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Maintaining Sexual Desire in Long-Term Relationships: A Systematic Review and Conceptual Model

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The most universally experienced sexual response is sexual desire. Though research on this topic has increased in recent years, low and high desire are still problematized in clinical settings and the broader culture. However, despite knowledge that sexual desire ebbs and flows both within and between individuals, and that problems with sexual desire are strongly linked to problems with relationships, there is a critical gap in understanding the factors that contribute to maintaining sexual desire in the context of relationships. This article offers a systematic review of the literature to provide researchers, educators, clinicians, and the broader public with an overview and a conceptual model of nonclinical sexual desire in long-term relationships. First, we systematically identified peer-reviewed, English-language articles that focused on the maintenance of sexual desire in the context of nonclinical romantic relationships. Second, we reviewed a total of 64 articles that met inclusion criteria and synthesized them into factors using a socioecological framework categorized as individual, interpersonal, and societal in nature. These findings are used to build a conceptual model of maintaining sexual desire in long-term relationships. Finally, we discuss the limitations of the existing research and suggest clear directions for future research.

The question of what maintains sexual desire in long-term relationships and the tendency for it to decrease over time has long been a topic of interest to researchers, educators, clinicians, and the broader public. It has also been represented in literature, media, and the arts across cultures. Although this has led to several studies examining factors associated with sexual desire, there has not been a synthesis of the literature conducted in this area, nor do we have a conceptual model for future research to build from currently.


The relevance of sexual desire to romantic relationships is clear. Researchers have consistently reported on the function of sexual desire in one's sexual and relationship satisfaction (Bridges & Horne, 2007; Davies, Katz, & Jackson,

1999; Mark, 2012, 2014; Mark & Murray, 2012; Santtila et al., 2007), and overall well-being (Apt, Hurlbert, Pierce, & White, 1996; Davison, Bell, LaChina, Holden, & Davis, 2009). Maintaining sexual desire in long-term relationships can be difficult, with sexual desire issues ranking among the most common to present in couples therapy (Ellison, 2002). In addition, individual levels of sexual desire ebb and flow for several reasons over the course of one's life (Acevedo & Aron, 2009; Ellison, 2002; Ridley et al., 2006). This results in inevitable instances of sexual desire discrepancy within a couple's relationship (Herbenick, Mullinax, & Mark, 2014), where one member of the couple has lower or higher desire relative to his or her partner (Mark & Murray, 2012).

Defining Sexual Desire

Sexual desire can be defined as the sexual drive, wish, or motive to engage in sexual activity (Levine, 1987) or achieve sexual intimacy (Mark, Herbenick, Fortenberry, Sanders, &

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 Supplemental data for this article can be accessed [here](#).

Reece, 2014), where a variety of factors may bring someone toward or away from sexual behavior (Levine, 1987). The object of one's sexual desire may vary considerably from one person to another (Mark et al., 2014), and although sexual desire is related to the frequency of sexual behavior, it can be problematic to rely on sexual frequency as a proxy for sexual desire (Brotto, 2010). Sexual desire is not a purely behavioral construct (Brotto, 2010; Clement, 2002; Mark, 2015). Using sexual frequency as a proxy for sexual desire removes the important contextual components of sexual desire, such as the relationship dynamic (Mark, 2015), distress (Clement, 2002) and the relevance of sexually diverse relationships where the frequency of sexual activity is not a marker of desire or quality (Blair & Pukall, 2014). In addition, sexual desire is not necessary for sexual activity (Brotto, Heiman, & Tolman, 2009), and sexual behavior is often engaged in for reasons other than sexual desire (Basson, 2000; Cain et al., 2003; Meston & Buss, 2007; Muise, 2017) or with the absence of sexual desire altogether (Beck, Bozman, & Qualtrough, 1991). A purely behavioral definition of sexual desire becomes further complicated by the enormous amount of individual variability in sexual activity preferences (Schneidewind-Skibbe, Hayes, Koochaki, Meyer, & Dennerstein, 2008). Given that desire ebbs and flows over the course of one's life (Acevedo & Aron, 2009; Ellison, 2002; Herbenick et al., 2014; Ridley et al., 2006), sexual desire appears to be better conceptualized as a state-like construct, rather than a stable trait (Mark, 2015).

If the media were used to define sexual desire, it would appear spontaneous, exciting, and full of visual turn-ons (Harris & Bartlett, 2009). This can be characteristic of sexual desire at the beginning of a relationship, when many couples are in the passionate love or limerence phase (Tennov, 1979) of their relationships. This spontaneous and exciting form of sexual desire is not as characteristic of sexual desire in longer-term relationships, particularly once one enters the companionate stage of love, and sexual desire may become more responsive (Basson, 2000). There has been little empirical investigation into the distinguishing factors between spontaneous sexual desire and more responsive sexual desire, though there has been theoretical discussion of this concept in the desire literature (e.g., Basson, 2000, 2001, 2008; Brotto, 2010; Everaerd & Laan, 1995; Klusmann, 2002; Laan & Both, 2008; Toates, 2009) and in popular culture outlets (e.g., Nagoski, 2015).

Models of Sexual Desire

Masters and Johnson (1966) were the first to provide empirical evidence of the human sexual response cycle. In their four-stage model, they focused on physiological responses to sexual stimulation. Sexual response was thought to be a linear process that worked through sexual excitement, plateau, orgasm, and resolution. Sexual desire was excluded until Kaplan (1977) and Lief (1977) proposed the addition of sexual desire to Masters and Johnson's sexual response model (1966) as a precursor

to sexual excitement. However, this model was similarly linear and did not account for the many situations, particularly in longer-term relationships, where the experience of sexual desire may follow, rather than precede, the physiological response of sexual arousal (Laan & Both, 2008). Basson (2000, 2001) also distinguished between spontaneous and responsive sexual desire, where spontaneous desire is the drive that is more characteristic in earlier relationships and responsive sexual desire is more consistent with longer-term relationships. Given that no sexual response is entirely spontaneous in nature—meaning that there is always some stimuli one is responding to, consciously or subconsciously—it may be overly simplistic of us to categorize sexual desire in this way, as sexual desire does not just happen independently of stimuli (Both, Everaerd, & Laan, 2007), despite it seeming this way in early romantic relationships. Semantics aside, sexual desire does appear to function differently in early relationships compared to longer-term relationships, and it is important for researchers to continue to strive to understand the complex ways in which sexual desire functions within and outside of the context of long-term relationships.

There has been an increase in attention paid to further understanding sexual desire in recent years, particularly related to low sexual desire in women, leading up to the 2015 Food and Drug Administration (FDA) approval of flibanserin in the United States, the first prescription drug to treat hypoactive sexual desire disorder (HSDD) (FDA, 2015; Gellad, Flynn, & Alexander, 2015). Scientific and public discussion has increased around the approval of flibanserin, approaches to women's sexual problems, and the medicalization (Conrad, 2013) that has accompanied this, all of which is beyond the scope of this article (see Brotto (2015); Joffe et al. (2016); Levine (2015); and Tiefer (2004, 2012) for additional context). For many people, experiencing low sexual desire may be adaptive to other life factors (Frost & Donovan, 2015), and we can learn about maintaining sexual desire in long-term relationships from nonclinical individuals and couples. Using a holistic or biopsychosocial perspective, rather than a purely physiological perspective, is important when examining sexual desire (Bitzer, Giraldo, & Pfaus, 2013). Given the increased focus on sexual desire problems, particularly in women, this review focuses on nonproblematic or nonclinical experiences of sexual desire for women and men in the context of long-term relationships. Perhaps relevant to the current review is the therapeutic approach put forth by Foley, Kope, and Sugrue (2011) that emphasizes desire, pleasure, eroticism, and satisfaction rather than the focus on arousal and orgasm often emphasized in earlier work and more medicalized approaches to treating sexual desire issues.

Distinguishing Desire and Arousal

Sexual desire and arousal are related but distinct constructs. As noted, Kaplan (1977) and Lief (1977) initially proposed the addition of sexual desire to Masters and Johnson's sexual response model (1966) as a precursor to sexual arousal.

Through this work, the delineation was primarily focused on the difference between psychological (desire) and physiological (arousal) response. Sexual desire presented itself as a drive that only occurred prior to arousal, and arousal was considered the physiological response of lubrication, erection, and swelling that followed the acknowledgment of an appealing sexual stimulus. Since then, it has become clear that sexual desire may either precede or follow the physiological response of sexual arousal (Basson, 2000, 2001; Both et al., 2007; Goldey & van Anders, 2012; Graham, Sanders, Milhausen, & McBride, 2004; Laan & Both, 2008; Singer & Toates, 1987) and sexual arousal can be measured as either objective (physiological) or subjective (self-report) as it is in most sexual psychophysiology research (see Janssen (2007) for an overview). The incentive motivation model (Both et al., 2007; Singer & Toates, 1987) distinguishes between sexual desire and arousal but acknowledges sexual desire as emergent from sexual arousal, activated by external sexual stimuli and reinforced by awareness of bodily and emotional responses.

