EXAMINING THE ASSOCIATION BETWEEN HOOKING UP AND MARITAL

PROCESSES AND QUALITY

by

MATTHEW DAVID JOHNSON

B.A., Manhattan Christian College, 2006

M.S., Kansas State University, 2009

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Human Ecology

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Abstract

The current study tests a theoretical model exploring the relationship between hooking up and marital quality and whether this relationship is mediated by sexual satisfaction and communication using public-use data from currently married participants in Wave IV of the National Longitudinal Study of Adolescent Health (Add Health, n = 1,729). Gender proved to significantly moderate the association between the variables in the model, but college education did not. The results indicate that hooking up has a direct negative relationship with marital quality for men that is not mediated by either sexual satisfaction or communication. The results for women revealed no direct relationship between hooking up and marital quality, but an indirect influence via communication.

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Chapter 1 - Introduction

Hooking up can be broadly defined as "a sexual encounter, usually lasting only one night, between two people who are strangers or brief acquaintances" (Paul, McManus, & Hayes, 2000, p. 79). Studies utilizing this broad definition report prevalence rates ranging from 52% to 78% of college men and women experiencing at least one hookup (Owen, Rhoades, Stanley, & Fincham, 2010; Paul et al., 2000). However, prevalence rates fluctuate based on operationalization of the construct. When asked whether the individual had engaged in intercourse and/or oral sex with someone known less than 24 hours or engaged in intercourse once and only once, the prevalence rates range from 28% to 60% of college students, with men engaging in significantly more hookups involving these specific behaviors (Fielder & Carey, 2010; Gute & Eshbaugh, 2008). Much of the research on hooking up to date has focused on understanding variables that predict this behavior, such as alcohol use, personality, attachment style, self-esteem, attitudinal acceptance of hooking up and fear of intimacy (Gute & Eshbaugh, 2008; Owen et al., 2010; Paul et al., 2001) and the personal consequences of engaging in a hookup, which include emotional ambivalence, psychological distress, unwanted sex, and sexual regret (Eshbaugh & Gute, 2008; Flack et al., 2007; Glenn & Marquardt, 2001; Owen & Fincham, 2011; Owen, Fincham, & Moore, 2011).

The current widespread practice of the hookup among college students has led some scholars to believe that our society has shifted its dominant mate selection strategy from a dating culture to a hookup culture, where individuals engage in multiple hookups as the mechanism for finding a suitable partner (Bogle, 2008; Glenn & Marquardt, 2001). However, there are no empirical investigations into how hooking up influences later relationship processes and quality. The current study seeks to extend the literature by exploring how the frequency of hooking up influences marital satisfaction and perceived marital stability, directly and indirectly, through communication and sexual satisfaction using data from currently married individuals participating in Wave IV of the National Longitudinal Study of Adolescent Health (Add Health; n = 1,729). Both gender and college attendance are explored as potential moderators of the relationships among the key variables of interest.

Chapter 2 - Literature Review

Theoretical Model

In order to examine how hooking up behaviors impact later marital quality and processes, a theoretical model developed by Busby, Carroll, and Willoughby (2010) will be utilized for the current study (see Figure 1). Busby and colleagues' model was developed to analyze how the timing of first sex (prior to dating, on the first date, within a month of dating, etc.) for the couple impacted later marital functioning. Specifically, they proposed that sexual timing would directly influence marital quality (comprised of variables related to marital satisfaction and perceived permanence/stability of the marriage) and indirectly influence quality by way of sexual satisfaction and couple communication beyond the influence of a variety of control variables. The current study seeks to examine how the frequency of hooking up (a specific type of sexual interaction) influences marital processes and quality. However, a review of the extant literature is necessary to provide sufficient rationale for such an application of the model.

Hooking Up and Sexual Satisfaction, Communication, and Marital Quality

While research specific to the hookup has yet to explore the relationship between hooking up and later sexual satisfaction within an enduring relationship, the broader literature related to sexual satisfaction provides evidence to suspect such a relationship. Prior sexual experiences have been shown to be a salient factor in the sexual enjoyment and satisfaction in later relationships (Bauserman & Davis, 1996; Moore & Davidson, 1997). Specifically, guilt stemming from past sexual experiences is related to lower sexual satisfaction in a sample of women (Moore & Davidson, 1997). Sexual regret, which is conceptually similar to guilt, has been reported after hooking up for both men and women (Eshbaugh & Gute, 2008; Paul & Hayes, 2002). In contrast, a positive evaluation of early sexual experiences is associated with greater sexual satisfaction in later relationships for both men and women (Bauserman & Davis, 1996). One study also found that those individuals who had a casual sexual relationship prior to their current partner had increased odds of not enjoying their most recent sexual encounter (Wight et al., 2008).

In regard to how hooking up might impact communication in marriage, Paul, Wenzel, and Harvey (2008) hypothesized that those individuals engaging in hookups are not gaining experience with more advanced levels of relationship functioning (such as conflict resolution and communication skills), which might negatively impact future relationships. This argument implies that the more one hooks up rather than develops committed romantic relationships, the less experience and skill he or she will have in communicating later on in marriage. In addition, Paul and colleagues argue that there are certain characteristics of the hookup experience that could directly impair communication. Namely, deception commonly occurs during a hookup which may result in not trusting partners and a hesitance to communicate about sensitive subjects. This link is yet to be tested empirically.

Several studies provide support for the potential link between hooking up and later marital quality. Paik (2010), utilizing data gathered in 1995 from adults aged 18 to 59 in the Chicago area who were currently dating, cohabiting, or married, found that relationship quality tended to be lower, on average, for those individuals that began their relationship through a hookup compared to those who had their first sex in a more committed context. In addition, prior sexual encounters initiated while under the influence of drugs or alcohol with someone other than a current partner, a common occurrence in hookups (Owen et al., 2010; Paul et al., 2000), is longitudinally linked to lower relationship quality in future relationships (Wight et al., 2008). Finally, theory related to marital quality and stability has identified one's prior sexual experiences (conceptualized as part of a larger construct referred to as enduring vulnerabilities in the vulnerability-stress-adaptation (VSA) model) as an important variable in understanding later marital functioning (Bradbury, 1995). Furthermore, the VSA model proposes a possible mechanism through which the hookup might influence marital quality: the behaviors couples engage in to deal with stress in their relationship, such as communication. It is likely that the impact of one's early experience with romantic relationships, especially when those relationships are primarily brief sexual encounters with relative strangers, will have an impact on the quality of future marital relationships.

