



Relational and Interpersonal Predictors of Sexual Satisfaction

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Abstract

Purpose of Review This review aims to compile recent research on the interpersonal and relational predictors of sexual satisfaction and to identify key trends in this area of research.

Recent Findings The introduction of the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS) in 1995 caused researchers to begin conceptualizing sexual satisfaction in a relational context, rather than as an evaluation of individual sexual experiences. This shift gave rise to more dyadic research on sexual satisfaction, and in recent years, dyad-focused research has identified a number of factors that either facilitate or attenuate sexual satisfaction at the partner and relational levels. Factors such as communication, sexual compatibility, and relationship satisfaction have all been shown to facilitate greater sexual satisfaction. Conversely, factors like desire discrepancies and sexual dysfunction are common attenuators. Though recent research has yielded a greater understanding of the factors that are associated with sexual satisfaction, the current review identified an acute lack of experimental manipulations and individual differences research in this area, which may inhibit the development of effective treatments to maximize sexual satisfaction at the couple-level.

Summary Current research on sexual satisfaction has identified a number of important interpersonal factors that predict sexual satisfaction levels; however, there is still a great need for research that will clarify the directionality of these relationships and examine individual differences to inform treatment development and clinical practice.

Keywords Sexual satisfaction · Dyadic research · Sexual relationships · Relationship satisfaction · Couples research · Romantic relationships

Introduction

Over the past 30 years, there has been a dramatic increase in research examining the factors that predict and contribute to experiences of sexual satisfaction, or a subjective feeling of happiness with one's sexual experiences and relationships (for a review, see 1). Importantly, research has disentangled sexual satisfaction from sexual distress, which refers to negative

emotionality such as worry, frustration, or anxiety related to sexual experiences and is a criterion for diagnosing clinically relevant sexual dysfunction [1]. The increase in research on satisfaction reflects an important deepening in our larger understanding of sexuality—that, in addition to understanding sexual problems and dysfunctions, it is critical to understand experiences of sexual well-being more broadly [1–4]. To that end, emerging research has found that sexual satisfaction seems to confer numerous psychological, relational, and physical health benefits [1, 4, 5], and is specifically associated with increased sexual functioning, decreased rates of depression, and quality of life buffers against a range of health-related concerns (e.g., cardiovascular disease and spinal cord injuries) [4–9].

As this body of research has expanded, so too have the definitions and models that seek to explain how and when sexual satisfaction arises. The most prominent and well-validated of these is the Interpersonal Exchange Model of Sexual Satisfaction (IEMSS), proposed by Lawrance and Byers in 1995 [10]. The IEMSS posits that individuals arrive at their total level of sexual satisfaction by weighing the

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positive and negative aspects of their sexual relationship [10–12]. Sexual satisfaction, in this context, would manifest when an individual perceives more sexual rewards than costs. While many additional models have been proposed to explain experiences of sexual satisfaction [13, 14], the IEMSS remains by far the most influential within sex research.

Interestingly, the IEMSS is relational in nature. Indeed, according to this framework, sexual satisfaction is not defined by one's evaluation of individual sexual experiences and feelings, but rather an evaluation of sexual relationships. This framing is echoed in the validated questionnaire associated with the IEMSS, which includes items such as the "extent to which you let your guard down with your partner," the "degree of emotional intimacy," and "how your partner treats you when you have sex" [15, 16•].

The relational framing of this model contradicts much of the extant research on sexual satisfaction, which has historically focused on individual-level outcomes (e.g., relationships between sexual satisfaction and sexual function, physical health, and psychological health). This reflects a paradoxically individualistic orientation in relationship research more generally, where over 70% of peer-reviewed articles only include individual-level data [17]. Additionally, this bias towards individual-level research reflects a conceptual problem: the most validated framework we have for conceptualizing sexual satisfaction is relational, and yet the majority of research in this area continues to ask individual-level questions that ignore the interpersonal context in which sexual satisfaction is likely to arise.

More recently, researchers within sexuality have begun to address this lack of relational research, acknowledging that sexual satisfaction is inherently interpersonal and that a deeper understanding of the construct requires dyadic data. This conceptual advancement has been coupled with necessary statistical innovations, as dyadic data requires specialized analytic strategies and considerations [17]. One particularly important shift in dyadic sexual satisfaction research has been the introduction of statistical models that examine both individual and partner effects concurrently and/or with cross-lagged parameters [17–19]. For example, one popular modeling strategy, actor-partner interdependence modeling (APIM), allows for an examination of [1] the factors within each individual in a couple that contributes to their personal levels of sexual satisfaction, as well as [2] the factors within each individual in a couple that contributes to their partner's levels of sexual satisfaction [17]. Research utilizing APIMS and similar models can, for the first time, allow us to rigorously examine how a range of variations within one individual can impact their partner's levels of sexual satisfaction over time [17–19].

