding that alcohol use was a significant mediator in this relation. This hypothesis was also based on the studies previously described that have demonstrated links between fraternity membership and alcohol consumption (e.g. Frintner & Rubinson, 1993; Martin & Hummer, 1989) as well as between alcohol use and coercive behavior (e.g. Gervais, DiLillo, & McChargue, 2014; Martin & Hummer, 1989). Further support for this hypothesis comes from studies showing that alcohol use lowers inhibitions under certain circumstances (Easdon & Vogel-Sprott, 2000; Fillmore & Vogel-Sprott, 2000) and thus might contribute to sexual coercion committed by individuals who are prone to such behavior.
2. We predicted that Hostility toward Women and Negative Masculinity would significantly mediate the relation between Fraternity Membership and all three levels of Sexual Coercion. As indicated in the prior review, several studies have demonstrated associations between fraternity membership and these attitudes as well as between such attitudes and sexual assault. We also based this hypothesis on the conjecture that these

two attitudes are fundamentally conducive to rape and may explain perpetrators' justification or motivation for their coercive behavior.

## **Method**

### **Participants**

The sample comprised 615 undergraduate males at three universities of varying sizes, one in California and two in Massachusetts. All participants reported that they had had some form of previous sexual contact. Two individuals who had never had any sexual contact were removed from the sample, because they did not receive any questions about sexual coercion. Further, anyone over the age of 30 was removed to keep the sample to an appropriate age range. The sample comprised 607 participants after these deletions. The sample included 361 students (59.5%) attending a small, private research university with a liberal arts focus located in Massachusetts that is currently comprised of approximately 3600 undergraduates. The sample also included 199 students (32.8%) from a state university in Massachusetts, a public research university currently comprising approximately 7000 undergraduates. Finally, 47 participants (7.7%) were students at a state university in California, a public research university located in California that is currently comprises approximately 24,000 undergraduates. Ages ranged from 17 to 30 years with a mean of 19.55 and a standard deviation of 1.88. The sample identified predominantly as Caucasian ( $N = 407$ , 67.1%).

Because list-wise deletion was used in all mediation analyses, all participants with missing fraternity values were excluded. The following reflects demographic information about the remaining participants with valid fraternity values. The sample comprised 419 undergraduate males. Of those, 216 participants (51.6%) were students from the small MA university, 159 participants (37.9%) were students at the larger MA state university, and 44 participants (10.5%)

were students at the California university. Ages ranged from 17 to 30 years with a mean of 19.78 and a standard deviation of 2.00. Again, most participants identified as Caucasian ( $N = 275$ , 65.6%).

### **Measures**

To test our hypotheses about fraternities and sexual coercion, we used relevant items on Fraternity Membership, Alcohol Use, Hostility toward Women, Negative Masculinity, and Sexual Coercion history from previously collected data gathered between 1993 and 2016 using the Multidimensional Inventory of Development, Sex, and Aggression (MIDSA). The MIDSA is a computerized, revised and expanded version of the Multidimensional Assessment of Sex and Aggression (the MASA), which was originally created to gather information that could be used to classify adult sex offenders and has now been revised and expanded six times. The instrument has been shown to be reliable and valid (Knight & Cerce, 1999; Knight, Prentky, & Cerce, 1994). The MIDSA was administered to undergraduate students at all three universities for several years. We sampled data from three different versions of the MIDSA: Versions 2 and 3 of the MASA and the current version of the MIDSA (MIDSA, 2011).

**Sexual Coercion.** Sexual Coercion was defined as the employment of any tactic used to engage in a sexual act with an unwilling individual. The inventory asks 40 coercion questions and we recoded these items to create new scales that combined across versions of the MIDSA. Three final scales were then created by taking the maximum score reported across all coercion strategies for a given level of sexual severity. The final scales reflected three levels of severity: Level 1 (touching, feeling, kissing, or petting), Level 2 (other sexual acts, such as oral or anal sex), and Level 3 (attempted or completed sexual intercourse). Level 1 was proposed to be the least severe of the three levels, whereas Levels 2 and 3 were proposed to be similar in severity.

Because the manipulated/bribed option was only included in a subset of the MIDSA versions, we included only four different coercion tactics within each level of severity: the victim was drunk or high; the individual gave the victim alcohol or drugs on purpose; the individual threatened to use physical force; and the individual used physical force. All questions asked participants about the number of times they had employed the given coercive strategy to achieve a certain sexual act (e.g., “I have threatened to use physical force on someone [saying I would hit, grab, hold, or hurt them] to make them go along with: sex play [touching, feeling, kissing, or petting]”). The respondent could endorse one of several options on a frequency scale which ranged from Never (0) to Very Often (Over 50 times). A comprehensive list of the items included in each coercion severity scale can be found in Appendix A.

