

Are Women's Orgasms Hindered by Phallocentric Imperatives?

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Abstract Women who have sex with women (WSW) are more likely to report experiencing an orgasm during partnered sex, compared to women who have sex with men (WSM). We investigated whether this difference can be partially accounted for by phallocentric imperatives—gendered sexual scripts that prioritize men's sexual experience. For example, these imperatives emphasize vaginal-penile intercourse (i.e., the coital imperative) and men's physical pleasure (i.e., the male orgasm imperative). We reasoned that a larger variety of sexual behaviors indicates less adherence to the coital imperative and that more self-oriented orgasm goals for women indicate less adherence to the male orgasm imperative. Consistent with previous work, we expected WSW to report higher rates of orgasm than WSM when taking frequency of sex into account. We also hypothesized that this difference in orgasm rates would dissipate when controlling for variety of sexual behavior and women's self-oriented orgasm goals. In a sample of 1988 WSM and 308 WSW, we found that WSW were 1.33 times ($p < .001$) more likely to report experiencing an orgasm than WSM, controlling for frequency of sex. This incidence rate ratio was reduced to 1.16 ($p < .001$) after taking into account variety of sexual behavior and self-oriented orgasm goals. Our findings indicate that certain sexual scripts (e.g., phallocentric imperatives) help explain the orgasm discrepancy between WSW and WSM. We discuss masturbation as another

male-centered practice that may be relevant to this gap, as well as implications for intervention and future research.

Keywords Orgasm · Gender · Sexual scripts · Women's well-being · Women who have sex with women · Sexual orientation

Introduction

Research on orgasms has been building. For example, we have learned that experiencing orgasm is not synonymous with sexual satisfaction (Opperman, Braun, Clarke, & Rogers, 2014)—though the two are intertwined, particularly for men (McClelland, 2011). Research also shows that men report higher rates of orgasm than women at their last heterosexual encounter; 94.1% of which involved vaginal-penile penetration (Richters, de Visser, Rissel, & Smith, 2006). Perhaps men are more physiologically responsive to sexual behavior—leading them to report higher rates of orgasm (Frederick, St. John, Garcia, & Lloyd, 2018; Garcia, Lloyd, Wallen, & Fisher, 2014). Alternatively, this gender difference may result from a phallocentric approach to sexuality that emphasizes vaginal-penile intercourse and male orgasm. Research has also reliably found that heterosexual women report less frequent orgasms than lesbian women (e.g., Breyer, Smith, Eisenberg, Ando, Rowen, & Shindel, 2010; Garcia et al., 2014); however, empirical evidence explaining this phenomenon is lacking.

In the current article, we posit that phallocentric imperatives, which prioritize the male sexual experience, partially account for the orgasm differences observed between women who have sex with women (WSW) and women who have sex with men (WSM). Specifically, we speculated that prioritizing vaginal-penile intercourse (i.e., the coital imperative) and men's orgasm (i.e., the male orgasm imperative) hinders the experience

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of orgasm for women. As such, we examined two practices that do not align with these phallogocentric imperatives—*variation in sexual behaviors* and *self-oriented orgasm goals*, respectively. Research shows that these practices are predictors of orgasm and are more likely to occur when women have sex with women, compared to when women have sex with men (e.g., Breyer et al., 2010; Goldey, Posh, Bell, & van Anders, 2016). In controlling for these two predictors, we expected the differences in orgasm frequency between WSW and WSM to attenuate.

Women's Orgasms

Sexual well-being involves the absence of sexual dysfunction and sexual problems, as well as the experience of sexual pleasure (e.g., Goldey et al., 2016). On the one hand, research has identified negative consequences of not achieving orgasm. Lavie-Ajayi and Joffe (2009) found that women who indicated difficulty experiencing orgasm were more anxious, angry, frustrated, and sad; they were also less satisfied with and less interested in sex. On the other, research has sought to identify factors that are associated with increased orgasms in women. Women's orgasm rates are positively associated with young age, early sexual experience, frequency of sex, varied sexual behaviors, and sexual satisfaction (Haavio-Mannila & Kontula, 1997). These examples are only two of myriad studies that have greatly informed our knowledge of women's sexual functioning in the past couple decades.

Unfortunately, WSW have been systematically underrepresented in previous work on both sexual dysfunction and sexual pleasure (Armstrong & Reissing, 2013). Because WSW and WSM were considered to be more similar than different on a variety of relationship measures, many studies focusing on sexual functioning have generally emphasized differences between women and men—rather than differences by sexual orientation or gender of sexual partners (Ronson, Milhausen, & Wood, 2012). According to Breyer et al. (2010), large-scale studies on sexual functioning have also excluded non-heterosexual women to strengthen scientific rigor by collecting a homogenous sample. Therefore, much of what we know about women's sexual functioning may not apply to WSW.

Indeed, sexual orientation is associated with the sexual well-being of women. For example, Goldey et al. (2016) reported that having women as sexual partners contributes to women's sexual pleasure. The extant literature is mixed on the effect of sexual orientation on women's sexual satisfaction (e.g., Kuyper & Vanwesenbeeck, 2011; Matthews, Hughes, & Tartaro, 2003; Sanchez, Moss-Racusin, Phelan, & Crocker, 2011), but sexual orientation consistently differentiates orgasm rates. WSW more regularly orgasm during sexual interactions than WSM (e.g., Beaber & Werner, 2009; Breyer et al., 2010; Frederick et al., 2018; Garcia et al., 2014; Kinsey, Pomeroy, Martin, & Gebhard, 1953). As such,

it is important to ask: Why are WSM less likely than WSW to orgasm during a given sexual interaction?

Reasons for these differences remain unclear and have not been thoroughly tested. Garcia et al. (2014) provided three potential explanations for their finding that WSW reported higher orgasm frequency compared to WSM: (1) WSW are more familiar with women's bodies, (2) WSW have different attitudes toward gender and sex, and (3) WSW were biologically influenced in some way that affected their clitoral and vaginal anatomy. We investigated the second of these possibilities. Specifically, we proposed that sexual scripts that favor male sexuality—the coital and male orgasm imperatives—hinder the sexual experiences of WSM.