From this emerging work with more advanced modeling techniques, we are beginning to have a more nuanced view of the couple-level factors that predict individual sexual satisfaction scores, as well as the individual variables that predict partner and couple levels of sexual satisfaction [14, 20•, 21,

22••]. To that end, the primary aim of this paper is to provide an overview of current research examining the interpersonal and relational predictors of sexual satisfaction. Given the influence of the IEMSS in this larger body of research, we will individually examine the relational factors that have been shown to facilitate and attenuate sexual satisfaction (i.e., sexual rewards and costs within the IEMSS). Taken together, it is our hope that this review can consolidate existing findings and elucidate research gaps in order to facilitate advances in dyadic sexual satisfaction research.

Relational Facilitators of Sexual Satisfaction

There is strong evidence to suggest that relationship factors and dynamics contribute to a large portion of the overall variance in sexual satisfaction scores, bolstering the idea that sexual satisfaction should be conceptualized within a relational context [i.e., 13, 14, 16•]. As the construct of relationship satisfaction broadly captures many nuanced aspects of relational functioning, many researchers have tried to examine the degree to which relationship satisfaction influences sexual satisfaction. That body of research has found a strong link between sexual and relational satisfaction that emerges across a wide range of cultural and relational contexts [12, 14, 16•, 23, 24]. More specifically, previous studies have observed this association in relationships with varying lengths and levels of commitment, in heterosexual and same-sex relationships, and across cultures and stages of life [12, 14, 16•, 23, 24, 25••].

While it is clear that sexual satisfaction is closely associated with relational satisfaction, the directionality of that relationship remains less obvious. For instance, a recent longitudinal study found a better fitting model with marital satisfaction preceding sexual satisfaction, suggesting that sexual satisfaction arises in the context of a well-functioning relationship rather than the reverse [26••]. Using the same statistical procedures and study design, another recent study found precisely the opposite pattern of results, with sexual satisfaction preceding and explaining relationship satisfaction, suggesting that relational satisfaction arises in the context of a robust and satisfying sex life [27••]. Still, other research finds that a bidirectional model, where sexual and relational satisfactions covary over time, best fits a longitudinal dataset [28]. Clinically, this confusion in the literature is quite meaningful; without a greater understanding of the temporal and causal pathways that link relational and sexual satisfaction, recommendations for clinical care become less clear. If relational satisfaction precedes and drives experiences of sexual satisfaction, couples therapy focusing on relationship factors may be a viable first-line treatment for sexual problems. If, on the other hand, sexual satisfaction is driving relational satisfaction, couples therapy interventions that exclusively focus on relationship

factors and do not attend specifically to the sexual relationship are unlikely to result in measurable sexual change.

To further complicate the picture, the relationship between sexual and relational satisfaction may also be influenced by individual and cultural variables. Indeed, a recent multi-wave study conducted in a Chinese sample found that for women, sexual satisfaction at wave one predicted relational satisfaction at wave two, while men showed the reverse relationship [25••]. Other research finds that the relationship between marital and sexual satisfaction may be moderated by attachment styles, such that individuals who have an anxious attachment style or an anxiously attached spouse depend on sexual satisfaction cues more for their overall sense of relational satisfaction [29]. Given the complexity of this relationship and the contradictory nature of many of the findings, more individual differences analyses are necessary to uncover the factors that influence the directionality of this larger relationship.

Relationship satisfaction is broad, and more granular aspects of this larger construct have also been examined in predicting overall sexual satisfaction. Communication, in particular, has been studied extensively to this end, and it seems that both sexual and non-sexual communications are important for sexual well-being and satisfaction [24, 30–32]. Indeed, there is even evidence to suggest that communication mediates the larger relationship between relational and sexual satisfaction [24]. Communication itself is proposed to be mechanistically connected to sexual satisfaction through sexual self-disclosure, which refers to sharing sexual preferences, values, past experiences, and attitudes [33]. MacNeil and Byers [34, 35] have hypothesized that this relationship progresses through two primary pathways, referred to as the instrumental and expressive pathways. In the instrumental pathway, individuals openly share their sexual preferences, allowing their partner to adapt sexual behavior to better meet their sexual needs and desires. Successful sexual self-disclosure via the instrumental pathway yields a more favorable balance of sexual rewards and costs by creating more pleasurable sexual experiences. The second pathway is the expressive pathway through which sexual communication itself leads to increased feelings of intimacy, which then confers sexual benefits. While MacNeil and Byers have found that both pathways influence sexual satisfaction, a number of factors such as gender, relationship satisfaction, and the nature of the self-disclosure itself moderate each pathway's effects on sexual satisfaction. For instance, sexual self-disclosure was associated with increased satisfaction and a better balance of sexual rewards and costs via the instrumental pathway. Both men and women's nonsexual self-disclosures, and women's sexual self-disclosures, were associated with satisfaction via the expressive pathway, with relationship satisfaction partially mediating this association [34].

