Heads UP   Psychology

12-2014

Development and Validation of the Hookup Motives Questionnaire (HMQ)

Shannon R. Kenney
Brown University

Andrew Lac
Claremont Graduate University

Justin F. Hummer
University of Southern California

Joseph W. LaBrie
Loyola Marymount University, jlabrie@lmu.edu

Follow this and additional works at: https://digitalcommons.lmu.edu/headsup

Part of the Psychology Commons

Recommended Citation

Kenney, S. R., Lac, A., Hummer, J. F., & LaBrie, J. W. (2014). Development and Validation of the Hookup Motives Questionnaire (HMQ). Psychological Assessment, 26(4), 1127–1137. http://doi.org/10.1037/a0037131

Development and Validation of the Hookup Motives Questionnaire (HMQ)

Shannon R. Kenney, **Andrew Lac**, **Justin F. Hummer**, and **Joseph W. LaBrie**
Shannon R. Kenney, Center for Alcohol and Addiction Studies, Department of Behavioral and Social Sciences, Brown University School of Public Health; Andrew Lac, Department of Psychology, Claremont Graduate University; Justin F. Hummer, Department of Psychology, University of Southern California; Joseph W. LaBrie, Department of Psychology, Loyola Marymount University

Abstract

Despite the high prevalence rates and growing research on hooking up among college students, no multidimensional inventory exists in the literature to assess motivations for hooking up. In the current study, we report on the development and validation of the Hookup Motives Questionnaire (HMQ), designed to assess the various reasons for hooking up. Exploratory and confirmatory factor analyses were conducted using 2 samples of college students (Campus 1, $N = 401$; Campus 2, $N = 367$). Exploratory factor analysis was undertaken to explore the psychometric properties of an initial set of 25 items, and confirmatory factor analysis was conducted to evaluate additional properties of the factor structure. The final factor structure of the HMQ contained 19 items that tapped 5 subscales representing social-sexual, social-relationship, enhancement, coping, and conformity motives. Results demonstrated good internal consistency and discriminant validity for the subscales. Moreover, criterion-related validity was satisfied by showing that HMQ subscales significantly correlated with hookup approval and behavior. Gender differences on the measures were found. The inventory offers considerable potential as a psychometrically sound instrument that may be administered to understand reasons for engaging in potentially risky hookup behaviors and used to inform the design of sexual health programs and interventions targeting young adults.

Keywords

hooking up; hookup motivations; college students; exploratory factor analysis; confirmatory factor analysis

Hooking up is defined as a behavior in which partners engage in physically intimate behaviors (e.g., kissing, oral sex, sexual intercourse) without explicit expectation of future romantic commitment (Bogle, 2008; Garcia & Reiber, 2008; Owen, Rhoades, Stanley, & Fincham, 2010; Paul & Hayes, 2002; Stepp, 2007). In U.S. college student samples, lifetime prevalence rates for hooking up range from 56% to 86% (Garcia & Reiber, 2008; Gute &

Correspondence concerning this article should be addressed to Joseph W. LaBrie, Office of the President, Loyola Marymount University, 1 LMU Drive, Los Angeles, CA 90045. jlabrie@lmu.edu.

Eshbaugh, 2008; Lewis, Granato, Blayney, Lostutter, & Kilmer, 2012; Paul & Hayes, 2002; Paul, McManus, & Hayes, 2000), with over half of all students reporting hooking up within the past year (LaBrie, Hummer, Ghaidarov, Lac, & Kenney, 2014; Owen, Fincham, & Moore, 2011; Owen et al., 2010). Hooking up may provide important opportunities for sexual exploration and identity development (e.g., Stinson, 2010), as students tend to report predominantly more positive than negative reactions to hooking up (Lewis et al., 2012; Owen et al., 2011). However, hooking up is also associated with negative physical and emotional consequences in college students, particularly among women (LaBrie et al., 2014). Risks associated with hooking up include unprotected oral and penetrative sex (Fielder & Carey, 2010; Lewis et al., 2012; Paul et al., 2000); unwanted sex (Flack et al., 2007; Kahn et al., 2000; Paul & Hayes, 2002); and negative emotional states, such as sexual regret, loss of self-respect, and embarrassment (Eshbaugh & Gute, 2008; Fielder & Carey, 2010; LaBrie et al., 2014; Lewis et al., 2012; Paul & Hayes, 2002).

Motivations for Hooking Up

Theories of sexual motivation conceptualize sexual behavior as goal directed and driven by internal (e.g., pleasure) and external (e.g., social reward) reasons (Impett & Peplau, 2003; Impett, Peplau, & Gable, 2005). According to a functionalist perspective of behavior, motives are fundamental predictors of sexual behavior, such that people strategically choose to engage in sexual behaviors to fulfill desired needs or avoid negative outcomes (Cooper, Shapiro, & Powers, 1998; Snyder & Cantor, 1998). Moreover, distinct motivations for sex compel distinct sexual risk-taking behaviors. For example, coping motives (e.g., engaging in sex to "cheer self up" or "feel better when lonely") are linked to sexual activity with multiple partners as well as engaging in risky sex (Cooper et al., 1998), including a lower likelihood of using contraception (Patrick, Maggs, Cooper, & Lee, 2011). Greater endorsement of enhancement and intimacy motives is associated with more oral and penetrative sexual behaviors (Patrick et al., 2011), a risk that appears more pronounced for women than men (Vannier & O'Sullivan, 2012). To advance the understanding of factors involved in decisions to hook up, researchers have begun exploring people's reasons or motivations for hooking up.

College students hook up for a variety of reasons, including to feel sexually desirable (Fielder & Carey, 2010), for sexual or emotional gratification (Fielder & Carey, 2010; Garcia & Reiber, 2008), to conform to normative perceptions of peer hookup behavior (Regan & Dreyer, 1999), for excitement and attainment of carefree interpersonal connections without commitment (Fielder & Carey, 2010), and to increase the likelihood of forming a committed relationship (England, Shafer, & Fogarty, 2008; Regan & Dreyer, 1999). Despite the array of documented reasons for hooking up, no inventory exists in the literature to assess a wide range of hookup motives. A benefit of constructing and validating a multidimensional scale that serves as a standardized instrument to assess motivations for hooking up is that it would enable researchers to compare the scores of the same motive dimensions across different samples. Generating a psychometrically sound scale should also furnish insights about which particular dimensions of motives toward hooking up most strongly contribute to hookup approval and behaviors. Finally, identification of the dimensions of hooking up motives serves the vital objective of elucidating this theoretical

concept for research focused on hooking up, with findings potentially informing the design of sexual health programs and interventions.

