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Relational Intimacy Mediates Sexual Outcomes Associated With Impaired Sexual Function: Examination in a Clinical Sample

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ABSTRACT

Background: Relational intimacy is hypothesized to underlie the association between female sexual functioning and various sexual outcomes, and married women and women with sexual dysfunction have been generally absent from prior studies investigating these associations, thus restricting generalizability.

Aim: To investigate whether relational intimacy mediates sexual outcomes (sexual satisfaction, coital frequency, and sexual distress) in a sample of married women with and without impaired sexual functioning presenting in clinical settings.

Methods: Using a cross-sectional design, 64 heterosexual married women with ($n = 44$) and without ($n = 20$) impaired sexual functioning completed a battery of validated measurements assessing relational intimacy, sexual dysfunction, sexual frequency, satisfaction, and distress. Intimacy measurements were combined using latent factor scores before analysis. Bias-corrected mediation models of the indirect effect were used to test mediation effects. Moderated mediation models examined whether indirect effects were influenced by age and marital duration.

Outcomes: Patients completed the Female Sexual Function Index, the Couple's Satisfaction Index, the Sexual Satisfaction Scale for Women, the Inclusion of the Other in the Self Scale, and the Miller Social Intimacy Test.

Results: Mediation models showed that impaired sexual functioning is associated with all sexual outcomes directly and indirectly through relational intimacy. Results were predominantly independent of age and marital duration.

Clinical Implications: Findings have important treatment implications for modifying interventions to focus on enhancing relational intimacy to improve the sexual functioning of women with impaired sexual functioning.

Strengths and Limitations: The importance of the role relational intimacy plays in broad sexual outcomes of women with impaired sexual functioning is supported in clinically referred and married women. Latent factor scores to improve estimation of study constructs and the use of contemporary mediation analysis also are strengths. The cross-sectional design precludes any causal conclusions and it is unknown whether the results generalize to male partners, partners within other relationship structures, and non-heterosexual couples.

Conclusion: Greater relational intimacy mitigates the adverse impact of impaired sexual functioning on sexual behavior and satisfaction in women. **Witherow MP, Chandraiah S, Seals SR, et al. Relational Intimacy Mediates Sexual Outcomes Associated With Impaired Sexual Function: Examination in a Clinical Sample. J Sex Med 2017;14:843−851.**

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INTRODUCTION

Female sexual dysfunction (FSD) is a common presenting problem in medical and psychotherapy settings.[1–4] Treatment of FSD is often conducted by multidisciplinary teams that target the interpersonal and medical factors involved in FSD. A significant number of women with FSD report marked psychological distress and sexual relationship problems.[5] Given the minimal efficacy of available medication therapies for FSD,[6–8] it is important to further investigate the role played by interpersonal dimensions in impaired sexual functioning, such as relational intimacy, to inform balanced approaches to integrated care.[9,10]

Although anecdotal evidence suggests that decreasing distress and increasing relational intimacy in clinical practice produces increased sexual functioning and satisfaction, there is little empirical evidence to support this model.[11] Most extant research has relied on convenience samples, such as college students, whereas samples with married couples, treatment-seeking samples, and samples recruited from clinical settings are notably absent.[12–15] This disparity is important because evidence suggests that findings from convenience samples might not generalize to women with FSD or to samples from clinical settings.[16] Accordingly, community-based studies with more narrowly defined populations are needed to test the generalizability of the association between sexual problems and dysfunctional or unsatisfactory relationships.[17,18] The present study addresses these limitations by using a married treatment-seeking sample to understand how impaired sexual functioning is associated with marital intimacy, sexual distress, sexual satisfaction, and sexual frequency.[19]

