

## In Pursuit of Pleasure: A Biopsychosocial Perspective on Sexual Pleasure and Gender

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### ABSTRACT

**Objective:** Various sources of evidence suggest that men and women differ in their experience of sexual pleasure. Such gender differences have been attributed to men's higher innate sex drive, supported by evolutionary psychology perspectives and gender differences in reproductive strategies.

**Method:** This paper presents biopsychosocial evidence for gender similarities in the capacity to experience pleasure, and for substantial gender differences in opportunities for sexual pleasure.

**Results:** We conclude that sexual activity, in most cultures, is less pleasurable and associated with greater cost for heterosexual women than for heterosexual men, even though they do not differ in the capacity for sexual pleasure.

**Conclusion:** Since gender differences in experienced sexual pleasure are not a biological given, a more critical discourse of sexual pleasure might create awareness of current inequalities, help lift restrictions for women's opportunities for pleasure, and could reduce gender differences in the cost of sex. That would truly serve sexual justice around the globe.

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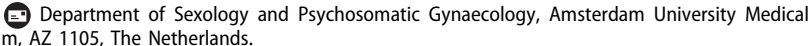
### Introduction

The World Association of Sexual Health (WAS) recently adopted sexual pleasure, defined as “the physical and/or psychological satisfaction and enjoyment derived from shared or solitary erotic experiences, including thoughts, fantasies, dreams, emotions, and feelings,” as the cornerstone of sexual health (Gruskin & Kismödi, 2020; World Association of Sexual Health, 2019). In most societies, the pursuit of sexual pleasure is among the main reasons to engage in sexual behavior (Abramson & Pinkerton, 2002; Hull, 2008; Meston & Buss, 2007; van Lunsen et al., 2013). It was not until recently, however, that scholars have started to acknowledge the importance of sexual pleasure for sexual health and sexual rights (Ford et al., 2019; Landers & Kapadia, 2020).

Health authorities and organizations tend to monitor the sexual health status of a population using statistics on contraceptive use, teenage pregnancies, abortions, condom use, rates of STIs and sexual violence (Fine & McClelland, 2006; Higgins & Hirsch, 2007). The role of pleasure in sexual development and relationships is usually not included in educational programs (Kantor & Lindberg, 2020),<sup>1</sup> although knowledge and communication about one's sexual wishes and recognizing oneself as a sexual being have been stressed as important capabilities in relation to sexual health (Gold et al., 1995).

### The “dangers” of sexual pleasure

Why has it taken so long, or why is it still so difficult for many, to acknowledge that sexual

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health, sexual rights, and sexual pleasure are related concepts, even though quite a few politicians and authorities will undoubtedly have experienced and enjoyed sexual pleasure as private persons? In her influential 1984 paper, Rubin pointed out that Western religious traditions have considered sex to be a “dangerous, destructive, negative force” (p. 150). Medicine and psychiatry contributed to the condemnation of sexual acts that fall outside the strict framework of sex for procreation, resulting in a popular culture that “is permeated with ideas that erotic variety is dangerous, unhealthy, depraved, and a menace to everything from small children to national security” (Rubin, 1984, p. 152; see also de Block & Adriaens, 2013). This “domino theory of sexual peril” sees sex as an uncontrollable biological force that, if not repressed (allowing procreation within monogamous heterosexual marriages only), will inevitably lead to societal chaos and anarchy. To date, public health approaches to sexuality remain largely focused on adverse health outcomes and concomitant risks (Mitchell et al., 2021).

These deep-rooted ideas that uncurbed sexuality is dangerous probably reinforce many caretakers’ and parents’ fears that a positive approach to sexual health and sex education will entice innocent children and adolescents into engaging in sex that they are not yet able to consent to. Yet, a recent review of 23 studies that looked at determinants of sexual pleasure at first partnered sexual experiences (defined as penile-vaginal penetration in three-quarters of the studies) found that young people with the agency to consider what a pleasurable first sexual experience may mean to them, experienced more pleasurable sexual debuts (Boydell et al., 2021). Also, there is substantial and convincing evidence that comprehensive sex education, even the kind that stays clear of anything remotely associated with sexual pleasure, is associated with heterosexual adolescents engaging in penile-vaginal intercourse at a later age, with more consistent condom and contraception use, and lower unwanted pregnancy rates in both developed and developing countries (Kirby et al., 2007; Kohler et al., 2008; Mueller et al., 2008; Russell et al., 2012). Countries that promote abstinence-only sex

education or no sex education usually perform worse on these indices of sexual health than countries that provide comprehensive and positive information about sex to adolescents (Kohler et al., 2008). In other words, a positive approach to sexual health and sex education has more benefits than risks. Mitchell et al. (2021) therefore recently proposed that sexual wellbeing, an overarching construct that incorporates sexual pleasure, sexual justice, and sexual health, demands recognition as an independent public health outcome in its own right, as sexual wellbeing contributes importantly to overall wellbeing (Hooghe, 2012).

### **Health benefits of pleasure**

Many studies have documented the health benefits of sexual pleasure. In a review of 40 studies published since 1990, Anderson (2013) concluded that the experience of sexual satisfaction, sexual pleasure, and positive sexual self-esteem improves sexual health, mental health, and physical health outcomes. It promotes overall wellbeing through improved relationship quality and general life satisfaction. This finding also holds true for older people and for people with a chronic condition or physical limitations (Kingsberg, 2005; Kleinplatz et al., 2009; Traeen et al., 2019).

The quality of couples’ sex lives makes a unique contribution to the quality and longevity of committed relationships (Diamond & Huebner, 2012), over and above the effect of being in a committed relationship (e.g., Yeh et al., 2006). In a large sample of young women (18–26 years), sexual pleasure was positively related to autonomy, self-esteem, and empathy (Galinsky & Sonenstein, 2011; see also Sanchez et al., 2006). These associations were less prominent in young men.<sup>2</sup> For older men, longevity and better physical health were rather consistently positively associated with frequency of sexual activity. Interestingly, longevity in heterosexual women was associated with *enjoyment* of sexual activity, not with sexual frequency per se (e.g., Palmore, 1982). And in line with these findings, a recent representative German survey on sexual behaviors found that sexual pleasure was associated with various health indicators (e.g.,

communication about sexually transmitted infections (STIs), condom use, absence of sexual problems, and orgasm frequency), with sexual pleasure predicting sexual health outcomes more strongly in women than in men (Klein et al., [in preparation](#)).

These latter findings may give the impression that, for men, sexual pleasure is less important for enjoying the health benefits of sex than it is for heterosexual women. However, this finding may rather reflect the fact that, for men, sexual activity is almost invariably associated with sexual pleasure, such that sexual pleasure does not further contribute to the association between health and engagement in sexual activity as it does in heterosexual women. Engaging in sexual activity may be exchangeable to experiencing sexual pleasure for the average man, but not for women.

### ***The gendered context of pleasure***

Not all individuals will have equal opportunities for pleasurable sexual experiences (Hall, [2019](#)). More specifically, experiences of sexual pleasure seem embedded in a gendered<sup>3</sup> context. Around the world, sexual complaints are more prevalent in heterosexual women than in heterosexual men (Laumann et al., [2005](#)). In most contemporary societies, heterosexual women's sexual pleasure is still generally subordinated to heterosexual men's pleasure (Hall, [2019](#); van Lunsen et al., [2013](#)). In (religious) traditional cultures sexual pleasure of women is judged to be more dangerous and undesirable than that of men, or even considered irrelevant (Hall, [2019](#)), probably because sexual pleasure of women does not appear to be directly related to reproductive success. Sexual pleasure of men, at least pleasure entailing orgasm with ejaculation, is condoned, if not prioritized, as procreational duties depend on it. Consequently, only those problems that interfere with sexual pleasure of men or with procreative sex are deemed worthy of complaint or treatment (Hall, [2019](#)), while sexual issues that are important and distressing to women (and individuals engaging in non-procreative sex), including a lack of sexual pleasure, go unnoticed.

Sexual pleasure remains an understudied topic in all populations, but especially in marginalized

ones. Even though we touch upon findings on sexual pleasure in LGBTQ+ populations, this review has a cisgender, heterosexual, western, educated, industrialized, rich, democratic (WEIRD; Klein et al., [2021](#)), and quantitative research focus. A timely review and commentary on research into pleasure among transgender and gender diverse individuals was recently published by Bradford and Spencer ([2020](#)). They argue that, despite an increased research interest into how these populations experience their sexuality subjectively, many studies are still focused on quantitative designs and how physiology and medical interventions might curtail sexual experiences of transgender and gender diverse people (Bradford & Spencer, [2020](#)). Multimethod research among men who have sex with men of diverse racial identity and self-identifying gay men has shown how these men defy and wrestle with social scripts on how they experience, negotiate, and share sensual and emotional aspects of pleasure across different relational and sexual contexts (Calabrese et al., [2015](#); Hoppe, [2011](#); Kiguwa, [2015](#)). We reiterate Bradford and Spencer's call to pay attention to and allocate research efforts to study the similarities, potential discrepancies, and diversity in pleasure(s) within and across populations, and to use mixed- and multimethod designs to allow people to report on their agency and subjectively lived experiences. In what follows, we review the available evidence for (cis) gender differences in experienced sexual pleasure.

### ***Current gender differences in experienced sexual pleasures and displeasures***

Sex as experienced by women appears to be substantially less positive and may come at a greater cost than the sex that men experience. Various sources of data support this contention.

### ***Pleasure gaps***

The most recent study on orgasm differences between women and men of various sexual orientations (Frederick et al., [2018](#)) confirms findings of earlier studies suggesting that heterosexual sexual activity benefits sexual pleasure of men more than that of women (Garcia et al., [2014](#);

Herbenick et al., 2010; Laumann et al., 1994; Lloyd, 2005; Wade et al., 2005). Using a large sample size (>50,000), Frederick et al. (2018) found that men of all sexual orientations were more likely to orgasm than women. The largest sexual pleasure gap was found between heterosexual women (65% of whom usually or always orgasmed during sexual activity with a male partner) and heterosexual men (95% of whom usually or always orgasmed during sexual activity with a female partner).

Incorporating oral sex along with other sexual activities during a sexual encounter was of particular importance for more frequent orgasms in women. Women who had only had penile-vaginal penetration during their last sexual encounter with a male partner were least likely to have an orgasm (only 35% of these women usually or always experience orgasm during sexual activity), corroborating very robust data that suggest that penile-vaginal intercourse is rather ineffective to induce orgasm in women, with an orgasm gap during that activity amounting to at least 60%. Penile-vaginal intercourse without additional glans clitoris stimulation results in orgasm in only about 25 to 30% of heterosexual women (Hite, 1976; Lloyd, 2005), whereas over 90% of heterosexual men always orgasm during penile-vaginal intercourse (e.g., Douglass & Douglass, 1997).

This is not explained by women simply being less able to orgasm than men, as women who have sex with women have orgasms in 80–90% of all sexual interactions (de Bruijn, 1982; Frederick et al., 2018). Indeed, in the latter study, women with a female sex partner had a three times greater likelihood of always having an orgasm during partnered sexual activity than women with a male sex partner. In a study in Dutch college women, lesbian women were also much more likely to experience orgasms during sexual activity with a female partner than heterosexual women (van Rees et al., 2016). In this study, likelihood of orgasm was strongly related to receiving glans clitoral stimulation. Interestingly, the lesbian women in this study were less likely to receive vaginal stimulation during lovemaking than the women in mixed-gender relationships, but those who did were significantly more likely to experience orgasm from it. Vaginal penetration

of the women who had sex with a male partner was overwhelmingly dependent on penile insertion, whereas vaginal penetration of the women in same-gender relationships was mainly done manually, suggesting that the finger may be much better equipped than the penis to stimulate the clitoris internally.