Assessing Motives

Cooper et al. (1998) developed one of the most widely used and validated measures for assessing motivations to engage in sexual activity. The Sex Motives Questionnaire uses theoretically derived dimensions of either positive reinforcement motives (i.e., pursuit of positive outcomes) or negative reinforcement motives (i.e., avoidance of negative outcomes). Subscales are classified further by the source of the desired outcome: internal (managing personal emotional affect) or external (managing one's standing among others). Although the Sex Motives Questionnaire is theoretically appropriate, its orientation toward motives for having sex with a romantic partner (e.g., "express love," "fear partner won't love if you don't have sex") is incompatible with a central component of hooking up: the lack of expectation or commitment between hookup partners.

Cooper tested and validated a 20-item Drinking Motives Questionnaire (DMQ–R; Cooper, 1994). Although this scale was designed to assess motives for alcohol consumption, its dimensions appear well-suited and correspond to dimensions of motives for hooking up among college students. Based on a similar theoretical framework as that of the Sex Motives Questionnaire, the DMQ–R assesses motives for alcohol consumption via four subscales: Enhancement (positive and internally derived; e.g., drink because "you like the feeling" or "it's fun"), Social (positive and socially derived; e.g., "helps you celebrate a special occasion with friends"), Coping (negative and internally derived; e.g., "to cheer up when you are in a bad mood"), and Conformity (negative and socially derived; e.g., "so you won't feel left out"). Each of these four dimensions has also been separately studied and recognized in previous research assessing motives for hooking up: for ephemeral sexual gratification (enhancement; Fielder & Carey, 2010; Garcia & Reiber, 2008), to avoid or obtain relational commitment (social rewards; Garcia & Reiber, 2008), to cope with lack of self-esteem or insecurities (coping; Paul et al., 2000), and to fit in with one's peer group (conformity; Buss, 2003).

Current Study

On the basis of the conceptual paradigm of the DMQ–R and the conceptual similarities of its dimensions to motive constructs posited in prior hooking-up research (e.g., Fielder & Carey, 2010; Garcia & Reiber, 2008; Regan & Dreyer, 1999), we developed the Hookup Motives Questionnaire (HMQ), a multidimensional inventory to assess motivations for hooking up. The HMQ consists of five motive factors: Enhancement, Coping, Conformity, Social-Sexual, and Social-Relationship. By conducting exploratory and confirmatory factor analyses on data gathered from two distinct samples of college students, we, in the current study, sought to validate the HMQ. In Sample 1 ($N = 401$), we used exploratory factor analysis to investigate the structure of the initial set of 25 items. In Sample 2 ($N = 367$), we used confirmatory factor analysis to further evaluate the factor structure and test subscale measurement validities. To further validate the measure, we examined the final HMQ subscales as a function of gender and correlated them with mental health (depression,

anxiety, stress), as gender and mental health are known correlates of hookup beliefs and behaviors among college students (Dawson, Shih, de Moor, & Shrier, 2008; LaBrie et al., 2014; Paul et al., 2000).

Method

Participants

The present study consisted of undergraduate students from two universities—a large public university and a midsized private university— on the west coast of the United States. Students participated as part of a larger intervention study (Larimer et al., 2011). Participants in the larger study reported at least one heavy episodic drinking occasion (4 drinks for women or 5 drinks for men on the same occasion) in the previous month. In addition, participants in our study reported that they had hooked up at least once in the previous year. The final sample used in the current study included 768 participants who met the inclusion criteria and responded to all 25 items of the HMQ.

For the purposes of this study, participants were split by site. Sample 1 consisted of 401 students from the midsized private university and was used for the exploratory factor analysis. The average participant age was 19.60 years ($SD = 1.20$), and 61.6% were women. The racial composition of participants was 71.7% Caucasian, 7.8% Asian, 2.3% Black, 2.3% Pacific Islander, 0.3% Native American, and 15.6% multiracial or other. Among these participants, 17.8% indicated a Latino ethnic background. Class standing was distributed almost equally into 23.3% freshman, 26.3% sophomore, 28.1% junior, and 22.3% senior. Sample 2 consisted of 367 participants enrolled in the large public university and was used for the confirmatory factor analysis. The average age was 20.20 years ($SD = 1.40$), and 55.3% were women. The racial composition of participants was 70.0% Caucasian, 17.1% Asian, 0.6% Black, 2.2% Pacific Islander, 0.3% Native American, and 9.9% multiracial or other. Among these participants, 6.3% indicated a Latino ethnic background. Class standing was distributed into 12.4% freshman, 21.4% sophomore, 22.8% junior, and 43.4% senior.

Procedure

Participants in the current study were recruited for a larger alcohol intervention project; none of the measures in that prior project were used for this current study. The design and protocol were approved by the institutional review board of each participating university, and data used in the current study were collected prior to participant assignment to interventions. Each site randomly recruited 3,000 students via postal mail and e-mail to participate in a project that involved web-based surveys. A link to the survey was embedded in e-mails sent directly to participants. To gain access to the survey and ensure confidentiality, participants entered a unique participant identification number and electronically consented to participate. From the recruited sample, 2,689 students (44.8%) completed the brief screening survey, and 1,493 (55.5%) of these met the drinking inclusion criteria and were therefore invited to complete the baseline survey. Among these invited students, 1,367 participants (91.6%) completed the baseline survey. Participants who satisfied the inclusion criteria for having hooked up in the past year and completed the HMQ

items (N = 768; 56.2%) were included in the current study. They received nominal stipends for participation.

Measures

Hookup motives—Motivations for hooking up were captured with 25 items. As mentioned, the underlying theoretical framework for developing the HMQ subscales and items was based on a comprehensive review of the pertinent literature: previously validated measures of sexual and drinking motives. Furthermore, we conducted focus groups with college students and an online survey in which students provided open-ended responses (n = 740) concerning their reasons for hooking up. After careful consideration of idiographic information derived from the focus groups and qualitative survey data, we developed items to capture the range of motives that college students report for hooking up and identify which fit into the theoretical framework described earlier. Students also cited external reasons for hooking up (most commonly related to intoxication), but we determined that these reasons were not motives; rather, they constituted external circumstances, internal states, or personal qualities that could account for hooking up behavior; thus, they were not included as motive-specific items. On the basis of motives most commonly endorsed by college students, we determined that five motive factors most adequately captured students' hooking up motives. Further, as expected, the qualitative data suggested that the social dimension be divided into sexual motives and relationship motives. Thus we developed five items for each the five factors, creating an initial scale of 25 items (see Table 1 for a list of items).