Coital Imperative

Sex for WSM means something fundamentally different than sex for WSW; sex between women and men is subject to the coital imperative. The coital imperative maintains that vaginal-penile intercourse is the “most natural,” “quintessential,” and even “necessary” form of sex (Braun, Gavey, & McPhillips, 2003, p. 243; Opperman et al., 2014, p. 504; McPhillips, Braun, & Gavey, 2001, p. 236, respectively). Indeed, Peterson and Muehlenhard (2007) have placed vaginal-penile intercourse atop the hierarchy of sexual behaviors. Though not unanimous, the consensus across studies is that the vast majority of people (i.e., 94.8–99.5%) include vaginal-penile intercourse in their definition of sex (Byers, Henderson, & Hobson, 2009; Randall & Byers, 2003; Sanders, Hill, Yarber, Graham, Crosby, & Milhausen, 2010; Sanders & Reinisch, 1999). These studies also found that only a minority consider manual genital stimulation (i.e., 10.2–14.5%) or oral sex (i.e., 21.4–40.1%) to be sex. Qualitative accounts of definitions of sex confirm the coital imperative as well (Braun et al., 2003; Peterson & Muehlenhard, 2007). For WSM at least, vaginal-penile intercourse tends to be the epitome of sex. However, compared to WSM, WSW rate manual, oral, and sex toy stimulation of genitals significantly higher on a 6-point scale from “definitely *not* sex” to “definitely sex” (Horowitz & Spicer, 2013).

Because vaginal-penile intercourse is not an option, WSW understandably do not conform to the coital imperative; rather, they rely on a more diverse range of other sexual behaviors (Garnets & Peplau, 2006). While WSW may still engage in penetrative activities, they do so significantly less than WSM (Sanchez et al., 2011). Penetration certainly is not imperative. Women who had had sex with both women and men have reported that sex with women is more “excitingly diversified” (Garnets & Peplau, 2006, p. 73). Evidencing this, WSW more regularly engage in a wider array of sexual activities—both genital and non-genital—than WSM (Breyer et al., 2010). Even though WSW engage in non-genital activities more than WSM, genital activities remain a significant predictor of WSW's sexual satisfaction (Cohen & Byers, 2014). Notably, WSW more often engage in sexual behav-

iors that are more likely to result in orgasm for women, such as oral sex (Armstrong & Reissing, 2013).

Disregarding whether the behaviors focus on genitals, sexual encounters that include more varied sexual behaviors result in women experiencing more orgasms (Frederick et al., 2018). Engaging in sundry sexual activities is also associated with longer sexual encounters (Blair & Pukall, 2014), which in turn more frequently result in orgasm for women (Frederick et al., 2018). Contrasting the coital imperative, such diversity in sexual behavior may partially account for the finding that WSW are more likely than WSM to orgasm during a given sexual interaction.

Male Orgasm Imperative

Orgasm is the goal of most sexual activity; this has been described as an orgasm imperative (Opperman et al., 2014). However, not all orgasms are equal. Multiple findings indicate that mixed-sex couples prioritize the man's orgasm specifically (e.g., Braun et al., 2003; McClelland, 2011; Opperman et al., 2014). Frederick et al. (2018) found that 95% of heterosexual women predict that their male partners "usually-always" orgasm, while only 73% of heterosexual men say the same of their female partners. This discrepancy is unsurprising given the conventionally integral role of the man's orgasm in heterosexual relationships. It is the man's orgasm that signals the end of sex (Braun et al., 2003; Opperman et al., 2014). It is the man's orgasm that predicts sexual satisfaction for both partners (McClelland, 2011). Indeed, both men and WSM prioritize the man's orgasm, and WSM try to ensure their partners' orgasm even at the expense of their own chance to orgasm (McClelland, 2011). Perhaps the male orgasm—which often coincides with ejaculation and loss of erection—is perceived as more legitimate due to its visibility, compared to female orgasms which could be more easily faked. Regardless, the imbalance is clear; sexual relationships between women and men careen toward phallocentricity. Overall, women's orgasms are considered subordinate to men's orgasms.

Relative to the Coital Imperative

The male orgasm imperative is almost inextricably intertwined with the coital imperative. WSM report that sexual activity typically culminates in vaginal-penile intercourse (Braun et al., 2003), even though women are less likely than men to orgasm from vaginal-penile intercourse (Nicolson & Burr, 2003). In one study, 94.5% of men reported that they orgasm from vaginal-penile intercourse alone; only 49.6% of women reported the same (Richters et al., 2006). In fact, women in that study were more likely to orgasm from manual and oral stimulation of their genitals than from either behavior in conjunction with vaginal-penile intercourse. In other words, engaging in vaginal-penile intercourse reduced the likelihood of orgasm when done alongside other sexual behaviors. Contrary to these findings, almost a third of men believe that most women orgasm from vaginal-penile intercourse alone (Wade, Kremer, & Brown, 2005).

By prioritizing a sexual activity that does not likely lead to their own orgasm (i.e., vaginal-penile intercourse), WSM may not even expect to orgasm from sexual activity with their partner (Goldey et al., 2016). Further, WSM reported that they strongly desire to orgasm—not for themselves—but for the sake of their partners (Nicholson & Burr, 2003). In mixed-sex relationships, the most common concern related to a woman's lack of orgasm—identified by both women and men—is the negative impact on the male partner's ego (Salisbury & Fisher, 2014). Thus, women were more concerned about their lack of orgasm because it might make their male partners feel inadequate than they were disappointed or frustrated over not experiencing an orgasm themselves. These male-focused goals of sex may detract from a woman's own goals for orgasm.