Intimacy and affection have also been shown to facilitate sexual satisfaction. In a recent study examining the predictors of sexual satisfaction in over 1000 heterosexual couples, non-sexual, physical intimacy (i.e., kissing, cuddling, caressing) was

among the most predictive variables in a larger model [20••]. Strikingly, this pattern seems to hold among women experiencing genito-pelvic pain, for whom frequent hugging and kissing does not reduce experiences of pain intensity, but does amplify experiences of sexual satisfaction even in the context of pain [36•]. Similarly, there is evidence to suggest that affection provides a protective buffer for sexual satisfaction in couples in which one partner has a breast cancer diagnosis [37•]. Notably, there is some evidence to suggest that the timing of such physical intimacy and affection is important, with some research highlighting the specific salience of post-sex intimacy for overall sexual satisfaction [38•].

In addition to more general relationship variables, there are several factors specific to sexual relationships that have been shown to predict sexual satisfaction scores. Among the most potent of these predictors is sexual frequency, which seems to be critically important for overall sexual satisfaction at the couple-level [20••, 22••, 39]. Sexual frequency even partially mediates the steady decline in sexual satisfaction that typically presents as relationships progress in duration [40•]. In general, more frequent sexual activity seems to confer benefits to sexual satisfaction; however, several other factors impact this relationship, including patterns of sexual initiation, sexual variety, and orgasm [13, 34, 35, 36•]. More specifically, couples in which both partners frequently initiate sex and where neither partner endorses negative beliefs about women initiating sex seem to present with higher sexual satisfaction scores [41, 42]. This also seems to be true for couples who vary sexual activity and maintain a high frequency of oral as well as penetrative sex [43••]. Additionally, while orgasms are certainly important to experiences of sexual satisfaction, so too are reports of importance placed on partner's orgasm, suggesting the importance of relational processes in sexual activity [20••, 43••].

Finally, sexual compatibility may play a facilitatory role in dyadic sexual satisfaction. Couples who score similarly on measures of sexual excitation and inhibition (i.e., sexual turn-ons and turn-offs) demonstrate higher levels of sexual satisfaction [44]. Interestingly, additional empirical evidence suggests that perceived sexual compatibility may be even more important for sexual satisfaction than actual compatibility. One study assessed similarities between couples' scores on sexual excitation and inhibition measures, as well as each partner's perception of their overall compatibility [45]. In this context, perceived compatibility was far more predictive of sexual satisfaction scores, suggesting that having a perception of similarity to a partner may be more important for sexual relationships than observably demonstrating such similarity.

Relational Attenuators of Sexual Satisfaction

There are several factors that, when present in a romantic relationship, seem to inhibit experiences of sexual satisfaction.

Among the most influential of these attenuating predictors is sexual dysfunction [20••]. For women, sexual dysfunction encompasses concerns in the domains of sexual arousal, pain, desire, and/or orgasm. For men, sexual dysfunction encompasses difficulties with either erectile function, ejaculation, or sexual desire [46]. Approximately 40–50% of women will experience at least one form of sexual dysfunction in their lifetime—most commonly arousal and desire disorders—irrespective of age [47]. The most common form of sexual dysfunction in men is erectile dysfunction, though prevalence rates vary widely by age (with an overall prevalence rate ranging from 1 to 10% in men younger than 40, to a prevalence rate of 50–100% in men older than 70) [47]. For individuals experiencing sexual dysfunction, the direct pathway to lower levels of sexual satisfaction at the personal-level is clear—sex itself may be less pleasurable as a result of the sexual concerns, and sexual activity may consequently begin to induce performance anxiety that further inhibits the quality and enjoyment of sex [48]. Interestingly, sexual dysfunction does not only inhibit sexual satisfaction at the individual level. There is robust evidence to suggest that sexual dysfunction in one partner has a strong, negative impact on their partner's overall level of sexual satisfaction as well [20••, 49•]. One potential pathway through which sexual dysfunction creates lower sexual satisfaction in a partner is by restricting the overall range of available sexual behaviors and activities—a pattern which may be further compounded by an overall decrease in sexual frequency [49•]. Additionally, couples experiencing sexual dysfunction may struggle with sexual communication and self-disclosure, leading to a broader lack of intimacy that creates a negative sexual feedback loop [50].