Some research has indicated that participants, particularly female participants, may have difficulty distinguishing between desire and arousal (Graham et al., 2004). In addition, women often present with both diminished sexual desire and inhibited sexual arousal concurrently (Brotto & Luria, 2014). HSDD and female sexual arousal disorder (FSAD) were removed and a new category - "female sexual interest/arousal disorder (FSIAD) - introduced in the shift from the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (*DSM-IV-TR*) to the *DSM-5* in 2013. Brotto (2010) offered a detailed account of the rationale for the combination of these two diagnoses, which is outside of the scope of this review due to its focus specifically on low sexual desire. Goldey and van Anders (2012) provided evidence in a non-clinical sample of women and men that desire and arousal are indeed separate but related constructs, and sexual desire does not always precede sexual arousal.

Despite this clear overlap between sexual desire and arousal, they are distinct constructs (Bancroft, 2010; Regan & Atkins, 2006), and researchers can be more nuanced than the general public in our approach to these constructs. We can clearly differentiate between desire and arousal and the way in which we measure these constructs. In fact, Brotto (2010) argued that the difficulty in defining sexual desire is inherent in how we as researchers understand the concept and how women themselves understand it, and that these two things may not be related. In addition, the methods we use to assess sexual desire and sexual arousal are very different, and researchers have shown that it is possible to experience sexual arousal without feelings of sexual desire (e.g., Beck et al., 1991; Brotto et al., 2009; O'Sullivan & Allgeier, 1998). Therefore, this review focuses explicitly on sexual desire, as distinct from sexual arousal.

Current Study

To address gaps in the synthesis of the sexual desire literature, this systematic review had three primary aims: to systematically review the literature on maintaining sexual desire in

the context of long-term romantic relationships; to propose a conceptual model for understanding and studying sexual desire as it functions in the context of a relationship based on the factors that contribute to maintaining sexual desire in long-term relationships; and to discuss the limitations of the existing research and suggest clear directions for future research.

Methodology

In our review, we examine and synthesize the available literature in peer-reviewed, English-language journals to determine the factors that contribute to maintaining sexual desire in long-term relationships. Both authors independently searched Google Scholar, PubMed, and PsycINFO using the search terms "desire" OR "sexual desire" OR "sexual motivation" OR "sexual drive" OR "sex drive" AND "romantic relationship" OR "relationship" OR "long-term relationship" OR "couples" OR "intimate relationship" OR "married" OR "marriage." Inclusion criteria beyond keyword match were that the paper was written in the English language, peer reviewed, with contribution to understanding the maintenance of sexual desire in the context of a romantic relationship. Differentiating between long-term relationships and other romantic relationships can be difficult, and almost all studies used relationship length as a control variable when available. Therefore, we did not use specific relationship length criteria for inclusion in the review, but the implications of the findings on maintaining desire in long-term relationships were important. We excluded studies that did not examine interpersonal processes which relate to desire or which were focused on internal mechanistic regulators of desire (e.g., hormone regulation, neural circuitry that mediates desire). We also omitted articles that did not take interpersonal context into consideration or used a clinical sample that specifically and exclusively examined sexual desire problems.

An initial search of the literature with all search terms resulted in a total of 395,236 articles, prior to the removal of duplicates and irrelevant titles, and prior to the addition of 29 articles based on reference list scans. The databases were set to sort by relevance, allowing us to determine relevance in order. First, titles of the articles were read until a clear pattern emerged that indicated titles no longer contained components of the initial search criteria (inclusion of sexual desire or romantic relationships). This search resulted in 294 articles, which were then narrowed to 94 articles based on a reading of the abstracts for inclusion. After manually searching the 94 articles' reference lists, 29 additional articles were included (and are documented as included in the initial 294). Of these 94 articles that matched the initial search criteria, a more thorough read resulted in the exclusion of 30 articles that did not meet inclusion criteria for reasons such as having a focus on arousal not desire, focus on internal mechanistic regulators (e.g., hormone specific), and/or the lack of a relational component. Therefore, 64 articles met the inclusion criteria, and a table with the design, desire specific instrument used, sample, and primary findings for all 64 of these articles is provided in a

supplementary online file. A PRISMA flowchart (Figure 1) provides documentation of each step of the search based on our inclusion criteria (Liberati et al., 2009). Due to our interest in factors that contribute to maintaining sexual desire in the context of a relationship, we eliminated studies that did not have a specifically relational component.

Building a Conceptual Model

Given the complexities of understanding sexual desire and the extent to which it varies individually and interpersonally, it is not surprising that there are several factors that contribute to sexual desire in long-term relationships. We aimed to provide a model that utilizes a socioecological approach (Bronfenbrenner, 1977) to sexual desire, exploring three levels of influence: individual, interpersonal (relationship and partner factors), and societal (gender expectations, cultural, social norms, social inequality). We were guided by the systematic review of the literature provided in the rest of this article, where scholars have described, and we have synthesized, several factors that contribute to sexual desire in long-term relationships. We constructed this conceptual model to provide a framework for future research to build from on the topic of maintaining sexual desire in long-term relationships. A visual depiction of the model is provided in Figure 2.

The innermost layer of the model, individual factors, serves as the core component influencing how an individual

interacts within his or her relationship and the society at large. The individual experience can directly influence the experience of sexual desire within a couple. These factors work interactively with interpersonal factors, all of which are nested within the broader social context. The middle layer of the model, interpersonal factors, focuses on the interaction between the individuals in the romantic relationship. The outermost layer of the model, societal factors, provides a macrolevel approach and serves as the context in which couples and individuals experience sexual desire.

Factors Associated with Sexual Desire

Our systematic review of the literature provided several factors related to sexual desire in long-term relationships. These are presented in the following sections, organized by individual, interpersonal, and societal levels. This systematic review of the literature provided us with the background necessary to create our conceptual model of maintaining sexual desire in long-term relationships (see Figure 2) that we hope to be useful in future research and educational efforts.

Individual Factors

Expectations. Realistic expectations that sexual desire will ebb and flow throughout the relationship has been shown in multiple studies to impact the maintenance of

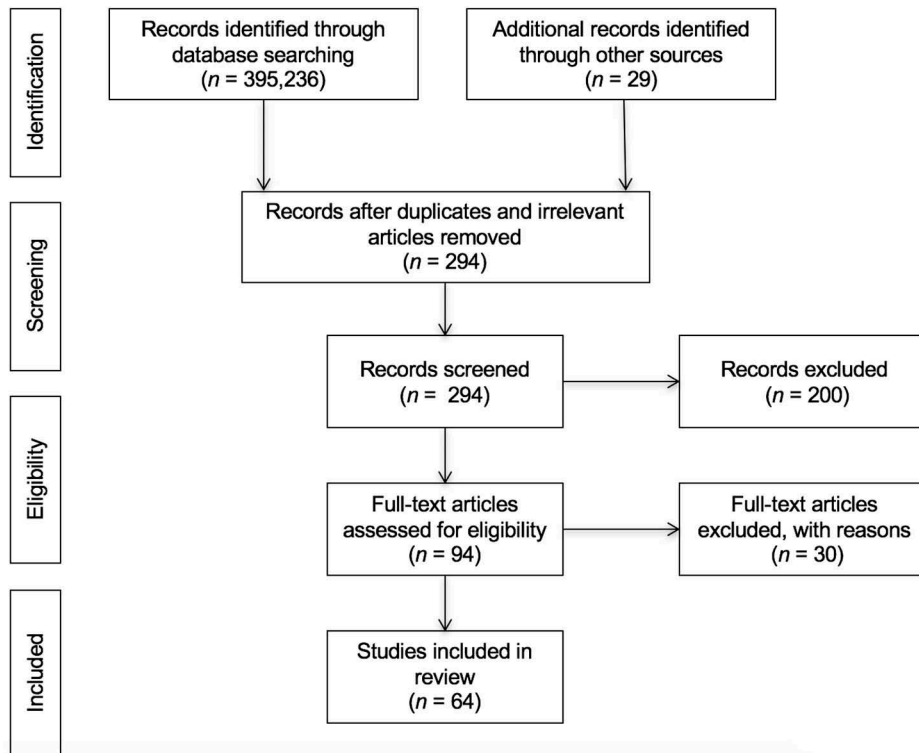


Figure 1. PRISMA diagram of systematic selection of articles.

