



# Sexual Desire and Fantasies in the LGBT+ Community: a Focus on Bisexuals, Transgender, and Other Shades of the Rainbow

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## Abstract

**Purpose of Review** The purpose of this review is to summarize the current knowledge on sexual desire expressions, sexual orientation, and identity in understudied groups inside the LGBT+ community.

**Recent Findings** Sexual desire and related problems have unique expressions in LGBT+ people which influence their sexual health. Emerging sex-positive approaches might be powerful and prominent tools to provide support and education on behalf of safer sex practices and marginalized sexualities. The importance of deepening LGBT+ sexualities and relationships, not only in lesbian women and gay men but also in all the other shades of the rainbow (bisexual, transgender, asexual, fluid, and non-binary/genderqueer identities), is strongly highlighted.

**Summary** A lack of literature regarding sexual desire in LGBT+ people is reported. Results are controversial and research is still limited on this topic, with little information available about sexual and health needs of sexual minorities beyond gay and lesbian people.

**Keywords** LGBT+ · Sexual desire · Sexual minority · Bisexuality · Transgender · Asexuality

## Introduction

Sexual desire and its expressions are complex, multifaceted, and difficult to define. In research, they are typically defined

as the subjective psychological status to initiate and maintain human sexual behavior triggered by external and internal stimuli [1]. Measures of sexual desire are usually indirect and focused on manifestations of drive (e.g., frequency of sexual intercourse or masturbation, sexual fantasies, arousal, self-reported level and intensity of sexual desire, sexual distress, attempts or receptivity to have sex). Expressions of desire differ widely both among individuals and within the same person, ranging from momentary fluctuations to broad changes over life [2]. Most available studies have focused on the sexual desire and fantasies on heterosexual women and men [3].

When it comes to expressions of sexual desire in the LGBT+ community, most studies focused primarily on lesbian and gay sexual functioning as they attempted to identify differences and similarities with heterosexual people. In many of these cases, the aim of the studies was to detect the determinants of sexual orientation rather than the idiosyncrasies of sexual expressions. Early studies were characterized by stereotypes and heteronormative beliefs, giving space for a more realistic view of sexuality in recent years. However, scientific and clinical expertise in this field is still inadequate. For an in-

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depth discussion of sexual desire and fantasies in lesbian women and gay men, readers are encouraged to refer to Nimbi et al. [4].

Focusing on other groups under the LGBT+ umbrella, limited research has investigated sexual desire in bisexual, transgender, asexual, fluid, and non-binary/genderqueer populations. Members of these populations seem even more invisible than gay and lesbian people among sexual minorities. The aim of the present review was to discuss the current knowledge about sexual desire and its manifestations in these neglected groups (bisexual, transgender, asexual, fluid, and non-binary/genderqueer people) belonging to the LGBT+ community with attention devoted to future research directions and some clinical suggestions.

## Methods

The manuscripts for this review were collected based on the results of a bibliographic research of relevant articles in Cochrane Library, Google Scholar, Web of Science, Scopus, and EBSCO. The search terms, including asterisks, were “sexual desire,” “LGBT,” “Bisexual,” “Transgender,” “Asexual,” “Fluidity,” “Non-binary,” “Genderqueer,” and related terms (e.g., MSM, WSW, Trans, Queer, Fluid). Additional terms included “sex\* drive,” “sex\* fantasies,” “sex\* motivation,” “sex\* arousal,” and “sex\* interest.” The results were reviewed following the aims of the current work. Experimental studies focusing on different expressions of sexual desire and biopsychosocial factors associated were selected. Books, systematic reviews, and meta-analyses describing models, guidelines, gold standards, treatment algorithms, and critical issues were also considered for a better characterization of the topic. Excluded studies were unrelated to the scope of this review (e.g., focusing only on heterosexual desire only). Article references were reviewed to find additional manuscripts. All articles selected were published in English and accessible in full text. When articles were not directly available, authors were solicited by email. A total of 61 articles and other sources were included in the present review, indicating an emergent body of research on LGBT+ sexuality in recent years.

## Results

The current review discusses the selected literature in paragraphs representing some groups of the LGBT+ community. For simplicity, we opted for describing 5 categories which are poorly represented elsewhere: bisexual, transgender, asexual, sexually fluid, and non-binary/genderqueer identities. This distinction may be, at times, too categorical and may underrepresent self-determination and flexibility in sexual behavior. Many studies did not differentiate between sexual

orientation (e.g., lesbian and bisexual women), and some authors preferred to use collective terms based on sexual behavior rather than identity such as men who have sex with men (MSM) and women who have sex with women (WSW). Other authors preferred to use terms such as “other sexual orientations,” “sexual minority women/men,” or “non-heterosexual orientation.” Due to these classification differences in the studies, comparing and discussing the evidence was quite challenging and findings should be interpreted with caution.