The Links From Sexual Satisfaction and Communication to Marital Quality

The relationship between sexual satisfaction and marital quality is robust, yet inconsistent (for a review, see Sprecher & Cate, 2004). In Karney and Bradbury's (1995) meta-analysis of the

predictors of marital quality and stability, sexual satisfaction exhibited some of the strongest effect sizes for both marital satisfaction ($d = .33$ for men and women) and stability ($d = .16$ for wives and $d = .20$ for husbands). However, individual studies have not found sexual satisfaction to be consistently associated with relationship quality. For example, a study of dating couples found the relationship between sexual satisfaction and relationship satisfaction to be stronger for men than women and to be significantly associated with relationship dissolution for men, but not for women (Sprecher, 2002). Furthermore, the temporal ordering of sexual satisfaction and relationship satisfaction has been questioned (see Byers, 2005), but a longitudinal study that employed autoregressive modeling to specifically establish the temporal ordering of marital quality and sexual satisfaction demonstrated that sexual satisfaction is causally related to marital quality, not the other way around (Yeh et al., 2006). Finally, sexual satisfaction has been found to mediate the relationship between a variety of variables and marital quality, including sexual behaviors (Kisler & Christopher, 2008), neuroticism (Fisher & McNulty, 2008), and body image (Meltzer & McNulty, 2010).

Communication as a relationship process has an extensive history linking it with marital quality for both men and women (for a review, see Gottman & Notarius, 2000). Positive and negative communication behaviors have demonstrated some of the strongest effect sizes in relation to marital satisfaction and stability for husbands and wives in a meta-analysis (as high as $d = .54$ for husbands' positive behavior on satisfaction; Karney & Bradbury, 1995). When analyzed in concert with sexual satisfaction, communication still accounts for unique variance in marital satisfaction (Litzinger & Gordon, 2005) and the strength of the connection between communication and relationship satisfaction seems to not differ significantly between men and women (Montesi, Fauber, Gordon, & Heimberg, 2010).

Control Variables

A number of demographic variables have demonstrated strong connections with marital quality, including education, relationship length, religious service attendance, age, and race (for a review, see Bradbury, Fincham, & Beach, 2000 and Fincham & Beach, 2010). There is also evidence that many of these same variables are important predictors of hooking up. Research has shown that religious service attendance is associated with reduced likelihood of hooking up (Burdette, Ellison, Hill, & Glenn, 2009), as does being a college student of color, including

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African Americans, Asian Americans, and Hispanics (Bogle, 2008; Glenn & Marquardt, 2001; Owen et al., 2010). The hookup has been explored almost exclusively with college student samples, so controlling for education will provide information about the likelihood of hooking up for those that did not attend college. Finally, those who are older in this sample may have been in their young adult years at a time when hooking up was not as socially acceptable (Lambert, Kahn, & Apple, 2003) and those in longer relationships may have had less time and opportunity to engage in hookups.

Gender as a Moderator?

There are few differences between men and women among the individual characteristics that predict hooking up (Paul et al., 2000). It seems that the area where men and women differ most dramatically is in the impact of the behavior. Fielder and Carey (2010) write "despite hooking up as much as men, women are not affected by hookups in the same way" (p. 1116). In general, women are at greater risk than men for experiencing adverse consequences from a hookup in the areas of mental health (Eshbaugh & Gute, 2008; Fielder & Carey, 2010; Owen et al., 2010) and sexual health consequences (Downing-Matibag & Geisinger, 2009; Grello, Welsh, & Harper, 2006; Littleton, Tabernik, Canales, & Backstrom, 2009; Paul & Hayes, 2002). Given these observed differences, it is also likely that the hookup will have a greater impact on women's later sexual satisfaction, communication, and marital quality. In addition, prior research has demonstrated that gender is a significant moderator in the relationship between sexual satisfaction and relationship satisfaction (Kisler & Christopher, 2008).

College Attendance as a Moderator?

There are preliminary research findings suggesting that the hookup seems to be a phenomenon most prevalent among college-aged individuals. While hooking up most likely occurs in all segments of society to some degree, it is likely not normative and widespread in the same way as it is currently for college students. Research investigating adolescents' (junior high and high school) casual sexual behaviors found only a small percentage engage in sexual behavior with a partner the adolescent did not know (Manning, Giordano, & Longmore, 2006). In addition, there is evidence that the hookup culture ends when young adults leave college and enter the workforce, with pairing practices taking on a more conventional dating pattern at that

time (Bogle, 2008). One major limitation in the extant literature is that the hookup has not been examined among the young adult cohort that does not attend college. Therefore, it cannot be stated whether this practice is tied more closely to age and young adult development or college attendance. The current study also explores whether college attendance is a moderator of the relationships among the variables in the theoretical model to be tested.

The Present Study

The present study seeks to answer the following research questions:

1. Is the frequency of hooking up related to current marital quality and is this relationship mediated by sexual satisfaction and communication?
2. Does gender moderate the relationships among frequency of hooking up, sexual satisfaction, communication, and marital quality?
3. Does college attendance moderate the relationships among frequency of hooking up, sexual satisfaction, communication, and marital quality?

These research questions will be answered by testing a theoretical model developed by Busby and colleagues (2010) of how sexual behaviors influence later marital functioning using data from the currently married participants in Wave IV of the Add Health study (n = 1,729), a nationally representative sample of young adults. Several control variables known to influence hooking up and marital quality will also be included in the analysis: education level, relationship length, religious service attendance, age, and race.

The design of this study has several clear strengths. First, a national sample will be used. Almost all of the research on the hookup to date has relied on convenience samples of college students. In a recent review of the literature concerning young adults and sexuality, the authors conclude: "We cannot overstate the importance of including more diverse samples in research on sexual behavior... The reliance to date on primarily White college student samples means that many of our conclusions are based on a select and biased sample" (Lefkowitz, Gillen, & Vasilenko, 2011, p. 225). Of particular salience to this topic area, the current study will be able to explore the hookup among those that did not attend college, something not yet explored in the empirical literature. Second, this study will test the impact of prior sexual relationships (hookups) on present marital functioning. Lefkowitz and colleagues (2011) noted that most of the research on sexual behavior focuses on factors that predict sexual behavior rather than how

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those behaviors influence well-being later on. In addition, a separate literature review covering partnering behaviors across the life course pointed out that research is needed to understand how earlier relationships affect subsequent ones (Sassler, 2010). This study answers both of those calls through testing how hooking up influences later marital functioning and examines how these early relationships (albeit brief and primarily sexual in nature) influence subsequent marital quality.