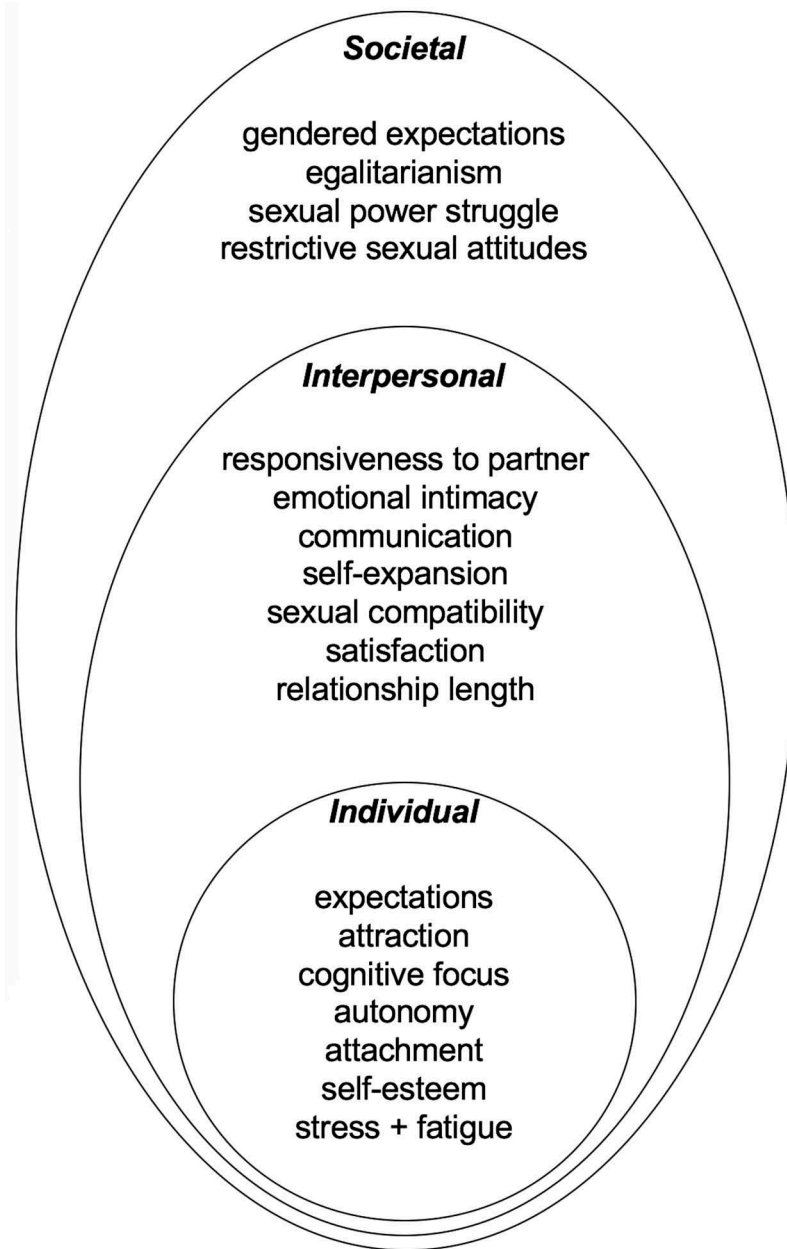


Figure 2. Conceptual model of maintaining sexual desire in long-term relationships.

sexual desire in long-term relationships (Ferreira, Fraenkel, Narciso, & Novo, 2015; Herbenick et al., 2014; Murray, Milhausen, & Sutherland, 2014; Sutherland, Rehman, Fallis, & Goodnight, 2015). In both Ferreira et al.'s qualitative study of 33 heterosexual couples and in Murray et al.'s qualitative study of 20 women in long-term heterosexual relationships, expectations that there were going to be ups and downs in sexual desire were perceived as a contributing factor to maintaining sexual desire in the relationship (Ferreira, Narciso, Novo, & Pereira, 2014; Murray, Sutherland, & Milhausen, 2012).

Sutherland and colleagues collected quantitative data in two studies to examine sexual desire discrepancy, where one member of the couple has higher or lower desire

relative to his or her partner, and they found that identifying desire changes as “normal” was helpful for protecting against negative influences of desire discrepancy (Sutherland et al., 2015). This was also the case for women in same-sex relationships, where women who viewed desire changes as a normal part of their relationships perceived this to be beneficial to avoiding desire discrepancy (Bridges & Horne, 2007). In a study of 179 women in long-term relationships, Herbenick and colleagues (2014) concluded that the expectation for sexual desire to ebb and flow and to see sexual desire discrepancy as an expectation rather than a problem in the relationship was helpful in addressing desire discrepancy within their relationships.

In addition, understanding that sexual desire fluctuation is inevitable and letting sexual desire just work itself out over time was a good strategy for modulating desire discrepancy for these heterosexual women (Herbenick et al., 2014). Perhaps by normalizing individual fluctuations in sexual desire over time, and in turn expecting desire discrepancy in long-term relationships, sexual desire may not be as negatively impacted (Mark, 2015; Murray et al., 2012).

Attraction. Another commonly found individual-level factor that contributes to long-term desire is an individual's feelings of attraction to his or her partner, and this has been studied in a few ways. For example, Basson (2000) indicated that finding the object appealing or attractive (called "appreciation of the stimulus" in her writing) was an important factor for responsive and spontaneous sexual desire. Similarly, attraction to one's partner may be important when sexual desire is more responsive in nature, particularly in women (Both et al., 2007) and attraction to one's partner (conscious or unconscious) is important for sexual desire functioning. Perel (2006) has also outlined the power of cultivating desire through seeing your partner as attractive from a distance, such as when they are excelling in what they do.

Although most of the research in this area has been done with women (e.g., Basson, 2000; Both et al., 2007), three studies that examined men also found attraction to partner to be important for sexual desire. Shrier and Blood (2016) found that when men perceive their partner to be emotionally stable, and they find emotional stability attractive, they have higher sexual desire. Ferreira and colleagues (2014) found that attraction was important for men's sexual desire. In addition, feeling like their partners were attracted to them was important for maintenance of sexual desire.

Murray, Milhausen, Graham, and Kuczynski (2017) also found that men feeling that their partners were attracted to them was important for the maintenance of desire. Likewise, women in emerging adulthood expressed that feeling sexy, feeling as though their partner found them attractive, and feeling that their partner was attentive were important factors in the maintenance of desire (Murray & Milhausen, 2012a; Ferreira et al., 2014). Naturally, researchers have also found that a high baseline level of sexual desire and attraction to partner is important for later maintaining that desire (Murray et al., 2012). If attraction to partner is not present, sexual desire may suffer (Both et al., 2007).

When attraction to partner wanes, it may lead to monotony or routine in the relationship, which can have a negative impact on sexual desire. Monotony regarding specific sexual stimuli appears to be consistently associated with difficulty in maintaining sexual desire in long-term relationships for both men (Carvalho & Nobre, 2011) and women (Ferreira et al., 2015). Specifically, Carvalho and Nobre (2011) found that lack of erotic thought and fear of an inability to maintain adequate arousal response were problems for men maintaining their sexual desire in long-term relationships. It is possible these issues would create a

negative feedback loop, where continued lack of erotic stimulation and fear of inadequate arousal response would continue to feed into lack of desire which would, in turn, perpetuate the cycle.

Both men and women reported that actual monotony and the perception of monotony (Ferreira et al., 2015) and the overfamiliarity with a partner (Sims & Meana, 2010) were risk factors in maintaining sexual desire in long-term relationships. In addition, despite cultural perception that men care more about appearance than women, a study of emerging adults indicated that lack of physical attraction to a partner was a significant factor in inhibiting sexual desire in women (Murray & Milhausen, 2012a). Further, as might be expected due to the benefits of mindfulness-based approaches (Basson, 2008) for low sexual desire, lack of mindfulness and being easily distracted has been found, especially among women, to inhibit the maintenance of sexual desire (Dosch, Ghisletta, & Van der Liden, 2016).

Cognitive focus. The ability for an individual to focus on making the relationship a priority despite external factors may be protective to sexual desire in long-term relationships. There has been a good deal of work around mindfulness having a positive impact on resolving sexual desire problems, notably Brotto's work (e.g., Brotto & Basson, 2014), that due to its clinical focus did not meet our search criteria for this systematic review. However, Ferreira and colleagues (2015) found in their qualitative analysis of protective strategies for sexual desire that making time for the relationship, being free of stress, and being intentional and invested in the relationship were all protective factors related to cognitive focus in maintaining sexual desire in long-term relationships. In addition, in a study that examined men's protective factors for sexual desire, Shrier and Blood (2016) found that when men use their cognitive energy to focus on enjoying physical intimacy, they are more likely to have high sexual desire.

In a few of the studies included in the systematic review, emphasis was also placed on cognitive restructuring. For example, McCarthy & Wald (2015) suggested that building positive anticipation for the sexual encounter was important for being able to maintain sexual desire in long-term relationships. This may be difficult to do in the context of a long-term relationship, but when individuals in a relationship commit to making sexual desire a priority and restructure their thoughts to match that, they may experience benefits related to desire. Consistent with a body of work examining the role of mindfulness in dealing with problems related to sexual desire, particularly in women (Brotto & Basson, 2014; Brotto et al., 2009; McCall & Meston, 2006), researchers found in their qualitative study of 20 women in long-term, mixed-sex relationships that staying mentally present was important to maintaining sexual desire (Murray et al., 2014).