Some have argued that women are not particularly concerned about experiencing orgasm (e.g., Blackledge, 2004), which may in itself be interpreted to reflect women being innately less interested in sex. If this were true, orgasm would be a poor measure of women's sexual pleasure. However, based on a series of surveys in Finnish women, Kontula (2009) concluded that the most important single predictor of sexual satisfaction for women is orgasm. In addition, women who downplay the importance of orgasm may perhaps do so to reduce cognitive dissonance (Festinger & Carlsmith, 1959). By saying that orgasms are not important, any distress accompanying difficulties with orgasm might be reduced. Indeed, in a large representative sample of Finnish heterosexual women, those who always or almost always had orgasms during partnered sexual activity were more likely to find orgasms particularly important (Kontula & Miettinen, 2016). A similar finding came from a 2012 study in a young convenience sample ( $N=300$ ) of Dutch heterosexual women (Anthony et al., 2012). Women who reported finding orgasms important were also the ones who had greatest ease in experiencing orgasms.

There are other indices besides orgasm that are indicative of substantial gender differences in pleasure derived from sex. For instance, using data from a large U.S. probability survey of individuals with various sexual orientations aged 14–60, Herbenick et al. (2010) found women and men to differ in the extent to which their last sexual encounter was “quite a bit” to “extremely” sexually arousing (66% versus 84%, respectively), sexually pleasurable (66% versus 83%, respectively), and pain free (70% versus 94.4%, respectively).

### **Painful sex**

The prevalence of pain or discomfort during penile-vaginal intercourse is high among women.

Lifetime estimates of dyspareunia range from 10% to 28% (Harlow et al., 2014). In men, dyspareunia is much less prevalent. Complaints of pain during penile-vaginal intercourse vary between 0,2% in the general population to 8% in a clinical setting (Simons & Carey, 2001). Rates of pain during penile-vaginal penetration are particularly high among young women. In a large representative sample of Dutch adolescents between 12 and 25 years, 46% of women reported having experienced pain during penile-vaginal intercourse, with 11% experiencing pain “regularly” to “always” (de Graaf, 2018). Comparable numbers were found in a Swedish study (Elmerstig et al., 2009). The latter study also found that only half of these women thought that having pain was a problem. Apparently, most of the women took this pain for granted, perhaps because they feel arousal despite the pain, because they feel loved and believe that that outweighs their pain, because they consider pain during penile-vaginal intercourse to be normal, because they find sexual pleasure less important, or perhaps because they feel that their partner has a right to penile-vaginal intercourse, regardless of their pain.

Characteristically, heterosexual women with dyspareunia do not cease sexual activity that is painful for them. They ignore the primary function of pain as signaling damage to the body (de Jong et al., 1995). While penile-vaginal intercourse frequency of women with dyspareunia is lower than that of women without sexual pain (Reed et al., 2003), not engaging in penile-vaginal intercourse is, by definition, not a behavioral choice that women with dyspareunia make. Brauer et al. (2014) found that 36% of a convenience sample of women with dyspareunia still engaged in penile-vaginal intercourse at least once or twice a week. Research consistently shows that psychological profiles of heterosexual women with dyspareunia do not differ much from those of women without sexual problems (e.g., Brauer et al., 2009). Yet, heterosexual women who seek help express concern that their partner will leave them if they do not give him access to penile-vaginal intercourse. Male partners’ negative response to expressions of pain was the best predictor of persisting in painful penile-vaginal penetration in young Dutch

women (Brauer et al., 2014). Wanting to be “normal” is also an important determinant of persisting in painful penile-vaginal intercourse (Elmerstig et al., 2008). These findings suggest that beliefs that penile-vaginal penetration is a “natural” sexual act to which men are entitled, justifying a relationship breakup, are alive and well (see Tiefer, 2004).

### ***Violent sex and “scary” sex***

Global WHO estimates indicate that about 1 in 3 women worldwide have experienced sexual intimate partner violence or non-partner sexual violence in their lifetime (UNICEF, 2020), with up to 50% of these acts of sexual violence being committed against girls under 16 years of age (UNICEF, 2014). Almost one-third of women report having experienced some form of sexual violence by their intimate partners. The prevalence of partner sexual violence in a 12-month period involving 44 countries was found to be around 4% in many high-income countries, but at least 40% in some low-income countries (Heisse & Kotsadam, 2015). Estimates of non-partner sexual violence were highest in sub-Saharan Africa (Abrahams et al., 2014). The lifetime prevalence of rape (or attempted rape) among women is around 18–19% in several samples in the United States and between 4 and 17% across several European countries (Littleton et al., 2018). A recent study found that for 6.5% of US women, their first penile-vaginal penetration was forced (Hawks et al., 2019).

Although all individuals are vulnerable to experiences of sexual victimization, sexual assault, abuse, and harassment are overall still gendered crimes, such that women and girls are more likely to be victims than men and boys (Littleton et al., 2018). For men, the lifetime prevalence of sexual assault, including non-consensual penetration, unwanted sexual contact, being forced to penetrate someone else, as based on representative studies, has been estimated to be 17% for the US and, on average, 16% in 10 European countries. In several studies around the world, the lifetime prevalence of completed or attempted rape among men is estimated to vary between 1% and 5% (Littleton et al., 2018). Members of marginalized groups face substantially

increased vulnerability to sexual victimization. These include individuals with disabilities, sexual and gender minorities, homeless individuals, individuals engaging in various kinds of sex work, and members of indigenous populations (Littleton et al., 2018).

Aside from sexual violence prevalence rates, there are other indications that sex is likely to have fewer positive connotations for women than for men. In one study, about 8% of US women aged 14–26 years believed that they do not ever have the right to make their own decisions regarding whether to have sex and how, and an additional 30% felt they were able to do so only some of the time (Rickert et al., 2002). Unfortunately, numbers for men are unavailable, perhaps because researchers presume that men will never be doubtful about such decisions, as being an active pursuer of sex fits the male gender stereotype. For women, sex may also be consensual but unwanted (e.g., Peterson & Muehlenhard, 2007), or wanted but unpleasant, or associated with negative psychological and outcomes (Littleton et al., 2009). Using data from a US probability survey of individuals aged 14–60, a recent study reported that women were more likely to having felt scared during sex (Herbenick et al., 2019). Scary sexual situations were reported by 24% of adult women, 10% of adult men, 12.5% of adolescent women, and 4% of adolescent men. In addition, the definition of “scary” was radically different for women and men. For women of all sexual orientations, “scary sexual experiences” included being choked, threatened, held down, hit, asking for a man to stop which he doesn’t. For men, “scary sexual experiences” were described as having sex with a woman who is menstruating or receiving oral sex while engaging in thoughts that the sex partner may have had sex with someone else the day before.

In sum, based on this brief overview of evidence from only three different domains, we feel that it is justified to conclude that currently women, and particularly heterosexual women, are less likely to experience sexual pleasure than men, and that for them, sex may come at a greater cost than for men. This raises the question of whether women have a lesser capacity for

sexual pleasure than men or whether these differences are better explained by women having fewer opportunities for sexual pleasure.

### **Aim of this paper**

This paper reviews biopsychosocial evidence for gender differences and similarities in (1) the capacity to experience sexual pleasure and (2) opportunities to experience sexual pleasure, including societal pressures which facilitate or penalize the attainment and expression of sexual pleasure. Given that some of the greatest (observed) “pleasure gaps” are between heterosexual women and heterosexual men, much of the paper will address gender differences between heterosexual women and men. Our focus on gender differences and similarities does not mean that we do not acknowledge variability in sexual pleasures among women and among men. Also, whereas the 2019 WAS declaration of sexual pleasure rightly includes the wide range of pleasures that people may derive from sexual activities (Gruskin & Kismödi, 2020), the current paper particularly focuses on sensual sexual pleasures (i.e., pleasure associated with arousal and orgasm).

### **Capacity for sexual pleasure**

#### ***Childhood genital responses and behavior***

Evidence is accumulating that women and men do not differ in their biological capacity for sexual response, as evidenced by observations of genital responses and behavior of girls and boys from (and even before) birth and onwards (Katz-Wise & Hyde, 2014). A thorough and extensive overview of studies investigating childhood sexual development illustrates that from an early age, children of both genders display responses and behaviors that appear to produce feelings that can be interpreted as pleasurable and even sexual (de Graaf & Rademakers, 2011), even though what constitutes “sexual” is probably not of concern to the children themselves (Lamb & Plocha, 2014). For instance, Masters et al. (1982) reported data from ultrasound studies showing reflex erections in male fetuses and vaginal lubrication in female infants 24h after birth. These physiological responses are indicative of an innate

capacity for sexual response although they perhaps should not be equated with sexual feelings during adulthood (Pfaus et al., 2012). However, studies do suggest that young children can derive pleasure from these responses and behaviors. For instance, Galenson (1990) observed rhythmic and seemingly intentional genital self-touch in male and female infants before the age of 2, sometimes accompanied by facial expressions indicative of pleasure and flushing, rapid respiration, and perspiration.

Girls and boys commonly touch their genitals before the age of 5 (Friedrich et al., 1998 ; Thigpen, 2009) and even prenatal self-touch and “orgasm-like” reflexes have been observed in both sexes (Brenot & Broussin; 1996; Giorgi & Siccardi, 1996). Based on retrospective studies, it is evident that some children experience sexual arousal or orgasm before puberty, but due to different samples and definitions of key concepts, it is impossible to say to how many children this applies (de Graaf & Rademakers, 2011) and whether there might be any systematic differences between girls and boys. Masturbation is a common form of sexual expression in children that have reached puberty, with boys generally starting masturbation at a younger age than girls (Katz-Wise & Hyde, 2014). Boys typically learn about masturbation from their male peers through being told or watching them, whereas girls typically learn about masturbation through self-discovery (Langfeldt, 1981). The fact that masturbation is condoned or even encouraged in boys but not or to a lesser extent in girls can have repercussions on the use and efficacy of masturbation as a source of pleasure. By the time they are ready to engage in sex with another person, boys may be equipped with greater knowledge than girls about what type of genital stimulation is pleasurable to them.

### **Responsivity to sexual stimuli**

In contrast to popular opinion that women are not very responsive to visual sexual stimuli, women do respond to visual sexual stimuli with genital sexual arousal. In fact, psychophysiological studies that investigate genital response and sexual feelings in response to different categories of

erotic stimuli have repeatedly shown that also in women, visual sexual stimuli yield highest genital responses, more so than erotic literature (van Dam et al., 1976), auditory erotic stimuli (e.g., Morokoff & Heiman, 1980) or engaging in erotic fantasies (e.g., Dekker & Everaerd, 1988; Laan et al., 2001; Morokoff & Heiman, 1980). Visual erotic stimuli combined with vibrotactile genital stimulation produce even higher genital responses compared to visual erotic stimuli only, in women and men alike (Janssen et al., 1994; Peterson et al., 2010). Also, the ease with which women and men become genitally aroused in response to sexual stimuli does not seem to differ (Janssen & Everaerd, 1993; Laan & Everaerd, 1995). In confirmation of these early studies on peripheral responses, a recent meta-analysis of 61 fMRI studies in 1850 women and men indicates that male and female brains are also equally responsive to visual sexual stimuli (Mitricheva et al., 2019). In sum, women and men do not seem to fundamentally differ in either genital or central responsivity to sexual stimulation. Processing of sexual stimuli by the brain generates blood flow to the genitals with apparent ease in women and men. So, even the mechanism of arousal is similar in women and men.

### **Sexual desire**

According to the incentive motivation model, sexual desire is activated by external, sexually relevant stimuli or mental representations of such stimuli (Both et al., 2007; Toates, 2009; 2014). This conceptualization of sexual desire contrasts that of many other researchers who, influenced by Freud (1953), Kaplan (1995), and others, consider sexual desire to be of internal origin, as a drive which is awakened “spontaneously” through deprivation.