Chapter 3 - Method

Data

The data for the current study comes from the fourth wave of the National Longitudinal Study of Adolescent Health (Add Health). The Add Health study collected its first wave of data from 1994 to 1995 with a nationally-representative sample of 20,745 adolescents in grades 7 through 12 in the United States (Harris et al., 2009). The original sample was gathered from 80 high schools and 52 middle schools using systematic and implicit stratification methods to ensure representation of United States adolescents in relation to region of the country, urbanicity, school size, school type, and ethnicity.

The Wave IV data were collected through in-home interviews from 2007 to 2008 with 15,701 of the original Wave I respondents. The participants in the study are now adults, ranging in age from 24 to 32 years at the time of data collection. A questionnaire was administered to the participants using computer-assisted personal interviews and computer-assisted self interview for sensitive questionnaire sections, with the total interview time taking 90 minutes. Following the interview, the researchers took physical measurements and collected biological specimens from all participants. The current study used only the survey data, which contains information related to social, economic, psychological, intimate relationship, and health domains. In addition, the current study used the public use Add Health dataset for Wave IV, which comprises a representative random sample of 5,114 adults that participated in the larger Wave IV data collection.

Since the purpose of this study is to test how hooking up impacts later marital processes and quality, only a subset of the participants from the public-use data were analyzed. Inclusion in the study was limited to those currently married at the time of data collection. In addition, the sample excluded those who had ever been physically forced to have sex or had sex in exchange for money during the last 12 months, as these two variables would obfuscate the operational definition of hooking up in this study, producing a final sample size of 1,729. Participants were not excluded if they reported being verbally coerced into sex or were given alcohol or drugs preceding sex. Both verbal coercion and impaired judgment due to alcohol or drug use are

documented characteristics of some hookups (Flack et al., 2007; Wright, Norton, & Matusek, 2010).

Participants

The sample in the current study is comprised of 1,729 currently married adults. On average, the participants had been in a relationship with their spouses for a little over 7 years (*SD* = 3.29), including time spent dating prior to marriage. There were more female respondents in this sample, with about 45% male and 55% female, and the mean age of the participants was 29.37 years (*SD* = 1.72). In regard to education, 6% had less than a high school diploma, 14% were high school graduates, and 11.5% participated in vocational or technical school. Nearly a third of the sample had some college education, over 21% completed a bachelor's degree, and about 15% completed graduate degrees. Over 80% of the sample was European American, 15.6% were African American, 2.3% were Asian or Pacific Islander, and the remaining .5% were American Indian or Alaskan Native. Just over 20% of the sample reported a total household income less than $39,999 per year, 42% earned between $40,000 and $74,999 per year, while the remaining 37.5% made over $75,000 each year.

Measures

Control Variables

Education, relationship length, religious service attendance, age, and race were included as control variables in the model. Education was measured with the item: "What is the highest level of education that you have achieved to date?" Responses ranged from "8th grade or less" (1) to "completed a master's degree" or higher (9). One item assessed relationship length: "What is the total amount of time that you have been involved in a sexual or romantic relationship with your spouse?" Respondents then indicated the length in months and years, which was converted to total time in months for analysis. Religious service attendance was measured by the item: "How often have you attended church, synagogue, temple, mosque, or religious services in the past 12 months?" Responses ranged from "never" (0) to "more than once a week" (5). Age was computed by subtracting the year the participant was born from the year they filled out the survey. Finally, respondents' race was dummy coded for all analyses: "European American" (0) and "Other race" (1).

Hookups

One item was used to measure number of hookups: "Considering all types of sexual activity, with how many partners, male or female, have you had sex on one and only one occasion?" "All types of sexual activity" is encompassed by earlier items in the questionnaire that explicitly define this as vaginal intercourse, oral sex, and anal intercourse. Responses ranged from 0 partners to 145 partners ($M = 3.22$; $SD = 8.14$; *Median* = 1.00).

Sexual Satisfaction

One item assessed sexual satisfaction: "I am satisfied with our (referring to their spouse) sex life." Possible responses ranged from "strongly disagree" (1) to "strongly agree" (5).

Communication

Two items were used to measure communication with the participant's spouse: "I am satisfied with the way we handle our problems and disagreements" and "My partner listens to me when I need someone to talk to." Response categories ranged from "strongly disagree" (1) to "strongly agree" (5). The Pearson correlation coefficient for these two items was .69, $p < .001$.

Perceived Stability

The perceived stability of the marital relationship was assessed with two questions. The first item asked, "How likely is it that your relationship with your spouse will be permanent?" Responses ranged from "almost no chance" (1) to "almost certain" (5). The second item stated, "How committed are you to your relationship with your spouse?" Responses ranged from "not at all committed" (1) to "completely committed" (4). Since the response categories for these two items are on a different metric (1 to 5 versus 1 to 4), the variables were recoded using the proportion of maximum transformation (POMS; Little, in press). This method transforms the coding of the indicators, without altering their distribution, to a common metric ranging from 0 to 1. Placing the indicators on the same metric helps the structural models to converge. The values for the variables after POMS are then interpreted as percentages, with higher percentages indicating a higher level of perceived stability. The Pearson correlation coefficient for these two items was .77, $p < .001$.

Marital Satisfaction

Three items were used to measure marital satisfaction. "In general, how happy are you in your relationship with your partner?" Response categories ranged from "not too happy" (1) to "very happy" (3). "We enjoy doing even ordinary, day-to-day things together." Responses ranged from "strongly disagree" (1) to "strongly agree" (5). The third question presented a series of circles that overlapped with each other in varying degrees. Each figure contained circles labeled "self" and "other." The directions stated, "Select the picture which best illustrates how close you feel to your spouse." There were seven options, with the first representing the greatest distance between "self" and "other" and the seventh depicting the most overlap. Once again, each item was answered on a different metric so a POMS transformation was used. Cronbach's α for these items was .85.