Autonomy. Maintaining a level of autonomy in a relationship and being able to continue to have an identity

that is separate from the couple identity has been shown to contribute to the maintenance of sexual desire in the context of a long-term relationship. In a qualitative study of 33 couples, autonomy in men and women was tied to a sense of possibility and discovery in the relationship; maintaining autonomy allows for innovation to take place in the relationship (Ferreira et al., 2014). Having some distance from one's partner and having an appreciation for that distance was deemed important. In a follow-up quantitative study of 66 people, differentiation of the self (the ability to separate feelings and thoughts) from one's partner was important to maintaining sexual desire but also helped buffer against dissatisfaction in the relationship (Ferreira, Narciso, Novo, & Pereira, 2016).

Ferreira and colleagues (Ferreira et al., 2014; Ferreira et al., 2016) discussed how crucial differentiation of self is to be able to regulate one's emotions and maintain a supportive role as a partner; both of which were protective for maintaining sexual desire in long-term relationships. This allows for individuals within a couple to maintain enough "otherness" to protect against desire inhibiting boredom (discussion follows in the section on interpersonal factors). This idea has also begun to be communicated to the public through Esther Perel in her widely watched TED Talk and popular books on maintaining sexual desire in the context of long-term relationships (Perel, 2017, 2013, 2006).

Attachment. Individual attachment style and its link with sexual desire was examined by a few researchers and studies provided mixed results in how it impacted sexual desire. For example, individuals who were higher in anxious attachment exhibited higher sexual desire for sexual activity with their partner to restore emotional closeness (Birnbau, Mikulincer, & Austerlitz, 2013). In another study of attachment and motivation for sex, Birnbaum (2010) described the anxiously attached partner's motivation for sex as one that is often devoid of hedonistic reasons and used to repair the relationship (Birnbau, Weisberg, & Simpson, 2011); and Birnbaum and Reis (2012) found that those with secure attachment styles generally have positive interactions with their partners and their partners with them. Although not directly assessing sexual desire, one study did find that attachment style impacted what the underlying motives for sex were such that those with attachment anxiety wanted to please their partners and those with avoidant attachment aimed to avoid negative consequences in the relationship (Impett, Gordon, & Strachman, 2008). This article did not meet the search criteria for our systematic review but does suggest there is a gap in the literature related to the link between attachment style and sexual desire; there may be something more going on here that warrants further investigation. We suggest researchers further examine the ways in which individual attachment style and compatibility of attachment style within a couple impact the experience of sexual desire.

Although attachment style has been examined in terms of sexual satisfaction (e.g., Butzer & Campbell, 2008; Hadden,

Smith, & Webster, 2014). It has not been directly examined in the experience of sexual desire. It may be that attachment style is as much an interpersonal factor as an individual factor, depending on the compatibility between partners' attachment styles. For example, it is currently unknown whether certain attachment style combinations promote the maintenance of sexual desire in long-term relationships. Overall, it appears anxious attachment may provide a facade of protection against diminishing desire in long-term relationships, which may not necessarily be positive for relational outcomes.

Individuals high in avoidant attachment tend to be at risk for maintaining sexual desire in long-term relationships. As noted, additional research is needed in this area to examine compatibility of attachment style within a dyad. It may be that the true risk factor for low sexual desire is related to lack of compatibility of attachment style, rather than individual attachment style itself, but this has not yet been empirically tested. Previous research in relationship satisfaction has indicated that when one member of the couple has high avoidant attachment and another has high anxious attachment, the relationship may be difficult to maintain (Brennan & Shaver, 1995).

Perhaps this is also the case with maintenance of sexual desire. If both members of the couple are avoidantly attached, perhaps the lack of maintenance of sexual desire would not be problematic in the relationship, and therefore this would positively contribute to maintaining sexual desire in the relationship. More avoidantly attached individuals do not have sexual desire for partners to avoid emotional closeness and intimacy that comes with sexual interactions. Men who are higher on avoidant attachment may still pursue sex, but they will treat sex as the goal rather than using sex to feel intimacy or closeness, as may be the case in more securely or anxiously attached men (Birnbau et al., 2013). For women, those who are more anxiously attached tend to conflate sex and relational experiences, so negative interactions with their partners decrease desire to want to be with them, especially when sex is not able to be used as a coping mechanism for lack of closeness (Davis et al., 2006).

Self-esteem. The self-esteem and confidence individuals have in themselves has been found to contribute to maintaining sexual desire in relationships through a few studies. For example, those whose perceptions of themselves as being sexy (Murray & Milhausen, 2012a), exhibiting positive self-image (Basson, 2008), and acknowledging that they are deserving of a healthy sex life (McCarthy & Wald, 2015) have all been found to contribute to the maintenance of sexual desire in long-term relationships. Specifically, McCarthy and Wald (2015) found that when individuals within a couple promote a sense of prioritizing themselves as sexual beings and deserving of healthy sexuality in their relationship, sexual desire may improve and may be maintained in long-term relationships. It may be that the formation of a healthy sense of sexual self is key to being able to prioritize sex in relationships, thereby making sexual desire a decision as much as a motivational response.

In addition, Murray and Milhausen (2012b) found that women who managed to maintain sexual desire in long-term relationships self-identified as being more “sexual beings with high desire” even before the relationship began. This may be indicative of the overlap between individual-level sexual desire and desire for a specific partner. Perhaps individuals who endorse a view of themselves as a sexual being are more successful in maintaining sexual desire through their long-term relationships. For men with HSDD, those who reported higher levels of sexual assertiveness than their female partners experienced the lowest levels of sexual desire. In addition, men who reported the highest amount of emotional reliance on others also reported the lowest levels of desire (Apt, Hurlbert, & Powell, 1993). It is less clear how sexual assertiveness would impact sexual desire in nonclinical populations of men or clinical or non-clinical populations of women.

Self-esteem, whereby one exhibits a high level of confidence, has been shown in prior relationships research to be a very attractive quality (e.g., Eastwick, Luchies, Finkel, & Hunt, 2014). Thus, it should not be surprising that having low self-esteem may be negatively related to maintaining sexual desire in long-term relationships. However, this has only been examined in women with low self-image (Basson, 2008), low trust for partner (Basson, 2008), and low body image (Dosch et al., 2016) associated with lower sexual desire for partner. Specifically, women with poor body image tended to have lower levels of sexual desire (Dosch et al., 2016) due to the distracting thoughts that accompany poor body image. Basson (2008) indicated low self-image as a risk factor for maintaining sexual desire. However, it is possible for self-image to improve over the course of a long-term relationship, resulting in negative self-image turning to positive self-image and acting as a protective factor for desire in the relationship (Dosch et al., 2016).

Individual-level trust issues, anxiety about the outcome of the sexual encounter, and general distractions all are negatively associated with maintaining desire in long-term relationships for women (Basson, 2008). It is certainly feasible that these would have the same impact on men’s sexual desire, especially given that there is some overlap between men and women related to self-esteem (Gentile et al., 2009), but future research needs to investigate this link.

Stress and fatigue. In a qualitative study of inhibiting and enhancing factors for sexual desire, Ferreira et al. (2014) found that stress was the most frequently stated factor in disturbing sexual desire and was mostly related to work or lack of time in men and women. Fatigue tends to exacerbate the stress response. In addition, overall poor health that impacted stress levels were found to be a particularly problematic component for men’s ability to maintain sexual desire over time (Murray et al., 2017), and low energy level may be an issue for maintenance of sexual desire for women in long-term relationships (Ferreira et al., 2014; Murray & Milhausen, 2012a). Murray and Milhausen

(2012a) conducted a qualitative study with 20 women in long-term, mixed-sex relationships and found that individual energy levels were a contributing factor to sexual desire in relationships, and this could easily be tied to several other individual factors within a relationship that directly contribute to one’s level of energy, such as getting enough rest and managing stress levels.

In a qualitative study on bisexual, lesbian, and straight women in long-term relationships, Rosenkrantz and Mark (in press) found that stress positively and negatively contributed to sexual desire, depending on the woman and her context. Their interviews with 31 women alluded to the possibility of there being a threshold level of stress where stress shifts from being protective for desire (perhaps even enhancing of desire) to diminishing desire. There were no differences between the different orientation groups in their account of this stress response. The role of stress in sexual desire in the context of long-term relationships may be a fruitful area for future research, particularly given the likelihood that couples in long-term relationships go through a variety of types of stress together (i.e., life transitions, such as transition to parenthood; deaths in the family; work stress).

Related to stress and fatigue, the stress around having children was also found to be an individual-level risk factor for maintaining sexual desire in long-term relationships, mainly due to the amount of time and energy that is necessary of child-rearing, as well as the fatigue that comes along with it (Ferreira et al., 2014). In addition, women noted the bodily changes and shift in the couple dynamics that accompany having children as significant factors that negatively impacted their sexual desire. One additional factor related to stress was that of trauma. Specifically, if either member of the couple, male or female, has had any trauma or history of trauma, this has been found to be a fairly large risk factor in maintaining sexual desire for women (McCarthy & Wald, 2012).