As a result, an overwhelming majority of questionnaires employed in clinical practice as well as in research for quantifying sexual desire are based on the assumption that sexual desire is a stable trait, a capacity that one does or does not possess, and which is then often claimed to be stronger in men than in women. Interestingly, studies using self-report questionnaires that conceptualize sexual desire as a trait consistently find

gender differences in the stereotypical direction (with men reporting higher desire), whereas studies that have individuals rate their feelings of sexual desire immediately following exposure to a sexual stimulus fail to find differences between women and men (e.g., Both et al., 2004; Goldey & van Anders, 2012; see Dawson & Chivers, 2014, for a review). However, even recent studies using trait measures of sexual desire have questioned the idea of men having high and unwavering sexual desire (see Murray, 2019, for a review).

To conclude, the almost universal idea that men have higher levels of desire than women and that this is an innate capacity, an idea reinforced by evolutionary theories and reproductive strategies (see later sections), may depend on how sexual desire is conceptualized and measured. If sexual desire is seen as emerging from rather than preceding “incentivized” sexual arousal, as incentive motivation theory posits, gender differences in reported feelings of desire may be the result of differences in incentive, or sexual context, quality rather than reflective of innate differences.

### **Sex drive, “sex” hormones, and reproductive success**

In contrast to most animals, in humans neither the ability to engage in sexual activity nor the motivation to do so is under strong hormonal control. The fact that men have 10–20 times more testosterone, expressed in absolute levels, than women (e.g., Wang et al., 2014), has often wrongly been equated with the notion that men have an innately stronger sex drive which increases as a function of deprivation (Kaplan, 1995, p. 17). There is, however, no evidence of any sexual desire-enhancing effects of sexual abstinence, and abstinence does not lead to life-threatening effects compared to, for instance, a hunger or thirst strike (see Both et al., 2007, for a review). If anything, in women and men the absence of partnered *and* solo sexual activity, or the presence of non-rewarding (i.e., non-pleasurable) sexual activity, seems related to a reduction of the desire to be sexually active, with sexual abstinence even leading to reduced testosterone levels after prolonged periods of sexual

abstinence (e.g., Carosa et al., 2002; Hsu et al., 2015; Leiblum et al., 1983).

Even though a certain level of testosterone is required for men’s brains and genitals to be sensitive to sexual stimuli, normal physiological testosterone levels above that minimum threshold (total T 10.4 nmol/L) seem unrelated to levels of sexual desire (Rastrelli et al., 2018). The same may be true for women, for whom testosterone is also thought to be associated with their sexual arousability (Le Moëne, & Ågmo, 2018; Pfaus, 2009). As in men, it is possible that in women testosterone is not linearly but curvilinearly related to sexual function across the total serum T-range. This entails that androgen-related sexual problems should only be expected when T-levels are below a certain, yet to be determined, hypophysiological threshold (cf. Bachmann et al., 2002; Bancroft, 2005; Rastrelli et al., 2018). In support of a threshold-approach, a recent study on Human Immunodeficiency Virus-Infected women showed that self-reported problems with sexual desire and other androgen-related symptoms such as depression, fatigue, and reduced physical function were higher in women with T-insufficiency compared to those without (with T-insufficiency defined as total T  $\leq 0.3$  if Sex-Hormone-Binding-Globulin (SHBG) levels were within the normal range ( $<100$  nmol/L), and as total T  $\times [100 * T/\text{SHBG}] \leq 0.5$  in patients with elevated SHBG levels ( $>100$  nmol/L); Laan et al., 2019). In short, not absolute but rather relative hormonal levels may allow women and men to be sensitive to sexual stimulation.

Furthermore, labeling testosterone the “*male sex hormone*” obscures the fact that, for men, testosterone is also their most important reproductive hormone. In most secondary school biology books, the difference in respect to which hormone is important for female and male reproductive development and fertility (estrogens and testosterone, respectively) is conflated with assumptions about which hormone would exert the greatest influence on their sexual arousability. Equating sexuality with reproduction and fertility, including concepts about how sex differences in reproduction and reproductive success must have led to evolved gender differences in sexual, rather than reproductive, strategies (e.g., Trivers, 1972), may have reinforced the belief that men’s higher



testosterone levels serve a sexual rather than reproductive purpose. In addition, it is usually ignored that for (non-pregnant) women absolute testosterone levels are, on average, four times higher than their absolute estrogen levels (Clayton & Vignozzi, 2018, p. 65; Buster, 1999, cited in Vignozzi & Maseroli, 2019, p. 114). For women, even though physiological androgen levels seem to facilitate fertility (likewise for estrogens and men's fertility), supraphysiological testosterone levels would compromise it (Hammes & Levin, 2019). And although estrogens are thought to be the "*female sex hormone*," in reality no good evidence exists that they are related to women's sensitivity to sexual stimuli. Of course, estrogens are important for the trophic condition of the vaginal wall (Semmens & Wagner, 1982), which may make vaginal penetration without sexual arousal potentially less painful, but estrogens are unrelated to women's sexual arousability itself (Laan & van Lunsen, 1997). In sum, the role sex hormones play in male and female reproduction should not be equated with their role in men's and women's sexuality.

In a similar vein, conflating sexuality with reproduction seems to have led to the widely held belief that the sexual act that helps humans reproduce (penile-vaginal intercourse), should also be the most sexually pleasurable. When considering the overwhelming evidence that penile-vaginal intercourse advances heterosexual men's orgasms, as discussed earlier, this seems like a reasonable thought, at least from a male perspective. This line of thought has inspired researchers to hunt for sexually sensitive locations within the vaginal wall (e.g., Alzate, 1985; Semmens & Semmens, 1978). And even though the anterior vaginal wall has consistently been found to be the spot that is most sensitive to electric stimulation, the vaginal wall is in fact rather insensitive, especially when compared to the sensitivity of the (glans) clitoris (Weijmar Schultz et al., 1989). Having a relatively insensitive vaginal wall may make perfect sense when it comes to reproduction, with women's vagina's having to accommodate a baby's head of approximately 10 cm in diameter during delivery. Labeling the vagina a reproductive rather than a sexual organ would help women to no longer feel sexually

dysfunctional when they have difficulty becoming sexually aroused, let alone experience orgasm, from penile-vaginal intercourse without direct or indirect stimulation of their pleasure organ, the clitoris. After all, who would expect men to reach orgasm without stimulation of the (glans) penis?

### ***Sexual behaviors and attitudes: gender differences or gender similarities?***

So if women and men achieve orgasm when stimulated adequately and are more similar than different in their responsivity and sensitivity to sexual stimulation, why do women experience less pleasurable sex? Do women and men differ in terms of behavioral or psychological factors that affect sexual pleasure? In the following section, we will address the tendency to overestimate differences, rather than acknowledge similarities, when studying gender differences in sexuality, and we will discuss a number of methodological issues of these studies. We then elaborate on the role that socio-cultural factors play in explaining those differences between women and men.

In 2010, Petersen and Hyde published a meta-analysis of studies investigating gender differences in 30 sexual behaviors and attitudes that appeared between 1993 and 2007. The meta-analysis included 834 samples as well as data from seven large national datasets. No large gender differences ( $d \cong .80$ ) were found, and only 4 gender differences with moderate effect sizes ( $d \cong .50$ ): masturbation frequency, use of pornography, number of sex partners, and attitudes about casual sex, with men scoring higher on all variables. Of note, while this implies that all of the highest scoring individuals are men and all of the lowest scoring individuals are women, those moderate effect sizes represent an overlap of 80% between populations (Magnusson, 2020), indicating greater similarity than difference. Comparing differences between the most recent meta-analysis from 2010 (Petersen & Hyde, 2010) with a meta-analysis published 17 years earlier (Oliver & Hyde, 1993) also shows that gender differences are becoming smaller with time. More recently, a meta-synthesis including 106 meta-analyses and 386 individual meta-analytic effects provided compelling support

for gender similarity (Zell et al., 2015). Declining gender differences underscore the notion that women do not necessarily have a smaller capacity for sexual pleasure than men.

Taking a closer look at each of these four differences suggests that methodological issues rather than true gender differences may be at play. Alexander and Fisher (2003) investigated gender differences in the frequency of “solosexual behaviors” (a composite score consisting of mean frequencies of masturbation and pornography use) and number of sex partners in three different experimental conditions potentially influencing adherence to gender role norms: (1) a setting in which participants were led to believe that their responses might be seen by a peer (“exposure threat condition”), (2) an anonymous (survey) setting, and (3) while participants were hooked up to a polygraph or “lie detector” (“bogus pipeline condition”). Gender differences in self-reported sexual behavior were negligible in the bogus pipeline condition, which participants believed could detect lying. Intriguingly, frequency scores of men were less affected by experimental conditions than women’s scores, which may suggest that women’s expression of sexual behavior is more susceptible to moral disapproval by others than those of men.

In fact, a growing body of research demonstrates that gender differences in sexual behavior can partially be explained by social-contextual factors, including stigma and safety. Men’s seemingly greater likelihood to accept casual sex offers in the famous Clark and Hatfield (1989) study, attributed to men having a stronger sex drive, was criticized in a study by Conley (2011). In that study, it was found that men’s greater likelihood of accepting casual sex offers by a stranger may have been influenced by male confederates being rated as less intelligent and sexually skilled and as more dangerous than female confederates. Also, gender differences in accepting a casual sex proposal were absent in a study that asked participants to imagine that they would receive casual sex proposals from (attractive and unattractive) famous individuals, friends, or same-gender individuals. In another study, Conley and colleagues showed that female casual sex accepters are judged more negatively than male casual sex accepters and that this backlash influences

women’s decisions regarding whether to engage in casual sex (Conley et al., 2013). In a subsequent study in bisexual individuals, Conley and colleagues only found gender differences in response to actual casual sex offers from men, not from women, with male proposers being perceived to be more dangerous than female proposers (Conley et al., 2014). Baranowski and Hecht (2015) found that the gender difference in accepting casual sex invitations disappeared in a subjectively safer environment. More recently, Conley and colleagues showed that men’s consistently more positive reactions to casual sex offers may be related to them being more likely than women to experience sexual pleasure and orgasm during casual sex (Piemonte et al., 2019). This should not be construed as evidence for women’s lesser capacity for pleasure per se, as women are much more likely to orgasm during casual sex with other women than during casual sexual encounters with men (Willis et al., 2018).

To conclude this section on the capacity for sexual pleasure, women and men do not seem to differ in their biological or psychological capacity for sexual pleasure. Pleasurable and reproductive aspects of human sexuality are conceptually, anatomically, and psychologically distinct. The human ability to experience orgasms and to develop positive sensations associated with genital stimulation thwarts the notion of a hormonally regulated sexual drive in humans. Fecundity of humans is such that engaging in sexual activity for the purpose of sexual pleasure may suffice to preserve the human species. Therefore, rather than seeing sexual pleasure as a by-product of reproduction, reproduction may be better conceptualized as a by-product of sexual pleasure (Abramson & Pinkerton, 2002). Sexual pleasure, rather than a fixed hormonal pattern, allows for a (not necessarily conscious) weighing of pro’s and con’s of whether to engage in sexual activity in any given situation, granted that potential partners have an equal say in the matter (see Ågmo & Laan, [under review](#), for a discussion of the role of consent in human sexual relations). In other words, sexual pleasure provides the basis for individual sexual development, with pleasure teaching us about the kind of sex that is worth desiring. Finally, women and men are, in principle, equally

arousable, provided that they are stimulated in a way that fits their “genital design,” and provided that they have the opportunity to learn that sexual activity can be sexually rewarding. The current “pleasure gaps” represent not a fundamental absence of sexual desire in women but rather a “severe neglect of female erotic potential” (Abramson & Pinkerton, 2002, p. 122). In other words, heterosexual women experiencing less sexual pleasure than heterosexual men may be related to the fact that these women are having sex with men, with the definition of “sex” as penetration, and with women’s sexuality being associated with stigma and danger. When these contextual and sociocultural factors are removed and opportunities for sexual pleasure are increased, the sexual pleasure gender gap is likely to be removed as well.