Interestingly, in a sample of WSW and WSM, Goldey et al. (2016) found that a focus on one's own sexual pleasure, regardless of a focus on the partner's, can increase the likelihood of orgasm for women. When women do not adhere to the male orgasm imperative, they may be more apt to pursue their own orgasms. The sexual experiences of WSW preclude the male orgasm imperative, which means that WSW may be more likely to possess self-oriented goals for orgasm. The absence of this phallocentric imperative in sexual encounters exclusively comprising women could also partially account for the finding that WSW are more likely than WSM to orgasm during a given sexual interaction.

Present Study

In response to questions raised by Frederick et al. (2018), the present study further investigated *why* WSM are less likely to orgasm than WSW on a given sexual encounter. The major goal of Frederick et al.'s study was "to create a profile of the attitudes and behaviors of people who orgasm frequently versus rarely" (p. 4). We aimed to extend this work (1) by examining orgasm frequency on a numerical continuum—rather than the categorical frequencies (e.g., usually-always, half of time, never-rarely) that have been used in previous studies—and (2) by framing our hypotheses in terms of sexual scripts that prioritize the male sexual experience. Using a theory-driven approach, we suggested that two phallocentric imperatives—coitus and male orgasm—partially drive this association. We theorized that in the absence of the coital imperative, women may be more likely to engage in a more diverse array of sexual behaviors; in the absence of the male orgasm imperative, women may be more likely to endorse self-focused goals for orgasm. Therefore, in a sample of women, we quantified *variety of sexual behaviors* and *frequency of self-oriented orgasm goals*.

In line with previous research (e.g., Breyer et al., 2010; Frederick et al., 2018; Garcia et al., 2014), we expected to find that a woman's partner's gender—like sexual orientation—would predict frequency of orgasm, controlling for number of times having sex. Specifically, we hypothesized that WSW are more likely on a given sexual encounter to orgasm compared to WSM. To extend

the work of others (e.g., Breyer et al., 2010; Garcia et al., 2014) who found this effect of sexual orientation on orgasm rates, we also predicted that *variety of sexual behaviors* and *frequency of self-oriented goals for orgasm* would at least partially account for this association between gender of partner and orgasm frequency.

Method

Participants

Data for the current study were collected as part of a larger study of women's well-being and sexuality involving 4426 women. Eligibility criteria included being age 18 or older, being able to read English, and having access to a computer and the Internet. Several actions were taken to improve data quality. Data were first examined for rapid submissions using the date and time each survey submission was made. We looked for similar or identical responses and encountered no rapid submissions. For the purpose of our research question, we removed 1790 participants who reported no sexual activity in the past 4 weeks, 31 outliers who reported greater than 56 orgasms in the past 4 weeks (i.e., more than two a day, every day), and 34 more who reported having had sex more than 84 times in the past 4 weeks (i.e., more than three times a day, every day). In addition, we removed 275 participants for missing data. Our final sample consisted of 2296 women.

Many researchers studying sexual identity differences categorize people by sexual orientation—not the gender of their partner (e.g., Frederick et al., 2018; Garcia et al., 2014; Wood, Milhausen, & Jeffrey, 2014). This is a slight, yet key, distinction. A person can have sex with any other person, regardless of sexual orientation—even though partner's gender and one's own sexual orientation often correspond. For the purpose of this study, we proposed that a women's sexual interactions are different based on the gender of her sexual partner. Therefore, we isolated the gender of women's partners and sought to identify the aspects that may improve sexual well-being in sexual relationships that do not include men. To compare WSW and WSM, the participants were divided into two subsamples—women whose primary sexual partner was male ($n = 1988$) and women whose primary sexual partner was female ($n = 308$).

Table 1 contains the demographic characteristics of the sample by gender of partner; it also depicts data from a subgroup of 308 WSM. To avoid the imbalanced group size inducing bias in estimating coefficients and standard errors, we randomly selected (i.e., SAMPLE function in SPSS 23) 308 out of 1988 respondents from the WSM group to correspond with the sample size of WSW. As expected, there were not many noticeable differences between the total sample of WSM and the randomly selected subgroup of WSM. On average, the WSW in our sample ($M = 26.24$ years; $SD = 7.64$) were a year and a half younger than the subgroup of WSM ($M = 27.71$ years; $SD = 7.95$), $t(614) = 2.33$, $p = .020$. The total sample of WSM had an average age of 27.80 years

($SD = 8.61$). All participants ranged from 18 to 65 years of age. The overwhelming majority of both groups identified as White (WSW = 87.3%; WSM = 90.2%). WSW and WSM differed in employment ($\chi^2[5] = 32.09$, $p < .001$). WSW (37.7%) were more likely to be full-time students than WSM (24.5%). The many differences in marital status between the two groups likely reflect the legal status of same-sex marriage in the U.S. WSW have historically had less opportunity to marry their partners, and these data were collected prior to the 2015 Supreme Court decision that legalized same-sex marriage.

Procedure

We addressed our research questions using secondary analyses of data collected as part of an online health and sexuality study conducted by researchers at the Kinsey Institute for Research on Sex, Gender, and Reproduction. Participants were recruited through advertisements placed in newsletters, electronic mailing lists, including mailing lists targeting lesbian and bisexual women, and by word-of-mouth and online snowball sampling. This sampling technique cast a large net, resulting in participants from across the U.S. and other countries in which English is the primary language, such as the UK and Australia. All study protocols were reviewed and approved by the Institutional Review Board Human Subject Committee at Indiana University.

The anonymity of the online study freed the data of all identifying information; this was made explicit to all participants on the introductory webpage of the questionnaire as a way of improving data validity. The entire questionnaire took approximately 30 min to complete. Participants were not offered any incentive, monetary or otherwise, to complete the questionnaire, which discouraged duplicate submissions.

Measures

Sociodemographic Variables

The survey included seventeen items assessing sociodemographic variables, including age, race, employment status, marital status, number of children, and household income (see Table 1).