**Fraternity Membership.** Fraternity membership was defined as whether or not a participant had ever belonged to a fraternity. The original question asked the respondent to report the number of semesters involved in a fraternity on campus, to which the respondent could select one of seven options ranging from 0 to 6 semesters. This continuous scale was recoded into a dichotomous scale (0/1; 0 [no] and 2 through 6 [yes]).

**Alcohol Use.** Alcohol use was assessed using a continuous scale that measured the frequency of both getting drunk and general alcohol consumption as a teenager and as an adult. This scale was calculated by first recoding four different alcohol-use items to match across versions and then by taking the mean score across these four items. An example of an item included in this scale is, “As a teenager (from my 13th birthday to my 17th birthday), I: drank alcohol.” Respondents selected one of five or six options which ranged from *Never (0)* to *Very often (almost daily)* in response to these items. The Cronbach internal consistency for this scale

was found to be .89. A comprehensive list of the items included in this scale can be found in Appendix B.

**Hostility toward Women.** Hostility toward Women is a scale comprising items that assess negative attitudes toward women and cognitive distortions about rape (MIDSA, 2011), e.g., “most women are cold people” or “women who get raped probably deserved it.” A Hostility toward Women scale was created by taking the mean score across eight different items from the MIDSA. Participants selected one of four or five options, ranging from *Definitely false (0)* to *Definitely true (5)*, in response to various statements reflective of hostile attitudes toward women. Cronbach Internal consistency was .71. A comprehensive list of the items included in this scale can be found in Appendix C.

**Negative Masculinity.** Negative Masculinity reflected attitudes of toughness and masculine honor defending (MIDSA, 2011). A Negative Masculinity scale was created by taking the mean score across four different questions from the MIDSA such as “My friends think of me as being tough” and “I can take a beating as well as any man.” Participants responded to these statements with one of four or five options, ranging from *Definitely false (0)* to *Definitely true (5)*. Preliminary reliability analyses indicated that the internal consistency was improved if a fifth item, “I express opinions about things no matter what others may think,” was removed from the scale. For this reason, the fifth item was removed from the final scale in this study. The Cronbach internal consistency for the final scale of four items was .66. A comprehensive list of the items included in this scale can be found in Appendix D.

## **Procedure**

University IRB approval was obtained from each university for administering all versions of the MIDSA. Participants were students in either an Introduction to Psychology course or a

Statistics course at their respective universities and were asked to complete the assessment as a course requirement. The sample was administered either Version 2 or 3 of the MASA or the MIDSAs, depending on the most recent version of the MIDSAs in existence at the time of testing. These three versions of the MIDSAs differed slightly in their response options for the relevant questions, and some items were not introduced until later versions of the MASA, but all relevant items were recoded to match across versions and participants with any missing values were excluded from the analyses. All participants completed the assessment either in a laboratory setting on a computer that was never connected to the internet or with pencil and paper, and all participants completed the assessment in complete privacy. Administrators verbally provided a general description of the assessment as well as the information provided in the Informed Consent Form, including that the participant could ask a question or leave at any time without penalty. Written informed consent was then collected and anonymity was assured and maintained for all participants. Participants were given three hours to complete the assessment, although most took approximately one hour and thirty minutes.

### **Analyses**

We performed nine separate mediation analyses with the Andrew F. Hayes PROCESS program for SPSS, one for each combination of mediator and level of coercion. Bootstrap resampling of 10,000 cases and list-wise deletion were used in all analyses. Thus, any participant with a missing value for any one of the three involved variables was excluded.

### **Results**

We predicted that Alcohol Use, Hostility toward Women, and Negative Masculinity would significantly mediate the relation between Fraternity Membership and all three levels of Sexual Coercion. To test this hypothesis, we performed nine separate mediation analyses using

the Andrew F. Hayes PROCESS program for SPSS. Of the initial sample 56.7% of the participants (344 participants) reported that they had never belonged to a fraternity, 12.4% (75 participants) reported that they had belonged to a fraternity, and 31.0% (188 participants) had missing fraternity values. Those missing fraternity values were subsequently excluded list-wise deletion. Of the 419 participants with non-missing values for Fraternity Membership, 82.1% had never belonged to a fraternity and 17.9% had belonged to a fraternity. Descriptive statistics for all three mediators as well as all three levels of coercion, both across all participants and broken down by Fraternity Membership, can be found in Table 1.