### Opportunities for sexual pleasure

In this section, we will explore the possibility that gender differences in sexual pleasure are related to differences in opportunities rather than in capacities for sexual pleasure (Abramson & Pinkerton, 2002; Armstrong et al., 2012; van Lunsen et al., 2013).

#### *Does pleasure breed desire?*

Exceptionally little empirical research attention has been paid to the hypothesis that heterosexual women tend to desire partnered sexual activities less than men, particularly with longer relationship duration (e.g., Klusmann, 2002), not because of some intrinsic gender difference in capacity for sexual pleasure, but because the kinds of sexual activity on offer provide them with fewer opportunities for sexual pleasure. Recently, drawing on sexual script theory (Gagnon & Simon, 1973) and pleasure theory (Abramson & Pinkerton, 2002), Rubin et al. (2019) examined whether anticipated pleasure from a sexual encounter predicted heterosexual women’s desire for penile-vaginal intercourse in samples from the United States, Canada, Germany, and Denmark. Decisions to engage in partnered sexual activity were expected to depend on earlier experiences with, and future expectations of, pleasurable sexual experiences (e.g., Eastwick et

al., 2014). Relatedly, greater endorsement of gendered cultural scripts (for instance, that men like sex more than women) were hypothesized to adversely influence women’s desire for sexual activity. Endorsement of gendered cultural scripts may inhibit sexual desire because gender roles inform and reinforce each other—just as men learn to desire sex, women learn to prioritize other’s needs above their own.

In support of these hypotheses, Rubin et al. (2019) found that both prioritization of male partner’s sexual pleasure in partnered encounters as well as gendered cultural scripts were negatively associated with heterosexual women’s desire for sexual activity. The women who prioritized their own sexual pleasure in partnered sexual activity and who anticipated to experience orgasm during future partnered sexual encounters reported greater desire for that sexual activity. Although the predictor variables did not significantly vary across countries, some country-based differences were found. For the Danish sample, the country with the greatest gender equality based on independent objective standards (World Economic Forum, 2018), only endorsement of gendered cultural scripts robustly predicted lower desire for sex. Women in Denmark are more satisfied with their sex lives than women in other Western nations (Traeen et al., 2019). Rubin et al. (2019) hypothesized that since sex between women and men is negotiated on more equal terms in Denmark, pleasure may be perceived as expected.

In conclusion, the findings of Rubin et al. (2019) support the hypothesis that when heterosexual women expect more opportunities for sexual pleasure based on earlier experiences or when they prioritize their own sexual pleasure (at least as much as that of their male partner), they are more likely to desire sexual activity. Increased opportunities for sexual pleasure may occur either by a gradual break-down of gendered sexual scripts, by (educational) efforts to have women stop de-prioritize their own sexual pleasure in heterosexual encounters compared to that of their partner, or by providing adolescents with accurate information about stimulation of which parts of women’s genital anatomy and which sexual activities are more likely to bring about

pleasure. All this may help further decrease gender differences in experienced sexual pleasure. Of note, a recent study found that women who were less likely to prioritize their own sexual pleasure in a heterosexual casual dating context were more at risk of performing undesired sexual acts to please a partner (Kettrey, 2018). Hence, changing sexual scripts that prioritize male sexual pleasure are not only likely to increase pleasurable sexual experiences for women, but also to decrease the likelihood of engaging in unwanted sexual activity.

### **The coital imperative**

Not only women's learned expectations about the likelihood that heterosexual sexual activity will be pleasurable or their (scripted) tendency to prioritize their male partner's sexual pleasure over their own may limit the opportunities for sexual pleasure of women. The *coital imperative* (the common view that penile-vaginal intercourse is the most important of all sexual activities; Braun et al., 2003) but even the mere definition of the word "sex" as (penile-vaginal or penile-anal) penetration is likely to provide heterosexual women with fewer opportunities for sexual pleasure. Particularly when this *coital imperative* is combined with a lack of knowledge about the anatomy of the clitoris and a disregard for the requirement of sexual arousal in women prior to penile insertion, penile-vaginal intercourse represents a poor opportunity for sexual pleasure for women. Only when a woman is sufficiently sexually aroused and both the outer and the inner aspects of her clitoris are fully engorged, she is likely to experience pleasure and perhaps even orgasm during penile-vaginal intercourse, because, as Levin (2003) pointed out, only then the inner aspect of the clitoris is likely to become (further) sexually stimulated during penile-vaginal intercourse.

Also, the pervasive myth that healthy adult women should be able to orgasm through penile-vaginal intercourse is unfavorable for heterosexual women's sexual pleasure. At the beginning of the 20th century, Freud (1953) suggested that women who required glans clitoral stimulation for orgasm are "psychologically immature" because mature women's proper sexual response

is a natural transfer of pleasurable feelings from the clitoris to the vagina during penile-vaginal intercourse. Exactly how this "natural transfer" of pleasurable feelings should happen was never elucidated. The notion that women have to be able to have such a "vaginal orgasm" contrasts with modern data that suggest that orgasm likelihood is largest in sexual situations that involve stimulation of the glans clitoris (e.g., Hite, 1976; Lloyd, 2005; Tavares et al., 2018).

Thus, the coital imperative represents a powerful limitation to heterosexual women's opportunities for pleasure, particularly when this is combined with the belief that women do not need to be sexually aroused prior to intercourse. After all, it is the increase in volume of the inner aspect of the clitoris that increases women's likelihood that vaginal penetration will lead to orgasm. So women and men do not differ even when it comes to what is an essential prerequisite for intercourse to be pleasurable, namely, sexual arousal.

### **Other gendered practices and scripts**

Additional gendered practices and scripts are likely to limit opportunities for sexual pleasure for women. Here we address some of them. First, 200 million women have undergone some type of genital mutilation globally, and annually 3 million girls are at risk of becoming genitally mutilated (UNICEF, 2020). A recent systematic review showed that genitally mutilated women have a greater likelihood for reduced psychological and sexual wellbeing (van Moorst et al., 2018).

Second, disregard of the clitoris as women's pleasure organ likely reduces women's likelihood of experiencing sexual pleasure. Even though the correct anatomy of the clitoris has been known for centuries, this knowledge has vanished from sight many times. For instance, in the first half of the 20th century in the United States the clitoris was systematically removed from anatomical drawings of female genitalia (Tuana, 2008).

Third, slut shaming is a form of cultural suppression of women's sexuality that has been practiced since antiquity (Webb, 2015). Also, a recent meta-analysis showed that the traditional double standard (i.e., heterosexual women are judged more harshly for engaging in casual sexual

activity than are heterosexual men; Conley et al., 2013) is still prevalent in society (Endendijk et al., 2020). Interestingly, Rudman et al. (2013) found support for the hypothesis that men are actually more instrumental in repressing women's sexual expressions than women are, contradicting Baumeister and Twenge's (2002) earlier conclusion that women are more culpable than men for suppressing women's sexual expressions (e.g., by spreading gossip about other women engaging in casual sex). Rudman et al. (2013) propose that sexism, stigma, and rape myths are primary obstacles to sexual equality in sexual pleasure.

Fourth, exposure to mass media depicting the thin-ideal body is related to body image concerns for women (e.g., Grabe et al., 2008), which is associated with them experiencing more difficulties with sexual arousal and orgasm than women without body concerns (Carvalho et al., 2016; Silva et al., 2016; Traeen et al., 2016).

Fifth, adolescent girls are faced with what Tolman (2002) called "the dilemma of desire": girls are encouraged through media and cultural representations to be "sexy," but at the same time they are punished if they are actively "sexual" because by showing agency they defy cultural expectations for women's sexuality.

### Evolution or culture?

Gender differences in sexual expressions or attitudes have long been taken as proof that men are innately sexual and that women are not or to a lesser extent—coined by Hollway (1984) as the *discourse of male sexual drive*. This discourse has been supported by simplified predictions of classical evolutionary theory (e.g., Greiling & Buss, 2000). Evolutionary theorists assume that gender differences are of biological (genetic) origin and the result of natural selection—thus limiting their empirical work to hypothesized gender differences in evolved adaptations, at the expense of considering the many similarities between women and men with respect to sexuality. Many scholars now agree that classic evolutionary theory has little explanatory power as an integrative paradigm for human sexuality (Eshuis, 2020).

Even though humans, like other animals, will have acquired general behavioral tendencies

aimed at survival and reproduction, they are clearly capable of adapting to life circumstances. *Life history theory* proposes that adaptive sexual strategies develop during an individual's life span, rendering the need for the assumption of evolved, innate, deterministic, gendered (cognitive) adaptations obsolete (Del Giudice et al., 2015). Life history theory assumes that global ecological changes, such as climate change, have a larger influence on human mating strategies than evolved adaptations. For instance, stable environments in which adequate resources for survival are available are usually characterized by reproductive strategies aimed at investment in a limited number of children, whereas unstable environments with scarce resources usually lead to more quantitative reproductive strategies with a greater number of offspring (Eshuis, 2020).

Thus, while biological and psychological factors clearly determine the possibilities and boundaries of our sexual potential, the way individuals express their sexuality depends on the environment and is therefore socially constructed. Culture, defined as the constructed and shared values of a group that are important enough to be passed on from one generation to the next, is dynamic and is constantly changing and being (re)negotiated (Hall, 2019). Only a culturally sensitive perspective on sexuality allows us to explain and appreciate the large variability in individual and gendered sexual expressions.

Although cultural explanations have been criticized based on the argument that the fact that in most cultures men dominate women is proof of men's biological superiority over women (Brown, 1991), some argue that male dominance is not rooted in human nature. For instance, according to Jablonka (2020), male dominance is best seen as a moral injustice resulting from a patriarchal system that evolved with a residential lifestyle that accompanied the development of agriculture, which favored male force and reduced the need for cooperation that is characteristic for a nomadic way of life.

There is abundant evidence that in most countries and cultures, expressions of sexual pleasure of women and girls are repressed to a greater extent than those of men and boys (Katz-Wise & Hyde, 2014). Sociocultural theorists have argued

that gender differences are driven not by biology but by role behaviors dictated by gendered divisions of labor (Eagly & Wood, 1999), with psychological attributes and behaviors that are adaptive for their roles in a gender-differentiated workplace having negative consequences for women's sexuality.

As was already stated, the decline in the number of gender differences in sexuality from 1993 to 2007 in Petersen and Hyde's (2010) meta-analysis suggests that cultural rather than biological factors are responsible for previous differences between genders in sexuality. Specifically, they found smaller gender differences in masturbation frequency in societies with greater gender equality. Similarly, whereas Buss (1989) emphasized the finding of a large gender difference in men's and women's preference for a potential partner's earning capacity as support of an evolved adaptation related to gender differences in reproductive strategies, Eagly and Wood (1999) found a large negative correlation across cultures between the magnitude of this gender difference and women's own earning capacity. More recently, Eastwick et al. (2014) presented meta-analytic data covering 97 studies and found no gender difference in the association between earning capacity and romantic evaluations of opposite-gender partners. Also, participants' romantic evaluations of partners they had met face to face tended to be more positive to the extent that the partner had good earning prospects, regardless of gender (using data of > 50,000 participants). The same was true, incidentally, for physical attractiveness ( $N > 29,000$ ).