## Bisexual Women and Men

In the literature, many studies discussing sexual desire in lesbian women and gay men [4] have contemplated bisexual people within comprehensive categories such as MSM and WSW. Some of the conclusions drawn for lesbian and gay people could be similar for bisexuals, but further studies investigating the unique nature of sexual desire and erotic fantasies in bisexual women and men are urgently needed. On one hand, joining homosexual and bisexual people in sampling may have helped researchers in recruiting more participants and in focusing on risky behaviors (e.g., studies on STIs prevention and risk in MSM). On the other hand, it ascribed that bisexuals, homosexuals, and other people who have same-sex behavior are the same. This assumption might be incorrect and may express a form of invisibility of bisexual people in research. Thus, it is important to highlight some peculiarities emerging from the bisexual population in future studies.

Bisexual women and men commonly face specific prejudices from both heterosexual and homosexual people. Bisexuals are frequently considered as confused regarding their sexuality (e.g., considered as homosexual people who have not yet admitted their sexual orientation, to themselves or to others), sexually promiscuous, open to new experiences, unreliable romantic partners, and less inclined to maintain monogamous long-term relationships [5, 6]. Interestingly, an online study with lesbian and gay participants found that bisexual women and men were both perceived as being more sexually attracted to men than women. Lesbian women reported more negative attitudes towards bisexual women than, respectively, gay men towards bisexual men [7•].

The academic literature lacks evidence on sexual desire and arousal in bisexual women and men. Some studies reported that bisexual women usually showed higher levels of sexual desire compared with heterosexual and lesbian women [8–11]. In some cases, the higher level of interest has been interpreted as expression of a problematic sexuality or paraphilia, reinforcing the negative role of stereotypes of bisexuality.

Some studies suggested that response patterns to erotic stimuli in bisexual women may be different from other women [9]. For example, bisexual women looked equally long at

pictures of women and men, rating them similarly, while lesbian and heterosexual women paid more attention to women and men, respectively (in line with their sexual orientation). Bisexual women reported highly stable desire over time. Moreover, bisexuals reported higher sexual desire and arousal for women than heterosexuals and lesbians, while lesbians reported lower sexual arousal and desire with men than the other groups [12, 13].

Similar studies on bisexual men have focused on genital and self-reported sexual arousal to sexual stimuli. Rieger et al. [14] found that bisexual men do not seem to have strong genital arousal to both male and female stimuli. More specifically, most bisexual men appeared primarily genitally aroused by male stimuli, although some by female stimuli. In contrast, they reported a subjective sexual arousal fitting with a bisexual pattern (towards both men and women). More recent studies have demonstrated bisexual patterns of both subjective and genital arousal in bisexual men [15, 16].

Bisexual men and women showed significantly more fantasies about having more than one sexual partner than heterosexual and homosexual men and women, respectively [17]. Regarding relationships, bisexual people usually engage in negotiations and discussion about their sexual fantasies with their partners. A longitudinal study on bisexual women and their partners [18••] showed that the majority of couples lived in long-term monogamous relationships, whereas a safe space was devoted to discuss and define boundaries of their relationships. The fact that one partner may have sexual desire and fantasies for both genders may give the couple the possibility to talk more deeply about sexuality, to share their needs, and to work more properly towards emotional and sexual intimacy.

Fetish and kinky fantasies and behaviors seem to be diffused and have a prominent position in some bisexual, pansexual, and queer identities expressions [19•]. Kinky activities and BDSM (a variety of behaviors involving bondage, discipline, dominance, submission, sadomasochism, and other practices) could be good opportunities for exploring gender identity and sexual orientation. The BDSM community has been historically respectful of diversities and expressions [20]. Moreover, being inside a community can be an important supportive factor to contrast minority stress consequences such as shame, isolation, grief, and loss. This raises some important considerations for support and therapy. Kink-aware and sex-positive clinicians might have a uniquely suited approach and set of skills to work with bisexual, pansexual, and queer people [19•].

## Transgender Women and Men

During the years, transgender women and men have attracted many researchers as their condition questioned the existing knowledge and definitions regarding sexuality, identity,

mental health, and sexual functioning. Historically, the majority of empirical studies about transgender people described cases of patients undergoing the “sex reassignment surgery,” focusing on physiological and psychiatric outcomes in a clinical perspective [21]. Thus, they were first pathologized and then recognized as natural expression of gender identity thanks to the struggle of many activists and clinicians. Also, in sexology, research focused primarily on pharmacotherapy, surgical treatments, and mental health of this heterogeneous population. Few studies have attempted to understand transgender people’s sexual needs nor their desire to achieve a more satisfying sexual experience [22]. Having a healthy and pleasurable sexual life can be challenging for transgender individuals. Understanding the personal sexual expectations and values within the trans population is central to determine the kind of sexual health care they may require, which may vary widely for each individual.

