

# IN STEADY HETEROSEXUAL RELATIONSHIPS MEN MASTURBATE MORE THAN WOMEN BECAUSE OF GENDER DIFFERENCES IN SEX DRIVE

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## ABSTRACT

This study investigated the suggestion that a gender difference in the frequency of masturbation exists due to a gender difference in sex drive. The research sample consisted of 554 Dutch participants of whom 355 were women and 199 men. The average age of the women was 42.02 years ( $SD = 10.77$ ) and the average age of the men was 44.62 years ( $SD = 11.06$ ). All participants were engaged in a steady heterosexual relationship. Higher sex drive scores were significantly positively related to the frequency of reported masturbation ( $B = .14$ ;  $t(550) = 10.33$ ,  $p < .001$ ) and the frequency of reported partnered sex ( $B = .07$ ;  $t(550) = 5.10$ ,  $p < .001$ ). Furthermore, women reported a masturbation frequency of about once per two weeks, while men reported a significantly higher masturbation frequency of about twice per week ( $B = -.77$ ;  $t(551) = -11.70$ ,  $p < .001$ ). Regarding reported frequency of partnered sex, no significant gender difference was found ( $B = -.04$ ;  $t(551) = -.62$ ,  $p = .534$ ). 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 the relationship between gender and the reported frequency of masturbation ( $Z = -9.14$ ,  $SE = .06$ ,  $p < .001$ ). The same mediation analysis was performed regarding the reported frequency of partnered sex. For partnered sex, sex drive also had a significant mediation effect, but as a suppressor ( $Z = -4.85$ ,  $SE = .05$ ,  $p < .001$ ). 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. Possible reasons for this are explored.

**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 (Béjin, 1996; Gerressu, Mercer, Graham, Wellings, & Johnson, 2008; Hyde, 2005; Kontula & Haavio-Mannila, 2003; Leitenberg, Detzer, & Srebnik, 1993; Lewin, 2000; Parish, Laumann, & Mojola, 2007; Petersen & Hyde, 2010; Oliver & Hyde, 1993; Zamboni & Crawford, 2003). Masturbation is sexual stimulation of one's own genitals for sexual pleasure, without a sex partner. In the 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 heterosexual relationships with a steady partner, masturbation is more common among men than women (Hessellund, 1976; Kontula & Haavio-Mannila, 2003; 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 arises 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 women in general 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), preferably with a partner (Richters, Grulich, De Visser, Smith, & Rissel, 2003). In other words, sex drive inherently motivates a person to engage in specific partner related sexual behaviour. It is what Freud considered as, "*the expression of the innate sexual constitution*" (Cotti, 2008). With regard to sex with a partner, research shows that men, in general, report a higher incidence and frequency of partnered sex than women (Oliver & Hyde, 1993; Petersen & Hyde, 2010, 2011). However, in heterosexual non-open relationships, the research group of the current study, a gender difference in the frequency of partnered sex is not to be expected.

Being inherently motivated to engage in sexual behaviour with a partner, even when a partner is available, not always leads to partnered sex (Richters *et al.*, 2003; Riley & Riley, 2000). An additional way, then, to fulfil sex drive is masturbation (Kinsey *et al.*, 1948, 1953; Ostovich & Sabini, 2005). According to Ostovich (2005) masturbation is, in contrast to partnered sex, under personal control and not subject

to pressure from, availability of, or cooperativeness of a partner. So, although there are issues such as masturbation guilt (Mosher & Vonderheide, 1985) and/or sociocultural constraints (Baćaka & Štulhofer, 2011), masturbation is an easier way of fulfilling one's sex drive than partnered sex.

The fact that men are inherently more strongly motivated to engage in sexual behaviour with a partner, and that their sex drive is not always fulfilled, can be the reason for 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 to be tested is: Frequency of partnered sex is dependent on gender, because sex drive is dependent on gender.