In an influential paper, Baumeister (2000) argued that women's sexuality is more malleable in response to sociocultural and situational factors, concluding that the observed gender difference in erotic plasticity results from men's sexuality being mainly determined by physical factors resulting from evolutionary selection. Alternatively, men's seemingly lesser malleability with respect to sexuality may also be a function of men, across cultures, having a lesser need to adapt to sociocultural and situational factors, as these factors are more in their favor or as they have more power (either actively pursued or granted habitually) to bend situational factors in their favor. This model of power-inequality negatively affecting people's

sexual expressions fits with findings that male dominance is not the only form of social injustice that is likely to influence sexual expressions. Poverty, race, disease, statelessness, are equally or perhaps even more influential in shaping the human sexual experience (Eshuis, 2020).

In sum, while biological and psychological factors determine the possibilities and restrictions of our sexual potential, circumstances shape our specific expectations about whether engaging in sexual activity, partnered or solo, will be rewarding and, thus, worth desiring. This perspective on sexual pleasure allows for a better understanding of how learning processes shape individuals sexual pleasures and problems (Both, 2020; Pfaus et al, 2012), and is in line with modern information processing perspectives on sexual response (Janssen et al., 2000) and with the incentive motivation model, an integrative theoretical framework for understanding sexual motivation, arousal, and behavior that may be useful for explaining the causes and possible treatments for problems related to sexual pleasure (Ågmo & Laan, [under review](#); Toates, 2009, 2014).

### **Conclusion: toward gender equality in sexual pleasure**

To facilitate sexual pleasures in all genders, we believe that it is necessary to move from a discourse of gender differences to a discourse of gender similarities, especially since the latter discourse seems, as we have argued, more consistently supported by scientific evidence. Convictions that women and men are fundamentally different with respect to sex are part of that cultural context that is likely to shape our sexual development and our day-to-day sexual experiences in a way that reinforces these gender differences, particularly for individuals who prefer opposite-gender sexual partners.

In recent years, the importance of sexual pleasure for (sexual) health has been acknowledged (World Association of Sexual Health [WAS], 2019; World Health Organization, 2006). That said, comprehensive sex education will be an important instrument for increasing knowledge, recognition, and promotion of sexual pleasure (Hull, 2008). However, to reduce gender differences in sexual pleasures, and to help people benefit

from the positive health effects of rewarding sexual experiences, we believe that sex education should not be limited to reproduction (which prioritizes the penis and sentences the clitoris to seclusion) and sexual risks, but should openly address the pleasurable aspects of sexuality and ways in which adolescents can learn to experience and share these pleasures. It appears to be the prioritization of pleasure, without the need to de-prioritize that of potential sexual partners, that has both health as well as protective benefits. This pleasure-prioritized sex education should involve promotion of “cliteracy” in all genders through tuition about differences in female and male genital anatomy from which pleasure can be derived, incorporated in a context that makes clear that these organs have the same embryological origin and that both the capacity for pleasure and the mechanisms of pleasure do not differ between genders.

Diversity with respect to genders and sexual orientations should be part and parcel of comprehensive sexuality education, to reduce the impact of heteronormativity, the coital imperative, girls’ dilemmas of desire, and gendered scripts that promote a sexual double standard that force women in a passive and men in an active role—which may harm men’s sexual pleasure as well—and that condemn women’s and commend men’s expressions of sexual pleasure, such that respect for individuals regardless of gender and sexual orientations is facilitated. Increasing girls’ and women’s sexual agency and relieving boys and men from their duty to perform can be part of that conversation.

Given that power differences between genders partly drive the gender differences in experienced sexual pleasure by limiting women’s opportunities for sexual pleasure, policies that encourage gender equality are vital. Promoting equality is a human issue, not a “woman’s issue.” The involvement of (heterosexual) men who use their powerful status to support egalitarian gender roles and gender equality (Silver et al., 2018) may be instrumental in promoting gender equality in sexual pleasure. We would predict that egalitarian sexual scripts can heighten heterosexual men’s sensual and emotional sexual pleasures, by reducing fear of performance failure which comes with gendered scripts that make men responsible for

initiating and directing sexual interactions. Together, women and men can practice a new definition of “sex.” One that does not refer to a particular sexual act, but to an experience: a sexually pleasurable experience that is affectionately shared among equals.

## Notes

1. Some exceptions exist. For instance, SIECUS guidelines for sexual health education incorporate pleasure. See <https://siecus.org/resources/the-guidelines/>. UNESCO also addresses sexual pleasure in their guidelines for sex education. See <https://www.unfpa.org/sites/default/files/pub-pdf/ITGSE.pdf>
2. Unless otherwise indicated, ‘women’ and ‘men’ refer to cisgender individuals.
3. Gender is defined here as “the condition of being male, female, or neuter. In a human context, sex usually refers to the biological aspects of maleness or femaleness, whereas gender implies the psychological, behavioral, social, and cultural aspects of being male or female (i.e., masculinity or femininity.)” (American Psychological Association [APA], 2015).

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## References

- Abrahams, N., DeVries, K., Watts, C., Pallitto, C., Petzold, M., Shamu, S., & García-Moreno, C. (2014). Worldwide prevalence of non-partner sexual violence: A systematic review. *The Lancet*, 383(9929), 1648–1654. [https://doi.org/10.1016/S0140-6736\(13\)62243-6](https://doi.org/10.1016/S0140-6736(13)62243-6)
- Abramson, P. R., & Pinkerton, S. D. (2002). *With pleasure: Thoughts on the nature of human sexuality*. Oxford University Press.
- Ågmo, A., & Laan, E. (under review). *Sexual incentive motivation and sexual behavior: The role of consent*.
- Alexander, M. G., & Fisher, T. D. (2003). Truth and consequences: Using the bogus pipeline to examine sex differences in self-reported sexuality. *Journal of Sex Research*, 4, 27–35.
- Alzate, H. (1985). Vaginal eroticism: A replication study. *Archives of Sexual Behavior*, 14(6), 529–537. <https://doi.org/10.1007/BF01541753>
- American Psychological Association. (2015). *APA dictionary of psychology* (2nd ed.). Author.
- Anderson, R. M. (2013). Positive sexuality and its impact on overall well-being. *Bundesgesundheitsblatt, Gesundheitsforschung, Gesundheitsschutz*, 56(2), 208–214. <https://doi.org/10.1007/s00103-012-1607-z>

- Anthony, G., Spiering, M., & Laan, E. (2012). *To come or not to come: Effects of different types of sexual stimulation on orgasm occurrence* [Unpublished manuscript]. Department of Psychology, University of Amsterdam.
- Armstrong, E. A., England, P., & Fogarty, A. C. K. (2012). Accounting for women's orgasm and sexual enjoyment in college hookups and relationships. *American Sociological Review*, 77(3), 435–462. <https://doi.org/10.1177/0003122412445802>
- Bachmann, G., Bancroft, J., Braunstein, G., Burger, H., Davis, S., Dennerstein, L., Goldstein, I., Guay, A., Leiblum, S., Lobo, R., Notelovitz, M., Rosen, R., Sarrel, P., Sherwin, B., Simon, J., Simpson, E., Shifren, J., Spark, R., & Traish, A. (2002). Female androgen insufficiency: The Princeton consensus statement on definition, classification, and assessment. *Fertility and Sterility*, 77(4), 660–665. [https://doi.org/10.1016/s0015-0282\(02\)02969-2](https://doi.org/10.1016/s0015-0282(02)02969-2)
- Bancroft, J. (2005). The endocrinology of sexual arousal. *The Journal of Endocrinology*, 186(3), 411–427. <https://doi.org/10.1677/joe.1.06233>
- Baranowski, A. M., & Hecht, H. (2015). Gender differences and similarities in receptivity to sexual invitations: Effects of location and risk perception. *Archives of Sexual Behavior*, 44(8), 2257–2265. <https://doi.org/10.1007/s10508-015-0520-6>
- Baumeister, R.F. (2000). Gender differences in erotic plasticity: The female sex drive as socially flexible and responsive. *Psychological Bulletin*, 126(3), 347–374.
- Baumeister, R. F., & Twenge, J.M. (2002). Cultural suppression of female Sexuality. *Review of General Psychology*, 6(2), 166–203. <https://doi.org/10.1037/1089-2680.6.2.166>
- Blackledge, C. (2004). *The story of V: A natural history of female sexuality*. Rutgers University Press.
- Both, S. (2020). Een leertheoretisch perspectief op seksueel functioneren [A learning theoretical perspective on sexual functioning]. *Tijdschrift Voor Seksuologie*, 44, 84–93.
- Both, S., Everaerd, W., & Laan, E. (2007). Desire emerges from excitement: A psychophysiological perspective on sexual motivation. In E. Janssen (Ed.), *The psychophysiology of sex* (pp. 327–339). Indiana University Press.
- Both, S., Spiering, M., Everaerd, W., & Laan, E. (2004). Sexual behavior and responsiveness to sexual stimuli following laboratory-induced sexual arousal. *Journal of Sex Research*, 41(3), 242–258. <https://doi.org/10.1080/00224490409552232>
- Boydell, V., Wright, K. Q., & Smith, R. D. (2021). A rapid review of sexual pleasure in first sexual experience(s). *Journal of Sex Research*, 58(7), 850–862. <https://doi.org/10.1080/00224499.2021.1904810>
- Bradford, N. J., & Spencer, K. (2020). Sexual pleasure in transgender and gender diverse individuals: An update on recent advances in the field. *Current Sexual Health Reports*, 12(4), 314–319. <https://doi.org/10.1007/s11930-020-00284-2>
- Brauer, M., Lakeman, M., van Lunsen, R. H. W., & Laan, E. (2014). Predictors of task-persistent and fear-avoiding behaviors in women with sexual pain disorders. *The Journal of Sexual Medicine*, 11(12), 3051–3063. <https://doi.org/10.1111/jsm.12697>
- Brauer, M., ter Kuile, M. M., Laan, E., & Trimbos, B. (2009). Cognitive-affective correlates and predictors of superficial dyspareunia. *Journal of Sex & Marital Therapy*, 35(1), 1–24. <https://doi.org/10.1080/00926230802525604>
- Braun, V., Gavey, N., & McPhillips, K. (2003). The 'fair deal'? Unpacking accounts of reciprocity in heterosex. *Sexualities*, 6(2), 237–261. <https://doi.org/10.1177/1363460703006002005>
- Brenot, P., & Broussin, B. (1996). Orgasm in utero? *Sexologies*, 5, 15–16.
- Brown, D. (1991). *Human universals*. Temple University Press.
- Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12(1), 1–14. <https://doi.org/10.1017/S0140525X00023992>
- Calabrese, S. K., Rosenberger, J. G., Schick, V. R., & Novak, D. S. (2015). Pleasure, affection, and love among black men who have sex with men (MSM) versus MSM of other races: Countering dehumanizing stereotypes via cross-race comparisons of reported sexual experience at last sexual event. *Archives of Sexual Behavior*, 44(7), 2001–2014. <https://doi.org/10.1007/s10508-014-0405-0>
- Carosa, E., Benvenga, S., Trimarchi, F., Lenzi, A., Pepe, M., Simonelli, C., & Jannini, E. A. (2002). Sexual inactivity results in reversible reduction of LH bioavailability. *International Journal of Impotence Research*, 14(2), 93–100. <https://doi.org/10.1038/sj.ijir.3900832>
- Carvalho, A., Godinho, L., & Costa, P. (2016). The impact of body dissatisfaction on distressing sexual difficulties among men and women: The mediator role of cognitive distraction. *The Journal of Sex Research*, 54(3), 331–340.
- Clark, R. D., & Hatfield, E. (1989). Gender differences in receptivity to sexual offers. *Journal of Psychology and Human Sexuality*, 2, 39–55.
- Clayton, A. H., & Vignozzi, L. (2018). Pathophysiology and medical management of hypoactive sexual desire disorder. In I. Goldstein, A. H. Clayton, A. T. Goldstein, N. N. Kim, & S. A. T. Kingsberg (Eds.), *Textbook of female sexual function and dysfunction: Diagnosis and treatment* (pp. 59–100). Wiley Blackwell.
- Conley, T. D. (2011). Perceived proposer personality characteristics and gender differences in acceptance of casual sex offers. *Journal of Personality and Social Psychology*, 100(2), 309–329. <https://doi.org/10.1037/a0022152>
- Conley, T. D., Rubin, J. D., Matsick, J. L., Ziegler, A., & Moors, A. C. (2014). Proposer gender, pleasure, and danger in casual sex offers among bisexual women and men. *Journal of Experimental Social Psychology*, 55, 80–88. <https://doi.org/10.1016/j.jesp.2014.06.002>
- Conley, T. D., Ziegler, A., & Moors, A. C. (2013). Backlash from the bedroom: Stigma mediates gender differences in acceptance of casual sex offers. *Psychology of Women Quarterly*, 37(3), 392–407. <https://doi.org/10.1177/0361684312467169>