Studies on sexual desire in transsexual people have focused primarily on the effects of hormonal treatments (HT) and gender affirmative surgery (GAS) [23•]. HT directly affects testosterone levels, which are connected to sexual drive expression. Trans women (MtF) who receive cross-sex hormone treatment usually experience a decrease in testosterone, whereas trans men (FtM) generally face an increase in testosterone levels. GAS may have less direct effects on sexual drive, whereas it seems to be more linked to general body satisfaction, personal sexual identity recognition, and sexual pleasure [24]. A recent online survey [23•] revealed that the most frequent sexual problems experienced by trans women and men in HT were desire and orgasm difficulties. Compared with trans people (both men and women) under HT only, trans people after GAS seemed to report low sexual desire, aversion, and arousal difficulties less often. A large Dutch study [24] considered 325 MtF and 251 FtM divided in 3 groups: no desire for treatment (NTD), wanting a treatment (UTD), and treatment fulfilled (FTD). For MtF, no difference was found regarding partnered sexual activity frequency among the 3 groups, while masturbation was higher in NTD than the other two groups. Regarding FtM, the frequency of masturbation and partnered sexual activity in UTD and FTD groups was higher than NTD. The authors underscored that UTD and FTD were taking HT, which may explain the desire variation between groups.

In general, we should be very careful in attributing powerful changes in sexuality to HT. The effect of testosterone treatments on sexual desire has been overestimated in recent years [2, 3]. Currently, there is no evidence to confirm a direct positive association between testosterone levels and sexual desire in FtM [25]. These findings are in line with other studies highlighting lower levels of sexual desire reported by MtF and higher levels reported by FtM after gender-confirming interventions [26–29]. However, sexual desire variation after GAS is not always perceived as distressful for trans people as

many reported it as a “desired” effect, perceiving it as the “typical” expression of their gender identity and role [28, 30]. Conversely, it should be noted that the will to adhere to stereotypic gender roles of the identified gender may also influence the expression of sexual desire and behavior in transgender people. For example, some FtM may report higher desire levels to show more masculine and virile attitudes and behavior [31, 32].

To better understand this controversial topic, other biopsychosocial factors should be considered. Body dysphoria, sexual satisfaction, fear of fetishization, depression, anxiety, and other mental health issues are relevant dimensions that should be taken into account in transgender people’s sexual life [22, 28]. Furthermore, internalized transphobia could have a negative role on sexual desire and satisfaction as highlighted for homonegativity in lesbian and gay people [23].

Regarding sexual fantasies, we did not find any available study in the literature which focused on the transgender population. However, some clinical reports highlighted a difference between pre- and post-surgery sexual fantasies in both FtM and MtF. Pre-surgery erotic imagery may be more characterized by fantasies of oneself belonging to the opposite biological sex (with focus on body parts), whereas the post-surgery imagery seems more adherent to the fantasies of the perceived gender (i.e., FtM are more in line with conventional fantasies presented by cisgender men) [33].

Diversity and variability within the transgender community in terms of identity, gender expression, sexual orientation, and lifestyle should also be recognized and celebrated in academic literature. Transgender people may benefit from sexual counseling at any stage of their transition and beyond [22], especially for those who experience distress in sexual desire or other sexual functions [27]. Clinicians should pay attention to potential psychological and social barriers to their patients’ sexual health and be prepared to offer a sex-positive clinical consultation, questioning their own prejudices and biases about trans-sexualities.

## Asexuals

Since the 1990s, many people began to identify as “asexual” through recognizing the absence of sexual attraction towards individuals of any gender [34–36]. Asexuality has intrigued researchers and clinicians as it challenges the idea of sexual desire as a basic human instinct and need. Some researchers have recognized asexuality as a heterogeneous entity that meets the criteria for a sexual orientation [37], but there is no full agreement in literature yet on this point.

Contrary to stereotypes depicting asexual people as uninterested in sexual expressions or feelings, they do not necessarily abstain from sex. Literature has highlighted a variability of approaches to sexuality, ranging from revulsion to

indifference in this population [34–36]. A recent study [38] highlighted that many asexual individuals reported sexual activities before realizing their asexual orientation. Interestingly, all participants have experienced relationships, connection, and romance in unique and creative ways. Another study [36] showed that some asexual people enjoyed arousal and orgasms in different ways than other sexual orientations. Asexual individuals are more likely to report never having had a sexual fantasy than other men and women. Usually, asexual individuals’ fantasies do not involve other people or, when involved, have a peripheral role or are faceless [39–41]. Some asexual individuals reported only objects, situations, or masturbation elicit desire and pleasure for them [41].