To assess the relations among variables, zero order Pearson correlations were calculated between all variables included in the model (see Table 2). Fraternity Membership was significantly correlated with Level 1 Sexual Coercion,  $r = .15$ ,  $SE = .08$ ,  $p = .005$ . Fraternity Membership was significantly correlated with Level 2 Sexual Coercion,  $r = .13$ ,  $SE = .07$ ,  $p = .012$ . Fraternity Membership was significantly correlated with Level 3 Sexual Coercion,  $r = .13$ ,  $SE = .07$ ,  $p = .014$ .

### **Alcohol Use**

Fraternity Membership significantly predicted the mediator, Alcohol Use, for participants with valid Level 1 and Level 3 Coercion values,  $\beta = .49$ ,  $SE = .15$ ,  $p = .001$ . Fraternity Membership accounted for 2.5% of the variance in Alcohol Use ( $R^2 = .025$ ). Due to the smaller sample size for Level 2 Coercion, statistics were slightly different for this correlation. Fraternity Membership still significantly predicted the mediator, Alcohol Use, for participants with valid Level 2 Coercion values,  $\beta = .48$ ,  $SE = .16$ ,  $p = .002$ . Fraternity Membership accounted for 2.5% of the variance in Alcohol Use ( $R^2 = .025$ ).

**Level 1 Sexual Coercion:** As can be seen in the mediation model presented in Figure 1, Alcohol Use significantly predicted Level 1 Sexual Coercion,  $\beta = .07$ ,  $SE = .03$ ,  $p = .006$ . The indirect effect of Fraternity Membership on Level 1 Sexual Coercion through Alcohol Use was significant,  $\beta = .03$ ,  $SE = .08$ ,  $p = .042$ , 95% CI [.01, .07]. After controlling for Alcohol Use, the direct effect of Fraternity Membership on Level 1 Sexual Coercion was not significant,  $\beta = .14$ ,  $SE = .08$ ,  $p > .05$ , 95% CI [-.02, .29]. These results suggest that Alcohol Use significantly mediated the relation between Fraternity Membership and Level 1 Sexual Coercion and the non-significant direct effect indicates that full mediation occurred.

**Level 2 Sexual Coercion:** Alcohol Use did not significantly predict Level 2 Sexual Coercion,  $\beta = .04$ ,  $SE = .02$ ,  $p > .05$ . Because prediction of the outcome was not established, mediation by Alcohol Use for Level 2 Sexual Coercion was not present.

**Level 3 Sexual Coercion:** Alcohol Use did not significantly predict Level 3 Sexual Coercion,  $\beta = .02$ ,  $SE = .02$ ,  $p > .05$ . Because prediction of the outcome was not established, mediation by Alcohol Use for Level 3 Sexual Coercion was not present.

### **Hostility toward Women**

Fraternity Membership significantly predicted the mediator, Hostility toward Women, for participants with valid Level 1 and Level 3 Sexual Coercion values,  $\beta = .29$ ,  $SE = .08$ ,  $p < .001$ . Fraternity Membership accounted for 3.4% of the variance in Hostility toward Women, ( $R^2 = .034$ ). Due to the smaller sample size for Level 2 Coercion, statistics were slightly different for this correlation. Fraternity Membership still significantly predicted the mediator, Hostility toward Women, for participants with valid Level 2 Coercion values,  $\beta = .29$ ,  $SE = .08$ ,  $p < .001$ . Fraternity Membership accounted for 3.5% of the variance in Hostility toward Women ( $R^2 = .035$ ).



**Level 1 Sexual Coercion:** As depicted in Figure 2, Hostility toward Women significantly predicted Level 1 Sexual Coercion,  $\beta = .17$ ,  $SE = .05$ ,  $p = .001$ . The indirect effect of Fraternity Membership on Level 1 Sexual Coercion through Hostility toward Women was significant,  $\beta = .05$ ,  $SE = .02$ ,  $p = .011$ , 95% CI [.01, .11]. After controlling for Hostility toward Women, the direct effect of Fraternity Membership on Level 1 Sexual Coercion was not significant,  $\beta = .17$ ,  $SE = .08$ ,  $p = .126$ , 95% CI [-.03, .27]. These results suggest that Hostility toward Women significantly mediated the relation between Fraternity Membership and Level 1 Sexual Coercion and the non-significant direct effect indicates that full mediation occurred.