Preliminary Analyses and Analytic Plan

The data were first explored with descriptive statistics to diagnose the amount of missing data. Level of missing data ranged from 0% to 2.3% across the variables in the model and were handled through the full information maximum likelihood estimation (FIML) procedure, which has been shown to produce less biased results than listwise deletion, pairwise deletion, or mean substitution and produces similar results to multiple imputation (Acock, 2005). To help justify the missing at random (MAR) assumption of FIML, a logistic regression was run to determine if any auxiliary variables predicted missingness in the hookup variable that could be included in the analysis. Income and gender both predicted missingness for this variable, supporting the MAR assumption. Level of missingness was so low on the remaining variables (from 0% to 0.06%) that it was not possible to run logistic regressions for each of those variables.

The data were analyzed using structural equation modeling in Mplus 6.0 with maximum likelihood estimation. All models were computed with a bootstrap analysis (2,000 bootstraps) for two reasons. The primary variable of interest in the study, hooking up, did not have a normal distribution (skewness = 7.58), violating the assumption of normality in maximum likelihood estimation (Kline, 2011). Simulation studies have demonstrated bootstrapping is an effective way to handle nonnormal data, reducing bias in the estimates and standard errors while still allowing all the available information in the data to be modeled

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(Enders, 2001; Nevitt & Hancock, 2001). Bootstrap analysis was also utilized because it is the preferred method for testing mediation models (Preacher & Hayes, 2008).

Chapter 4 - Results

Descriptive Findings

The data were first explored with descriptive statistics related to hooking up and *t*-tests to determine mean differences in hooking up behaviors between men and women and those that attended college compared to those that that did not attend college. About one third (34%) of participants in this study reported never having engaged in a hookup. Just over 25% had hooked up one time, 12% had hooked up twice, and 11.48% had hooked up three or four times. Only 6% of the sample reported hooking up 10 or more times. In comparing mean differences between men and women in regard to hookup frequency, men engaged in significantly more hookups than women ($M = 4.24$, $SD = 10.39$ for men versus $M = 2.40$, $SD = 5.58$ for women; $t(1688) = 4.65$, $p < .001$). Mean differences between those that attended college and those that never attended college were also examined. Participants that did not attend college reported significantly more hookups than those that did ($M = 3.84$, $SD = 9.55$ for no college versus $M = 2.95$, $SD = 7.41$ for college attendance; $t(1688) = 2.08$, $p < .05$).

Confirmatory Factor Analyses for Men and Women

A confirmatory factor analysis (CFA) was first conducted to ensure that the measurement model fit the data and that the data can be measured consistently for both men and women before the structural model was tested (see Figure 2). The initial CFA indicated that the measurement model fit the data well using guidelines provided by Kline (2011): χ^2 (49) = 238.82, Root Mean Square Error of Approximation (RMSEA) = 0.067 (90% CI = .059, .076), Comparative Fit Index (CFI) = .980; Tucker-Lewis Index (TLI) = .971. However, the latent variable correlations between perceived stability and marital satisfaction were extremely high for both men and women ($r = .95$ for men and $r = .96$ for women). This high correlation means that stability and satisfaction are statistically redundant, indicating the presence of multicollinearity among these two latent constructs. As a result, perceived stability and marital satisfaction were collapsed into one latent variable, marital quality, with three indicators: "In general, how happy are you in your relationship with your partner," "How likely is it that your relationship with your spouse will be permanent," and "How committed are you to your relationship with your spouse?" These

indicators were selected because they correlated highest with each other, resulting in a strong loading on the latent factor: marital quality.

A second CFA was then conducted with the revised model (see Figure 3). The fit indices showed the model did not provide an adequate fit to the data so the modification indices were consulted. The modification indices showed that model fit would be increased substantially by correlating the residuals for the commitment and stability indicators of marital quality. This modification is theoretically justified (commitment and stability are each part of a latent construct that was eliminated: perceived stability), so the change was made. A final CFA was conducted and the fit indices demonstrated a good fit to the data: χ^2 (24) = 102.159, RMSEA = 0.061 (90% CI = .049, .074), CFI = .988; TLI = .979. The fixed factor method of identification was used in the CFA, which standardizes the covariances among the observed and latent variables, allowing them to be interpreted as correlations (see Table 1). The correlations among the study variables revealed important information about the zero-order relationships among these variables for men and women. Most interesting is that hooking up was not correlated with any of the variables related to marital processes or quality for men (r = .01, .02, and .01, p < n.s.), but a significant correlation did exist between hooking up and all of the marital processes and quality variables for women (r = -.15, p < .01, r = -.13 and -.12, p < .10). The interrelationships between sexual satisfaction, communication, and relationship quality were all significant and consistent between men and women. With the correlations largely consistent with expectations, the structural model was then tested.

Structural Equation Models for Men and Women

The model fit indices from the two-group structural equation model analysis indicated a good fit between the model and the data: χ^2 (54) = 166.89, RMSEA = .049 (90% C.I. = .041, .058), CFI = .983, TLI = .964. To determine empirically if gender moderated the relationships among the study variables, the endogenous path coefficients (the main paths of interest for this study) were constrained to be equal for men and women and the change in chi-square was calculated. The chi-square difference indicated that constraining the endogenous paths to be equal for men and women significantly worsened the fit of the model (χ^2_{diff} (5) = 19.556, p < .01), supporting a two-group analysis of the model and that gender does moderate the relationships between the variables.

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The standardized results for the structural model can be seen in Figure 4. For men, hooking up was not related to sexual satisfaction ($\beta = .00$, $p <$ n.s.) or communication ($\beta = .03$, $p <$ n.s.), but had a significant, negative association with marital quality ($\beta = -.09$, $p < .001$). This significant relationship can be interpreted as follows: one standard deviation unit increase in hooking up for men is related to a .09 standard deviation unit decrease in marital quality, controlling for the influence of sexual satisfaction, communication, education, relationship length, religious service attendance, age, and race. Sexual satisfaction and communication both exhibited a significant, positive relationship to the marital quality variables ($\beta = .05$, $p < .001$ and $\beta = .77$, $p < .001$, respectively). In other words, more frequent hookups were associated with lower levels of marital quality, while higher sexual satisfaction and greater communication were related to increased marital quality. Overall, the model accounted for little of the variance in sexual satisfaction ($R^2 = .01$) and communication ($R^2 = .03$), but 66% of the variance in relationship quality was explained through this model.

