

In steady heterosexual relationships men masturbate more than women
because of a gender differences in sex drive

Wim Waterink

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Open University of the Netherlands

School of Psychology

PO Box 2960

6401 DL Heerlen

The Netherlands

e-mail: Wim.Waterink@ou.nl

ABSTRACT

In general, men and women differ with regard to the frequency of masturbation. Masturbation is more common among men than women. Masturbation is also more common among men than women in relationships. In a relationship this is not always an appreciated fact. Relationship dissatisfaction can arise when a woman considers masturbation of her partner a substitute for partnered sex. This study investigated the suggestion that a gender difference in the frequency of masturbation exists due to a gender difference in sex drive and that therefore masturbation of men engaged in a relationship is not a substitute for partnered sex. The research sample consisted of 554 Dutch participants of which were 355 women (mean age 42.02 years with a range of 20 to 72 years) and 199 men (mean age 44.62 years with a range of 22 to 76 years). All participants were engaged in a steady heterosexual relationship. In general it was found that a higher sex drive was associated with more masturbation and more partnered sex. More specific, women reported a masturbation frequency of about once per two weeks, that significantly differed from men. Men reported a masturbation frequency of about twice per week. Regarding reported frequency of partnered sex, no significant gender difference was found. Both, women and men, reported a frequency of about three times per two weeks. With regard to masturbation, a mediation analysis controlled for age with sex drive as a mediator, showed that sex drive significantly mediated, although not completely, the relationship between gender and the reported frequency of masturbation. The same mediation analysis was performed regarding the reported frequency of partnered sex. For partnered sex, sex drive also had significant mediation effect, but as a suppressor. It is concluded that in steady heterosexual relationships, the gender difference in sex drive is responsible for the fact that men masturbate more than women. Men masturbate more, because it is an easier outlet of sex drive than initiating partnered sex. Most important, for women in steady heterosexual relationships, as compared to men in steady heterosexual relationships, sex drive seems to be a less essential factor for partnered sex.

Keywords: gender differences; heterosexual relationship; masturbation; mediation analysis; partnered sex; sex drive

One distinct finding across studies is the robust gender differences in the prevalence of masturbation. Men masturbate more than women (Gerressu, Mercer, Graham, Wellings, & Johnson, 2008; Hyde, 2005; Leitenberg, Detzer, & Srebnik, 1993; Oliver & Hyde, 1993; Petersen & Hyde, 2010; Zamboni & Crawford, 2003). Masturbation is sexual stimulation of one's own genitals for sexual pleasure, without a sex partner. In literature it has been suggested that masturbation represents a substitute for partnered sex (Carvalheira & Leal, 2013; Dekker & Schmidt, 2003; Laumann, Gagnon, Michael, & Michaels, 1994; Lipsith, McCann, & Goldmeier, 2003). This certainly holds true for single men and single women (Das, 2007). However, with regard to men and women in a relationship, it has been found that masturbation coexists with partnered sex (Schmidt, Klusmann, Dekker, & Matthiesen, 1998). Also in steady heterosexual relationships masturbation is more common among men than women (Hessellund, 1976; Kontula & Haavio-Mannila, 2002; Waterink, 2012). In a relationship it still can be the case that masturbation is a substitute for partnered sex, which is not always appreciated (Renshaw, 2001). Relationship dissatisfaction arise when the actual frequency of partnered sex is lower than the desired frequency of partnered sex (Richters, Grulich, De Visser, Smith, & Rissel, 2003).

The current study follows the suggestion that the differential rates of masturbation reflects a gender difference in sex drive, with in general, women having a lower sex drive than men (Baumeister, 2000; Baumeister, Catanese, & Vohs, 2001; Gerressu, Mercer, Graham, Wellings, & Johnson, 2008; Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhart, 1953).