- Dam, F. S. A. M., van Honnebier, W. J., van Zalinge, E. A., & Barendregt, J. T. (1976). Sexual arousal measured by photoplethysmography. *Behavior Engineering*, 3, 97–101.
- Dawson, S. J., & Chivers, M. L. (2014). Gender-specificity of solitary and dyadic sexual desire among gynephilic and androphilic women and men. *The Journal of Sexual Medicine*, 11(4), 980–994. <https://doi.org/10.1111/jsm.12430>
- De Block, A., & Adriaens, P. R. (2013). Pathologizing sexual deviance: A history. *Journal of Sex Research*, 50(3–4), 276–298. <https://doi.org/10.1080/00224499.2012.738259>
- De Bruijn, G. (1982). From masturbation to orgasm with a partner: How some women bridge the gap-and why others don't. *Journal of Sex & Marital Therapy*, 8(2), 151–167. <https://doi.org/10.1080/00926238208405819>
- De Graaf, H. (2018). Seksueel gedrag. In: H. de Graaf & C. Wijzen (Eds.), *Seksuele gezondheid in Nederland 2017* (pp. 21–36). Rutgers, Eburon.
- De Graaf, H., & Rademakers, J. (2011). The psychological measurement of childhood sexual development in Western societies: Methodological challenges. *Journal of Sex Research*, 48(2–3), 118–129. <https://doi.org/10.1080/00224499.2011.555929>
- de Jong, J. M. J., van Lumen, R. H. W., Robertson, E. A., Stam, L. N. E., & Lammes, F. B. (1995). Focal vulvitis: A psychosexual problem for which surgery is not the answer. *Journal of Psychosomatic Obstetrics & Gynecology*, 16(2), 85–91. <https://doi.org/10.3109/01674829509042783>
- Dekker, J., & Everaerd, W. (1988). Attentional effects on sexual arousal. *Psychophysiology*, 25(1), 45–54. <https://doi.org/10.1111/j.1469-8986.1988.tb00957.x>
- Del Giudice, M., Gangestad, S. W., & Kaplan, H. S. (2015). Life history theory and evolutionary psychology. In D. M. Buss (Ed.), *The handbook of evolutionary psychology* (pp. 88–114). New York: Wiley.
- Diamond, L. S., & Huebner, D. M. (2012). Is good sex good for you? Rethinking sexuality and health. *Social and Personality Psychology Compass*, 6(1), 54–69. <https://doi.org/10.1111/j.1751-9004.2011.00408.x>
- Douglass, M., & Douglass, L. (1997). *Are we having fun yet?* Hyperion.
- Eagly, A. H., & Wood, W. (1999). The origins of sex differences in human behavior: Evolved dispositions versus social roles. *American Psychologist*, 54(6), 408–423. <https://doi.org/10.1037/0003-066X.54.6.408>
- Eastwick, P. W., Luchies, L. B., Finkel, E. J., & Hunt, L. L. (2014). The predictive validity of ideal partner preferences: A review and meta-analysis. *Psychological Bulletin*, 140(3), 623–665. <https://doi.org/10.1037/a0032432>
- Elmerstig, E., Wijma, B., & Berterö, C. (2008). Why do young women continue to have sexual intercourse despite pain? *Journal of Adolescent Health*, 43(4), 357–363. <https://doi.org/10.1016/j.jadohealth.2008.02.011>
- Elmerstig, E., Wijma, B., & Swahnberg, K. (2009). Young Swedish women's experience of pain and discomfort during sexual intercourse. *Acta Obstetrica et Gynecologica Scandinavica*, 88(1), 98–103. <https://doi.org/10.1080/00016340802620999>
- Endendijk, J. J., van Baar, A. L., & Deković, M. (2020). He is a stud, she is a slut! A meta-analysis on the continued existence of sexual double standards. *Personality and Social Psychology Review*, 24(2), 163–190. <https://doi.org/10.1177/1088868319891310>
- Eshuis, J. H. (2020). Dertig jaar evolutionair psychologisch perspectief op seksualiteit [Thirty years of evolutionary psychological perspective on sexuality. *Tijdschrift Voor Seksuologie*, 44, 181–197. ]
- Festinger, L., & Carlsmith, J. M. (1959). Cognitive consequences of forced compliance. *The Journal of Abnormal and Social Psychology*, 58(2), 203–210. <https://doi.org/10.1037/h0041593>
- Fine, M., & McClelland, S. (2006). Sexuality education and desire: Still missing after all these years. *Harvard Educational Review*, 76(3), 297–338. <https://doi.org/10.17763/haer.76.3.w5042g23122n6703>
- Ford, J. V., Corona Vargas, E., Finotelli, I., Jr., Fortenberry, J. D., Kismödi, E., Philpott, A., Rubio-Auriales, E., & Coleman, E. (2019). Why pleasure matters: Its global relevance for sexual health, sexual rights and wellbeing. *International Journal of Sexual Health*, 31(3), 217–230. <https://doi.org/10.1080/19317611.2019.1654587>
- Frederick, D. A., John, H. K., St Garcia, J. R., & Lloyd, E. A. (2018). Differences in orgasm frequency among gay, lesbian, bisexual, and heterosexual men and women in a U.S. national sample. *Archives of Sexual Behavior*, 47(1), 273–288. <https://doi.org/10.1007/s10508-017-0939-z>
- Freud, S. (1953). Three essays on the theory of sexuality. In J. Strachey (Ed.), *The standard edition of the complete psychological works of Sigmund Freud*. Hogarth Press. (Original work published in 1905)
- Friedrich, W. N., Fisher, J., Broughton, D., Houston, M., & Shafran, C. R. (1998). Normative sexual behavior in children: a contemporary sample. *Pediatrics*, 101(4), E9. <https://doi.org/10.1542/peds.101.4.e99521975>
- Gagnon, J. H., & Simon, W. (1973). *Sexual conduct: The social origins of human sexuality*. Aldine.
- Galenson, E. (1990). Observation of early infantile sexual and erotic development. In M. E. Perry (Ed.), *Handbook of sexology, Vol.7: Childhood and adolescent sexology* (pp. 169–178). Elsevier.
- Galinsky, A. M., & Sonenstein, F. L. (2011). The association between developmental assets and sexual enjoyment among emerging adults in the United States. *The Journal of Adolescent Health*, 48(6), 610–615. <https://doi.org/10.1016/j.jadohealth.2010.09.008>
- Garcia, J. R., Lloyd, E. A., Wallen, K., & Fisher, H. E. (2014). Variation in orgasm occurrence by sexual orientation in a sample of US singles. *The Journal of Sexual Medicine*, 11(11), 2645–2652. <https://doi.org/10.1111/jsm.12669>
- Giorgi, G., & Siccardi, M. (1996). Ultrasonographic observation of a female fetus' sexual behavior in utero. *American Journal of Obstetrics and Gynecology*, 175(3 Pt 1), 753–753.

- Gold, S. R., Letourneau, E. J., & O'Donohue, W. O. (1995). Sexual Interaction Skills. In W. O. O'Donohue & L. Krasner (Eds.), *Handbook of psychological skills training: Clinical techniques and applications* (pp. 229–246). Allyn & Bacon.
- Goldley, K. L., & van Anders, S. M. (2012). Sexual arousal and desire: Interrelations and responses to three modalities of sexual stimuli. *The Journal of Sexual Medicine*, 9(9), 2315–2329. <https://doi.org/10.1111/j.1743-6109.2012.02845.x>
- Grabe, S., Ward, L. M., & Hyde, J. S. (2008). The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*, 134(3), 460–476. <https://doi.org/10.1037/0033-2909.134.3.460>
- Greiling, H., & Buss, D. M. (2000). Women's sexual strategies: The hidden dimension of extra-pair mating. *Personality and Individual Differences*, 28(5), 929–963. [https://doi.org/10.1016/S0191-8869\(99\)00151-8](https://doi.org/10.1016/S0191-8869(99)00151-8)
- Hall, K. S. K. (2019). Cultural differences in the treatment of sex problems. *Current Sexual Health Reports*, 11(1), 29–34. <https://doi.org/10.1007/s11930-019-00189-9>
- Hammes, S. R., & Levin, E. R. (2019). Impact of estrogens in males and androgens in females. *The Journal of Clinical Investigation*, 129(5), 1818–1826. <https://doi.org/10.1172/JCI125755>
- Harlow, B. L., Kunitz, C. G., Nguyen, R. H., Rydell, S. A., Turner, R. M., & MacLehose, R. F. (2014). Prevalence of symptoms consistent with a diagnosis of vulvodynia: Population-based estimates from 2 geographic regions. *American Journal of Obstetrics and Gynecology*, 210(1), 40.e1–40.e8. <https://doi.org/10.1016/j.ajog.2013.09.033>
- Hawks, L., Woolhandler, S., Himmelstein, D. U., Bor, D. H., Gaffney, A., & McCormick, D. (2019). Association between forced sexual initiation and health outcomes among US women. *JAMA Internal Medicine*, 179(11), 1551–1558. <https://doi.org/10.1001/jamainternmed.2019.3500>
- Heise, L. L., & Kotsadam, A. (2015). Cross-national and multilevel correlates of partner violence: An analysis of data from population-based surveys. *The Lancet Global Health*, 3(6), e332–40–e340. [https://doi.org/10.1016/S2214-109X\(15\)00013-3](https://doi.org/10.1016/S2214-109X(15)00013-3)
- Herbenick, D., Bartelt, E., Fu, T. C., Paul, B., Gradus, R., Bauer, J., & Jones, R. (2019). Feeling scared during sex: Findings from a U.S. probability sample of women and men ages 14 to 60. *Journal of Sex & Marital Therapy*, 45(5), 424–439. <https://doi.org/10.1080/0092623X.2018.1549634>
- Herbenick, D., Reece, M., Schick, V., Sanders, S. A., Dodge, B., & Fortenberry, J. D. (2010). An event-level analysis of the sexual characteristics and composition among adults ages 18 to 59: Results from a national probability sample in the United States. *The Journal of Sexual Medicine*, 7(Suppl 5), 346–361. <https://doi.org/10.1111/j.1743-6109.2010.02020.x>
- Higgins, J. A., & Hirsch, J. S. (2007). The pleasure deficit: Revisiting the “Sexuality connection” in reproductive health. *Perspectives on Sexual and Reproductive Health*, 39(4), 240–247. <https://doi.org/10.1363/3924007>
- Hite, S. (1976). *The Hite report*. Dell.
- Hollway, W. (1984). Women's power in heterosexual sex. *Women's Studies International Forum*, 7(1), 63–68. [https://doi.org/10.1016/0277-5395\(84\)90085-2](https://doi.org/10.1016/0277-5395(84)90085-2)
- Hooghe, M. (2012). Is sexual well-being part of subjective well-being? An empirical analysis of Belgian (Flemish) survey data using an extended well-being scale. *Journal of Sex Research*, 49(2–3), 264–273. [https://doi.org/10.1016/0277-5395\(84\)90085-2](https://doi.org/10.1016/0277-5395(84)90085-2)
- Hoppe, T. (2011). Circuits of power, circuits of pleasure: Sexual scripting in gay men's bottom narratives. *Sexualities*, 14(2), 193–217. <https://doi.org/10.1177/1363460711399033>
- Hsu, B., Cumming, R. G., Blyth, F. M., Naganathan, V., Le Couteur, D. G., Seibel, M. J., Waite, L. M., & Handelsman, D. J. (2015). The longitudinal relationship of sexual function and androgen status in older men: The Concord Health and Ageing in Men Project. *The Journal of Clinical Endocrinology & Metabolism*, 4, 1350–1358.
- Hull, T. (2008). Sexual pleasure and wellbeing. *International Journal of Sexual Health*, 20(1–2), 133–145. <https://doi.org/10.1080/19317610802157234>
- Jablonka, I. (2020). *Mannen die deugen [Righteous men]*. Prometheus. (Original work published in 2019).
- Janssen, E., & Everaerd, W. (1993). Determinants of male sexual arousal. *Annual Review of Sex Research*, 4, 211–245.
- Janssen, E., Everaerd, W., Spiering, M., & Janssen, J. (2000). Automatic processes and the appraisal of sexual stimuli: Toward an information processing model of sexual arousal. *Journal of Sex Research*, 37(1), 8–23. [Database] <https://doi.org/10.1080/00224490009552016>
- Janssen, E., Everaerd, W., van Lunsen, R. H. W., & Oerlemans, S. (1994). Visual stimulation facilitates penile responses to vibration in men with and without erectile disorder. *Journal of Consulting and Clinical Psychology*, 62(6), 1222–1228. <https://doi.org/10.1037/0022-006x.62.6.1222>
- Kantor, L. M., & Lindberg, L. (2020). Pleasure and sex education: The need for broadening both content and measurement. *American Journal of Public Health*, 110(2), 145–148. <https://doi.org/10.2105/AJPH.2019.305320>
- Kaplan, H. S. (1995). *The sexual desire disorders. Dysfunctional regulation of sexual motivation*. Brunner and Mazel.
- Katz-Wise, S. L., & Hyde, J. S. (2014). Sexuality and gender: The interplay. In D. L. Tolman, L. M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.), *APA handbook of sexuality and psychology, vol. 1. Person-based approaches* (pp. 29–62). American Psychological Association. <https://doi.org/10.1037/14193-002>
- Kettrey, H. H. (2018). “Bad girls” say no and “good girls” say yes: Sexual subjectivity and participation in undesired sex during heterosexual college hookups. *Sexuality & Culture*, 22, 685–705.