Interpersonal Factors

Sexual desire is often directed toward a specific partner. Because our review focused on sexual desire in the context of long-term relationships, many of the contributing factors to sexual desire were interpersonal. In fact, interpersonal factors were the most populated of all categories for our conceptual model (see Figure 2); this highlights how crucial interpersonal factors are to sexual desire.

Responsiveness to partner. Responsiveness is considered an intimacy-building construct (Birbaum & Reis, 2006), and the perception of partner responsiveness has a positive impact on sexual desire, especially in women (Birbaum et al., 2016). In addition, applying responsiveness to the sexual context, some researchers have examined the role of meeting a partner’s needs in sexual desire. In an examination of sexual communal strength—specifically, exhibiting the motivation to meet a partner’s sexual needs—research has consistently found that people

who are high in sexual communal strength have higher desire (Muise & Impett, 2016) and are more likely to engage in sex even when desire discrepancy exists (Day, Muise, Joel, & Impett, 2015). When individuals are high in sexual communal strength, they are more partner focused, with a greater willingness to engage in sexual activity. This seems to positively maintain not only sexual desire but also satisfaction in the relationship (Day et al., 2015; Muise & Impett, 2016; Muise, Impett, Kogan, & Desmarais, 2013). Research conducted by Day and colleagues (2015) and further supported by Muise, Impett, Kogan, et al. (2013), with daily diary analysis on data collected from a sample of 88 mixed-sex couples, found that individuals high in sexual communal strength are also better able to maintain sexual desire over time than individuals who do not have this characteristic.

This partner-focused approach to relationships is also examined in terms of approach motives. In a sample of undergraduate students in dating relationships, Impett, Strachman, Finkel, and Gable (2008) found that approach motives may serve as a buffer against decreases in sexual desire over time and tended to predict increased sexual desire in daily interactions. Participants who had strong approach goals experienced greater sexual desire on good relationship days and less of a decrease in desire on poor relationship days. Overall, approach motivated sexual goals are related to higher sexual desire (Muise, Impett, & Desmarais, 2013; Muise, Impett, Kogan et al., 2013). Further, when researchers created interventions aimed at increasing approach goals, these were successful at increasing sexual desire, regardless of age (Muise, Boudreau, & Rosen, 2017). Daily diary research has also indicated that sexual desire feeds into next-day desire within relationships and partners' sexual desire can impact each other's sexual desire (Mark, Leistner, & Dai, *under review*). Specifically, in a 30-day daily electronic report of study mixed-sex couples, Mark et al. (*under review*) found that a partner's level of sexual desire was a strong predictor of next-day desire for the partner, regardless of whether sexual activity occurred.

Another component of responsiveness to partner that has been shown to contribute to maintaining sexual desire in long-term relationships is related to effort. Ferreira and colleagues (2014), in their qualitative investigation into maintaining desire in long-term relationships, found that the drive to invest in the couple relationship and make it a priority was one of the most beneficial approaches for couples. This was also found by McCarthy (1999), such that couples who have a commitment to confronting sexual desire issues that may arise are better able to maintain sexual desire over time. Other researchers have confirmed this as an interpersonal factor for maintaining sexual desire. Herbenick et al. (2014) found that, in women, meeting a partner's sexual needs by engaging in sex when desire is not present improved desire and got desire back on track when desire discrepancy came up. For men, their underperception (perception of a lesser amount of desire than existed) led to their partner feeling more satisfied and committed (Muise, Stanton, Kim, & Impett, 2016). Partner attentiveness was

important for women in emerging adulthood relationships (Murray & Milhausen, 2012a). To our knowledge, there has not been any research done examining responsiveness in nonheterosexual populations, and this is an important area of future research.

Emotional intimacy. Sexual scripts in popular culture would clearly support the role of emotional intimacy in women's sexual desire, though not necessarily that in men's sexual desire. However, this is empirically supported for both women (Basson, 2000; Murray et al., 2014) and men (Ferreira et al., 2014). For example, and related to the prior category of responsiveness, being responsive to a partner's needs positively impacts intimacy, which positively influences desire; this link was particularly strong for women (Birbaum et al., 2016). In addition, for men in mixed-sex relationships, increased level of emotional intimacy was positively associated with increased desire, and higher levels of intimacy were found to decrease the likelihood of low desire (Stulhofer, Ferreira, & Landripet, 2014).

Ferreira et al. (2014) also found that a higher expression of desire was associated with higher couple intimacy, and for men, the effect of sexual desire on couple satisfaction was fully mediated by intimacy. Partner responsiveness to emotional closeness is also beneficial for maintaining sexual desire in individuals and partners (Brotto et al., 2009). In addition, intimacy has been examined on a daily level. Rubin and Campbell (2012) found, in a sample of mixed-sex couples in long-term relationships, that intimacy on a daily level may have an overall positive impact on sexual desire in the long term.

Also related to intimacy, touch and having memories of one's partner were important for maintaining sexual desire over the longer term (Brotto et al., 2009). Increased intimacy reported by men was also related to higher sexual desire (Sutherland et al., 2015), and engaging in intimate and sexual communication has been found to positively impact sexual desire (Murray & Milhausen, 2012a). Researchers have found that even if sexual satisfaction is low, high relational intimacy can buffer against the negatives (Stephenson & Meston, 2010). Basson (2000) also indicated that when intimacy increases in the relationship, sexual desire should also increase. So it is possible that individuals who feel intimate with their partners would see benefits in their sexual desire, and it is likely this relationship is bidirectional. Overall, the literature points to intimacy as an important factor in maintaining sexual desire in longer-term relationships for women *and* men, despite the ideas in our culture that men are not driven by intimacy.

Communication. Given the strong link between communication and satisfaction outcomes in relationships (Byers & Demmons, 1999; Cupach & Comstock, 1990; Mark & Jozkowski, 2013), it is not surprising that strong communication between partners is an important interpersonal factor for sexual desire. Sharing feelings

about the relationship with a partner brings couples closer and may increase desire (Ferreira et al., 2014). Increasing sexual communication is shown to serve as a strong protector of maintaining sexual desire in long-term, mixed-sex relationships (Murray et al., 2014; Murray & Milhausen, 2012a). Communication about desire discrepancy is one of the primary ways women report getting sexual desire back on track within a relationship (Herbenick et al., 2014); for men, engaging in intimate communication helped with feeling sexual desire for their long-term partners (Murray et al., 2017).

Although there has been very few studies that have included LGBTQ* populations, Reece (1987), found that strong communication promotes gay male couples' sexual desire. We suspect there is overlap in the factors that contribute to maintaining sexual desire for LGBTQ* people in long-term relationships as well, but this is an area of research that is strikingly absent from the literature. Communication is helpful for relationships and for dealing with desire discrepancy, especially for men (Willoughby, Farero, & Busby, 2014).

Self-expansion. The construct of self-expansion, first defined by Aron and Aron (1986) as expansion of the self by including the other in the self and engaging in opportunities for growth, has been found in several studies to be relevant to maintaining sexual desire in long-term relationships. The way it has been conceptualized in many of these studies is in the realm of novelty. In Ferreira et al.'s (2014) qualitative interview study of risk and protective factors for sexual desire, breaking routine and constantly changing to expose themselves to new, positive experiences was very beneficial for participants. For example, a participant stated, "[W]e always try to change something, anything, even the decoration [...] we must find space and opportunities so that there is something interesting, otherwise you slide to monotony" (p. 6). Expanding beyond norms in the relationship through engaging in power games or using novelty items also promoted sexual desire for men and women (Ferreira et al., 2014).

In addition, engaging in flirtatious behavior with a crush but not crossing relational boundaries was also enhancing of desire for one's partner in a study by Mullinax, Barnhart, Mark, and Herbenick (2015). This theme of engaging in extradyadic flirtation to fuel the desire in the relationship was also found by Ferreira et al. (2014). Innovation was the most important protective factor in Ferreira et al.'s study (2014), and this referred to changing the daily routine and allowing space for each other to learn something new. Novelty was also found to be a meaningful way for women to increase their desire when it feels low (Sims & Meana, 2010). Indeed, a literature review by Singer and Toates (1987) found that sexual motivation relies on novelty.

Related to this novelty building, creating positive anticipation for sex within the relationship positively impacts sexual desire (McCarthy & Wald, 2015). Engaging in novel and flexible sexual interactions and feeling free to

express these in the relationship protected sexual desire (McCarthy & Wald, 2015). Unexpected sexual encounters were particularly important for men ages 30 to 65 in long-term relationships, and this fueled sexual desire for them (Murray et al., 2017). When researchers tried to differentiate between couples who had problems in sexual desire compared to couples without problems in desire, sexual experimentation was the most differentiating factor (Trudel, Aubin, & Matte, 1995). In this study of mixed-sex couples, this also impacted the extent to which sexual pleasure was experienced and therefore decreased sexual desire over time (Trudel et al., 1995).