Sex drive

Sex drive is a person's inherent motivation to have sex (Waterink, 2012), preferable with a partner (Richters, Grulich, De Visser, Smith, & Rissel, 2003). In other words, sex drive motivates a person to engage to specific sexual behaviour. It is what Freud considered as, "*the expression of the innate sexual constitution*" (Cotti, 2008). In that context, masturbation is also an expression of sex drive (Ostovich & Sabini, 2005). However, masturbation is, in contrast to partnered sex, under personal control and not subject to pressure from, availability of, or cooperativeness of a partner (Ostovich, 2005). So, masturbation is an easier to accomplish expression of sex drive than partnered sex.

With regard to partnered sex, research shows that men, in general, report a higher incidence and frequency than women (Oliver & Hyde, 1993; Petersen & Hyde, 2010, 2011). In steady heterosexual relationships, a gender difference in the frequency of partnered sex is not to be expected. In this group, meeting the needs for sex, a gender difference in sex drive

probably leads to a gender difference in the frequency of masturbation. That is what will be investigated in the current study. The hypothesis to be tested is: Masturbation frequency is dependent on gender, because sex drive is dependent on gender. As a comparison, a second hypothesis is tested is: Frequency of partnered sex is dependent on gender, because sex drive is dependent on gender.

METHOD

Participants

The data were collected by means of an internet-based survey. The survey was part of an educational website on psychological topics on daily live that were addressed in Dutch television programmes broadcasted by a public broadcasting system specialised in educational television. The data were collected within a research project, aiming to establish the human sex drive as an evolutionary supremacy (Waterink, 2011). Due to the intimate nature of the study, an internet-based survey seemed a suitable way to get a sufficient response. To increase the number of respondents, 12 psychology students (10 women and 2 men) also recruited participants to participate within this research project. The students used parts of the data to complete their theses in the field of Clinical psychology.

Procedure

Over the course of ten months (November 2011 – July 2012), 1294 people from The Netherlands entered the site of survey. All participants first received information on the purpose of the study, the procedure, and time needed. Furthermore, participants were informed that some questions are on an intimate level and that they could quit the survey at any time. If participants approved all this, by clicking on button “I accept”, they were linked to the questions.

People that had not fully completed the survey, were younger than 18 years of age, randomly filled in answers were excluded from the database. Also, people were excluded if they showed contrasting patterns in their answers. For example when the item, translated from Dutch, “*Last week, did you experience a sexual or an erotic moment?*”, did not match one or two additional questions (see paragraph “Sex drive survey”). Exclusion of these people yielded a sample of 915 participants, of which 402 were men and 513 were women. The greater number of women probably is due the greater number of female recruiting students. Participants reported their sexual orientation as ‘Heterosexual’, ‘Homosexual’, ‘Bisexual’ or ‘Asexual’. Relationship status could be reported as ‘No partner’, ‘Dating partner’, ‘Steady partner’ or ‘Several partners’.

In order to obtain a homogeneous group for the current study, only heterosexual participants with a steady partner were selected from the database. This selection yielded a research sample of 554 participants, of which were 355 women and 199 men.

Sex drive survey

The sex drive survey comprised 13 items, each focusing on a behavioural manifestation of sex drive. The items were rated on a four-point scale (0, 1, 2 or 3). Higher scores indicated a stronger expression of sex drive. An example of an item of the survey, translated from Dutch, was: “*Last week, did you think about certain sexual activity that you did not succeed to practice or of which you know it is not feasible in reality?*”. Cronbach’s alpha for the sex drive scale was .83, meaning that the internal consistency of the questionnaire was good (George & Mallery, 2003). The internal consistency was in the range with former research using the same sex drive survey .85 (Van Hooren, Waterink, & Eshuis, 2009) and later research .85 (Jans-Beken, 2013).

Following the multiple choice items, two questions were presented:

- 1) How many times did you masturbate during the last week?
- 2) How many times did you have sex with someone during the last week?

Data analysis

The hypotheses were tested by means of multiple regression analysis, according to the steps, regarding mediation analysis, of Baron and Kenny (1986). To obtain standardized regression coefficients, all variables were centred prior to the analysis. Gender was coded into a dummy variable (women: 1, male: -1), meaning that a significant positive regression weight represents a significant positive effect of women over men, and vice versa. Because age is known to affect sex drive (Hiller, 2005), age was added as a covariate.