## **METHOD**

### **Participants**

Data were collected by means of an internet-based survey. The survey was part of an educational website on psychological topics on daily life that were addressed in Dutch television programmes broadcast by a public broadcasting system specialising in educational television. The data were collected within a research project on the human sex drive (Waterink, 2011). Due to the intimate nature of the study, an internet-based survey seemed a suitable way to elicit responses. To increase the number of respondents, 12 psychology students (ten women and two men) also recruited participants to participate in the research project. They recruited respondents via mailings and Facebook. 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), 1 294 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 of an intimate nature and that they could terminate the survey at any time. If participants approved of these conditions, by clicking on a button labelled "I accept", they were linked to the questions. The ongoing research project, regarding the measurement of the human sex drive as an evolutionary phenomenon, received medical ethical approval from the Open University of the Netherlands and cleared.

Participants who had not fully completed the survey, who were younger than 18 years of age, or who randomly filled in answers (for example only scoring one type answer) were excluded from the database. In addition, participants 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 additional questions (see paragraph “Sex drive survey”). Exclusion of these participants yielded a sample of 915 participants, of which 402 were men and 513 were women. 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 chosen from the Sex Drive Scale (Waterink, 2011), 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. Cronbach’s alpha for the sex drive scale was .83, meaning that the internal consistency of the questionnaire is good (George & Mallery, 2003). The internal consistency was comparable to previous research using the same 13 items that yielded a Cronbach’s alpha of .85 (Jans-Beken, 2013; Van Hooren, Waterink, & Eshuis, 2009).

Following the multiple choice items, two questions were added:

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). Visual examination of data plots showed no specific problems with regard to homoscedasticity and normality. 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.

According to the instructions of Baron and Kenny (1986), a test for mediation consist of different steps. That is, different separate regression equations. With regard to the current data sample, the first equation has to establish a relationship between gender (the causal variable) and respectively masturbation and partnered sex (the outcome variables), that may be mediated. Masturbation and partnered sex are used as a criterion variable in two separate regression equations and gender

as the predictor, with age as a covariate. The second equation has to establish a relationship between gender (the causal variable) and sex drive (the mediator). Sex drive is used as the criterion variable in the regression equation and gender as the predictor, with age as a covariate. The third equation has to demonstrate that sex drive (the mediator) affects respectively masturbation and partnered sex (the outcome variables). Masturbation and partnered sex are used a criterion variables in the two separate 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. Equation four has to demonstrate 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

Regarding the research group the mean age was 42.95 years ( $SD = 10.95$ ). The range was 20-76 years. 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 ( $SD = 11.06$ ), ( $F(1,554) = 7.27, p = .007$ )). When inspecting some bivariate relationships (see Table 1), no significant relationship between age and the sex drive scores were noted. 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. Most importantly, there was no significant negative correlation between the reported frequency of partnered sex and the reported frequency of masturbation.

**Table 1.** Inter-correlations among the investigated variables

	Age	Sex drive	Masturbation	Partnered sex
Age				
Sex drive	-.06			
Masturbation	-.02	.56***		
Partnered sex	-.17***	.19***	-.03	
Gender	-.11*	-.63***	-.44***	-.01

*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 ( $\Delta R^2 = .41$ ,  $Fchange(1, 551) = 388.20$ ,  $p < .001$ ). Gender was a significant predictor for sex drive ( $B = -3.62$ ,  $t(551) = -19.70$ ,  $p < .001$ ). In the research sample, women scored significantly lower on the sex drive scale than men (women: 5.64 ( $SD = 3.34$ ); men 12.72 ( $SD = 5.37$ )).

As far masturbation is concerned, controlled for age, about 20% of the variance was explained by gender ( $\Delta R^2 = .20$ ,  $Fchange(1, 551) = 136.82$ ,  $p < .001$ ). Gender was a significant predictor for masturbation ( $B = -.77$ ,  $t(551) = -11.70$ ,  $p < .001$ ) (See also Table 2).