Monotony. Popular culture and researchers alike can say with confidence that it is necessary to avoid monotony in long-term relationships to keep desire alive (Ferreira et al., 2014). Overfamiliarity of the partner and the institutionalization of the relationship can result in a desexualization of the couple (Sims & Meana, 2010). In a review of the literature conducted in 1987, Singer and Toates concluded that being in a routine was a problem in maintaining sexual desire. This has not changed, and limited research has been conducted on this topic. It is indeed an area with room for growth.

Sexual compatibility. There has been some research into sexual compatibility as it relates to sexual and relationship satisfaction (Mark, Milhausen, & Maitland, 2013), but not as much research has examined sexual desire. This may be an area for future research, as it seems likely that sexual desire would be higher if a couple wants and enjoys the same things sexually. As noted in the individual factors section, Basson (2000, 2008) has acknowledged the importance of appreciating the sexual stimulus and experiencing it in the appropriate context. Some research has examined sexual compatibility on a more behaviorally specific level. For example, Apt, Hurlbert, Sarmiento, and Hurlbert (1996) specifically found that it was perceived sexual compatibility for women and their desire to perform fellatio on their male partners that significantly and uniquely predicted both members of the couple's level of sexual desire for each other.

Compatibility in terms of frequency of sex has also been examined as an important factor. Specifically, lower frequency of sex, especially when desired frequency does not meet one's partner's desired frequency, can be problematic for sexual desire (Willoughby et al., 2014). This may be particularly relevant to explore in the asexual community (Brotto, Yule, & Gorzalka, 2015; Prause & Graham, 2007). In a sample of mixed-sex couples, Mark and colleagues (2014) examined the object of one's sexual desire and the compatibility with one's partner in how these impacted sexual desire. They found that when women had a higher desire for sexual release, touch, and excitement than their male partners, their sexual desire for their partner was higher. The perceived level of sexual compatibility with a partner, particularly by women, was significantly related

to partner desire (Apt, Hurlbert, et al., 1996). This is consistent with the positive impact that perceived sexual compatibility has on sexual and relationship satisfaction (Mark et al., 2013), indicating there may be some interesting components of compatibility that could be further explored in research.

Perhaps, given the findings of Mark and colleagues (2013), level of sexual or relationship satisfaction may mediate the link between compatibility and sexual desire, acting as a protective mechanism within a relationship. This link should be explored further. Another factor related to sexual compatibility involved innovation in sexual activity. Ferreira et al. (2014) found that unpredictability in terms of sexual activity was a strong protective factor for sexual desire. Furthermore, physical attraction to partner was shown to be a protective factor of desire in women (Murray & Milhausen, 2012a).

Consistently, the sexual desire discrepancy literature has indicated that greater desire discrepancies between partners, regardless of the direction, negatively impact satisfaction in the relationship. Greater discrepant desire was associated with lower sexual satisfaction in women and lower relationship satisfaction in men (Mark & Murray, 2012; Willoughby & Vitas, 2012). Fewer studies have examined the specific influence of desire discrepancy on individual levels of desire, and this is an area that could use further exploration by researchers. Greater desire discrepancy was related to sexual and relationship satisfaction, and the perception of this desire discrepancy also impacted it; participants who thought they had higher discrepancy had lower satisfaction (Davies et al., 1999).

In same-sex female couples with problematic desire discrepancy, lower satisfaction and frequency of sex was reported than those with nonproblematic desire discrepancy (Bridges & Horne, 2007). Sexual desire discrepancy is a problem for men in relationships with men, but easy accessibility of sex may reduce the motivation to attempt to overcome the desire discrepancies (Reece, 1987). Reece's study was published in 1987, and accessibility of sex, particularly for gay men, is presumably higher now than it was then (with technology providing aid in partner availability). Perhaps we are less likely to work through desire discrepancies now that we have so many other potential partners at our disposal. Discrepant levels of sexual assertiveness, when men have higher sexual desire than their female partners, have been found to negatively impact men's desire in long-term relationships (Apt et al., 1993).

Two studies have examined daily level desire discrepancy and found that it also negatively impacts sexual desire and satisfaction. Specifically, discrepant daily desire negatively impacts quality of the sexual experience (Mark, 2014). Additionally, discrepancies in the specific object of one's desire can impact level of desire for partner. For example, when there is a discrepancy in the desire to be desired by a partner, where one partner wants to feel wanted by their partner more than the other, this can negatively impact sexual desire (Mark et al., 2014).

Satisfaction. There has been a strong link in several studies between satisfaction in one's relationship and sexual

desire. It appears that we have a strong base of evidence to support that sexually and relationally satisfied couples are also the couples with higher sexual desire. Research is also showing that these are important for the maintenance of sexual desire over the long term. In fact, one of the primary contextual factors noted in pushing against a medicalization approach to treating low sexual desire is the fact that so often it is simply a low satisfaction issue, rather than low desire per se. In addition, sexual and relationship satisfaction are very intertwined with each other (Apt, Hurlbert, Pierce, et al., 1996; Byers, 2001; Hurlbert & Apt, 1994), so it is reasonable to assume that their link with sexual desire might be similar. However, research has shown a slightly stronger link between sexual satisfaction and desire than relationship satisfaction and desire (Mark, 2012; Mark & Murray, 2012), most likely due to the sexual nature of both.

With regard to relationship satisfaction, this significant positive link has been found in married heterosexual couples (Breznyak & Whisman, 2004; Ferreira et al., 2016), women (Murray et al., 2014), and men's perception of strong relationship quality significantly positively impacted their higher and more stable levels of sexual desire (Shrier & Blood, 2016). A few studies found that, for men, relationship satisfaction was inversely related to sexual desire. For example, Birnbaum et al. (2013) found that relationship conflict positively impacted sexual desire. They indicated this may be related to attachment style (see overview in individual-level factors), such that perhaps high sexual desire during relational conflict or relational dissatisfaction was a coping mechanism for artificially bringing partners closer when they feel intimately distant. Gender proved to be more predictive than attachment style for how conflict affected partner attractiveness and subsequent desire. Some view conflict as an avenue to work through and build intimacy, while others (likely more avoidantly attached individuals) may perceive that conflict as rejection.

Women have been constructed as the gatekeepers of sex. It may be that the female partner is coping and sexual motivation impacts the ways in which sex will be handled after the conflict. Women have been shown to need more intimacy, whereas men more sexual pleasure (Basson, 2000, 2001; Mark et al., 2014). In Birnbaum et al.'s study (2013), they based their hypotheses on previous research (Basson, 2001; Diamond, 2003) suggesting that women's desire is more responsive to changes in the interpersonal dynamic and male sexual desire is motivated by more internal factors causing physiological arousal (including conflict). Therefore, conflict is arousing to the senses in myriad ways for men, which in turn may positively impact their sexual desire. McCarthy (1999) indicates that relational strife reduces a partner's sexual desirability for women. In addition, in studies by Mark et al. (2014) and Mark (2012), when a conflict existed where men had higher desire to be desired than their partner, sexual desire for the partner increased. The link has been clear between higher sexual satisfaction being related to higher desire levels (Mark,

2012). When sexual satisfaction is higher, especially among women, sexual desire discrepancy tends to be lower (Mark & Murray, 2012).

Several studies supported the link between sexual desire and sexual and relationship satisfaction. Breznsnyak and Whisman (2004) found that sexual desire was significantly predicted by marital satisfaction in a sample of married people. Although most of these studies examined heterosexual or mixed-sex relationships, sexual satisfaction may be a protective factor in desire for women in same-sex relationships (Cohen & Byers, 2014). In addition to being positively related to desire, couple satisfaction was also related to differentiation of self. Partner similarity regarding differentiation of self was significantly predictive of sexual desire (Ferreira et al., 2016).

It seems intuitive that conflict with one's partner would contribute to a decrease in sexual desire in long-term relationships, and this has received empirical support for women and men (Birnbbaum et al., 2013; Ferreira et al., 2014). Specifically, women and men in Ferreira and colleagues' (2014) qualitative interview study of long-term couples said that there was not any space left for desire when conflict took up space and energy in their relationship. Related to conflict and lack of communication is the avoidance of the fact that sexual desire declines in relationships. McCarthy (1999) found, based on a case study, that this was crucial to avoid the decline of desire in a long-term relationship. Further, overall sexual avoidance, particularly in men, is an issue for sexual desire (McCarthy & Wald, 2012). Lack of partner attention was also found to be a significant risk factor in maintaining sexual desire in the context of relationships (Murray & Milhausen, 2012a), and the sexual power struggle, where men desire more sexual interaction and women do not, and this builds resentment in the relationship (McCarthy & Farr, 2012). This ends up playing a negative role in the relationship and can contribute to lowered desire and decreased satisfaction.