The first step has to establish a relationship between the causal variable (gender) and the outcome variable (masturbation and partnered sex), that may be mediated. Masturbation and partnered sex are used as a criterion variable in the two regression equations and gender as the predictor, with age as a covariate. The second step has to establish a relationship between the causal variable (gender) and the mediator (sex drive). Sex drive is used as the criterion variable in the regression equation and gender as the predictor, with age as a covariate. The third step has to show that the mediator (sex drive) affects the outcome variable (masturbation and partnered sex). Masturbation and partnered sex are used a criterion variables in the two regression equations and gender and sex drive as predictors, with age as a covariate. Gender must be controlled in establishing the effect of sex drive on masturbation

and partnered sex. Step four establishes that sex drive mediates the relationship between gender and masturbation and/or the relationship between gender and partnered sex. The effect of gender on masturbation and partnered sex, controlling for sex drive and age should than change significantly, for which the Sobel test is used. The Sobel test is essentially a specific t-test that offers a method to determine whether a mediation effect is statistically significant (Sobel, 1982).

RESULTS

When inspecting some bivariate relationships (see Table 1), it showed that for the research sample there was no significant relationship between age and the sex drive scores. Furthermore, age had no significant relationship with the reported frequency of masturbation, but had a significant negative relationship with the reported frequency of partnered sex. In addition, by means of analysis of variance, it was found that women were significantly younger than men (women: 42.02 years (SD=10.77); men: 44.62 years (SD=11.06)) ($F(1,554) = 7.27, p = .007$). Most important, there was no significant negative correlation between the reported frequency of partnered sex and the reported frequency of masturbation. (See Table 1.)

Table 1

The inter-correlations among the investigated variables

	Age	Sex drive	Masturbation	Partnered sex
Age				
Sex drive	-.059			
Masturbation	-.018	.563***		
Partnered sex	-.170***	.187***	-.028	
Gender	-.114*	-.631***	-.441***	-.007

Note. * $p < .05$. ** $p < .005$. ***. $p < .001$. (2-tailed).

With regard to sex drive, controlled for age, about 41% of the variance was explained by gender ($\Delta R^2 = .412$; $F_{\text{change}}(1, 551) = 388.20, p < .001$). Gender was a significant predictor for sex drive ($B = -3.62$; $t = -19.70, p < .001$). (See also Table 2). In the research sample, women significantly scored lower on the sex drive scale than men (women: 5.64 (SD = 3.34); men 12.72 (SD = 5.37)).

Table 2

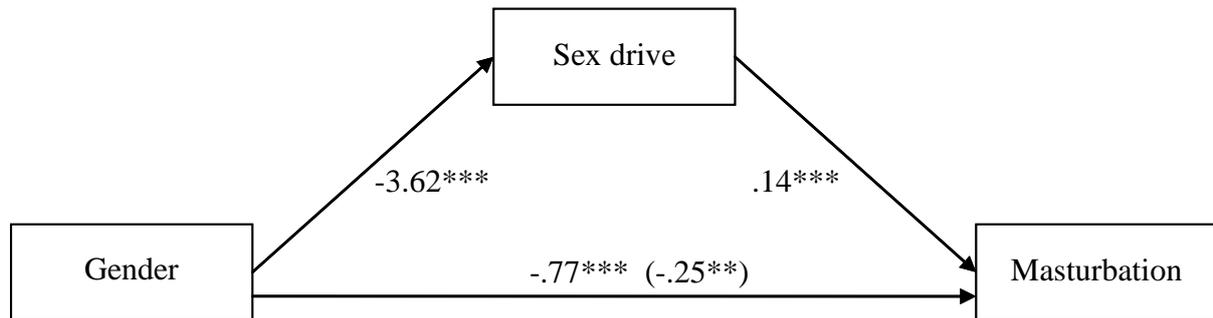
Hierarchical multiple regression analyses