Even for couples who are not experiencing a sexual dysfunction or concern, inter-partner differences in patterns of sexual desire and arousal can contribute to lower sexual satisfaction for both partners [22••, 51, 52•, 53, 54]. The term “desire discrepancy” was first discussed in the literature in 1980 by Zilbergeld and Ellison, who argued that individuals do not evaluate their sexual drive as “too high” or “too low” in general. Instead, individuals evaluate their sexual desire in relation to their partner and feel distressed when desire levels are perceived to dramatically differ [55]. Recent research has found that higher sexual desire discrepancy scores predict lower levels of sexual satisfaction, for both higher and lower desiring partners [22••, 51]. There is speculation that this pattern impacts sexual satisfaction by way of relational satisfaction, particularly for women, as individuals with desire discrepancies may fall into “demand-withdraw” relational patterns while attempting to bridge their gap in preferred sexual engagement levels [51, 52, 56]. Similarly, desire discrepancies can impact couple-level sexual satisfaction by creating a dynamic in which one partner feels resentful regarding unmet sexual needs, and the other partner increasingly associates sex with pressure rather than pleasure [56].

While sexual dysfunction and desire discrepancies are perhaps the most studied attenuators of sexual satisfaction in couples, several other factors have also been shown to inhibit dyadic sexual satisfaction. For instance, there is evidence to suggest that role strain, or a mismatch between the ideal and actual relationship role behaviors, contributes to lower sexual satisfaction in both partners [57]. There is also evidence to suggest that infidelity is costly to partner, but not individual, sexual satisfaction [58]. Additionally, while the impact of relationship duration on sexual satisfaction is still unclear, support is growing for a negative association between the two. One cross-sectional study found a non-significant effect of relationship duration on sexual satisfaction; however, a longitudinal study, created with the intention of clarifying this association, found a sharp increase in satisfaction within the first year of a relationship, followed by a steady decline thereafter [15, 33].

Finally, there is evidence that pornography consumption reduces overall sexual satisfaction for both the individual engaging with the pornographic material and their partner [58]. Though frequent pornography use is consistently found to be detrimental to sexual satisfaction, recent studies indicate that this relationship may actually be curvilinear such that occasional use (i.e., less than once per month) shows a slight positive association with sexual satisfaction [59, 60]. Moreover, this association may also be influenced by relationship-level variables. For instance, pornography consumption by only one partner leads to greater decrements in sexual satisfaction than if both or neither partner engages with such materials [61]. Within the context of marriage, one study found that female use of pornographic materials was positively associated with couple-level variance in satisfaction, though frequent use by either partner was still associated with lower satisfaction [62]. These findings underscore the complexity of sexual satisfaction and the various ways by which external factors can impact satisfaction at the individual and couple-level.

Conclusion

The literature base on couple-level sexual satisfaction has significantly increased in depth and rigor over the past decade, leading to significant advances in the way we conceptualize sexual satisfaction more broadly. By taking a couple-focused rather than individual-level approach, we have deepened our understanding of not only the factors that facilitate and attenuate sexual satisfaction but also the pathways by which these factors operate. Additionally, by beginning to conceptualize sexual satisfaction as a phenomenon that is intrinsically linked to sexual and romantic relationships, we have improved our ability to predict and model sexual satisfaction, increasing the precision and specificity of research findings in this area.

While these advances are important for the field at large, there remain notable gaps in our understanding of relationship dynamics and their impact on sexual satisfaction. One such gap is the lack of sufficient research on sexual satisfaction within sexual minority and nonmonogamous couples [63, 64]. There are a number of factors specific to these couples, such as sexual minority stress, internalized homonegativity, identity pride, and differing sexual scripts, that require investigation as they could differentially impact satisfaction [65].

Additionally, while we are beginning to have a better understanding of the factors associated with heterosexual couple-level sexual satisfaction, the directionality of most of these relationships remains unclear. For instance, we have no way of knowing if pornography consumption drives sexual dissatisfaction for both the consumer and their partner, or whether those who are already sexually unsatisfied are consequently more likely to use pornography. The lack of knowledge about the directionality of these associations makes it difficult to meaningfully apply the current literature to future clinical research and treatment implementation. Indeed, virtually, no research has experimentally manipulated any of these predictors in order to determine causality or the degree to which they can maximize sexual satisfaction outcomes. In part, these gaps may reflect the nascent nature of more rigorous dyadic data analytic techniques, with researchers still learning how to implement such modeling strategies. As it stands, this research area's largely correlational findings and its lack of experimental manipulations elucidate a larger issue: there exist extremely limited options in the way of empirically supported treatments for low sexual satisfaction.

In order to eventually develop and implement successful treatments in this area, we not only need more experimental research but also individual differences analyses. For instance, the directionality of the relationship between sexual and relational satisfaction is unclear, with several studies reporting directly contradictory results. The difficulty in determining which of these variables drives the other suggests that the relationship itself is nuanced and may look completely different based on a variety of individual, relational, and cultural factors. In addition to developing effective treatments, we also need a deeper understanding of which treatment targets are likely to be effective for which populations.