Theoretical models of relationship dynamics make somewhat divergent predictions regarding the role of relational intimacy in women's sexual outcomes. For instance, one model posits that greater intimacy in long-term relationships has a detrimental effect on sexual desire for a partner because of a lack of emotional differentiation and familiarity and habituation processes that dampen erotic interest and sexual frequency.[20,21] Alternatively, social exchange theory and attachment theory view relational intimacy as a potential protective mechanism against the negative effects imposed by sexual problems on relationships under some circumstances.[22] Indirect support for the role of relational intimacy in sexual functioning comes from evidence that anxious-ambivalent and avoidant-dismissive attachment styles negatively correlate with sexual functioning and behaviors.[19,23,24] In addition, in recently married heterosexual couples, sexual frequency and sexual satisfaction mediate the relation between the wife's perceived sexual attractiveness and the couple's marital satisfaction.[25] Because women who experience more negative perceptions of self-attractiveness also report worse romantic intimacy,[25] intimacy likely affects these sexual outcomes. Evidence that relational intimacy underlies sexual outcomes in FSD would provide strong support for interventions and conceptual models that promote intimacy and satisfaction as a means to promote women's sexual health.

Relational intimacy, FSD, and sexual health outcomes appear closely interrelated. In women with provoked vestibulodynia, relational intimacy uniquely predicts better self-reported sexual functioning independent of sexual intimacy and partner intimacy.[26] In cross-sectional samples, relational intimacy has been observed to protectively moderate the negative influence of lower sexual functioning on life satisfaction[12] and predict sexual frequency independent of age and marital duration.[27] Previous longitudinal investigations also have shown that frequency of sex and marital satisfaction are indirectly linked through sexual satisfaction. Understanding the factors hypothesized to influence outcomes such as sexual frequency and satisfaction have potential importance because these two factors are positively associated with relationship stability and union dissolution, although this association is somewhat stronger in cohabitating than in married couples.[28]

AIMS

The aim of the present study was to determine whether marital intimacy mediates the relations between sexual functioning and several behavioral and emotional sexual outcomes (sexual frequency, sexual satisfaction, and sexual distress) in a treatment-seeking heterosexual sample of married women.

It was hypothesized that women with impaired sexual functioning compared with women with normal sexual functioning would differ in sexual satisfaction and sexual distress (feelings of anxiety, worry, and frustration about one's sexual functioning), and that women's perceived levels of marital intimacy would mediate this association. This hypothesis was based in part on a previous study showing that women who reported greater intimacy levels also reported less impact of physical pain on their sexual relationship.[12,29]

A second hypothesis predicted that intimacy would mediate the relation between impaired sexual functioning and sexual (coital) frequency. Clinically, this hypothesis would be illustrated by women with impaired sexual functioning who report engaging in more sex when they feel close to their partner, but that this relation would be stronger for those with higher relational intimacy levels.

Whether age or marital duration alters the hypothesized mediation relationships was tested because of evidence that age can moderate the association between sexual functioning and sexual distress in women with impaired sexual functioning.[14]

METHODS

Sample and Recruitment

Sixty-four heterosexual married women were recruited from two treatment settings, a private practice marriage and family therapy clinic and two general psychiatry clinics (teaching and private practice) at the University of Mississippi Medical Center (Jackson, MS, USA). The sample reflects a treatment-seeking population of married women presenting with various psychiatric, psychological, and relational problems. The study was conducted according to

Table 1. Factor loadings for construction of intimacy latent factor scores*

Measurements	Intimacy (F1)
IOS	0.85
MSIS	0.88
CSI	0.94

CSI = Couple's Satisfaction Index; F1 = factor 1; IOS = Inclusion of the Other in Self Scale; MSIS = Miller Sexual Intimacy Scale.
*Only one factor was extracted during analysis.

institutional standards and was approved by the institutional review board. Participants provided consent and then were invited to complete a battery of questionnaires anonymously online or by a mail-in packet. The response rate was 41% for the online and mail-in methods combined. The language of the study was English. To be included in the study, participants had to be English-speaking heterosexual women in cohabiting marital relationships. Although not an inclusion criterion, most participants screened positive for impaired sexual functioning as measured by the six-item Female Sexual Function Index (FSFI-6). Exclusion criteria included heterosexual women in dating or cohabitating unmarried relationships.