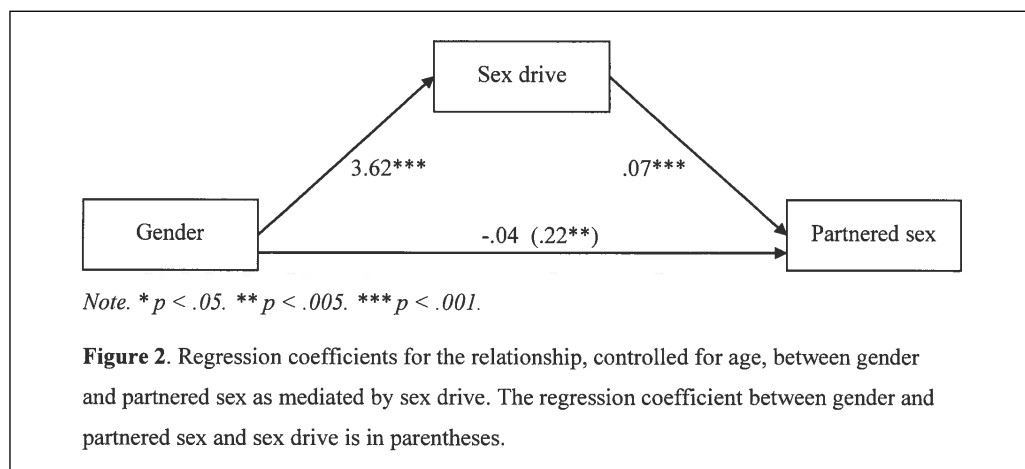
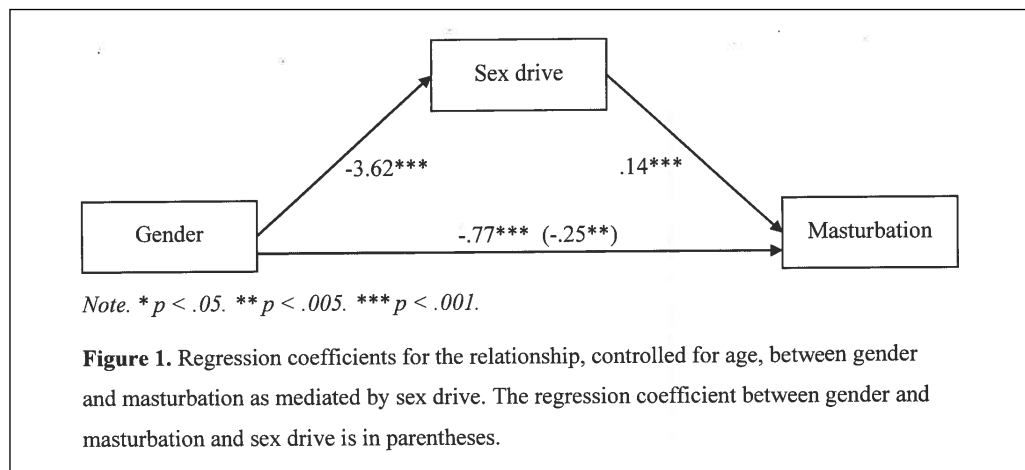
**Table 2.** Hierarchical multiple regression analyses

Predictor	Masturbation		Partnered sex	
	$\Delta R^2$	$B$	$\Delta R^2$	$B$
Step 1	.00		.03***	
Constant		1.05***		1.39***
Age		.00		-.02***
Step 2	.20***		.00	
Constant		1.27***		1.40***
Age		-.01		-.02***
Gender		-.77***		-.04
Step 3	.13***		.04***	
Constant		1.12***		1.33***
Age		.00		-.02**
Gender		-.25**		.22**
Sex drive		.14***		.07***
Total $R^2$	.33***		.07***	
$n$	555		555	

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

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 ( $\Delta R^2 = .13$ ,  $Fchange(1, 550) = 106.77$ ,  $p < .001$ ). In the research sample, the reported frequency of masturbation increased with increasing sex drive scores ( $B = .14$ ,  $t(550) = 10.33$ ,  $p < .001$ ). Furthermore, the regression coefficient for gender decreased substantially, but remained significant ( $B = -.25$ ,  $t(550) = -3.14$ ,  $p = .002$ ) (See also Table 2). After Sobel's 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.