Instructions provided the definition of hooking up (from LaBrie et al., 2014, p. 63):

> "Hooking up" is defined as engaging in physically intimate consensual behaviors ranging from kissing to sexual intercourse with someone with whom you do not have a committed relationship. Hooking up is defined as something both people agree to (consensual), including how far they go.

Next, participants were prompted with, "Following is a list of reasons college students give for hooking up. Thinking of all the times you have hooked up, how often would you say that you hook up for each of the following reasons?" Participants rated each item using the following response format: 1 (*almost never/never*), 2 (*some of the time*), 3 (*half the time*), 4 (*most of the time*), 5 (*almost always/always*).

Hooking up approval—Approval of hooking up was operationally defined with the question, "How much do you approve of hooking up?" Respondents answered on a Likert-type scale from 1 (*strongly disapprove*) to 7 (*strongly approve*). Greater self-approval in favor of hooking was expected to be correlated with higher scores on the hooking up motives.

Hooking up behavior—The behavioral frequency of hooking up was measured with the item "How often do you hook up?" This question was based on the following response format: 0 (*never*), 1 (*1–2 times a year*), 2 (*3–4 times a year*), 3 (*once a month*), 4 (*two times a month*), 5 (*three times a month*), 6 (*once a week*), 7 (*two or more times a week*).

Depression, anxiety, and stress—The Depression Anxiety Stress Scale (DASS–21; Lovibond & Lovibond, 1995) is a 21-item questionnaire measuring mental health symptoms in the past week using three subscales (seven items each) of depression (e.g., "I felt that life was meaningless"), anxiety (e.g., "I felt I was close to panic"), and stress (e.g., "I tended to over-react to situations"). Response options ranged from 0 (*did not apply to me at all*) to 3 (*applied to me very much*), and items were summed within each subscale to form depression ($Q = .87$), anxiety ($Q = .84$), and stress ($Q = .83$) composites. Higher scores represented poorer mental health on their respective dimensions. Studies have demonstrated the validity and internal consistency of the DASS–21 in clinical and nonclinical samples (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005).

Results

Sample 1: Exploratory Factor Analysis

Analytic plan—Exploratory factor analysis was undertaken on the original set of 25 items. Common factor analysis (principal axis factoring) served as the estimation method, as it has the advantage of accounting for measurement error in the solution (Gorsuch, 1983). As the derived factors were anticipated to be somewhat intercorrelated, an oblique rotation (oblimin) was performed to facilitate interpretation (Abdi, 2003; Gorsuch, 1983). Items with poor factor loadings were deleted until an acceptable factor structure was obtained.

Analysis results—The adequacy of the data in satisfying assumptions for exploratory factor analysis was examined for the set of 25 items. Overall, variables were not found to depart drastically from a normal distribution, with skewness levels ranging from –0.99 to 2.69. Factorability of the data was evaluated with two indices. The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy of .92 was judged to be "marvelous" (Kaiser, 1974). Bartlett's (1950) test of sphericity was highly significant, $\chi^2(300) = 6,364.60$, $p < .001$, signifying that the variance–covariance matrix was suitable for the technique.

Several criteria helped to judge the appropriate number of factors to be retained in the solution. The eigenvalue greater than 1 rule dictates that factors with eigenvalues above this threshold should be retained (Kaiser, 1960). On the basis of this criterion, the solution revealed that four factors were appropriate, but the fifth factor was very near this cutoff, with an eigenvalue of .96 that suggested a potentially promising fifth factor. This eigenvalue rule for determining the number of factors has been criticized on theoretical and statistical grounds (O'Connor, 2000). Horn (1965) advocated parallel analysis as a superior approach for determining the minimum number of credible factors not attributed to chance. Parallel analysis was performed, using the variant recommended by O'Connor (2000), with principal axis factoring and a 99% confidence interval. Comparing the permutations of eigenvalues of random data with the eigenvalues of the actual data, parallel analysis results indicated the existence of five factors. In terms of obtaining a simple structure, the five factors produced a conceptually clearer pattern of loadings than four factors (Gorsuch, 1983). As findings were inconclusive with regard to the number of underlying dimensions, on the basis of the simple structure and the theoretical position regarding the number of hypothesized dimensions the five-factor structure was tentatively retained.

In the five-factor structure, a standardized factor loading criterion of .50 was then used to judge the representativeness of items in capturing each factor. Three items produced factor loadings below this cutoff: Item 3 ("I hook up because it's fun to share hookup stories with my friends"), Item 12 ("I hook up because I feel bored"), and Item 19 ("Hooking up makes me feel sexually desirable"). After deleting these three items, the five-factor model was reestimated, resulting in the 22-item solution presented in Table 2. Interpretation of the pattern of loadings indicated that items evidenced strong loadings (>.51) on their hypothesized factors but weak loadings (<.32) on all other factors. The highest initial eigenvalues from the unrotated solution were as follows: 8.12, 2.90, 2.50, 1.33, 0.91, 0.74, 0.60, 0.56, 0.48.

Subscale reliability coefficients, means, and correlations are presented in Table 3. Internal consistency indicated that each subscale was reliable, with Cronbach's alphas ranging from .83 to .90. Subscale means of items within each factor were computed. A repeated-measures analysis of variance (ANOVA) revealed that the five subscales were significantly different overall, $F(4, 1600) = 378.11$, $p < .001$. Decomposing this omnibus statistic using paired t tests, the pairwise comparisons of subscale means were significantly different (all ps < .001), except between Social-Sexual and Social-Relationship and between Social-Relationship and Coping. The subscales of Social-Sexual and Social-Relationship correlated at .23, supporting the decision to conceptually distinguish and separately assess these two types of social motivations for hooking up.

Sample 2: Confirmatory Factor Analysis

Analytic plan—The purpose of this next phase was to conduct confirmatory factor analyses to further evaluate the structure obtained in the exploratory factor analysis. Confirmatory factor analysis is considered a more conservative approach than exploratory factor analysis, as items are specified to load only on its hypothesized dimensions. Construct validity was evaluated (Crano & Brewer, 2002). This includes tests of discriminant validity to determine the statistical independence of the five subscales and the extent that they are related or unrelated to external measures of depression, anxiety, and stress. Criterion-related validity was examined through subscale relationships with approval and behavior of hooking up. As some items measuring motivations for hooking up were expected to operate differently between men and women, the investigation also tested the extent of multiple-group measurement and structural invariance.

The EQS 6.2 program (Bentler, 2001) was used to specify the model using maximum-likelihood estimation. For the purpose of model identification, the measurement error for each item was estimated (Ullman & Bentler, 2003), and the variance of each latent factor was set to a scale of 1 (Ullman, 2001). Items were forced to load on their hypothesized factors, and these factors were allowed to be correlated.