While dedicated treatments still need to be developed in this area, it is likely that some existing clinical strategies may be effective in enhancing sexual satisfaction outcomes. More specifically, couple's interventions (e.g., Gottman Method Therapy, emotion-focused therapy) that address communication may improve sexual satisfaction outcomes—particularly if those interventions help couples discuss sexual preferences and concerns in a more direct way [66, 67]. Such interventions may also have an impact on affection and intimacy, which may in turn improve sexual satisfaction [68]. Finally, several pharmacologic and psychological treatments

exist to treat sexual dysfunction (for an overview of assessment and treatment strategies, see [69]). Given the impact of sexual dysfunction on sexual satisfaction for both the person experiencing the dysfunction and for their partner, these treatments might yield improvements on function as well as satisfaction. Importantly, prospective research is needed to examine the effects of each of these interventions on sexual satisfaction specifically as a clinical outcome.

Taken together, recent dyadic research has illuminated the importance of both relationship and partner variables in overall sexual satisfaction. Consequently, it is becoming increasingly clear that research and clinical approaches in this area should continue to prioritize dyadic strategies and insights wherever possible. Notably, while previous research has identified a number of interpersonal factors that predict sexual satisfaction, simply identifying these factors will not allow us to fully understand the underlying nature of sexual satisfaction, nor will it help us create effective treatments for low satisfaction. More research is needed to uncover the causal pathways that link these known predictor variables to sexual satisfaction, as well as to develop effective treatments that reflect a deep understanding of these nuanced relationships.

Compliance with Ethical Standards

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

References

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

- Of importance
 - Of major importance
1. Stephenson KR, Meston CM. Differentiating components of sexual well-being in women: are sexual satisfaction and sexual distress independent constructs? *J Sex Med.* 2010;7(7):2458–68.
 2. Sánchez-Fuentes MM, Santos-Iglesias P, Sierra JC. A systematic review of sexual satisfaction. *Int J Clin Heal Psychol.* 2014;14(1): 67–75.
 3. Arrington R, Cofrancesco J, Wu AW. Questionnaires to measure sexual quality of life. *Qual Life Res.* 2004;13:1643–58.
 4. Dundon CM, Rellini AH. More than sexual function: predictors of sexual satisfaction in a sample of women age 40–70. *J Sex Med.* 2010;7(2 Pt 2):896–904.
 5. Althof SE, Buvat J, Gutkin SW, Belger M, Stothard DR, Fugl-Meyer AR. Sexual satisfaction in men with erectile dysfunction: correlates and potential predictors. *J Sex Med.* 2010;7(1 Pt 1): 203–15.
 6. Mendes AK, Cardoso FL, Savall ACR. Sexual satisfaction in people with spinal cord injury. *Sex Disabil.* 2008;53(7):557–60.
 7. Mosack V, Steinke EE, Wright DW, Walker C, Medina M, Moser DK, et al. Effects of depression on sexual activity and sexual satisfaction in heart failure. *Dimens Crit Care Nurs.* 2011;30(4):218–25.