The results for women were quite different. More frequent hooking up was related to lower levels of sexual satisfaction ($\beta = -.15$, $p < .001$) and communication ($\beta = -.12$, $p < .001$), but there was no direct association between hooking up and marital quality ($\beta = .01$, $p <$ n.s.). Sexual satisfaction was also not associated with marital quality ($\beta = .04$, $p <$ n.s.), but higher communication was associated with higher levels of marital quality ($\beta = .82$, $p < .001$). As was the case with the men, little of the variance in sexual satisfaction ($R^2 = .03$) or communication ($R^2 = .03$) were accounted for in this model, but 74% of the variance in relationship quality was explained.

While relationships among the control variables to the endogenous variables was not the focus of the current study, given the paucity of research on the hookup with a national sample, some of those findings were notable. For both men and women, attending religious services more often ($\beta = -.10$, $p < .001$ and $\beta = -.12$, $p < .001$), being in a longer relationship with their spouse ($\beta = -.12$, $p < .001$ and $\beta = -.09$, $p < .001$), and having a higher level of education ($\beta = -.04$, $p < .001$ and $\beta = -.07$, $p < .001$) were all related to a lower frequency of hooking up. Age exhibited no relationship with hooking up ($\beta = -.01$, $p <$ n.s. for men and $\beta = -01$, $p <$ n.s. for women) and being a member of an ethnic minority group was associated with a higher frequency of hooking up for men ($\beta = .06$, $p < .001$). There was no relationship between race and hooking up for women ($\beta = .02$, $p <$ n.s.).

Next, individual path coefficients were constrained to be equal, one at a time, between men and women. The chi-square difference was calculated to determine whether applying the constraint to the path significantly worsened the fit of the model to the data. Applying the constraint to the path coefficients from hooking up to sexual satisfaction (χ^2_{diff} (1) = 14.31, $p <$ .001) and from hooking up to communication (χ^2_{diff} (1) = 11.69, $p < .001$) both significantly worsened the model fit. This indicates that there are significant differences between men and women when it comes to the relationship between the frequency of hookups and sexual satisfaction and communication. More specifically, the relationship between hooking up and both communication and sexual satisfaction is stronger for women than it is for men. There were no significant differences between men and women on any of the other paths.

To determine whether the model was equally explanatory for men and women, the variances of communication, sexual satisfaction, and marital quality were constrained to be equal and the difference in chi-square was calculated. Constraining the variances did significantly worsen the fit of the model to the data (χ^2_{diff} (3) = 31.50, $p < .001$). In viewing the model chi-square contribution from each group, the men's group contributed less of the chi-square than the women's group (χ^2 = 69.07 and χ^2 = 97.82, respectively), meaning that this model accounted for more of the variance in men's sexual satisfaction, communication, and marital quality than for women.

Finally, in order to test whether sexual satisfaction and communication mediated the relationship between hooking up and marital quality for men and women, a bootstrap analysis was used to test indirect effects (Preacher & Hayes, 2008). Standardized results are presented in Table 2. The only indirect effect to emerge as significant was the path from hooking up to communication to marital quality for women (β = -.10, $p < .001$, CI = -.13, -.07). This can be interpreted as follows: for one standard deviation unit increase in hooking up, marital quality will decrease .10 standard deviation units, via the prior effect of hooking up on communication.

Structural Equation Models for College Attendance and Gender

A structural equation model was then constructed to test whether college attendance moderates the relationships between hooking up and later marital processes and quality. The sample was grouped based on whether they had attended college or not and gender was maintained as a grouping variable. Therefore, a four group model was tested: men that attended

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college, men that never attended college, women that attended college, and women that never attended college. A CFA was first conducted to ensure that the measurement model fit the data and was consistent across the four groups. The model fit indices indicated a good fit of the CFA to the data: χ^2 (54) = 186.871, RMSEA = 0.075 (90% CI = .064, .087), CFI = .979; TLI = .968.

With the results of the CFA in line with expectations, the structural model was then analyzed and the model fit indices indicated a good fit to the data: χ^2 (102) = 264.797, RMSEA = 0.061 (90% CI = .052, .070), CFI = .975; TLI = .952. To determine if there was empirical justification for using college attendance as a grouping variable in this model, the endogenous path coefficients (the main paths of interest for this study) were constrained to be equal for men that attended college and men that did not attend college, as well as for women that attended college and women that did not attend college. The chi-square difference indicated that constraining the endogenous paths to be equal for those that attended college and those that did not attend college did not significantly worsen the fit of the model (χ^2_{diff} (10) = 13.386, $p <$ n.s.). While mean differences in hooking up are significantly higher for those that did not attend college compared to those that did (t(1688) = 2.08, $p < .05$), college attendance was not a salient moderator when examining the relationship between hookup frequency and marital processes and quality.

Chapter 5 - Discussion

The purpose of this study was to determine if the frequency of hooking up was related to marital quality and if this relationship was mediated by sexual satisfaction and communication after controlling for education, relationship length, religious attendance, age, and race. In addition, gender and college attendance were both explored to determine if they moderated the relationships between hooking up, sexual satisfaction, communication, and marital quality. Results indicated that gender was a significant moderator of the relationships among the endogenous variables, but college attendance was not. For men, hooking up exhibited a direct, negative relationship with marital quality (more hookups were related to lower marital quality), but was not related to sexual satisfaction or communication. For women, hooking up only influenced marital quality indirectly via a negative relationship with communication (more hookups were related to a less positive appraisal of communication).

The main finding from this study is that for both men and women, engaging in sexual encounters with someone only one time was related to lower marital quality with their spouse. This was expected in light of prior research findings and theory (Bradbury, 1995; Paik, 2011; Wight et al., 2008). However, the nature of the relationship between hooking up and marital quality was not consistent between men and women. Specifically, hooking up had a direct relationship with marital quality for men, but was related to marital quality indirectly through communication for women. Why might the nature of this relationship differ between men and women?