It may seem paradoxical, but many asexual people create significant relationships through BDSM, conventionally assumed to involve sexual interactions. Asexual BDSM practitioners seem to form non-sexual relationships based on affection and domination rather than fulfillment of sexual desire. For example, these people adapt BDSM practice to generate trust, courage, insight, self-discipline, power, and attunement in their relationships rather than sexual desire or pleasure [20, 41].

Asexual people may have desire and engage in sexual behavior, but our current definitions of sexuality are too strict and not comprehensive enough to describe their experiences. Lack of reliable tools, difficulties in recruiting sufficiently powered samples, and reliance on web-based asexual communities are the most common limitations of the available studies. Validated questionnaires to identify asexuality are available [42], but when it comes to sexual health, no one yet knows what asexual people need. Clinicians may be not prepared, aware, nor ready to fully understand and respect this population, and further efforts are needed to close the scientific gap.

## Sexual Fluidity

Sexual fluidity could be defined as situation-dependent flexibility in sexual responsiveness, which makes it possible for some people to experience attraction for either women or men regardless of their reported sexual orientation under certain circumstances [43]. In the literature, women appear to be more fluid than men regarding their sexual attraction and orientation over the lifespan [44]. Data from a Swedish survey on almost 2000 young participants [45] showed that women were twice as likely as men to report fluid attraction. Factors associated with fluidity in both women and men were a maximal fluidity peak between 25 and 34 years old, not being religious, living in urban contexts, and away from the family. Interestingly, fluid men reported higher education levels than men with more fixed sexual orientation and preferences.

Being fluid about sexual attraction and orientation does not mean that people are confused, perverted, or mentally unstable. Rather, it seems to have more to do with expanding sexual preferences and a pattern of attractions over time [45, 46]. Farr et al.

[46] showed that lesbian and bisexual women had more stable same-sex attraction during their lives, while fluid women reported more variable levels of attraction to men and women over time. Typically, the shifts are between adjacent categories referring to the Kinsey scale (such as “Exclusively heterosexual” and “Predominantly heterosexual, only incidentally homosexual”) rather than broader changes (e.g., from “Exclusively homosexual” to “Exclusively heterosexual”) [43].

Studies on arousal provided evidence that, while men demonstrated genital arousal primarily to female or male sexual stimuli (based on their sexual orientation), women exhibit genital arousal to both male and female sexual stimuli regardless of their orientation [44, 47]. Dawson and Chivers [48] reported the presence of a higher level of nonspecific gender pattern of arousal in androphilic women, both in solitary and dyadic desire rather than gynephilic women.

A recent study on erotic imagery reported that fantasies about having homosexual activities were more frequent in women than men [49]: about 42.4% of women have fantasized about watching two other women having sex, 35.7% about giving cunnilingus, and 36.9% about having sex with another woman although only 19% of the respondents considered themselves as bisexuals or lesbians. Interestingly, in the same study, also in men the percentages of people fantasizing about homosexual activities significantly exceeded the percentages of gay or bisexual men: approximately 26.8% of men fantasized about giving fellatio and 20.6% about having sex with another man.

In general, women seem to report less negative affect than men in response to thoughts about homosexual sexual activity [50] and the higher level of fluidity in women could be due to the fact that same-gender fantasies and behaviors could be more threatening to traditional male gender roles than to female ones, thus impeding men from exploring or recognizing themselves as fluid [51]. Other explanations were attributed to females’ higher erotic plasticity or being more open to change, while evolutionary psychology has proposed that fluidity may allow women in polygamous marriages to have sex with their cowives and reduce conflicts and tension [52]. Obviously, our knowledge on fluidity is still extremely lacking. Clear definitions and guidelines for sexual health are missing and clinicians may benefit from future studies focused on experiences, negotiation, and needs of fluid people [53].

### Non-binary/Genderqueer Identities

Some people may identify as non-binary or genderqueer, indicating a spectrum of gender identities that are not exclusively masculine or feminine. This umbrella collects people identifying as having two or more genders, no gender, moving/fluctuating between genders, being a “third” gender, and more. Epidemiological studies showed small percentages of non-binary people but, in terms of raw numbers, they represented a

sizable proportion of the population. About one-third of transgender people primarily identified as non-binary [54].

Non-binary people present a variety of sexual orientations and desire expressions, but research on this population is difficult and limited [55]. Regarding the aim of the current review, we did not find any source on sexual desire in non-binary/genderqueer population. However, this blank page represents the possibility to open interesting and totally new lines of research. This opportunity goes beyond the importance of understanding identities and labels. It may represent the possibility to better understand how gender identity, desire, and sexual behavior interact to produce different sexual expressions [56].