In line with the work on avoidance conflict, when men and women engage in sex for avoidance goals, like trying to avoid a fight or conflict within the relationship, this has been shown to be a risk factor in maintaining sexual desire in long-term relationships (Muise, Impett, & Desmarais, 2013). In addition, men may feel societal and partner pressure to initiate sex even when they do not experience desire (Murray et al., 2017) and conflict within the personality styles in the relationship was found to be problematic in same-sex male couples (Reece, 1987). Partner conflict has also led to women seeing their partner as less sexually attractive, but researchers caution that avoidance seems to be the issue here, not partner conflict per se (Birnbbaum et al., 2013). Couple conflict disturbed desire for both men and women but was slightly higher for women (Ferreira et al., 2014). Not working together as a team, lack of intimacy, and lack of a sexual voice within the partnership decreases sexual desire (McCarthy & Wald, 2012). Two studies examined emotional reliance as a risk factor, specifically for men. These findings indicated that men who showed higher

emotional reliance on others generally had lower sexual desire in their long-term relationships (Apt et al., 1993). Yet men who felt a lack of emotional connection with their partners experienced lower sexual desire as well (Murray et al., 2017). The way in which emotional reliance may feed into relational conflict is unclear, and future research could further examine this link in order to understand its role in maintaining sexual desire in long-term relationships.

Just as sexual satisfaction is a protective factor, sexual dissatisfaction is a risk factor in maintaining sexual desire in long-term relationships. There are some gender differences in this link. For example, men who reported feeling mentally and sexually dissatisfied reported the lowest levels of desire, but this was not the case for women. For women, it was more about their perception of the marriage regardless of sexual dissatisfaction (Hurlbert & Apt, 1994). Unique to women, sexual dissatisfaction and dissatisfaction with partner communication skills significantly impacted their ability and desire to repair their low sexual desire (Trudel, Fortin, & Matte, 1997). Difficulties in the ability to sexually adapt to each other is difficult for people with desire problems but is not an issue for people without desire problems (Trudel et al., 1997). Sexual dissatisfaction was significantly related to sexual desire discrepancy in mixed-sex couples (Mark, 2012, 2015; Mark & Murray, 2012; Willoughby & Vitas, 2012). It is also notable that for those that identify as asexual the desire for dyadic relational intimacy without the presence of sexual desire and subsequent sexual satisfaction can be difficult to navigate with a partner (Brotto et al., 2015). For this reason asexual individuals often experience difficulty establishing nonsexual intimate relationships (Prause & Graham, 2007). Further research into the establishment of dyadic intimate relationships among asexual individuals and relationship maintenance exclusive of sexual desire is needed to better understand satisfaction among this population.

Relationship length. A common cultural script is that sexual desire decreases as relationship length increases. Although there has been some support for this (e.g., Klusmann, 2002), the research is not entirely conclusive. Although length of relationship had a negative impact on sexual desire for women and is a risk factor in 18- to 25-year-olds, it made no difference in men (Murray & Milhausen, 2012b). Greater relationship length was also indicated to be a risk factor in women only in a literature review of changes in sexuality across time, relationships, and sociocultural context conducted by Ainsworth and Baumeister (2012). In a sample of 1,865 individuals in mixed-sex relationships, Klusmann (2002) found that desire declined for women over time, but not for men, and desire for tenderness in the relationship declined for men and increased for women over time. However, as reported in the book *The Normal Bar*, desire for tenderness increased over time for both men and women (Northrup, Schwartz, & Witte, 2014). In addition, in two studies with a total sample

of 915 people, Mark, Leistner, and Garcia (2016) found that age and relationship length (presumably related to each other) were more important than women's contraceptive method in predicting sexual desire. As the initial excitement phase of the relationship wanes, so does desire (Sims & Meana, 2010).

There is something unique to women with relationship length acting as a risk factor for them. It may be that women take on more responsibility as the relationship increases in length and are perhaps more sensitive to the environmental relationship changes. It would be beneficial to see how relationship length impacts sexual desire in same-sex relationships, particularly in the lesbian context, to understand if it is something about the interaction between women and men or women as individuals that is leading to these findings. McCarthy and Wald (2012) indicated that when a couple has a hard time bringing passionate love into companionate love, this can create a conflict in the "sexual voice" of the relationship, and therefore sexual desire decreases for both men and women in the relationship as relationship length increases. We propose that relationship length as a risk factor may be more about other factors that accompany relationship length rather than relationship length itself. Therefore, we encourage researchers to acknowledge the contextual features of the relationship when examining relationship length as a potential risk factor for maintaining desire. Sexual desire commonly decreases as length of relationship increases, but this is not necessarily due to relationship length itself.

Societal Factors

The outermost layer of the conceptual model, societal factors, provides the larger social context within which individuals and couples experience sexual desire. The research to specifically examine the societal influences into maintaining sexual desire in long-term relationships has been limited. We encourage researchers to begin examining some of these broader constructs that may significantly contribute to sexual desire in long-term relationships. This is an area with ample future research opportunities, and we encourage researchers to explore this as a priority.

Gendered expectations. We are a product of the social norms within our society. This is particularly relevant to the gendered nature of sexual desire. The societal expectations for sexual desire in men and women are very different (Murray, 2018). This is an example of an area where future research could benefit. It is plausible that in cultures where gender equality is stronger, perhaps it is easier to maintain sexual desire over the long term. Research on the direct cultural comparative perspective for maintaining sexual desire in long-term relationships has not been conducted and/or published. These data are available for sexual satisfaction (Heiman et al., 2011), though discussion around each country's gender norms was not

the focus for this research, and it is difficult to determine whether we would expect to see this impact sexual desire.

Research investigating gender differences in sexual desire has been plentiful, with most research focusing on detecting differences between men and women. In a review of gender differences and similarities in sexual desire, Dawson and Chivers (2014a) concluded that recent research is consistently finding more similarities than differences between men and women regarding desire. Recent research reiterates these findings concerning desire and gender (Ferreira et al., 2014) but also indicate that there are greater similarities between men and women regarding sexual desire discrepancies than previously supposed (Mark, 2015). There may be some gender differences in terms of the object of one's sexual desire (Mark et al., 2014), overall sexual desire which may be influenced by masturbation (van Anders, 2012), and for women, discrepancies in the object of sexual desire (Mark et al., 2014). However, based on our systematic review of the literature, we suggest researchers aim to examine individual differences within each gender rather than focus on gender differences in their future research. The assumption that men have higher sexual desire than women overall is simply not consistently supported by the data in the context of relationships. It may be that desire is not impacted by being a woman; rather, it is the societal expectations of being a woman that negatively impact women rather than men. Further, there has been little research dedicated to femininity and masculinity as distinct constructs from womanhood and manhood. This not only minimizes the variation within each gender but also ignores nonbinary gender. Our understanding of the impact of gender, gendered expectations, and gender roles on maintaining sexual desire in long-term relationships would benefit from a more nuanced approach to gender itself.

Egalitarianism. The idea that all people in a relationship should contribute equally within the relationship has been examined as it relates to sexual desire in long-term relationships. This study found it may positively impact sexual desire in long-term relationships, where more egalitarian relationships were related to higher levels of sexual desire from both partners (Brezsnyak & Whisman, 2004). Perhaps there is something unique about sexual desire and the power dynamic that is maintained with more egalitarian relationships. More research is needed in this area to further understand the role in maintaining sexual desire in long-term relationships.

Related to this construct, Rosenkrantz and Mark (2018) found in their qualitative study of bisexual, lesbian, and straight women in long-term relationships that shifting cultural views regarding the acceptability of nonheterosexual relationships was beneficial for maintaining sexual desire in long-term relationships in the lesbian and bisexual women interviewed. These women indicated that the movements toward equality that they could feel on a societal level contributed to less minority stress and provided room for more sexual desire for these women. It is entirely feasible

this would be the case in men as well, but such research has not yet been conducted in sexual minority men.

Sexual power struggle. Societal expectations for masculinity and femininity have created a culture where men are the sexual aggressors who are expected to seek and maintain power in a sexual relationship. This is not an environment where sexual desire in long-term relationships succeeds. Specifically, expectations of gender roles and societal pressure to fit masculine sexual scripts were deemed a risk factor in sexual desire in long-term relationships for men (Murray, 2018), and stigmatization of low desire in men may negatively impact satisfaction in men (McCarthy & McDonald, 2009). In fact, societal expectations have resulted in men feeling like they should consistently report high levels of sexual desire even when they do not feel desire. So, they might feign desire when they do not fit that script (Murray, 2018).