First, the difference in the direct effect from hooking up to marital quality was empirically tested for men and women and did not prove to be significantly different, although the path was significant for men, but not for women. This pattern of results is consistent with the prior study examining this model with timing of first sex as the key variable of interest (Busby et al., 2010). Therefore, the interpretation that hooking up has a direct effect on men's marital quality but not women's needs to be tempered by the magnitude of the effect, which is considered small ($\beta = -.09$; Cohen, 1988), and the fact that the men's path coefficient does not statistically differ from the women's path coefficient ($\beta = .01$). In light of those analyses, one tentative hypothesis is that there may be something about the experience of engaging in a sexual encounter with someone outside of a committed relationship that could shape men's (and

possibly women's) cognitions to a slightly more pessimistic appraisal of their later marital quality. The more frequently a person engages in brief sexual encounters, the more he or she may begin to develop a view that intimate relationships are temporary and, therefore, be less committed to his or her romantic partner. This explanation is bolstered by the fact that marital quality is operationalized with two items assessing commitment in this study. If future studies are able to replicate this finding and show there is a gender difference in this direct effect from hooking up to marital quality, prior research on the hookup provides one likely explanation for this disparity. Men are more likely to approach hookups with a sex-only mindset, while women are often hoping the hookup can serve as a mechanism whereby a committed relationship can develop (Glenn & Marquardt, 2001; Paul & Hayes, 2002). Due to this different appraisal for men and women, the experience of hooking up may reinforce the belief that relationships are temporary for men, even in marriage. This would not necessarily be the case for women, as they view hooking up as an avenue through which to develop a committed relationship. This mindset might not alter their views on commitment in future relationships as much, even as the number of hookups experienced increases. Alternatively, there may also be other mediators of this relationship that were not included in this study that could shed light on the mechanisms by which hooking up negatively influences marital quality. If hooking up does change cognitions about romantic relationships, a likely mechanism it influences would be attributions individuals hold toward their spouse, which have been shown to then influence marital quality through their impact on positive and negative behaviors (Durtschi, Fincham, Cui, Lorenz, & Conger, 2011).

Communication did prove to mediate the association between hooking up and marital quality for women in this study. This is consistent with the explanation proposed by Paul and colleagues (2008): those individuals engaging in hookups are not gaining experience with more advanced levels of relationship functioning (such as conflict resolution and communication skills), which might negatively impact future relationships. The strength of the path from hooking up to communication was significantly stronger for women than for men (no difference from communication to relationship quality). Prior research has shown that sexual history has a significant relationship to communication behaviors for both men and women (Busby et al., 2010). It is possible that hooking up still influences men's communication in marriage in ways that are not captured through the operationalization of that construct in the current study. Communication was measured globally in this study: "I am satisfied with the way we handle our

problems and disagreements," and "My partner listens to me when I need someone to talk to." These items do not capture specific communication behaviors that may have been impacted from engaging in hookup behaviors, such as negative interactions (Stanley, Markman, & Whitton, 2002), the demand/withdraw pattern (Futris, Campbell, Nielsen, & Burwell, 2010), or problem solving ability.

Sexual satisfaction did not prove to significantly mediate the relationship between hooking up and relationship quality for either men or women. For women, engaging in more hookups was related to decreased sexual satisfaction. The association between hooking up and sexual satisfaction was not significant for men and the strength of this path was empirically stronger for women than men. More research has explored the link between women's sexual history and their later sexual satisfaction than for men and is consistent with the finding that more hookups would be related to lower sexual satisfaction for women (Moore & Davidson, 1997). Furthermore, the relationship between sexual satisfaction and relationship quality was significant for men, but not women, although the strength of this path was not significantly different for men and women. In light of prior research, it was surprising that the strength of the path from sexual satisfaction to marital quality was weaker in the current study ($\beta = .05$ and $.04$ for men and women) than effect sizes in past research ($d = .16$ to $.33$; Karney & Bradbury, 1995). The one-item measure of sexual satisfaction could explain this weaker relationship. While the use of pre-existing, validated measures of sexual satisfaction are not common in research exploring this variable (for an exception, see Fisher & McNulty, 2008 and Montesi et al., 2010), most studies use multiple items to capture this construct. Additionally, characteristics of the participants might also further explain the weaker relationship between sexual satisfaction and marital quality. These data were gathered from a sample of young adults who were "satisfied," on average ($M = 4.03$, $SD = 1.10$), with their sexual relationship. The lack of variability in this item limits its ability to both be predicted and predict other variables.

Although individuals that did not attend college hooked up more, on average, than those that did attend college, college attendance did not significantly moderate the relationships among the variables in the model. However, it is a novel finding that those young adults that did not attend college actually hook up more, than those that did because some authors suggest hooking up is more of a college campus phenomenon (Bogle, 2008; Glenn & Marquardt, 2001). This does

not appear to be so. Future studies should explore hooking up among those young adults not in a university setting to see how the experience differs from college students.

This study also reported a variety of descriptive findings related to the hookup due to lack of information available utilizing a national sample. Overall, about two thirds of the participants in this sample had engaged in sexual behavior with someone once and only once, with men and those that did not attend college participating in significantly more hookups than women and those with at least some college, respectively. The percentage of participants engaging in hookups is somewhat higher than other studies using similar operationalizations with college student samples (Fielder & Carey, 2010; Gute & Eshbaugh, 2008). This provides some evidence that hooking up is as prevalent, and maybe slightly more so, in the general population compared to college campuses. Also, many of the predictive relationships from the control variables to hooking up were noteworthy. Most of the results for the controls were consistent between men and women: more frequent attendance at religious services, being in a longer relationship with their spouse, and achieving a higher level of education were all associated with a lower frequency of hooking up. More frequently participating in religious services has been shown to be associated with fewer hookups in prior research exploring this area (Burdette et al., 2009). Age was not related to hooking up for either men or women, likely due to the narrow age range of the sample. Being a member of a racial or ethnic minority group was actually associated with engaging in more hookups for men, but was not related to hooking up for women. This finding is not consistent with previous studies that found college students of color to engage in less frequent hookups (Bogle, 2008; Glenn & Marquardt, 2001; Owen et al., 2010). This is an area to be investigated in future research.

Limitations and Future Directions for Research

This study contains a number of limitations. The variables of interest in this study were not operationalized with existing, validated measures. Of particular importance is the way in which hooking up was measured: "Considering all types of sexual activity, with how many partners, male or female, have you had sex on one and only one occasion?" While this operationalization has been used in other studies on this topic (Gute & Eshbaugh, 2008), it likely does not provide the most precise information. This is a common limitation in studies employing secondary data analysis, but researchers have stressed the importance of exploring issues of

sexuality with more diverse samples (Lefkowitz et al., 2011). Another limitation is that the data for this study are cross-sectional, limiting the ability to determine causality. The participants reported the number of hookups from their past, but this type of retrospective questioning could be prone to memory bias and willingness to respond honestly could be influenced by current relational factors. Next, this model did not include some of the variables known to predict hooking up, such as alcohol use, personality, and attachment style (Paul et al., 2000; Owen et al., 2010). It is possible that the relationships between hooking up and the marital process and quality variables could change if these additional predictors were included in the model. Finally, this study explored only those young adults currently married. Hooking up may have a very different impact on relationship processes and quality among dating or cohabiting couples.