8. Akkuş Y, Nakas D, Kalyoncu U. Factors affecting the sexual satisfaction of patients with rheumatoid arthritis and ankylosing spondylitis. *Sex Disabil.* 2010;28:222–32.
9. McCall-Hosenfeld JS, Freund KM, Legault C, Jaramillo SA, Cochrane BB, Manson JE, et al. Sexual satisfaction and cardiovascular disease: the Women's Health Initiative. *Am J Med.* 2008;121(4):295–301.
10. Lawrance K, Byers ES. Sexual satisfaction in long-term heterosexual relationships: the interpersonal exchange model of sexual satisfaction. *Pers Relatsh.* 1995;2(4):267–85.
11. Byers ES, Demmons S, Lawrance KA. Sexual satisfaction within dating relationships: a test of the interpersonal exchange model of sexual satisfaction. *J Soc Pers Relat.* 1998;15(2):257–67.
12. Byers ES, Macneil S. Further validation of the interpersonal exchange model of sexual satisfaction. *J Sex Marital Ther.* 2006;32(1):53–69.
13. Henderson AW, Lehavot K, Simoni JM. Ecological models of sexual satisfaction among lesbian/bisexual and heterosexual women. *Arch Sex Behav.* 2009;38(1):50–65.
14. la France BH. Predicting sexual satisfaction in interpersonal relationships. *South Commun J.* 2010;75(3):195–214.
15. Lawrance K, Byers E, Cohen J. Interpersonal exchange model of sexual satisfaction questionnaire. In: *sexuality-related measures: a compendium*, vol. 2; 1998. p. 525–30.
16. Sánchez-Fuentes MDM, Santos-Iglesias P, Byers ES, Sierra JC. Validation of the interpersonal exchange model of sexual satisfaction questionnaire in a Spanish sample. *The Journal of Sex Research.* 2015;52(9):1028–1041. **This study included an evaluation of the IEMSSQ for same-sex couples. Psychometric analyses indicate that the IEMSSQ can reliably assess sexual satisfaction levels among this population, suggesting the broad applicability of the model across diverse groups.**
17. Kenny DA, Kashy DA, Cook WL. *Dyadic data analysis*: Guilford Press; 2006.
18. Kenny DA, Kashy DA, Kashy DA. Dyadic data analysis using multilevel modeling. *Handbook of advanced multilevel analysis.* 2011;335–370
19. Kenny DA. Cross-lagged panel design. In: *Wiley StatsRef: statistics reference online*. Chichester: Wiley, Ltd; 2014.
20. Fisher WA, Donahue KL, Long JS, Heiman JR, Rosen RC, Sand MS. Individual and partner correlates of sexual satisfaction and relationship happiness in midlife couples: dyadic analysis of the international survey of relationships. *Arch Sex Behav.* 2015;44(6):1609–20 **Using the actor-partner interdependence model, this largescale dyadic analysis found a variety of factors at the individual level that contribute to partner-level relationship and sexual satisfaction, suggesting the importance of partner-level traits for overall individual satisfaction.**
21. Heiman JR, Long JS, Smith SN, Fisher WA, Sand MS, Rosen RC. Sexual satisfaction and relationship happiness in midlife and older couples in five countries. *Arch Sex Behav.* 2011;40(4):741–53.
22. Velten J, Margraf J. Satisfaction guaranteed? How individual, partner, and relationship factors impact sexual satisfaction within partnerships. *PLoS One [Internet].* 2017;12(2):e0172855 **This study evaluated how individual, partner, and relationship level factors, specific to a sexual relationship, affect sexual satisfaction. Utilizing the actor-partner interdependence model, several actor effects, such as sexual dysfunction and frequency, as well as gender-specific partner effects, such as sexual function and distress, were identified.**
23. Byers ES. Relationship satisfaction and sexual satisfaction: a longitudinal study of individuals in long-term relationships. *J Sex Res.* 2005;42(2):113–8.
24. Mark KP, Jozkowski KN. The mediating role of sexual and non-sexual communication between relationship and sexual satisfaction in a sample of college-age heterosexual couples. *J Sex Marital Ther.* 2013;39(5):410–27.
25. Cao H, Zhou N, Fine MA, Li X, Fang X. Sexual satisfaction and marital satisfaction during the early years of Chinese marriage: a three-wave, cross-lagged, actor-partner interdependence Model. *J Sex Res.* 2019;56(3):391–407 **This study aimed to explain the directionality of the relationship between sexual and marital satisfaction, specifically in a non-Western sample. Findings indicate a potential gender difference in the directionality of this relationship.**
26. Vowels LM, Mark KP. Relationship and sexual satisfaction: a longitudinal actor-partner interdependence model approach. *Sex Relatsh Ther.* 2020;35(1):46–59 **This longitudinal study aimed to evaluate the directionality of the relationship between relationship satisfaction and sexual satisfaction. Cross-sectional and longitudinal data indicate a better fitting model with relationship satisfaction predicting sexual satisfaction.**
27. Fallis EE, Rehman US, Woody EZ, Purdon C. The longitudinal association of relationship satisfaction and sexual satisfaction in long-term relationships. *J Fam Psychol.* 2016;30(7):822–31 **This longitudinal study aimed to identify the directionality of the relationship between sexual and relational satisfaction, finding that sexual satisfaction predicted relationship satisfaction, and that this relationship was stronger for men than for women.**
28. Quinn-Nilas C. Relationship and sexual satisfaction: a developmental perspective on bidirectionality. *J Soc Pers Relat.* 2019;37(2):624–46.
29. Butzer B, Campbell L. Adult attachment, sexual satisfaction, and relationship satisfaction: a study of married couples. *Pers Relatsh.* 2008;15(1):141–54.
30. Litzinger S, Gordon KC. Exploring relationships among communication, sexual satisfaction, and marital satisfaction. *J Sex Marital Ther.* 2005;31(5):409–24.
31. Montesi JL, Fauber RL, Gordon EA, Heimberg RG. The specific importance of communicating about sex to couples' sexual and overall relationship satisfaction. *J Soc Pers Relat.* 2011;28(5):591–609.
32. Theiss JA. Modeling dyadic effects in the associations between relational uncertainty, sexual communication, and sexual satisfaction for husbands and wives. *Communic Res.* 2011;38(4):565–84.
33. Snell WE, Belk SS, Papini DR, Clark S. Development and validation of the sexual self-disclosure scale. *Ann Sex Res.* 1989;2(4):307–34.
34. MacNeil S, Byers ES. Dyadic assessment of sexual self-disclosure and sexual satisfaction in heterosexual dating couples. *J Soc Pers Relat.* 2005;22(2):169–81.
35. MacNeil S, Byers ES. Role of sexual self-disclosure in the sexual satisfaction of long-term heterosexual couples. *J Sex Res.* 2009;46(1):3–14.
36. Vannier SA, Rosen NO, Mackinnon SP, Bergeron S. Maintaining affection despite pain: daily associations between physical affection and sexual and relationship well-being in women with genitopelvic pain. *Arch Sex Behav.* 2017;46(7):2021–31 **This study evaluated the impact of physical affection on the sexual-well being of women with (PVD). Women reporting more physical affection also reported higher sexual and relational satisfaction, as well as sexual function. These findings imply that couple-based interventions for PVD should involve increasing daily affection to stimulate better sexual well-being.**
37. Rottmann N, Gilså Hansen D, dePont Christensen R, Hagedoorn M, Frisch M, Nicolaisen A, et al. Satisfaction with sex life in sexually active heterosexual couples dealing with breast cancer: a nationwide longitudinal study. *Acta Oncol (Madr).* 2017;56(2):212–9 **This study evaluated changes in sexual satisfaction over time in couples coping with breast cancer. Affection, orgasm ability, and emotional closeness were a few factors found to have a positive association with satisfaction for both the patient and their partner. This indicates that sexual satisfaction should be**