Several fit indices helped to judge the adequacy of the confirmatory factor analyses. The model chi-square test is sensitive to rejecting desirable models if the sample size is not small (Bollen, 1989). Thus, also used to evaluate the quality of the models were additional indices. The comparative fit index (CFI) and the incremental fit index (IFI) range from 0.00 to 1.00, with higher values reflecting better fit (Bentler, 2001; Ullman & Bentler, 2003). The

standardized root-mean-square residual (SRMR) was interpreted, as this index has been found to be adequately sensitive in detecting misspecifications, with higher values diagnostic of a poor fitting model (Hu & Bentler, 1998).

Analysis results

Four factors versus five factors—As information concerning the number dimensions in the exploratory factor analysis was mixed, using this new sample and the original 25 items, confirmatory factor analyses pitted the four-factor model against the five-factor model. First specified was the four-factor structure, in which the items of Social-Sexual and Social-Relationship were forced into a single Social factor, $\chi^2(269) = 1,562.94$, $p < .001$, CFI = .76, IFI = .76, SRMR = .13. The five-factor model, stipulating separate factors for Social-Relationship and Social-Sexual, produced better values on the fit indices, $\chi^2(265) = 1,176.23$, $p < .001$, CFI = .83, IFI = .83, SRMR = .12. Given that these two structures are statistically nested, a chi-square difference test was conducted, disclosing that the five-factor model significantly improved on the four-factor variant, $\chi_{diff}^2 = 386.71$, $df = 4$, $p < .001$. On the basis of this information, the five-factor model was deemed to better capture the underlying data and therefore was used in all analyses from this point forward.

Final model—Returning to the 22 items isolated in the exploratory factor analysis, confirmatory factor analysis of the five factors yielded borderline fit indices, $\chi^2(199) = 772.07$, $p < .001$, CFI = .87, IFI = .88, SRMR = .084. The model was then inspected to determine modifications potentially rendering an improvement in fit. A factor loading below .50 emerged for Item 7 ("I hook up because I like the emotional bond I share with a hookup partner"). The multivariate Lagrange multiplier test (Bentler, 2001; Chou & Bentler, 1990) indicated that Item 10 ("I hook up because I'm interested in dating my hookup partner") and Item 23 ("I hook up because most or all of my friends hook up") produced the strongest cross-loadings with other items.

After deletion of these three items, the reestimated model yielded satisfactory fit indices overall, $\chi^2(142) = 474.66$, $p < .001$, CFI = .92, IFI = .92, SRMR = .07. This final 19-item scale was called the HMQ (see Appendix A). Results of the confirmatory factor analysis are presented in Figure 1. All items sufficiently captured their factors, with significant factor loadings. Except between enhancement and conformity, the majority of interfactor correlations were significant ($p < .001$).

Next, two criteria were used to determine whether discriminant validity was evidenced across the five subscales. One recommendation is that an interfactor correlation below .80 indicates that factors are not largely sharing the same variance (Mahoney, Thombs, & Howe, 1995). This requirement was satisfied, as the highest correlation between any two factors was .60. To further examine that the latent factors were not statistically isomorphic, we conducted tests of constraints in which every combination involving two factors, in separate tests, was forced to be perfectly correlated (Anderson & Gerbing, 1988). The imposed constraints were not shown to be tenable ($p < .001$), underscoring that the five factors representing hooking up motivations are not statistically identical.

Construct validity—Additional properties of the final 19-item inventory were evaluated using computed subscales constructed by taking the mean of items within each factor. Results are shown in Table 4. Reliabilities of each subscale ranged from .80 to .92, suggesting that items were internally consistent in representing the dimensions. A repeated-measures ANOVA showed that the five subscale means were significantly different overall, $F(4, 1464) = 438.85$, $p < .001$. In follow-up analyses to decompose the omnibus difference, all possible pairwise comparisons of subscale means were found to be significantly different (all ps < .01), except for the correlation between Social-Relationship and Coping.

The relationships of the HMQ subscales with external scales of depression, anxiety, and stress were examined. As displayed in Table 5, Social-Sexual significantly correlated with depression and anxiety; Social-Relationship correlated with anxiety; Coping correlated with depression, anxiety, and stress; and Conformity correlated with depression, anxiety, and stress. To evaluate criterion-related validity, we examined associations of the five HMQ subscales with approval and behavior of hooking up (see Table 5). Except for Conformity motives, higher scores on the other four motives were significantly and positively correlated with approval of hooking up. Moreover, higher scores on each of the five motives positively correlated with frequency of hooking up behaviors. A positive correlation also emerged between approval and hooking up behavior ($r = .39$, $p < .001$).

Gender differences—The five-factor model represented by 19 items was separately estimated for the subsamples of men, $\chi^2(142) = 354.78$, $p < .001$, CFI = .89, IFI = .89, SRMR = .09, and women, $\chi^2(142) = 310.73$, $p < .001$, CFI = .92, IFI = .92, SRMR = .08. Analyses of multiple-group invariance were conducted to determine the extent that the factor structure operated similarly for men and women. Factorial invariance was evaluated according to the sequence recommended by Byrne (2006). First, the male and female models were simultaneously estimated to establish a configural model to serve as a baseline to compare with the subsequently constrained models, $\chi^2(284) = 665.51$, $p < .001$, CFI = .90, IFI = .90, SRMR = .08. Next, all factor loadings between men and women were constrained to be statistically equivalent, $\chi^2(303) = 757.43$, $p < .001$, CFI = .88, IFI = .88, SRMR = .21. This constrained measurement model was significantly different from the baseline model, $\chi_{diff}^2 = 91.92$, $df = 19$ $p < .001$. Specifically, five items were interpreted differently ($p < .01$), with a higher factor loading for V16 in men and higher factor loadings for V21, V22, V24, and V25 in women. Constraints for these particular factor loadings were then released.

Building on the remaining constraints, we then constrained all of the structural interfactor correlations of the models for men and women to be equivalent, $\chi^2(308) = 701.16$, $p < .001$, CFI = .90, IFI = .90, SRMR = .11. This was not significantly different from the baseline model, $\chi_{diff}^2 = 35.65$, $df = 24$, ns, suggesting that the interfactor correlations were not statistically different as a function of gender. In conclusion, the factor structure of men and women exhibited partial measurement invariance (Byrne, 2006).

Mean differences on the HMQ subscales between men and women were assessed by performing a multivariate analysis of variance, revealing a significant multivariate difference, $F(5, 361) = 6.57$, $p < .001$, Wilks's $\lambda = .92$. This was followed by one-way ANOVAs to assess mean differences on each subscale as a function of gender. In Table 6,

results show that men tended to score systematically higher than women on all five subscales.