Predictor	Masturbation		Partnered sex	
	ΔR	B	ΔR	B
Step 1	.000		.029***	
Constant		1.052***		1.390***
Age		-.003		-.021***
Step 2	.199***		.001	
Constant		1.269***		1.401***
Age		-.010		-.022***
Gender		-.769***		-.038
Step 3	.130***		.044***	
Constant		1.121***		1.329***
Age		-.001		-.017**
Gender		-.247**		.216**
Sex drive		.144***		.070***
Total R ²	.329***		.073***	
N	555		555	

Note. * $p < .05$. ** $p < .005$. *** $p < .001$.

As masturbation is concerned, controlled for age, about 20% of the variance was explained by gender ($\Delta R^2 = .199$; $F_{\text{change}}(1, 551) = 136.82$, $p < .001$). Gender was a significant predictor for masturbation ($B = -.769$; $t = -11.70$, $p < .001$). (See also Table 2.) In the research sample, women reported a lower frequency of masturbation than men (women: .51 (SD = .92); men 2.02 (SD=5.37)). Regarding masturbation, controlled for age and gender, 13% of the variance was explained by sex drive ($\Delta R^2 = .130$; $F_{\text{change}}(1, 550) = 106.77$, $p < .001$). In the research sample, the reported frequency of masturbation increased with increasing sex drive scores ($B = .144$; $t = 10.33$, $p < .001$). Furthermore, the regression coefficient for gender decreased substantially, but remained significant ($B = -.247$; $t = -3.14$, $p = .002$). (See also Table 2.) After Sobel test, significant mediation could be confirmed via sex

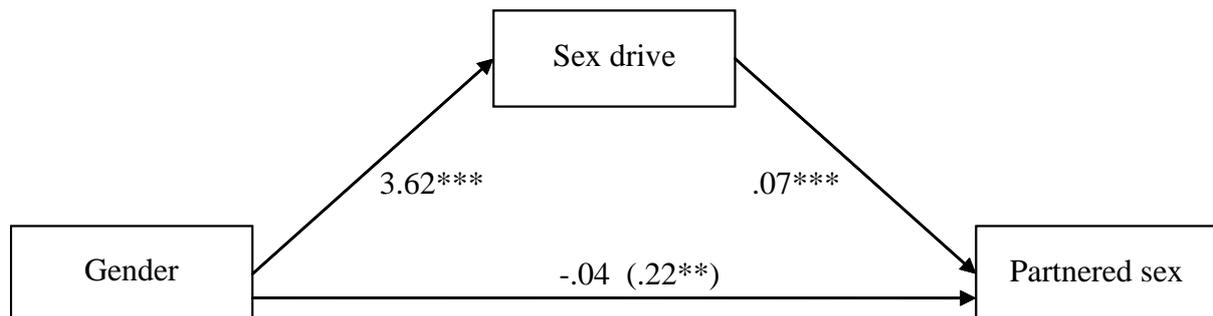
drive ($Z = -9.14$; $SE = .06$; $p < .001$). (See also Figure 1.) Controlled for age and sex drive, women still reported a lower frequency of masturbation than men.



Note. * $p < .05$. ** $p < .005$. *** $p < .001$.

Figure 1

Regression coefficients for the relationship, controlled for age, between gender and masturbation as mediated by sex drive. The regression coefficient between gender and masturbation and sex drive is in parentheses.



Note. * $p < .05$. ** $p < .005$. *** $p < .001$.

Figure 2

Regression coefficients for the relationship, controlled for age, between gender and partnered sex as mediated by sex drive. The regression coefficient between gender and partnered sex and sex drive is in parentheses.