Sexuality Variables

Using the Interviewer Ratings of Sexual Function (Bancroft, Loftus, & Long, 2003), we also asked women about sexual behaviors, sexual feelings, and sexual functioning that they had engaged in or experienced over the past 4 weeks. This measure contained sixty-six items. Specific items from this measure have been used in previous studies to examine aspects of sexual functioning (Higgins, Hoffman, Graham, & Sanders, 2008; Jozkowski & Sanders, 2012; Jozkowski, Sanders, Rhoads, Milhausen, & Graham, 2016; Smith, Jozkowski, & Sanders, 2014). Below, we detail the four particular sets of items to construct the necessary sexuality variables to test

Table 1 Demographics for the total samples of WSW and WSM and the subgroup of WSM

| | Total WSW sample, <i>N</i> = 308 <i>n</i> (%) | Total WSM sample, <i>N</i> = 1988 <i>n</i> (%) | WSM subgroup, <i>N</i> = 308 <i>n</i> (%) |
|---------------------------|--------------------------------------------------|---------------------------------------------------|----------------------------------------------|
| Race | | | |
| White | 269 (87.3) | 1793 (90.2) | 280 (90.9) |
| Black | 16 (5.2) | 93 (4.7) | 14 (4.5) |
| Hispanic | 26 (8.4) | 135 (6.8) | 21 (6.8) |
| Asian | 8 (2.6) | 62 (3.1) | 6 (1.9) |
| Native American | 15 (4.9) | 60 (3.0) | 7 (2.3) |
| Other | 23 (7.5) | 92 (4.6) | 8 (2.6) |
| Employment | | | |
| Full time | 113 (36.7) | 768 (38.6) | 120 (39.0) |
| Part time | 56 (18.2) | 474 (23.8) | 80 (26.0) |
| Full-time student | 116 (37.7) | 488 (24.5) | 69 (22.4) |
| Full-time homemaker | 3 (1.0) | 146 (7.3) | 22 (7.1) |
| Unemployed | 18 (5.8) | 95 (4.8) | 15 (4.9) |
| Marital status | | | |
| Single | 188 (61.0) | 813 (40.9) | 120 (39.0) |
| Married | 10 (3.2) | 624 (31.4) | 102 (33.1) |
| Living with partner | 93 (30.2) | 391 (19.7) | 59 (19.2) |
| Separated/divorced | 14 (4.5) | 133 (6.7) | 22 (7.1) |
| Number of children | | | |
| Zero | 209 (67.9) | 1144 (57.5) | 169 (54.9) |
| One | 21 (6.8) | 251 (12.6) | 39 (12.7) |
| Two | 14 (4.5) | 206 (10.4) | 35 (11.4) |
| Three | 6 (1.9) | 86 (4.3) | 15 (4.9) |
| Four or more | 4 (1.3) | 37 (1.9) | 8 (2.6) |
| Household income | | | |
| \$0–\$20,000 | 66 (21.4) | 324 (16.3) | 44 (14.3) |
| \$20,001–\$30,000 | 37 (12.0) | 230 (11.6) | 35 (11.4) |
| \$30,001–\$40,000 | 38 (12.3) | 233 (11.7) | 35 (11.4) |
| \$40,001–\$50,000 | 37 (12.0) | 239 (12.0) | 38 (12.3) |
| \$50,001–\$75,000 | 48 (15.6) | 374 (18.8) | 62 (20.1) |
| \$75,001–\$100,000 | 37 (12.0) | 254 (12.8) | 35 (11.4) |
| \$100,000+ | 42 (13.6) | 305 (15.3) | 51 (16.6) |

our hypotheses. For each of these items, women referenced only partnered sexual activity with their primary sexual partner—who participants had identified as either a woman or a man.

To measure frequency of orgasm (our outcome variable), all women reported how many times in the past 4 weeks they had experienced orgasm during sexual activity with their primary sexual partner. To measure frequency of sex, participants indicated the number of times they had engaged in sexual activity during the past 4 weeks. Frequency of sexual activity for WSW was measured using one item: “Over the past 4 weeks, approximately how many times have you engaged in sexual activity with your partner (for example, breast or genital contact or other activity intended to give sexual pleasure)?” To discern activity that

included vaginal-penile penetration, frequency of sexual activity for WSM was measured using two items: (1) “Over the past 4 weeks, approximately how many times have you engaged in sexual activity leading to vaginal sexual intercourse (that is, entry of the penis into vagina intended to give sexual pleasure)?” and (2) “Over the past 4 weeks, approximately how many times have you engaged in sexual activity with your partner (for example, breast or genital contact or other activity intended to give sexual pleasure) not leading to vaginal intercourse?” Each WSM’s overall frequency of sexual activity was calculated by summing these two items.

To measure *variety of sexual behaviors*, all women indicated which of sixteen non-coital sexual behaviors they had engaged in with their primary sexual partner during the past 4 weeks: (1) deep

kissing (French or tongue kissing), (2) you touched, fondled, or manually stimulated your partner's breasts or nipples, (3) your partner touched, fondled, or manually stimulation your breasts or nipples, (4) you stimulated your partner's breasts or nipples with your mouth, lips, or tongue, (5) your partner stimulated your breasts or nipples with her [his] mouth, lips, or tongue, (6) you touched, fondled, or manually stimulated your partner's genitals, (7) your partner touched, fondled, or manually stimulation your genitals, (8) you stimulated your partner's genitals with your mouth, lips, or tongue, (9) your partner stimulated your genitals with her [his] mouth, lips, or tongue, (10) rubbing your genitals against your partner's body, (11) your partner rubbing her [his] genitals against your body, (12) you touched, fondled, or manually stimulated your partner's anus (rectum), (13) your partner touched, fondled, or manually stimulation your anus (rectum), (14) you stimulated your partner's anus (rectum) with your mouth, lips, or tongue, (15) your partner stimulated your anus (rectum) with her [his] mouth, lips, or tongue, or (16) used sex toys. Similar to Frederick et al. (2018), scores for variety of sexual behavior were summed and thus ranged from zero to sixteen. To measure frequency of *self-oriented orgasm goals*, all women reported how many times in the past 4 weeks it was their goal to experience an orgasm on occasions that they had had sexual activity with their primary sexual partner.