Discussion

The HMQ presents researchers and clinicians with a brief multidimensional and logically sound measure for assessing five statistically distinct, yet related, motivations for hooking up. Hooking up is considered a prevalent and sometimes risky behavior in young adult populations. The identification of motives for hooking up is critical to gain a better understanding of the fundamental antecedents that compel hooking up and may help illuminate the risks that contribute to negative outcomes stemming from hooking up (e.g., unsafe sex practices, sexual victimization, regret). Results of two independent samples— one using exploratory factor analysis and the other using confirmatory factor analysis— supported a final 19-item instrument involving social-sexual, social-relationship, enhancement, coping, and conformity motives. The HMQ demonstrated desirable internal consistency and subscale discriminant validity. Moreover, results satisfied criterion-related validity by showing that HMQ subscales were significantly correlated with hookup approval and behavior. The only nonsignificant correlation was found between conformity motives and approval of hooking up. Given the external focus of hooking up to fit in or conform to others' expectations however, it is not surprising that endorsement of conformity motives was unrelated to the more internal construct of personal approval of hooking up.

Consistent with broader research on sexual behavior (Dawson et al., 2008; Paul et al., 2000), negative reinforcing coping and conformity motives for hooking up were associated with negative emotional states, including depression, anxiety, and stress. Given that coping- and conformity-motivated sexual behavior appears to be particularly risky, these results emphasize the need to assess and intervene with distressed students who may be hooking up to reduce negative affect or to fit in with peers. Along these lines, it would be advantageous for researchers and those who work directly with young adults and college students around sexual health to demonstrate the extent to which HMQ subscales are associated with positive and negative consequences. Event-level and longitudinal approaches would provide excellent methodological designs for providing depth and insight into such interpersonal relationships.

Overall, these findings may reflect that college men are more motivated to engage in hooking up behaviors relative to their female peers, regardless of the specific motivator. Somewhat surprising was that men more frequently endorsed social-relationship motives for hooking up indicating that, contrary to popular belief, college men view hooking up as a means of establishing a interpersonal relationship more than college women do. Although this does not negate the fact that college women also endorsed this motive, women might be more likely than men to support other motivations, unrelated to hooking up, that might lead to a committed relationship. This is a potentially fruitful area for future research.

The unique subscales of the HMQ highlight its divergence from established measures of sexual motives that fail to account for central aspects of hooking up, including the noncommittal nature as well as the range of physically intimate behaviors (e.g., kissing, oral

sex, sexual intercourse) that constitute the use of the term *hooking up* in today's young adult nomenclature. Differences in underlying sexual motivations can profoundly shape the expression of sexual behavior (e.g., DeLamater, 1987). From a historical perspective, in which the expression of sexual behavior evolves alongside new generations and rapidly changing subcultures, it is important for researchers to identify the range of needs and desires served by hooking up. The HMQ provides an important tool for those seeking to establish both these links and others. For example, although hooking up is often characterized by the lack of an explicit expectation for future romantic commitment (e.g., Bogle, 2008; Garcia & Reiber, 2008; Owen et al., 2010), data from the current study indicate that college students may also harbor desires that hooking up might eventually lead to a committed relationship. As such, social-sexual motives encapsulate the noncommittal purpose of hooking up to meet sexual or physical needs, whereas social-relationship motives address the desire for a hookup to potentially lead to a committed relationship.

When interpreting these results, some methodological limitations should be considered. First, the current sample includes only college students who reported hooking up within the past year and a heavy episodic drinking occasion in the past month. On the one hand, examining hooking up motives in this subgroup is advantageous given the relevance of hookup behaviors as well as the notable link between risky alcohol use and hooking up (Fielder & Carey, 2010; LaBrie et al., 2014; Olmstead, Pasley, & Fincham, 2013). On the other hand, endorsement of hookup motives found in the current sample may be considerably higher than in broader college student samples. Future research using nationally representative samples of young adults is needed to determine if the HMQ is applicable to other college and noncollege populations. Furthermore, the scale could be beneficially used to investigate hooking up motivations among diverse subgroups of students, for example, by racial or ethnic status and sexual orientation, and in the general adult population. As the final scale was developed and validated using samples from two different universities, it is imperative to determine if the final inventory is generalizable to other nonuniversity samples. Second, data were obtained from web-based self-report measures, which, with regard to potentially sensitive questions about human sexuality, may have suffered from response bias. However, our protocol was designed to preserve respondents' privacy, and we were careful to assure respondents that surveys were confidential (e.g., McCabe, Boyd, Couper, Crawford, & D'Arcy, 2002; Uriell & Dudley, 2009). Next, criterion-related validity was assessed using one attitudinal construct and one behavioral construct, each of which was operationalized by a single item. Despite attempts at phrasing to best encapsulate one's overall approval and frequency of hooking up, we acknowledge the limitations associated with single-item indicators of complex constructs (e.g., approval could vary depending on the range of behaviors that constitute hooking up). Additional research is needed to understand how particular motivational subscales from the HMQ contribute to different behavioral aspects of hooking up, as well as emotional (e.g., mood states) and physical (e.g., safe sex practices) consequences.

Despite the growth of research on hooking up, no previously existing instrument specifically designed to assess multidimensional motivations for hooking up has been developed. This preliminary evaluation suggests that the HMQ can be a valuable tool for assessing the

distinct motives that drive decisions to hook up. The present measurement instrument offers considerable utility as a psychometric tool for better understanding the reasons that promote hooking up behaviors, with results potentially informing the design of sexual health programs and interventions.

Acknowledgments

Appendix A

Final Version of the Hookup Motives Questionnaire (HMQ), With Instructions and Items

Following is a list of reasons college students give for hooking up. Thinking of all the times you have hooked up, how often would you say that you hook up for each of the following reasons? There are no right or wrong answers; we just want to know what you think personally.

Social-Sexual Motives

1. I hook up because it allows me to avoid being tied down to one person.

2. Hooking up provides me with "friends with benefits."

3. Hooking up provides me with sexual benefits without a committed relationship.

4. Hooking up enables me to have multiple partners.

Social-Relationship Seeking Motives

5. I hook up because hooking up is a way to find a relationship.

6. I hook up because it is the first step to forming a committed relationship.

7. I hook up because it can help me decide if I want something more serious with my hookup partner.

Enhancement Motives

8. I hook up because it's fun.

9. I hook up because it's sexually pleasurable.

10. I hook up because I'm attracted to the person.

11. I hook up because it's exciting.

Coping Motives

12. I hook up because it makes me feel good when I'm not feeling good about myself.

13. I hook up because it makes me feel attractive.

14. I hook up because it cheers me up when I'm in a bad mood.

15. I hook up because it helps me feel less lonely.

Conformity Motives

16. I hook up because I feel pressure from my friends to hook up.

17. I hook up because my friends will tease me if I don't.

18. I hook up because it helps me fit in.

19. I hook up because I feel I'll be left out if I don't.

Note. Answer options are *almost never/never* (1), *some of the time* (2), *half of the time* (3), *most of the time* (4), and *almost always/always* (5).