- Kiguwa, P. (2015). "I provide the pleasure, I control it": Sexual pleasure and "bottom" identity constructs amongst gay youth in a Stepping Stones workshop. *Reproductive Health Matters*, 23(46), 117–126. <https://doi.org/10.1016/j.rhm.2015.11.016>
- Kingsberg, S. A. (2005). Loss of sexual desire and menopause: Prevalence, causes and impact on quality of life. *The Female Patient*, 30, 57–63.
- Kirby, D. B., Laris, B. A., & Rolleri, L. A. (2007). Sex and HIV education programs: Their impact on sexual behaviors of young people throughout the world. *The Journal of Adolescent Health*, 40(3), 206–217. <https://doi.org/10.1016/j.jadohealth.2006.11.143>
- Klein, V., Laan, E., Brunner, F., & Briken, P. (in preparation). *Sexual Pleasure matters (at least for women): Sexual Health Data from a representative German Sex Survey (GeSid)*.
- Klein, V., Savaş, Ö., & Conley, T. D. (2021). How WEIRD and androcentric is sex research? Global inequities in study populations. *The Journal of Sex Research*, 1–8. DOI: [10.1080/00224499.2021.1918050](https://doi.org/10.1080/00224499.2021.1918050)
- Kleinplatz, P. J., Ménard, A. D., Paradis, N., Campbell, M., Dalglish, T., Segovia, A., & Davis, K. (2009). From closet to reality: Optimal sexuality among the elderly. *The Irish Psychiatrist*, 10(1), 15–18.
- Klusmann, D. (2002). Sexual motivation and the duration of partnership. *Archives of Sexual Behavior*, 31(3), 275–287. <https://doi.org/10.1023/A:1015205020769>
- Kohler, P. K., Manhart, L. E., & Lafferty, W. E. (2008). Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. *The Journal of Adolescent Health*, 42(4), 344–351. <https://doi.org/10.1016/j.jadohealth.2007.08.026>
- Kontula, O. (2009). *Between sexual desire and reality: The evolution of sex in Finland*. Väestöliitto - The Family Federation of Finland.
- Kontula, O., & Miettinen, A. (2016). Determinants of female sexual orgasms. *Socioaffective Neuroscience & Psychology*, 6(1), 31624. <https://doi.org/10.3402/snp.v6.31624>
- Laan, E., & Everaerd, W. (1995). Determinants of female sexual arousal: Psychophysiological theory and data. *Annual Review of Sex Research*, 6, 32–76.
- Laan, E., & van Lunsen, R. H. W. (1997). Hormones and sexuality in postmenopausal women: A psychophysiological study. *Journal of Psychosomatic Obstetrics & Gynecology*, 18(2), 126–133. <https://doi.org/10.3109/01674829709085579>
- Laan, E., van Lunsen, H. W., Prins, J. M., Nieuwkerk, P. T., & Nievaard, M. A. F. (2019). Testosterone insufficiency in human immunodeficiency virus-infected women: A cross-sectional study. *Sexual Medicine*, 7(1), 72–79. <https://doi.org/10.1016/j.esxm.2018.10.002>
- Laan, E., van Lunsen, R. H. W., & Everaerd, W. (2001). The effects of tibolone on vaginal blood flow, sexual desire and arousability in postmenopausal women. *Climacteric*, 4(1), 28–41.
- Lamb, S., & Plocha, A. (2014). Sexuality in childhood. In D. L. Tolman, L. M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.), *APA handbook of sexuality and psychology, vol. 1. Person-based approaches* (pp. 415–432). American Psychological Association. <https://doi.org/10.1037/14193-014>
- Landers, S., & Kapadia, F. (2020). The public health of pleasure: Going beyond disease prevention. *American Journal of Public Health*, 110(2), 140–141. <https://doi.org/10.2105/AJPH.2019.305495>
- Langfeldt, T. (1981). Childhood masturbation. In L. L. Constantine & F. M. Martinson (Eds.), *Children and sex* (pp. 63–74). Little, Brown and Company.
- Laumann, E. O., Nicolosi, A., Glasser, D., Paik, A., Gingell, C., Moreira, E., & Wang, T. (2005). Sexual problems among women and men aged 40–80 y: Prevalence and correlates identified in the Global Study of Sexual Attitudes and Behaviors. *International Journal of Impotence Research*, 17(1), 39–57. <https://doi.org/10.1038/sj.ijir.3901250>
- Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (1994). *The social organization of sexuality: Sexual practices in the United States*. University of Chicago Press.
- Le Moëne, O., & Ågmo, A. (2018). The neuroendocrinology of sexual attraction. *Frontiers in Neuroendocrinology*, 51, 46–67. <https://doi.org/10.1016/j.yfrne.2017.12.006>
- Leiblum, S., Bachmann, G., Kemmann, E., Colburn, D., & Swartzman, L. (1983). Vaginal atrophy in the postmenopausal woman: The importance of sexual activity and hormones. *JAMA*, 249(16), 2195–2198. <https://doi.org/10.1001/jama.1983.03330400041022>
- Levin, R. J. (2003). The G-spot: Reality or illusion? *Sexual and Relationship Therapy*, 18(1), 117–119. <https://doi.org/10.1080/1468199031000064487>
- Littleton, H., Abrahams, N., Bergman, M., Berliner, L., Blaustein, M., Cohen, J., Dworkin, E., Krahé, B., Peterson, Z., Pina, A., Rizvi, S., Weaver, T., Ybarra, M., & Zinzow, H. (2018). *Sexual assault, sexual abuse, and harassment: Understanding the mental health impact and providing care for survivors*. An International Society for Traumatic Stress Studies Briefing Paper. International Society for Traumatic Stress Studies. [www.istss.org/sexual-assault](http://www.istss.org/sexual-assault)
- Littleton, H., Tabernik, H., Canales, E. J., & Backstrom, T. (2009). Risky situation or harmless fun? A qualitative examination of college women's bad hook-up and rape scripts. *Sex Roles*, 60(11–12), 793–804. <https://doi.org/10.1007/s11199-009-9586-8>
- Lloyd, E. A. (2005). *The case of the female orgasm: Bias in the science of evolution*. Harvard University Press.
- Magnusson, K. (2020). *Interpreting Cohen's d effect size: An interactive visualization* (Version 2.4.2) [Web App]. R Psychologist. <https://rpsychologist.com/cohend/>
- Masters, W. H., Johnson, V. E., & Kolodny, R. C. (1982). *Human sexuality*. Little, Brown and Company.