**Level 2 Sexual Coercion:** As depicted in Figure 3, Hostility toward Women significantly predicted Level 2 Sexual Coercion,  $\beta = .22$ ,  $SE = .04$ ,  $p < .001$ . The indirect effect of Fraternity Membership on Level 2 Sexual Coercion through Hostility toward Women was significant,  $\beta = .07$ ,  $SE = .03$ ,  $p = .003$ , 95% CI [.02, .14]. After controlling for Hostility toward Women, the direct effect of Fraternity Membership on Level 2 Sexual Coercion was not significant,  $\beta = .10$ ,  $SE = .07$ ,  $p > .05$ , 95% CI [-.03, .23]. These results suggest that Hostility toward Women significantly mediated the relation between Fraternity Membership and Level 2 Sexual Coercion and the non-significant direct effect indicates that full mediation occurred.

**Level 3 Sexual Coercion:** As depicted in Figure 4, Hostility toward Women significantly predicted Level 3 Sexual Coercion,  $\beta = .19$ ,  $SE = .04$ ,  $p < .001$ . The indirect effect of Fraternity Membership on Level 3 Sexual Coercion through Hostility toward Women was significant,  $\beta = .06$ ,  $SE = .02$ ,  $p = .004$ , 95% CI [.02, .12]. After controlling for Hostility toward Women, the direct effect of Fraternity Membership on Level 3 Sexual Coercion was not significant,  $\beta = .07$ ,  $SE = .07$ ,  $p > .05$ , 95% CI [-.05, .20]. These results suggest that Hostility toward Women

significantly mediated the relation between Fraternity Membership and Level 3 Sexual Coercion and the non-significant direct effect indicates that full mediation occurred.

### **Negative Masculinity**

Fraternity Membership did not significantly predict the mediator, Negative Masculinity, for participants with valid Level 1 and Level 3 Coercion values,  $\beta = -.04$ ,  $SE = .12$ ,  $p > .05$ .

Fraternity Membership accounted for .02% of the variance in Negative Masculinity ( $R^2 = .000$ ).

Due to the smaller sample size for Level 2 Coercion, statistics were slightly different for this correlation. Fraternity Membership still did not significantly predict the mediator, Negative Masculinity, for participants with valid Level 2 Coercion values,  $\beta = -.04$ ,  $SE = .13$ ,  $p > .05$ .

Fraternity Membership accounted for .03% of the variance in Negative Masculinity ( $R^2 = .000$ ).

Because prediction of the mediator by Fraternity Membership was not established for any levels of Sexual Coercion, mediation by Negative Masculinity was not present.

### **Discussion**

The present study investigated the mediating roles of Alcohol Use, Hostility toward Women and Negative Masculinity in the relation between Fraternity Membership and three levels of severity of Sexual Coercion. We predicted that all three proposed mediators would significantly mediate the relation between Fraternity Membership and all three levels of Sexual Coercion.

Overall, Fraternity Membership predicted Sexual Coercion across all levels of severity. For Level 1 Sexual Coercion, which reflected the lowest severity (touching, feeling kissing, petting), Alcohol Use significantly mediated the relation between Fraternity Membership and Sexual Coercion and there appeared to be full mediation due to the non-significant direct effect. For Levels 2 and 3 Sexual coercion, which reflected other sexual acts such as oral or anal sex

and attempted or completed intercourse, respectively, Alcohol Use did not significantly predict Sexual Coercion. Thus, the model was not significant and mediation did not occur. In summary, Alcohol Use fully mediated the relation between Fraternity Membership and Level 1 Sexual Coercion whereas Alcohol Use did not mediate between Fraternity Membership and Level 2 or 3 Sexual Coercion.

Hostility toward Women significantly mediated the relation between Fraternity Membership and all three levels of severity of Sexual Coercion and full mediation was present across all levels based on the non-significant direct effects. Fraternity Membership, however, did not significantly predict negative Masculinity, and thus the model was not significant and mediation by Negative Masculinity did not occur. Although the model was not significant and mediation by Negative Masculinity was not present, it is worth pointing out that Negative Masculinity did significantly predict Level 2 Sexual Coercion, although it is possible, given the fact that Negative Masculinity did not significantly predict the other levels of Sexual Coercion, that this may simply have been a Type I error.

Some of our results were consistent with our hypotheses. Alcohol use mediated Level 1 Sexual Coercion, the least severe level, partially confirming our hypotheses. Contrary to our predictions, however, Alcohol Use did not mediate for the more severe levels of Sexual Coercion. Hostility toward Women mediated across all levels of severity of Sexual Coercion, supporting our hypotheses. In contrast, Negative Masculinity did not mediate across any levels of Sexual Coercion because Fraternity Membership failed to predict Negative Masculinity. These results were inconsistent with our hypotheses. It is important to note that we did suspect that mediation might fail to reach significance for the more severe levels of Sexual Coercion due to the small number of respondents who endorsed these items. This might explain the disparity

between the significant mediation by Alcohol Use for Level 1 Sexual Coercion and the lack of mediation by Alcohol Use across Levels 2 and 3 of Sexual Coercion.