Queer identities are increasingly being recognized in western societies by the legal, medical, and psychological systems in line with the emerging advocacy of the LGBT+ rights and health needs [54]. However, non-binary and genderqueer people remain marginalized and at high risk of victimization and minority stress, including within the LGBT+ community. While not pathological in and of themselves, the experience of being invisible and ostracized may affect their mental and sexual health (high suicide risk, distress, high levels of depression and anxiety). Some suggestions to mental health professionals are present and valid [55], such as using gender-neutral pronouns chosen by the person (e.g., “they/them/hers”) and using gender-neutral terms that may prevent clients from feeling misunderstood. Psychologists are strongly encouraged to challenge the dominant binary assumption about gender identities, creating friendly environments that may include non-binary individuals and being supportive in the process of self-affirmation and improvement of quality of life [54].

### Conclusions

LGBT+ people demonstrated a variety of sexual expressions that are hard to categorize using the heteronormative sexual standards that permeate the literature and clinical practice. This review represents a small drop in the ocean of sexual diversity. The more we explore this topic, the more we should recognize that our theoretical backgrounds are too rigid and narrow to understand the kaleidoscopic nature of sexualities.

We urgently need to change our view on sexual health. It will be hard to consider distress as the main criteria for sexual problems while we cling to an antiquated view of “normal” sexual behavior. Negative sexual beliefs and attitudes may represent barriers to access to sexual health care. Recognizing them is part of clinical work and may allow significant improvements in care and treatment [57]. Addressing desire problems in LGBT+ people should include assessment of sexual practices, frequency of sexual activity, couple discrepancies in desires levels, and erotic repertoires [2, 3]. It is also important to explore how the couple communicates about sexual issues and improve said dialogue [58].

In conclusion, there is the need to recognize emerging sex-positive approaches as powerful and prominent tools to provide support and education on behalf of safer sex practices and marginalized sexualities. Sex-positivity is a non-judgmental philosophy that recognizes the differences in sexualities, beyond heteronormative penetrative intercourse, and encounters the individual needs of each person [59]. It argues the need to emphasize the personal meaning of sexuality and its relationship with health and well-being [60]. Overall, sex-positivity not only focuses on the absence of physical and emotional harm but also encourages the presence of positive pleasure. Health, pleasure, and consent are the pillars of this movement; aiming to privilege the capacity of sexual expression to engender intimacy and personal integrity [41]. Sex-positive therapists should create a comfortable environment where healthy sexuality can be acknowledged by the client, which may be very difficult for sexual minorities. This climate may encourage discussing intimate and personal topics and can promote positive outcomes in sexuality and intimacy [61].

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## Compliance with Ethical Standards

**Conflict of Interest** The authors declare that they have no conflict of interest.

**Human and Animal Rights and Informed Consent** This article does not contain any studies with human or animal subjects performed by any of the authors.

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## References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
- Of major importance