We separated the frequency of sex variable into six categories: 1–4 times, 5–8 times, 9–12 times, 13–16 times, 17–20 times, and ≥ 21 times. We separated the *variety of sexual behaviors* and *self-oriented orgasm goals* into three categories based on the distributions of our sample: low, median, and high. Low and high cutoffs were at the first and third quartiles, respectively. Women in the low group for *variety of sexual behaviors* had engaged in 0–8 of the sixteen sexual behaviors, in the median group 9–12 behaviors, and in the high group 13 or more behaviors. Participants in the low group for *self-oriented orgasm goals* reported that it was their goal to orgasm during sex 0 times in the past 4 weeks, in the median group 1–5 times, and in the high group greater than 5 times.

Analyses

To assess our research questions, we regressed orgasm frequency onto partner's gender, sex frequency, variety of sexual behaviors, and self-oriented orgasm goals. However, orgasm frequency violated the linear regression assumption that the outcome variable be normally distributed. Because our dependent variable was a count type without negative integers, we used negative binomial regression models (Gardner, Mulvey, & Shaw, 1995). Further, negative binomial models were favored over Poisson models, since orgasm frequency was overdispersed—meaning its variance exceeded its mean (Coxe, West, & Aiken, 2009).

Unlike Poisson-distributed regression models, a pseudo- R^2 cannot be calculated for negative binomial models (Coxe et al., 2009). Thus, we employed the likelihood ratio (LR) test to

compare the goodness of fit between each step of the model (White & Bennetts, 1996). The LR test statistic follows a chi-square distribution and can be used to assess whether the addition of a parameter (e.g., frequency of sex) leads to a model that fits significantly better than the previous step of the model (e.g., gender of partner as the only predictor).

Our hierarchical negative binomial regression model had three steps. The first step was a univariate analysis of partner's gender effect on orgasm frequency. The second step controlled for frequency of sex. The third step of the model entered *variety of sexual behaviors* and *self-focused orgasm goals* into the negative binomial regression analysis. We also input each of these two variables individually into Step 3 to evaluate their unique influences on partner gender's prediction of orgasm frequency.

To adequately test our hypotheses, we calculated the incidence rate ratio (IRR) for each parameter. Each IRR reported indicates how many times more likely women in one group were to experience orgasm compared to their respective reference group, controlling for all other variables in the model (Gardner et al., 1995). The reference group for partner's gender was male, because we expected WSW to report higher frequency of orgasm on a given experience, compared to WSM. To best depict how increases in the ordinal variables affected our outcome variable, we set the reference groups for frequency of sex to 0–1 times per week, for *variety of sexual behaviors* to 0–8 types, and for *self-oriented orgasm goals* to 0. Using SAS 9.4, we ran our regression analyses with the total sample and with all WSW and the subgroup of WSM. No meaningful differences were found; both sets of results are presented.

Results

Descriptive Statistics

Table 2 contains descriptive statistics for each of the study variables by gender of partner; it also depicts data from the subgroup of 308 WSM. As expected, there were not many noticeable differences between the total sample of WSM and the randomly selected subgroup of WSM. For the overall sample, the biggest discrepancy based on gender of partner was frequency of sex (WSW: $M = 9.50$ times in the past 4 weeks, $SD = 9.05$; WSM: $M = 15.74$ times, $SD = 13.95$), $t(562.86) = 10.33$, $p < .001$. We compared frequency of sex using Welch's t test, because (1) WSW and WSM had unequal variances and (2) the skewness and kurtosis of sex frequency reports did not indicate substantially non-normal distributions (i.e., skewness $< |2|$ and kurtosis $< |7|$; Kim, 2013).

Regression Model

Tables 3 and 4 present the results of our hierarchical negative binomial regression analyses. Table 3 presents data from the entire sam-

Table 2 Descriptive statistics of study variables for the total samples of WSW and WSM and the subgroup of WSM

| Variable | Total WSW sample, $N = 308$ | | Total WSM sample, $N = 1988$ | | Matched WSM sample, $N = 308$ | |
|-----------------------------------------|-----------------------------|-------|------------------------------|-------|-------------------------------|-------|
| | $M (SD)$ | Range | $M (SD)$ | Range | $M (SD)$ | Range |
| Frequency of orgasm | 7.14 (8.66) | 0–55 | 7.65 (8.98) | 0–52 | 7.23 (8.58) | 0–50 |
| Frequency of sex | 9.50 (9.05) | 1–60 | 15.73 (13.95) | 1–80 | 15.25 (13.46) | 1–75 |
| Types of sexual behavior | 10.83 (2.43) | 5–16 | 10.33 (2.71) | 0–16 | 10.34 (2.61) | 1–16 |
| Frequency of self-oriented orgasm goals | 4.69 (6.03) | 0–30 | 5.39 (7.30) | 0–50 | 4.98 (6.94) | 0–50 |

ple, while Table 4 depicts the results from the sample of WSW and the subgroup of WSM. Results presented in this section reflect the overall analytic sample ($n = 2296$).

Step 1 of our model was not significant (i.e., there was not an overall difference between WSW and WSM in the number of orgasms they reported). But once we controlled for frequency of sex in Step 2, both partner's gender ($\chi^2 = 22.14, p < .001$ with $df = 1$) and frequency of sex ($\chi^2 > 114.96, ps < .001$ with $dfs = 1$) were significant predictors of orgasm frequency. After Step 2, the model was a significantly better fit in the prediction of women's orgasm frequency compared to Step 1 ($\Delta\chi^2 = 531.76, p < .001$ with $df = 5$). Step 3 introduced the variables *variety of sexual behaviors* and *self-oriented orgasm goals* and was an even better fit than the model after Step 2 ($\Delta\chi^2 = 155.82, p < .001$ with $df = 4$). Partner's gender and frequency of sex remained significant predictors of orgasm frequency; *variety of sexual behavior* ($\chi^2 > 81.74, ps < .001$) and *self-oriented orgasm goals* ($\chi^2 > 31.84, ps < .001$) were significant predictors as well.