Future studies would benefit from continuing to explore the impact of hooking up on later committed relationships of all types, including dating, cohabiting, and married. In addition, longitudinal designs are essential to provide a clearer picture of the impact of this behavior over time. Research has followed college students over the course of an academic semester (Fielder & Carey, 2010, Owen et al., 2011), but longer term longitudinal studies are needed. In addition, hooking up may have a stronger effect on more proximal factors, which would then reduce marital quality later on. For example, some research suggests hooking up is related to poorer mental health outcomes, especially for women (Eshbaugh & Gute, 2008; Fielder & Carey, 2010; Owen et al., 2010), which have been shown to negatively influence communication (Whitton et al., 2007). As described above, relationship attributions could also be a more proximal variable through which future marital satisfaction is influenced indirectly via the couple's behavior. Identifying and connecting additional mediating variables would provide a more comprehensive picture of the way in which hooking up negatively impacts later relationship quality.

Conclusion

This study provides an initial exploration into the relationship between hooking up and marital quality, as well as potential mechanisms through which hooking up might indirectly influence marital quality using data from Wave IV of the Add Health study. There was a direct relationship between hooking up and marital quality for men that was not mediated by either sexual satisfaction or communication. For women, hooking up was only related to marital quality indirectly through communication. This study also provides an empirical challenge to the

popular belief that hooking up is "consequence-free sex." Rather, it appears that these anonymous or brief encounters actually have a negative influence on the most enduring relationship in our society: marriage. If, in fact, engaging in a series of hookups has become the modal pathway for selecting romantic partners in the United States (Bogle, 2008; Glenn & Marquardt, 2001), this may not bode well for the viability of the marriages ultimately resulting from that practice.

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Appendix A - Tables

Table 1 Correlations Matrix for Observed and Latent Study Variables (Men Above and Women Below the Diagonal)

Variables	1	2	3	4
1. Hookups	___	.01	.02	.01
2. Sexual Satisfaction	-.15**	___	.61***	.51***
3. Communication	-.13†	.65***	___	.81***
4. Marital Quality	-.12†	.57***	.86***	___

† $p < .10$. ** $p < .01$. *** $p < .001$.

Table 2 Mediating Effects with Hooking Up as the Independent Variable, Sexual Satisfaction and Communication as Mediators, and Marital Quality as the Outcome Variable. Bootstrap Analyses of the Magnitude and Significance of Mediating Pathways (Standardized Solution; N = 1,729)

Group	Predictor	Mediator	Outcome	β	CI	t-value
Men	Hookup →	Sexual Satisfaction →	Marital Quality	.00	.00, .00	.47
Men	Hookup →	Communication →	Marital Quality	.03	-.02, .08	.32
Women	Hookup →	Sexual Satisfaction →	Marital Quality	.01	-.01, .00	-1.55
Women	Hookup →	Communication →	Marital Quality	.10	-.13, -.07	-7.12***

Note: Indirect paths tested with 2,000 bootstraps. CI = 95% confidence interval.

*p < .05, *** p < .001.

Figure 1 Theoretical Model for the Impact of the Hookup on Marital Processes and Quality
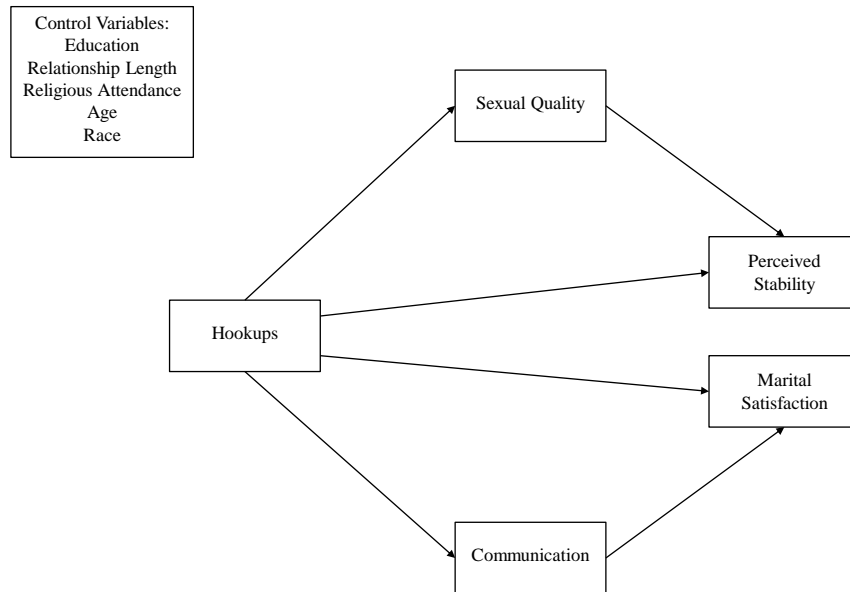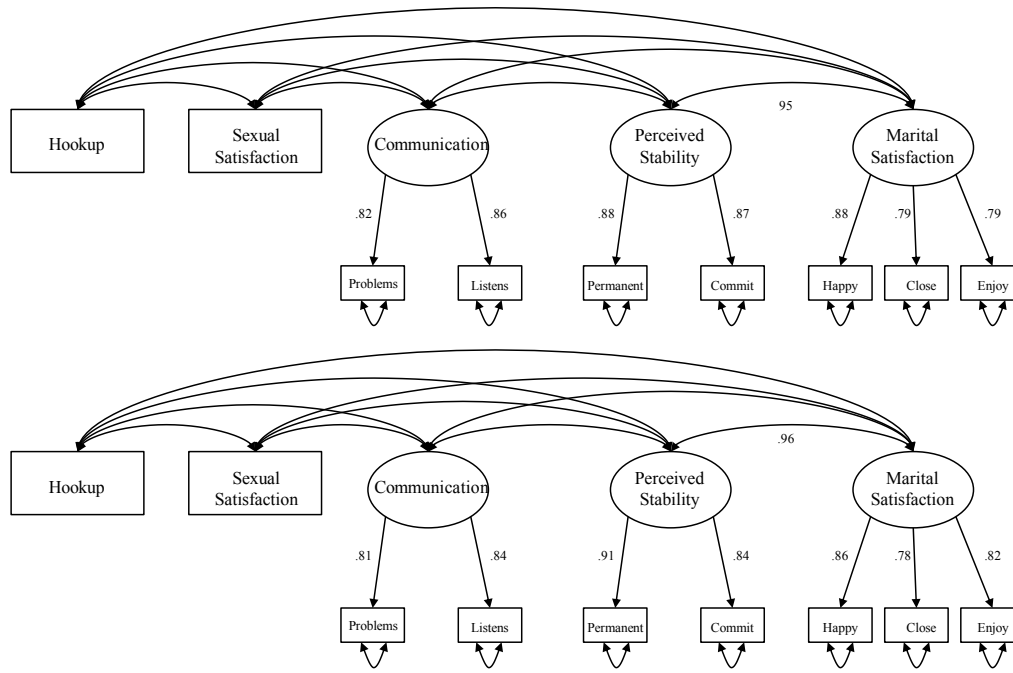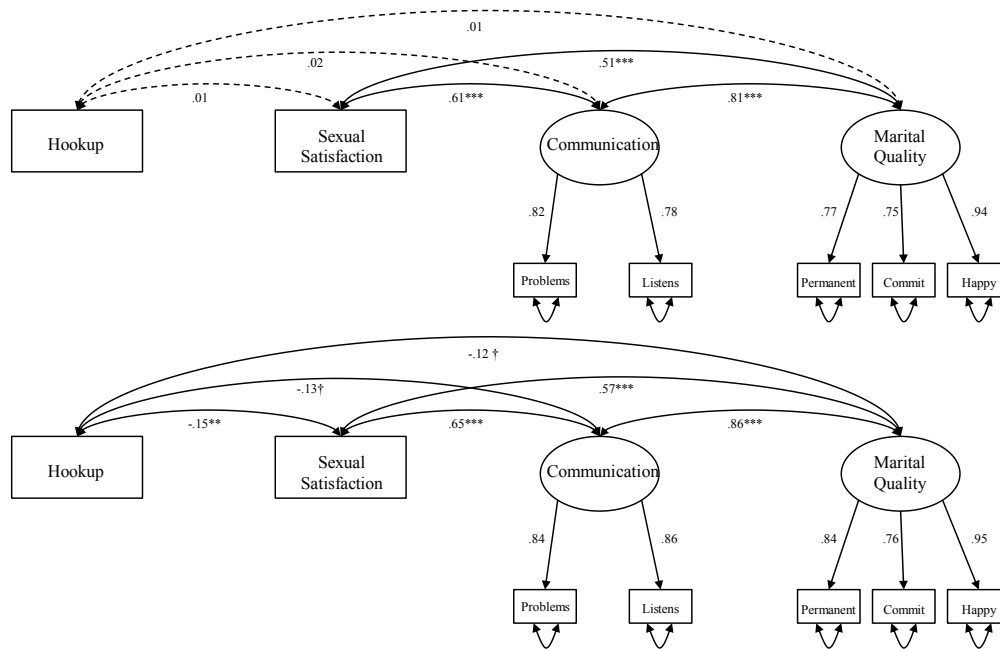
Figure 2 Confirmatory Factor Analysis of Initial Measurement Model for Men and Women (Model for Men Above and Model for Women Below; Standardized Estimates Shown; n = 1,729)