Overall, the results of this study support the findings of most of the relevant previous literature. The prediction of all three levels of Sexual Coercion by Fraternity Membership is consistent with the findings of several aforementioned studies (Boeringer, 1996; Boeringer et al., 1991; Frintner & Rubinson, 1993; Martin & Hummer, 1989). Further, findings on mediation by Alcohol Use for Level 1 Sexual Coercion support the results of Kingree and Thompson (2013), who studied undergraduate males at a large southeastern university and found that fraternity membership was associated with sexual aggression and that high-risk alcohol use mediated this relation. The lack of Alcohol Use mediation for the more severe levels of Sexual Coercion is not, however, consistent with Kingree and Thompson's findings (2013). Mediation by Hostility toward Women across all three levels of sexual coercion was also inconsistent with Kingree and Thompson's relevant results, which suggested that hostility toward women did not correlate with fraternity membership nor did it mediate the relation between fraternity membership and sexual aggression. This presents an interesting contradiction that requires further investigation.

We also found that Fraternity Membership failed to covary with Negative Masculinity, which is inconsistent with previous literature. Several studies have found an association between fraternities and hyper-masculine attitudes (Martin & Hummer, 1989; Murnen & Kohlman, 2007). For this reason, our Negative Masculinity results are somewhat puzzling in relation to prior studies and again, this topic requires further investigation.

Some possible explanations for our findings that Alcohol Use mediated the relation between Fraternity Membership and Level 1 Sexual Coercion is that alcohol consumption is prevalent at fraternity parties and a high level of drinking may serve to reduce inhibition (Easdon

& Vogel-Sprott, 2000; Fillmore & Vogel-Sprott, 2000), leading to sexually coercive behaviors in individuals who have coercive tendencies. It is possible, however, that alcohol did not mediate the relation for the two higher severity levels of sexual coercion because alcohol may also negatively affect sexual performance in males (Laumann, Paik, & Rosen, 1999), discouraging the completion of sexual intercourse but allowing for less severe forms of coercion. This theory only accounts for completed intercourse and not attempted intercourse, which was also included in Level 3 Sexual Coercion. Another possible explanation for the findings is that alcohol lowers inhibitions to some extent, leading to less severe coercive behavior, but does not lower inhibitions to such a degree that the coercer attempts or completes penetration of any kind, something that might require a different mechanism from decreased inhibition. A final explanation is simply that the number of respondents who endorsed the more severe levels of Sexual Coercion was too small to demonstrate a significant effect. This idea is supported by the fact that prediction of Level 2 Sexual Coercion by Alcohol Use was trending toward significance and the indirect effect was significant, suggesting that mediation might be detected with a larger sample.

The role of Hostility toward Women in the relation between Fraternity Membership and all levels of Sexual Coercion might be explained by the idea that such an attitude reflects negative feelings toward women and rape myth acceptance, both of which could serve as perpetrators' motivation and/or justification for committing sexual assault. Further, these attitudes might be particularly prevalent within fraternities due to the nature of such institutions, which provide a single-gendered environment where members can reward one another for exhibiting coercive behavior and promote rape myth acceptance and hostile attitudes toward women among their fellow fraternity brothers. The lack of association between Fraternity

Membership and Negative Masculinity poses somewhat of a dilemma, as we generally link fraternities with hyper-masculine ideals, an association supported by previous literature. Thus, this relation requires further investigation.

Several limitations of the present study should be considered. First, the sample size of fraternity members compared to the overall sample was relatively small for two reasons: most of the participants were freshmen because they were in an Introduction to Psychology course and there is a relatively small number of fraternity members at the small Massachusetts university in total, which was the principal location of study. This small sample size may have influenced our results. Second, the fact that the majority of the participants were Psychology majors may have skewed the results in that these students may differ from students of other majors on a variety of aspects such as certain personality traits (e.g., empathic abilities, conscientiousness, openness) and general stress level. Therefore, our findings may not reflect the larger population of undergraduate males, but rather a more niche population. Further, skewness and kurtosis values were substantially high, especially for the Sexual Coercion scales, and thus transforming the data to normalize the distribution be worthwhile. Another limitation is the wide time frame (1993-2016) from which data were pulled. It is important to consider potential generational changes and/or cohort effects that may have influenced the results. Additionally, manipulation and bribery were not included in any final coercion scales. Thus, an entire category of coercive behavior was missing from our analyses. It is also important to note that effect sizes were all small, suggesting relatively minimal real world implications of the findings.