Hypothesis Testing

To determine the effects of frequency of sex, *variety of sexual behavior*, and *self-oriented orgasm goals* on the association between partner's gender and orgasm frequency, we looked for differences in incidence ratio rates (IRR). For example, an orgasm IRR of 1.5 for WSW would indicate that WSW were 1.5 times more likely to report an orgasm than WSM. Without controlling for any of these variables, the orgasm IRR for WSW was not significant (IRR = .93, $p = .348$). However, when controlling for frequency of sex in Step 2, the orgasm incident rate for WSW was 1.32 times the orgasm incident rate for WSM ($p < .001$). This finding supported Hypothesis 1, which predicted that WSW would be more likely to report more orgasms than WSM after controlling for frequency of sex. Supporting Hypothesis 2, the orgasm IRR for WSW was reduced in Step 3; the reported experiencing orgasm for WSW were only 1.16 times as much as that for WSM when further controlling for *variety of sexual behaviors* and *self-oriented orgasm goals* ($p < .001$).

In fact, each of the variables uniquely diminished the effect of partner's gender on orgasm frequency. When only *variety of sexual behaviors* was entered into Step 3, the orgasm IRR for WSW decreased from 1.32 to 1.22. And when only *self-oriented orgasm goals* were entered into the model at Step 3, the orgasm IRR

for WSW dropped from 1.32 to 1.24. These findings were also found when WSW were compared to the subgroup of WSW (Table 4).

The IRR for each of the parameters increased as the frequency within that parameter increased (see Tables 3 and 4). For example, women who reported having had sex 0–1 times a week were significantly less likely to report experiencing an orgasm than those who reported 1–2 times a week, who in turn were significantly less likely to report experiencing an orgasm than women who reported having had sex 2–3 times, and so on. For the total sample, this pattern continued for both *variety of sexual behaviors* and *self-oriented orgasm goals*. The only deviation from this pattern in the subgroup was that the 9–12 sexual behaviors (median) group did not differ from the reference (low) group; however, the ≥ 13 sexual behaviors (high) group did.

Discussion

Phallogocentric imperatives prioritize the sexual experience of men. We sought to examine whether these gendered sexual scripts and resulting behaviors could extend previous work (e.g., Frederick et al., 2018; Garcia et al., 2014) that has consistently found that women who have sex with men (WSM) are less likely to experience orgasm than women who have sex with women (WSW). Frederick et al. (2018) were one of the first research teams to study *why* these discrepancies in orgasm rates exist. Our results further refine those reported by Frederick et al. These researchers reported that even after controlling for all of their predictors (e.g., sexual variety, communication, duration of sex, etc.), lesbian women were almost three times more likely than heterosexual women to “always” experience orgasm (OR 2.98). Our findings paint a picture that is similar in direction but markedly different in amplitude. Rather than using subjective relative frequencies (e.g., usually-always, half of time, never-rarely), we looked at numerical frequency of women's orgasms to more precisely assess differences in orgasm rates between WSW and WSM. In our sample, WSW were still more likely than WSM to report having an orgasm on a given experience; however, using numerical frequency counts reveals that gender of partner may have less of an influence on orgasm frequency than previous methods may have suggested (IRR = 1.32). Regardless, even though we found a smaller orgasm gap between

Table 3 Hierarchical negative binomial regression on frequency of orgasm, full sample ($N = 2296$)

| Variable | IRR | $B (SE)$ | Wald 95% CI | | χ^2 | p | $\Delta\chi^2$ |
|------------------------------|------|------------|-------------|------|----------|-------|----------------|
| Step 1 | | | | | | | |
| Gender of partner | .93 | -.06 (.07) | -.21 | .07 | .88 | .348 | |
| Step 2 | | | | | | | |
| Gender of partner | 1.32 | .28 (.06) | .16 | .40 | 22.14 | <.001 | 531.76*** |
| Sex 1–4 times | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| Sex 5–8 times | 2.07 | .73 (.07) | .60 | .86 | 114.96 | <.001 | |
| Sex 9–12 times | 3.54 | 1.26 (.07) | 1.12 | 1.40 | 321.55 | <.001 | |
| Sex 13–16 times | 4.43 | 1.48 (.08) | 1.33 | 1.64 | 367.73 | <.001 | |
| Sex 17–20 times | 5.84 | 1.76 (.08) | 1.60 | 1.92 | 477.26 | <.001 | |
| Sex ≥ 21 times | 8.58 | 2.15 (.06) | 2.02 | 2.27 | 1171.74 | <.001 | |
| Step 3 | | | | | | | |
| Gender of partner | 1.16 | .14 (.06) | .03 | .26 | 6.69 | <.001 | 155.82*** |
| Sex 1–4 times | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| Sex 5–8 times | 1.57 | .45 (.07) | .32 | .58 | 46.29 | <.001 | |
| Sex 9–12 times | 2.41 | .88 (.07) | .74 | 1.02 | 157.85 | <.001 | |
| Sex 13–16 times | 3.00 | 1.09 (.08) | .94 | 1.24 | 206.69 | <.001 | |
| Sex 17–20 times | 3.99 | 1.38 (.08) | 1.23 | 1.54 | 307.62 | <.001 | |
| Sex ≥ 21 times | 5.09 | 1.62 (.07) | 1.50 | 1.75 | 614.90 | <.001 | |
| 0–8 sexual behaviors | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| 9–12 sexual behaviors | 1.32 | .49 (.05) | .38 | .59 | 81.74 | <.001 | |
| ≥ 13 sexual behaviors | 2.05 | .67 (.07) | .55 | .80 | 110.05 | <.001 | |
| 0 self-oriented goals | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| 1–5 self-oriented goals | 1.63 | .28 (.05) | .18 | .23 | 31.84 | <.001 | |
| ≥ 5 self-oriented goals | 1.96 | .72 (.05) | .61 | .82 | 184.25 | <.001 | |

IRR, incidence rate ratio; B , unstandardized regression coefficient; SE , standard error; $\Delta\chi^2$, likelihood ratio test; *Ref.*, reference group

*** $p < .001$

WSW and WSM when absolute numerical frequencies are used, we demonstrated that accounting for other factors, such as sexual variety and self-oriented orgasm goals, further reduces the gap.