References

Abdi, H. Factor rotations in factor analyses. In: Lewis-Beck, M.; Bryman, A.; Futin, T., editors. Encyclopedia for research methods for the social sciences. Sage; Thousand Oaks, CA: 2003. p. 978-982.

Anderson JC, Gerbing DW. Structural equation modeling in practice: A review and recommended two-step approach. Psychological Bulletin. 1988; 103:411–423. doi:10.1037/0033-2909.103.3.411.

Antony MM, Bieling PJ, Cox BJ, Enns MW, Swinson RP. Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. Psychological Assessment. 1998; 10:176–181. doi:10.1037/1040-3590.10.2.176.

Bartlett MS. Tests of significance in factor analysis. British Journal of Psychology. 1950; 3:77–85. doi: 10.1111/j.2044-8317.1950.tb00285x.

Bentler, PM. EQS 6 structural equations program manual. Multivariate Software; Encino, CA: 2001.

Bogle, KA. Hooking up: Sex, dating, and relationships on campus. New York University Press; New York, NY: 2008.

Bollen, KA. Structural equations with latent variables. Wiley; New York, NY: 1989.

Buss, DM. The evolution of desire: Strategies of human mating. Basic Books; New York, NY: 2003.

Byrne, BM. Structural equation modeling with EQS: Basic concepts, applications, and programming. 2nd. Erlbaum; Mahwah, NJ: 2006.

Chou C-P, Bentler PM. Model modification in covariance structure modeling: A comparison among likelihood ratio, Lagrange multiplier, and Wald tests. Multivariate Behavioral Research. 1990; 25:115–136. doi:10.1207/s15327906mbr2501_13.

Cooper ML. Motivations for alcohol use among adolescents: Development and validation of a four-factor model. Psychological Assessment. 1994; 6:117–128. doi:10.1037/1040-3590.6.2.117.

Cooper ML, Shapiro CM, Powers AM. Motivations for sex and risky sexual behavior among adolescents and young adults: A functional perspective. Journal of Personality and Social Psychology. 1998; 75:1528–1558. doi:10.1037/0022-3514.75.6.1528. [PubMed: 9914665]

Crano, WD.; Brewer, MB. Principles and methods of social research. 2nd. Erlbaum; Mahwah, NJ: 2002.

Dawson LH, Shih M, de Moor C, Shrier L. Reasons why adolescents and young adults have sex: Associations with psychological characteristics and sexual behavior. Journal of Sex Research. 2008; 45:225–232. doi:10.1080/00224490801987457. [PubMed: 18686151]

DeLamater, J. Gender differences in sexual scenarios. In: Kelley, K., editor. Females, males, and sexuality: Theories and research. SUNY Press; Albany, NY: 1987. p. 127-139.

England, P.; Shafer, E.; Fogerty, ACK. Hooking up and forming relationships on today's college campuses. In: Kimmel, M., editor. The gendered society reader. 3rd. Oxford University Press; New York, NY: 2008. p. 531-593.

Eshbaugh EM, Gute G. Hookups and sexual regret among college women. Journal of Social Psychology. 2008; 148:77–90. doi:10.3200/SOCP.148.1.77-90. [PubMed: 18476484]

Fielder RL, Carey MP. Predictors and consequences of sexual "hookups" among college students: A short-term prospective study. Archives of Sexual Behavior. 2010; 39:1105–1119. doi:10.1007/s10508-008-9448-4. [PubMed: 19130207]

Flack WF Jr. Daubman KA, Caron ML, Asadorian JA, D'Aureli NR, Gigliotti SN, Bucknell U. Risk factors and consequences of unwanted sex among university students: Hooking up, alcohol, and stress response. Journal of Interpersonal Violence. 2007; 22:139–157. doi: 10.1177/0886260506295354. [PubMed: 17202573]

Garcia JR, Reiber C. Hook-up behavior: A biopsychosocial perspective. Journal of Social, Evolutionary, and Cultural Psychology. 2008; 2:192–208.

Gorsuch, RL. Factor analysis. 2nd. Erlbaum; Hillsdale, NJ: 1983.

Gute G, Eshbaugh E. Personality as a predictor of hooking up among college students. Journal of Community Health Nursing. 2008; 25:26–43. doi:10.1080/07370010701836385. [PubMed: 18444064]

Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS–21): Construct validity and normative data in a large non-clinical sample. British Journal of Clinical Psychology. 2005; 44:227–239. doi:10.1348/014466505X29657. [PubMed: 16004657]

Horn JL. A rationale and test for the number of factors in factor analysis. Psychometrika. 1965; 30:179–185. doi:10.1007/BF02289447. [PubMed: 14306381]

Hu L-T, Bentler PM. Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. Psychological Methods. 1998; 3:424–453. doi:10.1037/1082-989X. 3.4.424.

Impett EA, Peplau LA, Gable SL. Approach and avoidance sexual motives: Implications for personal and interpersonal well-being. Personal Relationships. 2005; 12:465–482. doi:10.1111/j. 1475-6811.2005.00126.x.

Impett EA, Peplau LA. Sexual compliance: Gender, motivational, and relationship perspectives. Journal of Sex Research. 2003; 40:87–100. doi:10.1080/00224490309552169. [PubMed: 12806534]

Kahn, AS.; Fricker, K.; Hoffman, J.; Lambert, T.; Tripp, M.; Childress, K. Hooking up: Dangerous new dating methods? Sex, unwanted sex, and sexual assault on college campuses; Paper presented at the symposium conducted at the 108th Annual Convention of the American Psychological Association; Washington, DC. 2000.

Kaiser HF. The application of electronic computers to factor analysis. Educational and Psychological Measurement. 1960; 20:141–151. doi:10.1177/001316446002000116.

Kaiser HF. An index of factorial simplicity. Psychometrika. 1974; 39:31–36. doi:10.1007/BF02291575.