Future replications and expansions of the present study may seek to gather data from a more diverse population of undergraduates, perhaps from various majors and class years. Other potential mediators are worth examining as well, such as sexual preoccupation, sexual

compulsivity, hyper-sexuality, and perhaps drug use in addition to alcohol use. Additionally, it may be worthwhile to replicate the study exclusively with students at a small university and/or to include the size of the university as a potential covariate. It would also be interesting to perform the study in both liberal and conservative political atmospheres, large and small schools, and state schools and private universities, as well as in various regions of the United States to assess the differences among these settings. Investigating other categories and scales of coercion may also be worthwhile, as one could look at the coercive strategy employed rather than the level of severity. It may also be worthwhile to look at the effect of race on the relevant relations. Further, running the mediation model multiple ways would be a beneficial, perhaps with Sexual Coercion and/or the current mediators as the predictors and with Fraternity Membership as the outcome. This is important because mediation analyses require us to assume causality, but we did not know when running the models whether being in a fraternity for a longer period increased the incidence of coercion and the three mediators, or if individuals who already exhibited these attitudes and behaviors were more likely to join fraternities in the first place.

Overall, the results of the present study indicate that it would be beneficial to incorporate alcohol-related education and information that helps to dispel rape-myths in rape prevention programs. It may be particularly beneficial to target fraternities and focus on the effects that both alcohol use and this type of male-gendered institution have on sexual coercion in these programs. Further, a potential direction is to explore the ways in which the incidence of sexual coercion can be reduced by altering the ways fraternities function. In a meta-analysis, Anderson and Whiston (2005) found that rape-prevention programs are somewhat successful in improving rape-related knowledge and attitudes but are generally unsuccessful in reducing the incidence of sexual

assault. The effectiveness of such programs might be improved by targeting the appropriate topics, such as fraternity functions and alcohol use.

In addition to implications for rape-prevention programs, our results provide insight into the many factors that contribute to the incidence of sexual assault on college campuses. It is important for young adults to be knowledgeable about these factors so that they can make informed decisions about the types of universities they want to attend, the functions they choose to visit on campus, and the ways in which women (and men) can look out for one another at such functions.



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## Appendix A

### Items Included in Final Sexual Coercion Scales

#### Level 1 Sexual Coercion:

1. I have threatened to use physical force on someone (saying I would hit, grab, hold, or hurt them) to make them go along with: sex play (touching, feeling, kissing, or petting)
2. I have used some physical force, such as pinning someone against a wall, grabbing them, hitting them, holding them down, or hurting them to make them go along with: sex play (touching, feeling, kissing, or petting)
3. I have done the following sexual acts with someone who was so drunk or high on drugs that they were not able to say no: sex play (touching, feeling, kissing, or petting)
4. I have given someone alcohol or drugs on purpose so that they could not say no to my doing the following sexual acts with them: sex play (touching, feeling, kissing, or petting)

#### Level 2 Sexual Coercion:

1. I have threatened to use physical force on someone (saying I would hit, grab, hold, or hurt them) to make them go along with: other sexual acts, such as oral or anal sex
2. I have used some physical force, such as pinning someone against a wall, grabbing them, hitting them, holding them down, or hurting them to make them go along with: other sexual acts, such as oral or anal sex
3. I have done the following sexual acts with a someone who was so drunk or high on drugs that they were not able to say no: other sexual acts, such as oral or anal sex
4. I have given someone alcohol or drugs on purpose so that they could not say no to my doing the following sexual acts with them: other sexual acts, such as oral or anal sex

## Level 3 Sexual Coercion:

1. I have threatened to use physical force on someone (saying I would hit, grab, hold, or hurt them) to make them go along with: attempted sexual intercourse
2. I have used some physical force, such as pinning someone against a wall, grabbing them, hitting them, holding them down, or hurting them to make them go along with: attempted sexual intercourse
3. I have done the following sexual acts with a someone who was so drunk or high on drugs that they were not able to say no: attempted or completed sexual intercourse
4. I have given someone alcohol or drugs on purpose so that they could not say no to my doing the following sexual acts with them: sexual intercourse

**Appendix B****Items Included in Final Alcohol Use Scale**

1. As a teenager (from my 13th birthday to my 17th birthday), I: drank alcohol.
2. As a teenager (from my 13th birthday to my 18th birthday), I: got drunk.
3. As an adult (since my 18th birthday), I: drank alcohol
4. As an adult (since my 18th birthday), I: got drunk

### Appendix C

#### Items Included in Final Hostility toward Women Scale

1. Most women are cold people
2. Since prostitutes sell their bodies for sexual purposes anyway, it is not as bad if someone forces them into sex
3. Women who get raped probably deserved it
4. If a woman gets drunk at a party, it is really her own fault if someone takes advantage of her sexually
5. A lot of women who get raped had "bad reputations" in the first place
6. If a woman or a girl does not strongly resist sexual advances, she is probably willing to have sex
7. A real man needs to have sex regularly
8. It is necessary for the man to be boss in a relationship with a woman



**Appendix D**

**Items Included in Final Negative Masculinity Scale**

1. I would beat on a guy who insulted my girl or wife
2. My friends think of me as being tough
3. I can hold my own with anybody when it comes to drinking
4. I can take a beating as well as any man

Table 1.