We found that there may be things women do that counterbalance the effects of phallocentric imperatives—things that WSW may be more likely to do than WSM. First, women go against the coital imperative when they engage in a more diverse repertoire of sexual behaviors. Consistent with Frederick et al.'s (2018) findings, our data indicated that women who engaged in more varied sexual behaviors report more frequent orgasms. Further, we found that the effect of varied sexual behavior partially accounted for the difference in orgasm rates observed between WSW and WSM. Second, women challenge the male orgasm imperative when they prioritize their own orgasm. In our sample, women who more frequently focused on their own orgasm reported more frequent orgasms; this effect also individually accounted for the orgasm discrepancy between WSW and WSM. In sum, women whose sexual scripts do not seem to strictly adhere to the coital and male orgasm imperatives were more likely to orgasm during a given partnered sexual experience.

While this study investigated the effects of two particular phallocentric imperatives, there may still be others that hinder women's orgasms. For example, differences between WSW and WSM regarding masturbation may further help us understand why WSM are less likely to experience orgasm. The coital imperative has seemingly penetrated women's views of masturbation. Even though most women report that they do not self-penetrate when masturbating, they simultaneously believe that most other women do self-penetrate—thinking also that they are odd for their reliance on clitoral stimulation (Fahs & Frank, 2014). WSM's attitudes about masturbation may further emphasize the male sexual experience. In a qualitative study, WSM described masturbation as an activity that either (1) threatens their partner's masculinity, (2) is done for their partner's viewing pleasure, or (3) should only be done by men (Fahs & Frank, 2014). These phallocentric opinions about masturbation may be reasons that WSM are less likely to masturbate and explore their bodies than WSW (Goldey et al., 2016). And women who masturbate are also more likely to orgasm from partnered sexual activity (e.g., Heiman & LoPiccolo, 1987; Laan & Rellini, 2011). Consistent with our primary claim that sexual scripts that emphasize

Table 4 Hierarchical negative binomial regression on frequency of orgasm, WSW and subgroup of WSM ($N = 616$)

| Variable | IRR | $B (SE)$ | Wald 95% CI | | χ^2 | p | $\Delta\chi^2$ |
|-------------------------|------|------------|-------------|------|----------|-------|----------------|
| Step 1 | | | | | | | |
| Gender of partner | .98 | -.01 (.09) | -.19 | .17 | .02 | .894 | |
| Step 2 | | | | | | | |
| Gender of partner | 1.42 | .35 (.08) | .20 | .49 | 21.92 | <.001 | 180.891*** |
| Sex 1–4 times | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| Sex 5–8 times | 2.27 | .82 (.11) | .60 | 1.04 | 52.29 | <.001 | |
| Sex 9–12 times | 3.75 | 1.32 (.12) | 1.09 | 1.55 | 123.91 | <.001 | |
| Sex 13–16 times | 5.18 | 1.64 (.13) | 1.39 | 1.89 | 168.00 | <.001 | |
| Sex 17–20 times | 7.05 | 1.95 (.13) | 1.69 | 2.21 | 219.74 | <.001 | |
| Sex ≥ 21 times | 9.87 | 2.29 (.12) | 2.06 | 2.51 | 391.35 | <.001 | |
| Step 3 | | | | | | | |
| Gender of partner | 1.25 | .22 (.07) | .08 | .36 | 9.45 | .0021 | 35.811*** |
| Sex 1–4 times | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| Sex 5–8 times | 1.77 | .57 (.11) | .35 | .79 | 95.98 | <.001 | |
| Sex 9–12 times | 2.52 | .92 (.12) | .68 | 1.16 | 58.29 | <.001 | |
| Sex 13–16 times | 3.53 | 1.26 (.13) | 1.01 | 1.51 | 97.48 | <.001 | |
| Sex 17–20 times | 4.76 | 1.56 (.13) | 1.30 | 1.82 | 138.41 | <.001 | |
| Sex ≥ 21 times | 5.92 | 1.77 (.12) | 1.53 | 2.02 | 206.18 | <.001 | |
| 0–8 sexual behaviors | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| 9–12 sexual behaviors | 1.10 | .09 (.09) | -.08 | .28 | 1.12 | .290 | |
| > 13 sexual behaviors | 1.79 | .58 (.10) | .39 | .77 | 35.01 | <.001 | |
| 0 self-oriented goals | Ref. | Ref. | Ref. | Ref. | Ref. | Ref. | |
| 1–5 self-oriented goals | 1.54 | .43 (.11) | .22 | .64 | 16.69 | <.001 | |
| > 5 self-oriented goals | 1.89 | .63 (.12) | .39 | .88 | 27.10 | <.001 | |

IRR, incidence rate ratio; B , unstandardized regression coefficient; SE , standard error; $\Delta\chi^2$, likelihood ratio test, $Ref.$, reference group

*** $p < .001$

the male sexual experience can be helpful in explaining the orgasm discrepancy between WSW and WSM, we would expect that controlling for masturbation attitudes and behaviors would further reduce this discrepancy.