For partnered sex, controlled for age, gender was not a significant predictor ($B = -.038$; $t = -.622$, $p = .534$). (See also Table 2.) In the research sample, women and men reported about the same frequency of partnered sex (women: 1.38 (SD = 1.39); men 1.40 (SD = 1.35)). Regarding partnered sex, controlled for age and gender, about 4% of the variance was explained by sex drive ($\Delta R^2 = .044$; $F_{\text{change}}(1, 550) = 25.98$, $p < .001$). In the research sample, the reported frequency of partnered sex increased with increasing sex drive scores ($B = .070$; $t = 5.10$, $p < .001$). The regression coefficient for gender became significant positive

($B = .216$; $t = 2.79$, $p = .005$). (See also Table 2.) After Sobel test, significant mediation could be confirmed via sex drive ($Z = -4.85$; $SE = .05$; $p < .001$). (See also Figure 2). Controlled for age and sex drive, women significantly reported a higher frequency of partnered sex than men.

DISCUSSION

Partnered sex and masturbation are both expressions of sex drive (Kinsey et al., 1948, 1953). If sex drive increases, the need for sexual expression increases. In the current study, higher sex drive scores were indeed accompanied by higher reported frequencies of partnered sex and masturbation. However, the contribution of sex drive to the reported frequency of partnered sex was small, as compared to the contribution to the reported frequency of masturbation. So, in steady heterosexual relationships, meeting the need for sex, comprises partnered sex and masturbation, whereby, in general, sex drive seems to be a more important factor for masturbation than for partnered sex. No significant negative correlation was present between the reported frequency of partnered sex and the reported frequency of masturbation. So, it is not likely that for women and men in steady heterosexual relationships, masturbation is a substitute for partnered sex.

Nevertheless, women and men engaged to masturbation, but, like in other research (Petersen & Hyde, 2010), men masturbate more than women. Women reported a masturbation frequency of about once per two weeks, confirming former research (Brody, 2004; Zamboni & Crawford, 2003). Men reported a masturbation frequency of about twice per week, also confirming former research (Brody, 2004; Leitenberg et al., 1993; Reading & Wiest, 1984; Zamboni & Crawford, 2003). Furthermore, women and men reported, as expected, about the same frequency of partnered sex, nearby three times per two weeks, also confirming former research (Johannes & Avis, 1997; Långström & Hanson, 2006; Petersen & Hyde, 2010).

In line with earlier research (Baumeister, et al., 2001), it was found that women had a lower sex drive as compared to men. In the research sample, this gender difference was responsible for the gender difference regarding the reported frequency of masturbation, as, mediation analyses showed that sex drive significantly mediated, though, not completely, the relationship between gender and the reported frequency of masturbation. With regard to gender and the reported frequency of partnered sex, mediation analysis showed that sex drive acted as a suppressor. In regression analyses, where there is no significant relation between independent variable and dependent variable, a suppressor is a variable that undermines the total effect by its omission, meaning accounting for it in a regression equation enhances the predictive utility of the other variable(s) in the equation (Rucker, Preacher, Tormala, & Petty,

2011). So, in the research sample, the gender difference in sex drive “disallowed” a gender difference, women in favour over men, in the reported frequency of partnered sex. Meaning, that for women in steady heterosexual relationships sex drive is not an important factor to engage to more partnered sex. This finding can be explained by evolutionary psychology. Theorist such as Trivers (1972) have pointed out that women, in general, are the ones driving partnered sex, because women and men differ in their parental investment. Women invest much more time and energy into their offspring than do men. So, all this made women “*in charge*” with regard to partnered sex. This has been suggested before. “*The wife is the one to decide the matrimonial standard of sexual intercourse*” (Hessellund, 1976) or “*Women’s sexual needs should drive partnered sexual relations more than should men’s sexual needs*” (Ostivich, 2005).

In some instances this evolutionary trait can lead to a problem. It is known that a mismatch in the needs for partnered sex in married couples is a common presentation at sex therapy clinics (Riley & Riley, 2000). As long there is not a difference in the preferred frequency of partnered sex, there is no problem (Metz & McCarthy, 2007). Whichever partner wants partnered sex more is in a weaker position. Insofar, sex drive creates dependency on a partner that may influence the entire relationship (Baumeister, et al., 2001). So, in sex therapy it should be made clear that men and women differ with regard to their sex drive and that masturbation is just an outlet of sex drive.

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