*Descriptive Statistics for Variables Included in the Analytic Models*

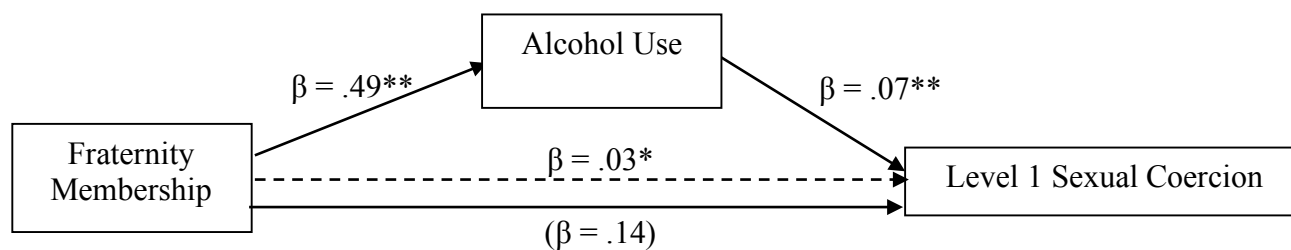
Variable	<i>n</i>	Fraternity Members				<i>n</i>	Non-Fraternity Members				<i>n</i>	All (Subjects with Valid Fraternity Values)			
		Min	Max	<i>M</i>	<i>SD</i>		Min	Max	<i>M</i>	<i>SD</i>		Min	Max	<i>M</i>	<i>SD</i>
Alcohol Use	75	0.00	5.00	2.51	1.04	344	0.00	4.75	2.02	1.21	419	0.00	5.00	2.11	1.19
Hostility Toward Women	75	0.00	2.67	0.95	0.71	344	0.00	2.88	0.66	0.57	419	0.00	2.88	0.71	0.61
Negative Masculinity	75	0.00	3.75	2.00	0.89	344	0.00	4.00	2.04	0.92	419	0.00	4.00	2.03	0.91
Sexual Coercion															
Level 1 Sexual Coercion	75	0.00	3.00	0.37	0.67	344	0.00	3.00	0.20	0.59	419	0.00	3.00	0.23	0.61
Level 1 Sexual Coercion	64	0.00	3.00	0.27	0.64	303	0.00	3.00	0.10	0.44	367	0.00	3.00	0.13	0.49
Level 3 Sexual Coercion	75	0.00	3.00	0.25	0.67	344	0.00	3.00	0.12	0.48	419	0.00	3.00	0.14	0.52

Table 2.

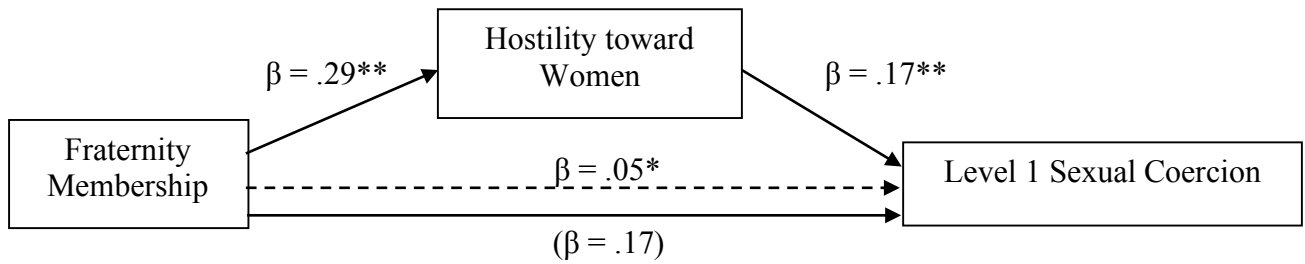
*Intercorrelations among Variables Included in the Mediation Analyses*