LaBrie JW, Hummer JF, Ghaidarov TM, Lac A, Kenney SR. Hooking up in the college context: The event-level effects of alcohol use and partner familiarity on hookup behaviors and contentment. Journal of Sex Research. 2014; 51:62–73. doi:10.1080/00224499.2012.714010. [PubMed: 23127230]

Larimer ME, Neighbors C, LaBrie JW, Atkins DC, Lewis MA, Lee CM, Walter T. Descriptive drinking norms: For whom does reference group matter? Journal of Studies on Alcohol and Drugs. 2011; 72:833–843. [PubMed: 21906510]

Lewis MA, Granato H, Blayney JA, Lostutter TW, Kilmer JR. Predictors of hooking up sexual behaviors and emotional reactions among U.S. college students. Archives of Sexual Behavior. 2012; 41:1219–1229. doi:10.1007/s10508-011-9817-2. [PubMed: 21796484]

Lovibond, SH.; Lovibond, PF. Manual for the Depression, Anxiety and Stress Scales. 2nd. Psychology Foundation; Sydney, Australia: 1995.

Mahoney CA, Thombs DL, Howe CZ. The art and science of scale development in health education research. Health Education Research. 1995; 10:1–10. doi:10.1093/her/10.1.1-a. [PubMed: 10150418]

McCabe SE, Boyd CJ, Couper MP, Crawford S, D'Arcy H. Mode effects for collecting alcohol and other drug use data: Web and U.S. mail. Journal of Studies on Alcohol and Drugs. 2002; 63:755–761.

O'Connor BP. SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. Behavior Research Methods, Instruments, & Computers. 2000; 32:396–402. doi:10.3758/BF03200807.

Olmstead SB, Pasley K, Fincham FD. Hooking up and penetrative hookups: Correlates that differentiate college men. Archives of Sexual Behavior. 2013; 42:573, 583. doi:10.1007/s10508-012-9907-9. [PubMed: 22350126]

Owen J, Fincham FD, Moore J. Short-term prospective study of hooking up among college students. Archives of Sexual Behavior. 2011; 40:331–341. doi:10.1007/s10508-010-9697-x. [PubMed: 21203816]

Owen JJ, Rhoades GK, Stanley SM, Fincham FD. "Hooking up" among college students: Demographic and psychosocial correlates. Archives of Sexual Behavior. 2010; 39:653–663. doi:10.1007/s10508-008-9414-1. [PubMed: 18839300]

Patrick ME, Maggs JL, Cooper LM, Lee CM. Measurement and motivations for and against sexual behavior. Assessment. 2011; 18:502–516. doi:10.1177/1073191110372298. [PubMed: 20581394]

Paul EL, Hayes KA. The casualties of "casual" sex: A qualitative exploration of the phenomenology of college students' hookups. Journal of Social and Personal Relationships. 2002; 19:639–661. doi:10.1177/0265407502195006.

Paul EL, McManus B, Hayes A. "Hookups": Characteristics and correlates of college students' spontaneous and anonymous sexual experiences. Journal of Sex Research. 2000; 37:76–88. doi:10.1080/00224490009552023.

Regan PC, Dreyer CS. Lust? Love? Status? Young adults' motives for engaging in casual sex. Journal of Psychology & Human Sexuality. 1999; 11(1):1–24. doi:10.1300/J056v11n01_01.

Snyder, M.; Cantor, N. Understanding personality and social behavior: A functionalist strategy. In: Gilbert, DT.; Fiske, ST.; Lindzey, G., editors. The handbook of social psychology. 4th. Vol. 1. McGraw-Hill; New York, NY: 1998. p. 635-679.

Stepp, LS. Unhooked: How young women pursue sex, delay love and lose at both. Riverhead; New York, NY: 2007.

Stinson R. Hooking up in young adulthood: A review of factors influencing the sexual behavior of college students. Journal of College Student Psychotherapy. 2010; 24:98–115. doi:10.1080/87568220903558596.

Ullman, JB. Structural equation modeling. In: Tabachnick, BG.; Fidell, LS., editors. Using multivariate statistics. 5th. Allyn & Bacon; New York, NY: 2001. p. 676-780.

Ullman, JB.; Bentler, PM. Structural equation modeling. In: Schinka, JA.; Velicer, WF., editors. Handbook of psychology. Wiley; Hoboken, NJ: 2003. p. 607-634.doi:10.1002/0471264385.wei0224

Uriell ZA, Dudley CM. Sensitive topics: Are there modal differences? Computers in Human Behavior. 2009; 25:76–87. doi:10.1016/j.chb.2008.06.007.

Vannier SA, O'Sullivan LF. Who gives and who gets: Why, when, and with whom young people engage in oral sex. Journal of Youth and Adolescence. 2012; 41:572–582. doi:10.1007/s10964-012-9745-z. [PubMed: 22327462]
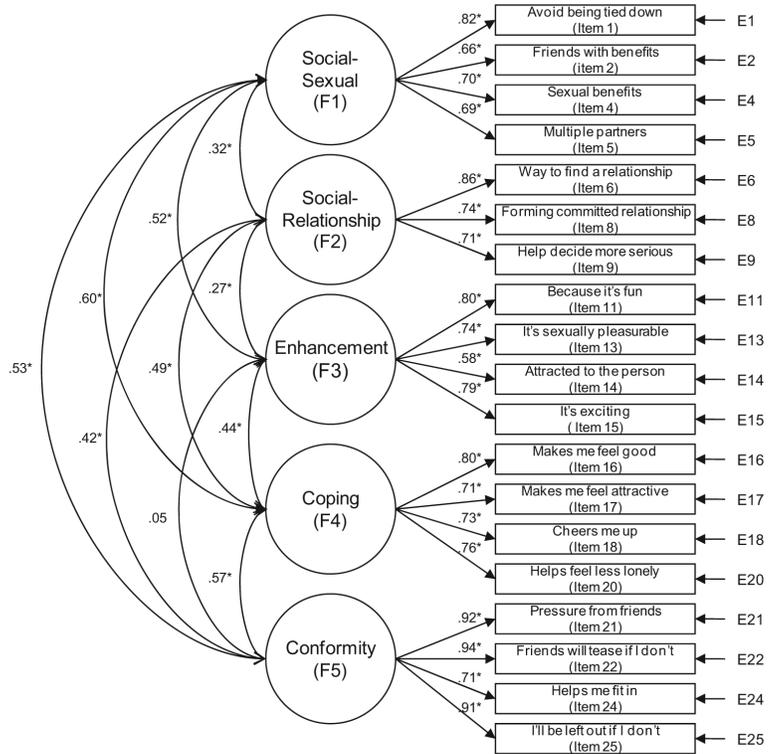
Figure 1.
Study 2: Confirmatory factor analysis of the Hookup Motives Questionnaire (*N* = 367).
Standardized coefficients are presented. E = measurement error. * *p* < .001.