Note: Model Fit Indices: χ² (49) = 238.82, RMSEA = 0.067 (90% CI = .059, .076), CFI = .980; TLI = .971. Model was estimated with 2,000 bootstraps.

Figure 3 Confirmatory Factor Analysis of Final Measurement Model for Men and Women (Model for Men Above and Model for Women Below; Standardized Estimates Shown; n = 1,729)

Note: Model Fit Indices: χ^2 (24) = 102.159, RMSEA = 0.061 (90% CI = .049, .074), CFI = .988; TLI = .979. Model was estimated with 2,000 bootstraps and the residuals were correlated for permanent and commit. The fixed factor method of identification was used, so the covariances are interpretable as correlations between observed and latent variables. † $p < .10$. ** $p < .01$. *** $p < .001$.

Figure 4 Structural Model Estimating the Impact of Hooking Up on Marital Processes and Quality for Men and Women (Model for Men Above and Model for Women Below; Standardized Estimates Shown; n = 1,729)
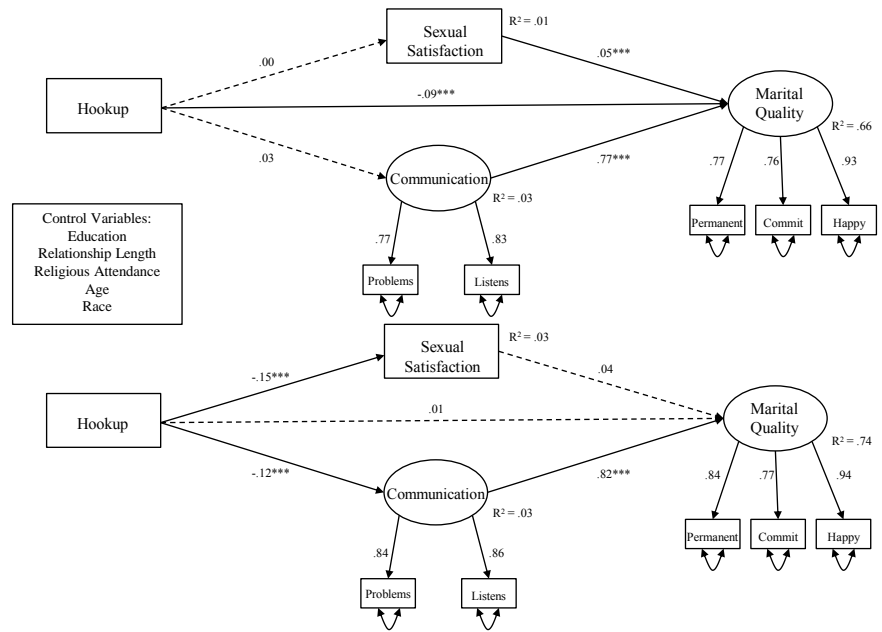
Note: Model Fit Indices: χ^2 (54) = 166.89, RMSEA = .049 (90% C.I. = .041, .058), CFI = .983, TLI = .964. Residuals for sexual satisfaction and communication were correlated, as were those for permanent and commit. Model was estimated with 2,000 bootstraps. The control variables all had path coefficients to each of the four endogenous variables for men and women, but were not shown to ease interpretation of the primary results. *** $p < .001$.