Variable	Fraternity Membership	Alcohol Use	Hostility toward Women	Negative Masculinity	Level 1 Sexual Coercion	Level 2 Sexual Coercion	Level 3 Sexual Coercion
Fraternity Membership	1.00	--	--	--	--	--	--
Alcohol Use	.16**	1.00	--	--	--	--	--
Hostility toward Women	.19**	.09	1.00	--	--	--	--
Negative Masculinity	-.02	.22**	.26**	1.00	--	--	--
Level 1 Sexual Coercion	.15**	.16**	.23**	.00	1.00	--	--
Level 2 Sexual Coercion	.13*	.12*	.29**	.10	.71**	1.00	--
Level 3 Sexual Coercion	.13*	.10	.29**	.09	.72**	.77**	1.00

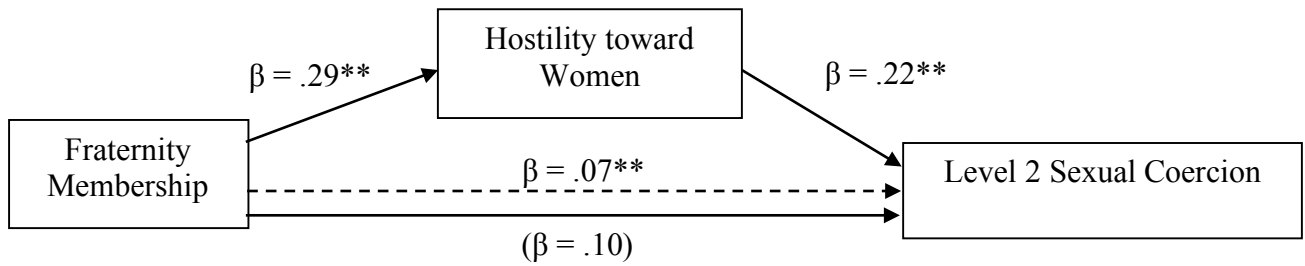
Note: \*\*p < .01, \*p < .05



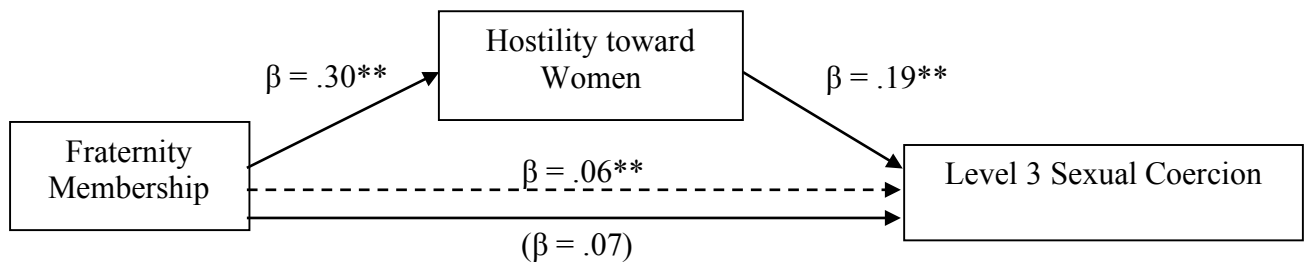
*Figure 1.* Model of the Relation Between Fraternity Membership and Level 1 Sexual Coercion (Touching, Feeling, Kissing, or Petting) Mediated by Alcohol Use. Statistics in parentheses indicate the direct effect of Fraternity Membership on Level 1 Sexual Coercion while controlling for Alcohol Use. Dashed line reflects the indirect effect.  $^{**}p < .01$ ,  $^*p < .05$ .



*Figure 2.* Model of the Relation Between Fraternity Membership and Level 1 Sexual Coercion (Touching, Feeling, Kissing, Petting) Mediated by Hostility toward Women. Statistics in parentheses indicate the direct effect of Fraternity Membership on Level 1 Sexual Coercion while controlling for Hostility toward Women. Dashed line reflects the indirect effect.  $^{**}p < .01$ ,  $^*p < .05$ .



*Figure 3.* Model of the Relation Between Fraternity Membership and Level 2 Sexual Coercion (Other Sexual Acts, Such as Oral or Anal Sex) Mediated by Hostility toward Women. Statistics in parentheses indicate the direct effect of Fraternity Membership on Level 2 Sexual Coercion while controlling for Hostility toward Women. Dashed line reflects the indirect effect.  $^{**}p < .01$ .  $^{*}p < .05$ .



*Figure 4.* Model of the Relation Between Fraternity Membership and Level 3 Sexual Coercion (Attempted or Completed Sexual Intercourse) Mediated by Hostility toward Women. Statistics in parentheses indicate the direct effect of Fraternity Membership on Level 3 Sexual Coercion while controlling for Hostility toward Women. Dashed line reflects the indirect effect.  $^{**}p < .01$ .  $^{*}p < .05$ .