- evaluated as a couple-level issue, as partner and relationship level factors were associated with satisfaction.
38. Muise A, Giang E, Impett EA. Post sex affectionate exchanges promote sexual and relationship satisfaction. *Arch Sex Behav.* 2014;43(7):1391–402 **This paper evaluated the effects of post-sex affection, such as kissing and cuddling, on overall relational and sexual satisfaction. Results indicate that the duration of the post-sex affection was positively associated with sexual and relational satisfaction for both partners.**
 39. Schoenfeld EA, Loving TJ, Pope MT, Huston TL, Štulhofer A. Does sex really matter? Examining the connections between spouses' non-sexual behaviors, sexual frequency, sexual satisfaction, and marital satisfaction. *Arch Sex Behav.* 2017;46(2):489–501.
 40. Schmiedeberg C, Schröder J. Does sexual satisfaction change with relationship duration? *Arch Sex Behav.* 2016;45(1):99–107 **This study evaluated the impact of relationship duration on sexual satisfaction. There have been contradicting findings about this relationship, but the longitudinal nature of the study aimed to clarify these. The results indicate a steady decline in sexual satisfaction after a spike in the second half of the first year.**
 41. Byers ES, Heinlein LH. Predicting initiations and refusals of sexual activities in married and cohabiting heterosexual couples. *J Sex Res.* 1989;26(2):210–31.
 42. Lau JTF, Yang X, Wang Q, Cheng Y, Tsui HY, Mui LWH, et al. Gender power and marital relationship as predictors of sexual dysfunction and sexual satisfaction among young married couples in rural China: a population-based study. *Urology.* 2006;67(3):579–85.
 43. Frederick DA, Lever J, Gillespie BJ, Garcia JR. What Keeps Passion Alive? Sexual satisfaction is associated with sexual communication, mood setting, sexual variety, oral sex, orgasm, and sex frequency in a national U.S. Study. *J Sex Res.* 2017;54(2):186–201 **This study aimed to identify factors that protect against decreases in passion and sexual satisfaction in long-term relationships. This study identified a number of protective factors that could be targeted in clinical treatments to increase satisfaction.**
 44. Lykins AD, Janssen E, Newhouse S, Heiman JR, Rafaeli E. The effects of similarity in sexual excitation, inhibition, and mood on sexual arousal problems and sexual satisfaction in newlywed couples. *J Sex Med.* 2012;9(5):1360–6.
 45. Mark KP, Milhausen RR, Maitland SB. The impact of sexual compatibility on sexual and relationship satisfaction in a sample of young adult heterosexual couples. *Sex Relatsh Ther.* 2013;28(3):201–14.
 46. Reed GM, Drescher J, Krueger RB, Atalla E, Cochran SD, First MB, et al. Disorders related to sexuality and gender identity in the ICD-11: revising the ICD-10 classification based on current scientific evidence, best clinical practices, and human rights considerations. *World Psychiatry.* 2016;15(3):205–21.
 47. McCabe MP, Sharlip ID, Lewis R, Atalla E, Balon R, Fisher AD, et al. Incidence and prevalence of sexual dysfunction in women and men: a consensus statement from the fourth international consultation on sexual medicine. *J Sex Med.* 2016;13:144–52.
 48. Barlow DH. Causes of sexual dysfunction: the role of anxiety and cognitive interference. *J Consult Clin Psychol.* 1986;54(2):140–8.
 49. Jodouin JF, Bergeron S, Janssen E. The mediating role of sexual behavior in event-level associations between sexual difficulties and sexual satisfaction in newlywed mixed-sex couples. *J Sex Med.* 2018;15(10):1384–92 **This study assessed newlywed's experience of subclinical sexual difficulties, sexual behaviors, and sexual satisfaction and found that difficulties with arousal were associated with a smaller range in behaviors and lower satisfaction for both partners. This indicates that interventions for satisfaction should be couple based and target sexual activities as well as any sexual difficulties.**