For partnered sex, controlled for age, gender was not a significant predictor ( $B = -.04$ ,  $t(551) = -.62$ ,  $p = .534$ ) (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 ( $\Delta R^2 = .04$ ,  $Fchange(1, 550) = 25.98$ ,  $p < .001$ ). In the research sample, the reported frequency of partnered sex increased with increasing sex drive scores ( $B = .07$ ,  $t(550) = 5.10$ ,  $p < .001$ ). The regression coefficient for gender became significant positive ( $B = .22$ ,  $t(550) = 2.79$ ,  $p = .005$ ) (See also Table 2). After Sobel’s 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

In the current study, higher sex drive scores were accompanied by higher reported frequencies of partnered sex and masturbation. In line with other research (Kinsey *et al.*, 1948, 1953; Ostovich & Sabini, 2005) partnered sex and masturbation can be regarded as expressions of sex drive. 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. Furthermore, due to the fact that no significant negative correlation was present between the reported frequency of partnered sex and the reported frequency of masturbation, it is not likely that for women and men in steady heterosexual relationships, masturbation is a substitute for partnered sex. Nonetheless, women and men both engaged in masturbation, but, men masturbated more than women. Women reported a masturbation frequency of about once per two weeks, confirming previous research (Brody, 2004; Zamboni & Crawford, 2003). Men reported a masturbation frequency of about twice per week, also confirming previous research (Brody, 2004; Leitenberg *et al.*, 1993; Reading & Wiest, 1984; Zamboni & Crawford, 2003). Women and men reported, as expected, about the same frequency of partnered sex, nearly three times per two weeks, also confirming previous research (Johannes & Avis, 1997; Långström & Hanson, 2006; Petersen & Hyde, 2010).

In line with previous 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 in 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. Triver’s (1972)



theory of parental investment predicts that the gender investing the most in lactating, nurturing and protecting offspring will be most discriminating regarding partnered sex. A biological foundation behind this is Bateman's principle (Bateman, 1948). The principle states that women have a larger investment in producing each child. The reason for this inequality can be found in the production of gametes: Sperm are much cheaper than eggs. A woman will not produce more offspring by mating with more than one man. A man, on the other hand, is capable of fathering more offspring if he mates with several women. As a consequence, a man's potential reproductive success is limited by the number of women he has sex with, while a woman's potential reproductive success is limited by how many eggs she can produce. For humans this resulted in a specific pattern of sexual selection in which men compete with each other, and women become choosy about which men to mate with. As a result, women have become fundamentally selective, and men fundamentally promiscuous. So, all this has in essence put modern women "*in charge*" with regard to partnered sex. This has been suggested previously by Hesselund (1976): "*The wife is the one to decide the matrimonial standard of sexual intercourse*", or more recently by Ostovich (2005): "*Women's sexual needs should drive partnered sexual relations more than should men's sexual needs*".

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 need for sex therapy (Metz & McCarthy, 2007). Whichever partner wants partnered sex more is in a weaker position. 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 initially differ with regard to their sex drive and that masturbation is just an outlet of sex drive. Fortunately, masturbation is widely used now in sex therapy as a means of improving the sexual health of the individual, but also of a relationship (Coleman, 2003; Herbenick, Reece, Schick, Sanders, Dodge, & Fortenberry, 2010; Zamboni & Crawford, 2003).

Some methodological considerations should be taken into account when interpreting these results. First, the method of online recruitment may have resulted in a study population that is not representative of the general population. People who use the internet tend to be younger, wealthier and better educated than non-users. Second, response rates to web-based surveys tend to be low (Skitka & Sargis, 2006). However, recent evidence has shown that samples are not as selective as was once feared (Birnbaum, 2004). Third, the use of an online format may have some limitations. For example, it is possible that the survey was completed under undesirable circumstances and that anonymity encourages deceptive responses (Prause & Graham, 2007). The likelihood of these limitations was reduced in so far as possible in the present study. The introductory page of the website was explicit

about the fact that data are confidential and that survey completion is voluntary. Additionally, prior to analyses, the data were reviewed in an effort to find and remove obviously deceptive answers.

Furthermore, with regard to masturbation and partnered sex, in relation to sex drive and evolutionary psychology, it would be interesting to expand research to groups with different sexual orientations. That is, although all humans have an involuntary and unconscious biological urge to procreate (Basten; 2009; Waterink, 2011), procreation success in some types of steady relationships is zero.

## CONCLUSION

In steady heterosexual relationships, fulfilling the sex drive of women and men comprises partnered sex and masturbation, but, in general, sex drive seems to be a more important factor for masturbation than for partnered sex. Due to the fact that men have a higher sex drive than women, 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.

## BIOGRAPHICAL NOTE



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