Implications

All women, but especially WSM, can benefit from our finding that women are more likely to orgasm if they engage in a more diverse array of sexual behaviors and if they focus on their own sexual experience. One implication of this finding is for couples' therapy. Professionals working with couples who are experiencing sexual problems should recommend strategies that actively oppose phallogocentric imperatives. Baima and Feldhousen (2007) proposed that "inviting couples into conversations about ways in which patriarchy organizes their relationship is liberating for both partners and creates space for more preferred ways of being intimate" (p. 13). Guided by our findings, these interventions should especially emphasize diversifying sexual repertoires and focusing more on the woman's orgasm. And though we do not present data on masturbation, our theory that phallogocentric imperatives hinder

women's orgasm would suggest that we encourage women to explore their genitals.

We also acknowledge that phallogocentric imperatives are a product of our patriarchal society. Changing cultural norms is a daunting task, but researchers have already laid the groundwork for potentially effective techniques. In their review of the effect of traditional gender roles on women's sexuality, Sanchez, Fetterolf, and Rudman (2012) offered interventions aimed at decreasing adherence to traditional sexual scripts. While Sanchez et al. did not specifically address phallogocentric imperatives, their suggestion of employing counterstereotype induction could also be applied to the coital imperative and the male orgasm imperative. Essentially, such a technique would expose women to sexually agentic female role models, thereby reducing adherence to the male orgasm imperative. Similar interventions could also be developed for young men, who should learn not to rely on the one sexual behavior that is most likely to result in their own orgasm (i.e., the coital imperative).

Limitations

The primary conceptual limitation to the present study is its focus on orgasm which may be interpreted as reifying the orgasm imper-

ative. That is not our intention. Our findings are only relevant to the extent that the goal of sexual activity for a given person is to experience orgasm. For women at least, sexual satisfaction does not rely on experiencing orgasm (Opperman et al., 2014). However, that finding itself is potentially a result of phallogocentric imperatives. It may be that women compensate for their lack of orgasms with men by diminishing the importance of their own orgasm within their sexual activities and reporting that pleasure found in other aspects of the sexual activity is equally, if not more important, than their own orgasm. It is of course difficult or impossible to tease this apart.

An additional limitation is that we only have data from one person in the dyad of sexual relationships. It could be that women are even more likely to orgasm when both partners are promoting varied sexual behaviors and women-oriented orgasm goals. Future studies on this topic would benefit from working with all people involved in a given sexual relationship to be able to assess any interpersonal factors that influence whether women orgasm. Other constructs that might help explain the difference in orgasm rates between WSW and WSM but were not measured in the present study include duration of sexual encounter, quality of sexual behaviors, and amount of time devoted to different types of sexual activity. Another limitation of our study is our reliance on retrospective self-reports for our variables. Women were asked to report exact values for their past 4 weeks of sexual experiences; however, they may have been prone to deferring to estimations. Without measuring our constructs in the moment, we cannot be certain participants are accurately remembering their experiences.

Separating frequencies into groups can be seen as a limitation as well. We arranged both *variety of sexual behaviors* and *self-oriented orgasm goals* into low, median, and high groups; frequency of sex was grouped by number of times per week. Though meaningful, these categories reduced the precision of our results. A final limitation of our study is that we did not have a measure of relationship status other than marital status. Due to potentially limited opportunities for WSW to marry (only 3.2% of the WSW in our sample were married), we did not use this measure as a covariate. However, studies have shown that the approaches to women's orgasms vary by how committed or how casual a relationship is (e.g., Salisbury & Fisher, 2014). Future work attempting to disentangle the reasons for orgasm differences between WSW and WSM should more clearly measure relationship status and include it as a covariate in their analyses.

Future Directions

Future work should investigate the course and development of individual sexual encounters and compare orgasm rates based on whether women are having sex with women or men. It would be best to assess the factors we have identified as important to women's orgasms—*varied sexual behaviors* and *self-oriented orgasm goals*—in the moment and over time. For example, by using a longitudinal design, researchers could isolate the effects of

varied sexual behavior by investigating whether women orgasm more with the same partner as their sexual activity diversifies over time. Experimental designs could also be applied to this line of work. For example, actively priming a woman to focus more on her own orgasm goals may result in a higher orgasm frequency compared to a control group, regardless of their partner's goals. Going forward, deviating from correlational research designs will be important to better answer the question of *why* WSM are less likely to orgasm than WSW. Similarly, employing qualitative methodology would provide richer data regarding the influence of a partner's gender on women's sexuality and experience of orgasm.

We have provided evidence that phallogocentric imperatives may hinder the likelihood that women orgasm during their sexual encounters. But being in a culture that prioritizes the male sexual experience may affect other areas of women's sexuality—WSW and WSM alike. For example, women are thought to have lower sexual desire than men. Frederick et al. (2018) even suggest that differences in orgasm rates between WSW and WSM might be attributed to women having a lower sexual desire. In other words, WSM may have sex more often to appease the desires of their partner and thus are not always engaging in sexual activity for their own sexual pleasure (e.g., Blumstein & Schwartz, 1983). This may be the case and there is evidence to support it (e.g., Lippa, 2007); however, being socialized to not want sex in the first place could be the driving factor for why women report lower sexual desire (Tolman, 2012). Future research should attempt to identify other aspects of women's sexuality affected by phallogocentric imperatives.

Conclusion

People have a right to sexual pleasure (WHO, 2002). Researching why some populations are not experiencing optimal sexual pleasure is important to realize this ideal. We know that women in general, and especially women who have sex with men, are not as likely as men to orgasm. It's true that some women may not define their sexual fulfillment by frequency of orgasm. But in a society where men's sexual pleasure takes precedence, we are unable to determine how women would define their sexuality in the absence of phallogocentric imperatives. We do, however, have the means to identify ways that women who want to orgasm may increase their chances to do so. We have provided further evidence that more varied sexual behaviors and more self-focused orgasm goals do increase the likelihood that women will orgasm. We have also uniquely shown that these practices independently can account for some of the differences that we see in orgasm rates between women of varying sexual orientations.

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