 50. Mallory AB, Stanton AM, Handy AB. Couples' sexual communication and dimensions of sexual function: a meta-analysis. *J Sex Res.* 2019;56(7):882–98.
 51. Mark KP, Murray SH. Gender differences in desire discrepancy as a predictor of sexual and relationship satisfaction in a college sample of heterosexual romantic relationships. *J Sex Marital Ther.* 2012;38(2):198–215.
 52. Willoughby BJ, Farero AM, Busby DM. Exploring the effects of sexual desire discrepancy among married couples. *Arch Sex Behav.* 2014;43(3):551–62. **This article evaluated the impact of actor and partner sexual desire discrepancy on relational factors, such as stability, communication, conflict, and satisfaction. Findings indicated that greater discrepancies in desire for sex were associated with lower relational outcomes for both partner.**
 53. Willoughby BJ, Vitas J. Sexual desire discrepancy: the effect of individual differences in desired and actual sexual frequency on dating couples. *Arch Sex Behav.* 2012;41(2):477–86.
 54. Bridges SK, Horne SG. Sexual satisfaction and desire discrepancy in same sex women's relationships. *J Sex Marital Ther.* 2007;33(1):41–53.
 55. Zilbergeld B, Ellison C. Desire discrepancies and arousal problems in sex therapy. Chapter in *Principles and Practice of Sex Therapy*, Leiblum, SR & Previn, LA. 1980
 56. Davies S, Katz J, Jackson JL. Sexual desire discrepancies: effects on sexual and relationship satisfaction. *Archives Sex Behav.* 1999;28(6):553–67.
 57. Frank E, Anderson C, Rubinstein D. Marital role strain and sexual satisfaction. *J Consult Clin Psychol.* 1979;47(6):1096–103.
 58. Yucel D, Gassanov MA. Exploring actor and partner correlates of sexual satisfaction among married couples. *Soc Sci Res.* 2010;39(5):725–38.
 59. Wright PJ, Steffen NJ, Sun C. Is the relationship between pornography consumption frequency and lower sexual satisfaction curvilinear? Results from England and Germany. *J Sex Res.* 2019;56(1):9–15.
 60. Wright PJ, Miezan E, Sun C. Pornography consumption and sexual satisfaction in a Korean sample. *Journal of Media Psychology: Theories, Methods, and Applications.* 2018;31(3):164–9.
 61. Newstrom NP, Harris SM. Pornography and couples: what does the research tell us. *Cont Fam Ther.* 2016;38(4):412–23.
 62. Brown CC, Carroll JS, Yorgason JB, Busby DM, Willoughby BJ, Larson JH. A common-fate analysis of pornography acceptance, use, and sexual satisfaction among heterosexual married couples. *Arch Sex Behav.* 2017;46(2):575–84.
 63. Parsons JT, Starks TJ, Gamarel KE, Grov C. Non-monogamy and sexual relationship quality among same-sex male couples. *J Fam Psychol.* 2012;26(5):669–77.
 64. Moreno-Domínguez S, Raposo T, Elipe P. Body image and sexual dissatisfaction: differences among heterosexual, bisexual, and lesbian women. *Front Psychol.* 2019;10:903.
 65. Baldwin A, Herbenick D, Schick VR, Light B, Dodge B, Jackson CA, et al. Sexual satisfaction in monogamous, nonmonogamous, and unpartnered sexual minority women in the US. *J Bisex.* 2019;19(1):103–19.
 66. Gottman J, Gottman J. *Gottman couples therapy.* In: Gurman A, Lebow J, Snyder D, editors. *Clinical handbook of couples therapy.* 5th ed. New York: The Guilford Press; 2015.
 67. Denton WH, Burlinson BR, Clark TE, Rodriguez CP, Hobbs BV. A randomized trial of emotion-focused therapy for couples in a training clinic. *J Marital Fam Ther.* 2000;26(1):65–78.
 68. Davoodvandi M, Navabi Nejad S, Farzad V. Examining the effectiveness of gottman couple therapy on improving marital adjustment and couples' intimacy. *Iran J Psychiatry.* 2018;13(2):135–41.
 69. Wincze J, Weisberg R. *Sexual dysfunction, a guide for assessment and treatment.* 3rd ed. New York: The Guilford Press; 2015.