McCarthy and Wald (2012) discussed how sexual power struggles within a relationship can be difficult to work with regarding sexual desire. In addition, there is a power struggle that is inherent to the social structures of what is prioritized in our culture. This is relevant to both gender and sexual identity. For example, in our heterosexist culture, heterosexual sex is prioritized. Minority stress, such as heterosexist discrimination, stigmatized identities, coming out, and the impact of visible/safe spaces, was found to negatively impact sexual minority women's experience of sexual desire in long-term relationships (Rosenkrantz & Mark, *in press*). Research from the mid-1990s (Hurlbert & Apt, 1994) indicated that lesbians had lower sexual desire and sexual frequency. However, more recently, Holmberg and Blair (2009) found that there were no significant differences in levels of desire between lesbian and straight women. One explanation for this may be due to levels of minority stress decreasing over the past 20 years. However, until recently (e.g., Mark, Toland, Rosenkrantz, Brown, & Hong, 2018), many of our measurement tools used in research have been psychometrically validated only in heterosexual samples. Thus, another equally plausible explanation is that measurement of sexual desire and satisfaction has been limited in sexual minority participants.

Restrictive sexual attitudes. Two studies met our search criteria and explicitly examined the role of sexual attitudes in sexual desire in long-term relationships. In a study of men, Carvalho and Nobre (2011) examined predictors of sexual desire and found that feeling sad or ashamed about sex was a predictor of low desire (Carvalho & Nobre, 2011). In an interview study of bisexual, lesbian, and heterosexual women, Rosenkrantz and Mark (*in press*) found that attitudes toward sexuality as taboo was a salient theme for all women in the study as a barrier to maintaining sexual desire in long-term relationships. This study suggests that the sociocultural context can influence the sexual desire of diverse women and it is important to understand the impact of systems of privilege and oppression (e.g., sexism, heterosexism, racism), particularly on women's

sexual desire. Based on our systematic review, it appears that both men and women are negatively impacted by restrictive sexual attitudes on a societal level.

Something that may feed into decreasing restrictive sexual attitudes is comprehensive sex education. Despite our understanding of the importance and benefit of comprehensive sex education in the development of healthy relationships and sexual health (Santelli et al., 2017), comprehensive sex education is still not taught in most schools throughout the United States. Comprehensive sex education has the potential to significantly impact the cultural scripts around consent, healthy relationships, and negotiation of sexual agency with partners from adolescence onward. Incorporation of sexual desire specifically into sex education was first suggested by Michelle Fine, in her seminal 1988 article about the missing discourse of sexual desire (Fine, 1988). There has been discussion around how to integrate sexual desire into sex education efforts (e.g., Lamb, Lustig, & Graling, 2013; Tolman, 2005), but the impact of this on future sexual relationships has not yet been pursued. We see this as an important area for future research.

General Discussion

Fluctuations in sexual desire within an individual are due to several issues on the individual, interpersonal, and societal level. The function of sexual desire is important to relationships, with researchers clearly demonstrating its impact on sexual and relationship satisfaction (Bridges & Horne, 2007; Davies et al., 1999; Mark, 2012, 2014; Mark & Murray, 2012; Santtila et al., 2007) and overall well-being (Apt, Hurlbert, Pierce, et al., 1996; Davison et al., 2009). Although sexual desire issues rank among the most common to present in couples therapy (Ellison, 2002), couples can apply several factors based on the empirical literature to sustain healthy sexual desire in long-term relationships. Our conceptual framework is helpful for researchers to use as a guide of the work that has been done and where to go moving forward, for clinicians to offer suggestions to couples or individuals who present in couples therapy with this common complaint on what works for nonclinical samples, and for the general public in finding ways to apply what we have learned as researchers to their own long-term relationships. In this discussion, we highlight the implications for those audiences, as well as point out limitations in our empirical body of work thus far and indicate clear directions for future research, of which there are many. We anticipate the proposed conceptual model will evolve as more work is done in this area, particularly work that includes more samples of couples and diverse populations.

Interestingly, sexual desire is perhaps one of the most likely sexual constructs to be discussed in a stereotypically gendered way. There are clear assumptions in our culture that women have lower sexual desire than men and that it is abnormal for women to have high sexual desire or for men to have low sexual desire. However, research in recent years has clearly shown that these gender-based assumptions about sexual desire are not

supported by data (Dawson & Chivers, 2014b), and there are more variations within each gender than between (Ferreira et al., 2014; Mark, 2015). Rather than assuming gender differences, we encourage researchers to approach their empirical investigations with questions of gender similarity. If we use the lens of gender similarity rather than difference, we may begin to approach gender equality within the research we conduct. Another way to acknowledge this in our desire research is to include more men in sexual desire studies and test for significant gender differences before assuming that analyses need to be done for men and women separately. That said, we should also be critical of our measurement tools we use to assess sexual desire, as there may be a reporting bias in the ways men and women answer our questions. Indeed, McClelland (2011) found that when asked about sexual satisfaction, women are more likely to consider the satisfaction of their partners rather than themselves. There have not been similarly critical evaluations of measurements of sexual desire, and it would be useful to gain additional psychometric information about our measurement tools, because the findings we report are only as strong as their measurement.

Related to our conceptualization of sexual desire, there is still a lack of strong empirical work differentiating between “spontaneous” or, more characteristically, early-relationship sexual desire and “responsive” or, more characteristically, longer-term relationship sexual desire. Our measurements of sexual desire do not currently differentiate between different types of sexual desire, and our measurement tools tend to focus on sexual desire as more of a trait than a state. However, we found a good deal of research, much of which was discussed in this review, that supports sexual desire as a state. It seems clear that we would benefit from researchers examining the psychometric properties of existing scales and potentially creating new measurement tools to ensure that we are measuring what we think we are measuring.

A very clear limitation of the studies in maintaining sexual desire in long-term relationships concerns that of diversity. Of the 64 studies that met our inclusion criteria and were reviewed, only three (5.2%) examined sexual desire in the context of same-sex relationships (Bridges & Horne, 2007; Reece, 1987; Rosenkrantz & Mark, *in press*). Although there has been an increase in attention paid to same-sex relationships, and the representation of sexual diversity has increased in sex research in the past decade, many of those studies are focusing on risk reduction or purely behavioral components of sexual health. Despite same-sex couples engaging in long-term relationships as often as straight couples, the research being conducted in these samples is certainly not focused on the maintenance of sexual desire in long-term relationships. In the research that has been conducted on maintaining sexual desire in long-term relationships, there are several similarities to heterosexual couples.

In addition, many of the studies did not report on the race/ethnicity of their samples, and therefore we do not know how racially diverse they are. However, the lack of reporting on this construct leads us to believe that they are most likely

primarily White samples, with underrepresentation of racial and ethnic minorities in the research. Researchers should strive to understand the role of race and ethnicity in individual experiences of desire within the context of a relationship. We anticipate there would be several additional social factors that would be integrated into the experience of sexual desire due to diversity in attitudes toward sexuality, sex education, and minority stress, particularly related to gender or sexual identity intersectionality with race/ethnicity, that may impact sexual desire.

Another area related to lack of diversity in the couples focused on in the current review is related to monogamy. Like the primacy of heterosexuality in our culture, our culture also provides privilege to monogamy, and this is a clear bias in the research. Of the studies that met the criteria for this systematic review, monogamous relationships were a consistent feature. Given that a very salient protective factor was novelty and a risk factor was monotony, it would be beneficial for researchers to examine the ways in which sexual desire functions on the dyadic level in consensually nonmonogamous long-term couples. Although this may be a difficult population to reach, insights into the role of monotony, novelty, commitment, satisfaction, and trust as they relate to maintaining sexual desire over time would be fascinating.

It is worthwhile to note that examining the maintenance of any variable over time is time and labor intensive. Several of the studies reviewed relied on retrospective reports or daily electronic reports. Those are certainly insightful, but it would be ideal to be able to follow couples over the course of their relationship and regularly monitor the mechanisms that influence their sexual desire; we did not find any such studies that did this specific to sexual desire. In addition, conducting research in the context of couples is labor intensive. It requires a great deal of effort in recruitment, retention (especially if longitudinal), data cleaning, and data analysis (Mark & Leistner, 2014). However, the contextual advantage and analytic flexibility achieved by conducting research in couples is well worth the effort. In our review, fewer than half of the studies that met the search criteria involved couples in their samples. Although this is much higher than we find in the general sexual desire literature, it is still low given that the search criteria explicitly required interpersonal relationship context to be a focus of the study.

Overall, this systematic review and the resulting conceptual model provides a way forward in looking at maintaining sexual desire in long-term relationships. Sexual desire does not always have to be high to be maintained or good. In fact, we found in this review that if people expect sexual desire to fluctuate, they may be better off in their relationship (Herbenick et al., 2014; Murray et al., 2012; Sutherland et al., 2015). Sexual desire should be considered in the context within which it exists: the individual, interpersonal, and societal. Overall, our work suggests that researchers need to increase efforts in recruitment of diverse samples and work to further understand the dyadic nature of sexual desire by recruiting

couples into studies of sexual desire. There are several risk and protective factors in maintaining sexual desire in long-term relationships, and the conceptual model we put forth aims to synthesize these and provide a framework for exploring additional facets of sexual desire in future research. The decline of sexual desire over the course of long-term relationships is a common, but not necessary, part of long-term relationships.

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