- 1 Mark K, Herbenick D, Fortenberry D, Sanders S, Reece M. The object of sexual desire: examining the “what” in “what do you desire?”. *J Sex Med.* 2014;11(11):2709–19. <https://doi.org/10.1111/jsm.12683>.
- 2 Nimbi FM, Tripodi F, Rossi R, Navarro-Cremades F, Simonelli C. Male sexual desire: an overview of biological, psychological, sexual, relational, and cultural factors influencing desire. *Sexual medicine reviews.* 2020;8(1):89–91. <https://doi.org/10.1016/j.sxm.2018.12.002>.
- 3 Nimbi FM, Tripodi F, Rossi R, Michetti PM, Simonelli C. Which psychosocial variables affect drive the most? Analysis of sexual desire in a group of Italian men. *Int J Impot Res.* 2019;31:410–23. <https://doi.org/10.1038/s41443-018-0105-8>.
- 4 Nimbi FM, Ciocca G, Limoncin E, Fontanesi L, Batuhan U, Flinchum M, Tambelli R, Jannini EA, Simonelli C. Sexual desire and fantasies in the LGBT+ community: focus on lesbian women and gay men. *Current Sexual Health Reports.* 2020; under review. <https://doi.org/10.1007/s11930-020-00263-7>.
- 5 Mohr JJ, Chopp RM, Wong SJ. Psychotherapists’ stereotypes of heterosexual, gay, and bisexual men. *Journal of Gay & Lesbian Social Services.* 2013;25(1):37–55. <https://doi.org/10.1080/10538720.2013.751885>.
- 6 Zivony A, Lobel T. The invisible stereotypes of bisexual men. *Arch Sex Behav.* 2014;43(6):1165–76. <https://doi.org/10.1007/s10508-014-0263-9ss>.
- [7•] Matsick JL, Rubin JD. Bisexual prejudice among lesbian and gay people: examining the roles of gender and perceived sexual orientation. *Psychology of Sexual Orientation and Gender Diversity.* 2018;5(2):143–55. <https://doi.org/10.1037/sgd0000283> **An interesting study about prejudice towards bisexuality among gay and lesbian people.**
- [8] Lippa RA. The relation between sex drive and sexual attraction to men and women: a cross-national study of heterosexual, bisexual, and homosexual men and women. *Arch Sex Behav.* 2017;36(2):209–22. <https://doi.org/10.1007/s10508-006-9146-z>.
- [9] Persson TJ, Ryder AG, Pfau JG. Comparing subjective ratings of sexual arousal and desire in partnered sexual activities from women of different sexual orientations. *Arch Sex Behav.* 2016;45(6):1391–402. <https://doi.org/10.1007/s10508-014-0468-y>.
- [10] Mark KP, Vowels LM, Bennett S, Norwick J. Sources for the formation of sexual values in lesbian, gay, bisexual, and straight adults and the impact on sexual satisfaction and desire. *American Journal of Sexuality Education.* 2018;13(4):399–410. <https://doi.org/10.1080/15546128.2018.1470950>.
- [11] Cherkasskaya E, Rosario M. The relational and bodily experiences theory of sexual desire in women. *Arch Sex Behav.* 2018;48(6):1659–81. <https://doi.org/10.1007/s10508-018-1212-9>.
- [12] Bouchard KN, Timmers AD, Chivers ML. Gender-specificity of genital response and self-reported sexual arousal in women endorsing facets of bisexuality. *Journal of Bisexuality.* 2015;15(2):180–203. <https://doi.org/10.1080/15299716.2015.1022924>.
- [13] Timmers AD, Bouchard KN, Chivers ML. Effects of gender and sexual activity cues on the sexual responses of women with multidimensionally defined bisexuality. *Journal of Bisexuality.* 2015;15(2):154–79. <https://doi.org/10.1080/15299716.2015.1023389>.
- [14] Rieger G, Chivers ML, Bailey JM. Sexual arousal patterns of bisexual men. *Psychol Sci.* 2005;16(8):579–84. <https://doi.org/10.1111/j.1467-9280.2005.01578.x>.
- [15] Cemy JA, Janssen E. Patterns of sexual arousal in homosexual, bisexual, and heterosexual men. *Arch Sex Behav.* 2011;40(4):687–97. <https://doi.org/10.1007/s10508-011-9746-0>.
- [16] Rosenthal AM, Sylva D, Safron A, Bailey JM. Sexual arousal patterns of bisexual men revisited. *Biological Psychology.* 2011; 88(1): 112–115. Doi: j.biopsycho.2011.06.015.
- [17] Schmitt DP. Universal sex differences in the desire for sexual variety: tests from 52 nations, 6 continents, and 13 islands. *J*