- Meston, C. M., & Buss, D. M. (2007). Why humans have sex. *Archives of Sexual Behavior*, 36(4), 477–507. <https://doi.org/10.1007/s10508-007-9175-2>
- Mitchell, K. R., Lewis, R., O'Sullivan, L. F., & Fortenberry, J. D. (2021). What is sexual wellbeing and why does it matter for public health? *Lancet Public Health*, 6(8), e608–e613. [https://doi.org/10.1016/S2468-2667\(21\)00099-2](https://doi.org/10.1016/S2468-2667(21)00099-2)
- Mitricheva, E., Kimura, R., Logothetis, N. K., & Noori, H. R. (2019). Neural substrates of sexual arousal are not sex dependent. *Proceedings of the National Academy of Sciences of Sciences*, 116(31), 15671–15676. <https://doi.org/10.1073/pnas.1904975116>
- Morokoff, P. J., & Heiman, J. R. (1980). Effects of erotic stimuli on sexually functional and dysfunctional women: Multiple measures before and after sex therapy. *Behaviour Research and Therapy*, 18(2), 127–137. [https://doi.org/10.1016/0005-7967\(80\)90107-2](https://doi.org/10.1016/0005-7967(80)90107-2)
- Mueller, T., Gavin, L., & Kulkarni, A. (2008). The association between sex education and youth's engagement in sexual intercourse, age at first intercourse, and birth control use at first sex. *Journal of Adolescent Health*, 42(1), 89–96. <https://doi.org/10.1016/j.jadohealth.2007.08.002>
- Murray, S. H. (2019). *Not always in the mood: The new science of men, sex, and relationships*. Rowman & Littlefield.
- Oliver, M. B., & Hyde, J. S. (1993). Gender differences in sexuality: A meta-analysis. *Psychological Bulletin*, 114(1), 29–51. <https://doi.org/10.1037/0033-2909.114.1.29>
- Palmore, E. B. (1982). Predictors of the longevity difference: A 25-year follow-up. *The Gerontologist*, 22(6), 513–518. <https://doi.org/10.1093/geront/22.6.513>
- Petersen, J. L., & Hyde, J. S. (2010). A meta-analytic review of research on gender differences in sexuality, 1993–2007. *Psychological Bulletin*, 136(1), 21–38. <https://doi.org/10.1037/a001750>
- Peterson, Z. D., Janssen, E., & Laan, E. (2010). Women's sexual responses to heterosexual and lesbian erotica: The role of stimulus intensity, affective reaction, and sexual history. *Archives of Sexual Behavior*, 39(4), 880–897. <https://doi.org/10.1007/s10508-009-9546-y>
- Peterson, Z. D., & Muehlenhard, C. L. (2007). Conceptualizing the "wantedness" of women's consensual and nonconsensual sexual experiences: Implications for how women label their experiences with rape. *Journal of Sex Research*, 44(1), 72–88. <https://doi.org/10.1080/00224490709336794>
- Pfaus, J. G. (2009). Reviews: Pathways of sexual desire. *The Journal of Sexual Medicine*, 6(6), 1506–1533. <https://doi.org/10.1111/j.1743-6109.2009.01309.x>
- Pfaus, J. G., Kippin, T. E., Coria-Avila, G. A., Gelez, H., Afonso, V. M., Ismail, N., & Parada, M. (2012). Who, what, where, when (and maybe even why)? How the experience of sexual reward connects sexual desire, preference, and performance. *Archives of Sexual Behavior*, 41(1), 31–62. <https://doi.org/10.1007/s10508-012-9935-5>
- Piemonte, J. L., Conley, T. D., & Gusakova, S. (2019). Orgasm, gender, and responses to heterosexual casual sex. *Personality and Individual Differences*, 151, 109487. <https://doi.org/10.1016/j.paid.2019.06.030>
- Rastrelli, G., Corona, G., & Maggi, M. (2018). Testosterone and sexual function in men. *Maturitas*, 112, 46–52. <https://doi.org/10.1016/j.maturitas.2018.04.004>
- Rastrelli, G., Corona, G., Tarocchi, M., Mannucci, E., & Maggi, M. (2016). How to define hypogonadism? Results from a population of men consulting for sexual dysfunction. *Journal of Endocrinological Investigation*, 39(4), 473–484. <https://doi.org/10.1007/s40618-015-0425-1>
- Reed, D. B., Advincola, A. P., Fonde, K. R., Gorenflo, D. W., & Haefner, H. K. (2003). Sexual activities and attitudes of women with vulvar dysesthesia. *Obstetrics and Gynaecology*, 102, 325–331.
- Rees, J. C., van Spiering, M., & Laan, E. (2016). Orgasmeconsistentie van lesbische en heteroseksuele vrouwen tijdens partnerseks: De rol van clitorale stimulatie [Orgasm consistency of lesbian and heterosexual women during partnersex: The role of clitoral stimulation]. *Tijdschrift Voor Seksuologie*, 40, 68–75.
- Rickert, V. I., Sanghvi, R., & Wiemann, C. M. (2002). Is lack of sexual assertiveness among adolescent and young adult women a cause for concern? *Perspectives on Sexual and Reproductive Health*, 34(4), 178–183. <https://doi.org/10.2307/3097727>
- Rubin, G. S. (1984). Thinking sex: Notes for a radical theory of the politics of sexuality. In C. S. Vance (Ed.), *Pleasure and danger: Exploring female sexuality* (pp. 143–178). Routledge.
- Rubin, J. D., Conley, T. D., Klein, V., Liu, J., Lehane, C. M., & Dammeyer, J. (2019). A cross-national examination of sexual desire: The roles of 'gendered cultural scripts' and 'sexual pleasure' in predicting heterosexual women's desire for sex. *Personality and Individual Differences*, 151, 109502. <https://doi.org/10.1016/j.paid.2019.07.012>
- Rudman, L. A., Fetterolf, J. C., & Sanchez, D. T. (2013). What motivates the sexual double standard? More support for male versus female control theory. *Personality & Social Psychology Bulletin*, 39(2), 250–263. <https://doi.org/10.1177/0146167212472375>
- Russell, S. T., van Campen, K. S., & Muraco, J. A. (2012). Sexuality development in adolescence. In L. M. Carpenter & J. DeLamater (Eds.), *Sex for life: From virginity to Viagra, how sexuality changes throughout our lives* (pp. 70–87). New York University Press.
- Sanchez, D. T., Kiefer, A. K., & Ybarra, O. (2006). Sexual submissiveness in women: Costs for sexual autonomy and arousal. *Personality & Social Psychology Bulletin*, 32(4), 512–524. <https://doi.org/10.1177/0146167205282154>
- Semmens, J. P., & Semmens, F. J. (1978). The role of the vagina in female sexuality. In E. S. E. Havez, & F. N. Evans (Eds.), *The human vagina* (p. 213). Elsevier.
- Semmens, J. P., & Wagner, G. (1982). Estrogen deprivation and vaginal function in postmenopausal women. *JAMA*, 248(4), 445–448.
- Silva, E., Pascoal, P. M., & Nobre, P. (2016). Beliefs about appearance, cognitive distraction and sexual functioning

- in men and women: A mediation model based on cognitive theory. *The Journal of Sexual Medicine*, 13(9), 1387–1394. <https://doi.org/10.1016/j.jsxm.2016.06.005>
- Silver, E. R., Chadwick, S. B., & van Anders, S. M. (2019). Feminist identity in men: Masculinity, gender roles, and sexual approaches in feminist, non-feminist, and unsure men. *Sex Roles*, 80(5–6), 277–290. <https://doi.org/10.1007/s11199-018-0932-6>
- Simons, J.S. & Carey, M.P. (2001). Prevalence of sexual dysfunctions: Results of a decade of research. *Archives of Sexual Behavior*, 30(2), 177–219, DOI: 10.1023/a:1002729318254
- Tavares, I. M., Laan, E., & Nobre, P. J. (2018). Sexual inhibition is a vulnerability factor for orgasm problems in women. *The Journal of Sexual Medicine*, 15(3), 361–372. <https://doi.org/10.1016/j.jsxm.2017.12.015>
- Thigpen, J. W. (2009). Early sexual behavior in a sample of low-income, African American Children. *Journal of Sex Research*, 46(1), 67–79. <https://doi.org/10.1080/00224490802645286>
- Tiefer, L. (2004). *Sex is not a natural act and other essays* (2nd ed.). Westview Press.
- Toates, F. (2009). An integrative theoretical framework for understanding sexual motivation, arousal, and behavior. *Journal of Sex Research*, 46(2–3), 168–193. <https://doi.org/10.1080/00224490902747768>
- Toates, F. (2014). *How sexual desire works: The enigmatic urge*. Cambridge University Press.
- Tolman, D. (2002). *Dilemmas of desire: Teenage girls talk about sexuality*. Harvard University Press.
- Tolman, D. L., & McClelland, S. I. (2011). Normative sexuality development in adolescence: A decade in review, 2000–2009. *Journal of Research on Adolescence*, 21(1), 242–255. <https://doi.org/10.1111/j.1532-7795.2010.00726.x>
- Traeen, B., Markovic, A., & Kvale, I. L. (2016). Sexual satisfaction and body image: A cross-sectional study among Norwegian young adults. *Sexual and Relationship Therapy*, 31(2), 123–137. <https://doi.org/10.1080/14681994.2015.1131815>
- Traeen, B., Štulhofer, A., Janssen, E., Carvalheira, A. A., Hald, G. M., Lange, T., & Graham, C. (2019). Sexual activity and sexual satisfaction among older adults in four European countries. *Archives of Sexual Behavior*, 48(3), 815–829. <https://doi.org/10.1007/s10508-018-1256-x>
- Trivers, R. L. (1972). Parental investment and sexual selection. In B. Campbell (Ed.), *Sexual selection and the descent of man: 1871–1971* (pp. 136–179). Aldine.
- Tuana, N. (2008). Coming to understand: Orgasm and the epistemology of ignorance. In R. Proctor & L. Schiebinger (Eds.), *Agnology: The making and unmaking of ignorance* (pp. 108–145). Stanford University Press.
- UNICEF. (2014). *Hidden in plain sight: A statistical analysis of violence against children*. UNICEF Publications.
- UNICEF. (2020, May). *Female genital mutilation country profiles*. <https://data.unicef.org/resources/fgm-country-profiles/>
- Van Lunsen, H. W., Brauer, M., & Laan, E. (2013). Sex, pleasure and dyspareunia in liberal Northern Europe. In K. S. K. Hall & C. A. Graham (Eds.), *The cultural context of sexual pleasure and problems: Psychotherapy with diverse clients* (pp. 356–370). Routledge.
- Van Moorst, B. R., das Dores, S., van Lunsen, R. H. W., & Laan, E. T. M. (2018). Seksueel- en psychisch welbevinden na vrouwelijke genitale verminking: Een narratieve systematische review [Sexual and psychological wellbeing after female genital mutilation: A narrative systematic review]. *Nederlands Tijdschrift Voor Geneeskunde*, 162, D2196.
- Vignozzi, L., & Maseroli, E. (2019). Hormones and sex behaviour. In F. Petraglia & B. Fauser (Eds.), *Female reproductive dysfunction* (pp. 95–122). Springer. [https://doi.org/10.1007/978-3-030-14782-2\\_6](https://doi.org/10.1007/978-3-030-14782-2_6)
- Wade, L. D., Kremer, E. C., & Brown, J. (2005). The incidental orgasm: The presence of clitoral knowledge and the absence of orgasm for women. *Women & Health*, 42(1), 117–138. [https://doi.org/10.1300/J013v42n01\\_07](https://doi.org/10.1300/J013v42n01_07)
- Wang, Y., Gay, G. D., Botelho, J. C., Caudill, S. P., & Vesper, H. W. (2014). Total testosterone quantitative measurement in serum by LC-MS/MS. *Clinica Chimica Acta*, 436, 263–267. <https://doi.org/10.1016/j.cca.2014.06.009>
- Webb, L. (2015). Shame transfigured: Slut-shaming from Rome to cyberspace. *First Monday*, 20(4), 5464. <http://firstmonday.org/ojs/index.php/fm/article/view/5464/4419>
- Weijmar Schultz, W. C. M., van de Wiel, H. B. M., Klatter, J. A., Sturm, B. E., & Nauta, J. (1989). Vaginal sensitivity to electric stimuli: Theoretical and practical implications. *Archives of Sexual Behavior*, 18(2), 87–95. <https://doi.org/10.1007/BF01543115>
- Willis, M., Jozkowski, K. N., Lo, W., & Sanders, S. A. (2018). Are women's orgasms hindered by phallogocentric imperatives? *Archives of Sexual Behavior*, 47(6), 1565–1576. <https://doi.org/10.1007/s10508-018-1149-z>
- World Association of Sexual Health. (2019, October 15). *Declaration on sexual pleasure*. <https://worldsexualhealth.net/declaration-on-sexual-pleasure>
- World Economic Forum. (2018, December 17). *The global gender gap report 2018*. <https://www.weforum.org/reports/the-global-gender-gap-report-2018>
- World Health Organization. (2006). *Defining sexual health report of a technical consultation on sexual health*. World Health Organization. [http://www.who.int/reproductive-health/publications/sexual\\_health/defining\\_sexual\\_health.pdf](http://www.who.int/reproductive-health/publications/sexual_health/defining_sexual_health.pdf)
- Yeh, H. C., Lorenz, F. O., Wickrama, K. A. S., Conger, R. D., & Elder, G. H. Jr. (2006). Relationships among sexual satisfaction, marital quality, and marital instability at midlife. *Journal of Family Psychology*, 20(2), 339–343. <https://doi.org/10.1037/0893-3200.20.2.339>
- Zell, E., Krizan, Z., & Teeter, S. R. (2015). Evaluating gender similarities and differences using metasynthesis. *The American Psychologist*, 70(1), 10–20. <https://doi.org/10.1037/a0038208>