Table 1

The Initial 25 Items of Motives for Hooking Up

Subscale and item	Variable
Social-Sexual	
Item 1	I hook up because it allows me to avoid being tied down to one person.
Item 2	Hooking up provides me with "friends with benefits."
Item 3	I hook up because it's fun to share hookup stories with my friends.
Item 4	Hooking up provides me with sexual benefits without a committed relationship.
Item 5	Hooking up enables me to have multiple partners.
Social-Relationship	
Item 6	I hook up because hooking up is a way to find a relationship.
Item 7	I hook up because I like the emotional bond I share with a hookup partner.
Item 8	I hook up because it is the first step to forming a committed relationship.
Item 9	I hook up because it can help me decide if I want something more serious with my hookup partner.
Item 10	I hook up because I'm interested in dating my hookup partner.
Enhancement	
Item 11	I hook up because it's fun.
Item 12	I hook up because I feel bored.
Item 13	I hook up because it's sexually pleasurable.
Item 14	I hook up because I'm attracted to the person.
Item 15	I hook up because it's exciting.
Coping	
Item 16	I hook up because it makes me feel good when I'm not feeling good about myself.
Item 17	I hook up because it makes me feel attractive.
Item 18	I hook up because it cheers me up when I'm in a bad mood.
Item 19	Hooking up makes me feel sexually desirable.
Item 20	I hook up because it helps me feel less lonely.
Conformity	
Item 21	I hook up because I feel pressure from my friends to hook up.
Item 22	I hook up because my friends will tease me if I don't.
Item 23	I hook up because most or all of my friends hook up.
Item 24	I hook up because it helps me fit in.
Item 25	I hook up because I feel I'll be left out if I don't.

Table 2

Sample 1: Exploratory Factor Analysis of Hookup Motives Questionnaire Using Common Factor Analysis With Oblique Rotation (N = 401)

Item no.	Variable	Factor loading					Communality
		F1	F2	F3	F4	F5	
	Social-Sexual						
1	Avoid being tied down	.01	−.07	.00	**.90**	.01	.77
2	Friends with benefits	−.04	.03	.15	**.74**	.01	.61
4	Sexual benefits	.03	.26	−.11	**.67**	.06	.70
5	Multiple partners	.31	.10	−.13	**.52**	.08	.61
	Social-Relationship						
6	Way to find a relationship	.20	−.07	**.69**	.04	.08	.62
7	Emotional bond	−.03	.14	**.52**	.04	.10	.39
8	Forming committed relationship	.00	−.07	**.76**	.03	.13	.63
9	Help decide more serious	.16	.09	**.66**	.04	−.01	.59
10	Dating hookup partner	−.04	.05	**.76**	−.05	−.07	.56
	Enhancement						
11	Because it's fun	.00	**.66**	.05	.22	−.03	.63
13	It's sexually pleasurable	.04	**.77**	−.05	.07	.04	.65
14	Attracted to the person	−.08	**.57**	.24	−.05	−.12	.42
15	It's exciting	.23	**.74**	−.03	.01	.08	.73
	Coping						
16	Makes me feel good	**.88**	−.10	.06	.08	−.01	.81
17	Makes me feel attractive	**.64**	.28	−.02	−.02	.09	.66
18	Cheers me up	**.56**	.04	.13	.20	.03	.56
20	Helps me feel less lonely	**.70**	.08	.11	−.06	.08	.62
	Conformity						
21	Pressure from friends	−.06	.04	.05	−.07	**.95**	.82
22	Friends will tease if I don't	−.10	−.08	.09	.03	**.83**	.69
23	Most or all friends hook up	.05	−.01	.04	.22	**.57**	.53
24	Helps me fit in	.31	−.03	.03	−.03	**.64**	.70
25	I'll be left out if I don't	.06	.05	−.05	.01	**.79**	.67

Note. Standardized loadings are from the pattern matrix after oblique rotation. The largest loading for each variable is bolded.

Table 3

Sample 1: Subscale Reliabilities, Means, Standard Deviations, and Correlations (N = 401)

HMQ subscale	No. of items	a	M	SD	1	2	3	4	5
1. Social-Sexual	4	.87	2.28	1.07	—				
2. Social-Relationship	5	.84	2.20	0.96	.23**	—			
3. Enhancement	4	.83	3.51	1.09	.50**	.41**	—		
4. Coping	4	.87	2.11	1.11	.55**	.43**	.49**	—	
5. Conformity	5	.90	1.44	0.74	.43**	.40**	.12*	.55**	—

Note. HMQ = Hookup Motives Questionnaire.

*
$p < .05$.

**
$p < .001$.

Table 4

Sample 2: Subscale Reliabilities, Means, Standard Deviations, and Correlations (N = 367)

HMQ subscale	No. of items	a	M	SD	1	2	3	4	5
1. Social-Sexual	4	.80	2.11	0.96	—				
2. Social-Relationship	3	.81	1.91	0.94	.30*	—			
3. Enhancement	4	.82	3.54	1.08	.43*	.25*	—		
4. Coping	4	.83	1.96	0.97	.49*	.43*	.37*	—	
5. Conformity	4	.92	1.32	0.72	.46*	.41*	.03	.53*	—

Note. HMQ = Hookup Motives Questionnaire.

*
$p < .001$.

Table 5

Sample 2: Correlations With Other Measures (N = 367)

HMQ subscale	Depression	Anxiety	Stress	Hooking up approval	Hooking up behavior
Social-Sexual	.15*	.17*	.06	.33**	.22**
Social-Relationship	.06	.11*	.08	.18**	.15*
Enhancement	−.01	.00	.05	.39**	.27**
Coping	.27**	.27**	.20**	.19**	.24**
Conformity	.25**	.35**	.19**	.09	.19**

Note. HMQ = Hookup Motives Questionnaire.

*
$p < .05$.

**
$p < .001$.

Table 6

Sample 2: Mean Differences Between Men (n = 164) and Women (n = 203) on Hookup Motives Questionnaire (HMQ) Subscales

HMQ subscale	Men		Women		$F(1, 366)$	Cohen's d
	M	SD	M	SD		
Social-Sexual	2.30	1.05	1.95	0.85	12.52**	0.37
Social-Relationship	2.08	0.98	1.78	0.88	9.48*	0.32
Enhancement	3.67	1.10	3.43	1.05	4.69*	0.22
Coping	2.14	1.10	1.81	0.82	11.39**	0.35
Conformity	1.54	0.88	1.15	0.50	27.89**	0.56

*
$p < .05$.

**
$p < .001$.