- Pers Soc Psychol. 2003;85(1):85–104. <https://doi.org/10.1037/0022-3514.85.1.85>.
- [18●●] Lahti A. Bisexual desires for more than one gender as a challenge to normative relationship ideals. *Psychology & Sexuality*. 2018;9(2):132–47. <https://doi.org/10.1080/19419899.2018.1441896> **An interesting paper highlighting how women's bisexuality often brought the monogamous norm under explicit negotiation inside couples.**
- [19●] Sprott RA, Hadcock BB. Bisexuality, pansexuality, queer identity, and kink identity. *Sexual and Relationship Therapy*. 2018;33(1–2):214–32. <https://doi.org/10.1080/14681994.2017.1347616> **A study on the interconnection between sexual orientation, identities, and BDSM practice.**
- [20] Botta D, Nimbi FM, Tripodi F, Silvaggi M, Simonelli C. Are role and gender related to sexual function and satisfaction in men and women practicing BDSM? *J Sex Med*. 2019;16(3):463–73. <https://doi.org/10.1016/j.jsxm.2019.01.001>.
- [21] Schilt K, Lagos D. The development of transgender studies in sociology. *Annu Rev Sociol*. 2017;43:425–43. <https://doi.org/10.1146/annurev-soc-060116-053348>.
- [22] Prunas A. The pathologization of trans-sexuality: historical roots and implications for sex counselling with transgender clients. *Sexologies*. 2019;28(3):e54–60. <https://doi.org/10.1016/j.sexol.2019.06.002>.
- [23●] Kerckhof ME, Kreukels BP, Nieder TO, Becker-Héblly I, van de Grift TC, Staphorsius AS, et al. Prevalence of sexual dysfunctions in transgender persons: results from the ENIGI follow-up study. *The journal of sexual medicine*. 2019;16(12):2018–29. <https://doi.org/10.1016/j.jsxm.2019.09.003> **A survey on the presence of sexual difficulties in trans men and women discussing important sexual health topics.**
- [24] Nikkelen SW, Kreukels BP. Sexual experiences in transgender people: the role of desire for gender-confirming interventions, psychological well-being, and body satisfaction. *Journal of sex & marital therapy*. 2018;44(4):370–81. <https://doi.org/10.1080/0092623X.2017.1405303>.
- [25] Wierckx K, Van Caenegem E, Elaut E, Dedeker D, Van de Peer F, Toye K, et al. Quality of life and sexual health after sex reassignment surgery in transsexual men. *J Sex Med*. 2011;8(12):3379–88. <https://doi.org/10.1111/j.1743-6109.2011.02348.x>.
- [26] Elaut E, De Cuyper G, De Sutter P, Gijs L, Van Trotsenburg M, Heylens G, et al. Hypoactive sexual desire in transsexual women: prevalence and association with testosterone levels. *Eur J Endocrinol*. 2008;158(3):393–9. <https://doi.org/10.1530/EJE-07-0511>.
- [27] Elaut E, Weyers S, Hoebeke P, Stockman S, Monstrey S. Sexuality and relationships of transgender people. In *The transgender handbook: a guide for transgender people, their families and professionals*. Nova Science. 2017; 117–131 Doi: 1854/LU-8151155.
- [28] Wierckx K, Elaut E, Van Hoorde B, Heylens G, De Cuyper G, Monstrey S, et al. Sexual desire in trans persons: associations with sex reassignment treatment. *J Sex Med*. 2014;11(1):107–18. <https://doi.org/10.1111/jsm.12365>.
- [29] Heß J, Henkel A, Bohr J, Rehme C, Panic A, Panic L, et al. Sexuality after male-to-female gender affirmation surgery. *Biomed Res Int*. 2018;2018:1–7. <https://doi.org/10.1155/2018/9037979>.
- [30] Doorduyn T, Van Berlo W. Trans people's experience of sexuality in the Netherlands: a pilot study. *J Homosex*. 2014;61(5):654–72. <https://doi.org/10.1080/00918369.2014.865482>.
- [31] Nimbi FM, Tripodi F, Rossi R, Simonelli C. Testing a conceptual model for men's sexual desire referring to automatic thoughts, emotions, sexual function, and sexism. *J Sex Med*. 2018;15(11):1518–26. <https://doi.org/10.1016/j.jsxm.2018.09.008>.
- [32] Nimbi FM, Tripodi F, Rossi R, Simonelli C. Expanding the analysis of psychosocial factors of sexual desire in men. *J Sex Med*. 2018;15(2):230–44. <https://doi.org/10.1016/j.jsxm.2017.11.227>.
- [33] Shepherdson C. Selection from the role of gender and the imperative of sex. In: *The transgender studies reader*: Routledge; 2013. p. 110–8.
- [34] Bogaert AF. Asexuality: prevalence and associated factors in a national probability sample. *Journal of Sex Research*. 2004;41(3):279–87. <https://doi.org/10.1080/00224490409552235>.
- [35] Scherrer KS. Coming to an asexual identity: negotiating identity, negotiating desire. *Sexualities*. 2008;11(5):621–41. <https://doi.org/10.1177/1363460708094269>.
- [36] Carrigan M. There's more to life than sex? Difference and commonality within the asexual community. *Sexualities*. 2011;14:462–78. <https://doi.org/10.1177/1363460711406462>.
- [37] Brotto LA, Yule M. Asexuality: sexual orientation, paraphilia, sexual dysfunction, or none of the above? *Arch Sex Behav*. 2017;46(3):619–27. <https://doi.org/10.1007/s10508-016-0802-7>.
- [38●●] Mitchell H, Hunnicutt G. Challenging accepted scripts of sexual “normality”: Asexual narratives of non-normative identity and experience. *Sexuality & Culture*. 2019;23(2):507–24. <https://doi.org/10.1007/s12119-018-9567-6> **A qualitative study on asexual narratives about sexual identity and experiences.**
- [39] Yule MA, Brotto LA, Gorzalka BB. Sexual fantasy and masturbation among asexual individuals. *Can J Hum Sex*. 2014;23(2):89–95. <https://doi.org/10.3138/cjhs.2409>.
- [40] Yule MA, Brotto LA, Gorzalka BB. Sexual fantasy and masturbation among asexual individuals: an in-depth exploration. *Arch Sex Behav*. 2017;46(1):311–28. <https://doi.org/10.1007/s10508-016-0870-8>.
- [41] Sloan LJ. Ace of (BDSM) clubs: building asexual relationships through BDSM practice. *Sexualities*. 2015;18(5–6):548–63. <https://doi.org/10.1177/1363460714550907>.
- [42] Yule MA, Brotto LA, Gorzalka BB. A validated measure of no sexual attraction: the asexuality identification scale. *Psychol Assess*. 2015;27(1):148–60. <https://doi.org/10.1037/a0038196>.
- [43] Bailey JM, Vasey PL, Diamond LM, Breedlove SM, Vilain E, Epprecht M. Sexual orientation, controversy, and science. *Psychol Sci Public Interest*. 2016;17(2):45–101. <https://doi.org/10.1177/1529100616637616>.
- [44] Welling LL, Singh K, Puts DA, Jones BC, Burriss RP. Self-reported sexual desire in homosexual men and women predicts preferences for sexually dimorphic facial cues. *Arch Sex Behav*. 2013;42(5):785–91. <https://doi.org/10.1007/s10508-012-0059-8>.
- [45] Ross MW, Daneback K, Månsson SA. Fluid versus fixed: a new perspective on bisexuality as a fluid sexual orientation beyond gender. *Journal of Bisexuality*. 2012;12(4):449–60. <https://doi.org/10.1080/15299716.2012.702609>.
- [46] Farr RH, Diamond LM, Boker SM. Female same-sex sexuality from a dynamical systems perspective: sexual desire, motivation, and behavior. *Arch Sex Behav*. 2014;43(8):1477–90. <https://doi.org/10.1007/s10508-014-0378-z>.
- [47] Chivers ML, Rieger G, Latty E, Bailey JM. A sex difference in the specificity of sexual arousal. *Psychol Sci*. 2004;15(11):736–44. <https://doi.org/10.1111/j.0956-7976.2004.00750.x>.
- [48] Dawson SJ, Chivers ML. Gender-specificity of solitary and dyadic sexual desire among gynephilic and androphilic women and men. *J Sex Med*. 2014;11(4):980–94. <https://doi.org/10.1111/jsm.12430>.
- [49] Joyal CC, Cossette A, Lapierre V. What exactly is an unusual sexual fantasy? *J Sex Med*. 2015;12(2):328–40. <https://doi.org/10.1111/jsm.12734>.
- [50] Carvalho J, Gomes AQ, Laja P, Oliveira C, Vilarinho S, Janssen E, et al. Gender differences in sexual arousal and affective responses

- to erotica: the effects of type of film and fantasy instructions. *Arch Sex Behav*. 2013;42(6):1011–9. <https://doi.org/10.1007/s10508-013-0076-2>.
- [51] Pedersen W, Kristiansen HW. Homosexual experience, desire and identity among young adults. *J Homosex*. 2008;54(1–2):68–102. <https://doi.org/10.1080/00918360801951962>.
- [52] Kanazawa S. Possible evolutionary origins of human female sexual fluidity. *Biol Rev*. 2017;92(3):1251–74. <https://doi.org/10.1111/brv.12278>.
- [53] Walker A. “I’m not a lesbian; I’m just a freak”: a pilot study of the experiences of women in assumed-monogamous other-sex unions seeking secret same-sex encounters online, their negotiation of sexual desire, and meaning-making of sexual identity. *Sexuality & Culture*. 2014;18(4):911–35. <https://doi.org/10.1007/s12119-014-9226-5>.
- [54] Matsuno E, Budge SL. Non-binary/genderqueer identities: a critical review of the literature. *Curr Sex Health Rep*. 2017;9(3):116–20. <https://doi.org/10.1007/s11930-017-0111-8>.
- [55] Richards C, Bouman WP, Seal L, Barker MJ, Nieder TO, T’Sjoen G. Non-binary or genderqueer genders. *International Review of Psychiatry*. 2016;28(1):95–102. <https://doi.org/10.3109/09540261.2015.1106446>.
- [56] Ciocca G, Zauri S, Limoncin E, Mollaioli D, D’Antuono L, Carosa E, et al. Attachment style, sexual orientation, and biological sex in their relationships with gender role. *Sexual medicine*. 2020;8(1):76–83. <https://doi.org/10.1016/j.esxm.2019.09.001>.
- [57] Delebarre C. Sexuality between women: clinical specificities? Elements of understanding with a view to improving treatments and care offered to WSW (women who have sex with women) for sexual health. *Sexologies*. 2019;28(3):96–103. <https://doi.org/10.1016/j.sexol.2019.05.011>.
- [58] Parish SJ, Hahn SR. Hypoactive sexual desire disorder: a review of epidemiology, biopsychology, diagnosis, and treatment. *Sexual medicine reviews*. 2016;4(2):103–20. <https://doi.org/10.1016/j.sxmr.2015.11.009>.
- [59] Glick E. Sex positive: feminism, queer theory, and the politics of transgression. *Feminist review*. 2000;64(1):19–45. <https://doi.org/10.1080/014177800338936>.
- [60] Kimmes JG, Mallory AB, Cameron C, Köse Ö. A treatment model for anxiety-related sexual dysfunctions using mindfulness meditation within a sex-positive framework. *Sex Relatsh Ther*. 2015;30(2):286–96. <https://doi.org/10.1080/14681994.2015.1013023>.
- [61] Baggett LR, Eisen E, Gonzalez-Rivas S, Olson LA, Cameron RP, Mona LR. Sex-positive assessment and treatment among female trauma survivors. *J Clin Psychol*. 2017;73(8):965–74. <https://doi.org/10.1002/jclp.22510>.

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