MAIN OUTCOME MEASURES

Sexual Function

The FSFI-6 is a 6-question abridged version of the 19-question FSFI that assesses sexual desire, arousal, lubrication, orgasm, vaginal pain, and overall sexual satisfaction. The FSFI has been shown to differentiate between women with and those without potential impaired sexual functioning. The FSFI-6 is a rapid self-report instrument that screens for potential FSD according to *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV) criteria. The FSFI-6 has excellent psychometric properties. Scores no higher than 19 indicate a possible risk for DSM-IV–defined FSD, with further assessment recommended with the full version of the FSFI, additional information, and medical evaluation to make a diagnosis of FSD as defined by the DSM-IV. In an effort to reflect an awareness of important diagnostic changes for FSD in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5), an operational label of potential impaired sexual functioning was used for patients with a score no higher than 19 on the FSFI-6[30] rather than "risk for FSD." The Cronbach α was 0.80 for the present sample. Women were assigned to impaired (n = 44) and non-impaired (n = 20) groups based on this screening algorithm, which successfully differentiated groups based on total FSFI-6 scores (impaired, mean = 13.05, SD = 4.60; non-impaired, mean = 23.15, SD = 2.18).

Sexual (Coital) Frequency

Women were asked to indicate "the number of times you have had sexual intercourse with your spouse in the last month," which indexed coital sexual frequency. One-month recall shows minimal bias to and moderate correspondence with (r = 0.60) daily diary methodology.[31]

Couple's Satisfaction Index

The 16-item Couple's Satisfaction Index (CSI) was used to measure relationship satisfaction. The CSI was constructed using item response theory. Participants respond on a six-point Likert scale with anchors ranging from "always agree" to "always disagree" with regard to their relationship satisfaction. Compared with other relationship satisfaction scales, the CSI has greater power for detecting differences in levels of satisfaction. Its psychometric properties are strong and the CSI has demonstrated strong convergent validity with other satisfaction measurements.[32] The Cronbach α was 0.98 for the present sample.

Miller Social Intimacy Scale

The Miller Social Intimacy Scale (MSIS) is a 17-item measurement of the maximum level of intimacy currently experienced and is a good measurement for married clinical samples.[33] Item ratings (6 regarding frequency and 11 regarding intensity) are selected on a 10-point Likert scale with anchors 1 (not much), 5 (a little), and 10 (a great deal). The Cronbach α was 0.94 for the present sample. Predictive validity for the MSIS comes from its ability to measure maximum levels of current closeness.

Inclusion of the Other in the Self Scale

The Inclusion of the Other in the Self Scale (IOS) is a unique pictorial scale measuring relationship interconnectedness. It has excellent psychometric properties and predictive validity for predicting whether romantic relationships are intact after 3 months and is resistant to social desirability response effects.[34] The IOS consists of seven pictures of circles depicting perceived levels of closeness in a relationship. Each picture is assigned a number in a Likert-type scale from 1 (lowest) to 7 (highest) to represent intimacy.

Sexual Satisfaction and Subjective Distress

The Sexual Satisfaction Scale for Women (SSS-W) consists of 30 items assessing five unique domains (6 items each) of sexual satisfaction and has demonstrated high reliability and validity including sensitivity to treatment response in sex therapy based on cognitive-behavioral therapy.[35,36] Participants rate the rate their level of agreement or disagreement on a five-point Likert scale with interval anchors of 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly agree). The contentment subscale was used to measure sexual satisfaction and the personal concern subscale was used to measure sexual distress in the present study. The Cronbach α for the SSS-W was 0.90 for the present sample.

Table 2. Descriptive statistics of sample

Variable	Overall			Clinic 1			Clinic 2			
	Mean	Median	SD	Mean	Median	SD	Mean	Median	SD	*P* value
Age (y)	44.3	43.0	10.9	41.2	38.5	10.3	52.2	54.5	8.2	†
Married (%)	15.6	14.0	11.0	13.6	12.0	10.5	20.9	23.0	10.9	*
Frequency of sexual intercourse (%)	4.6	2.0	5.3	5.0	3.5	5.4	3.5	1.0	4.9	0.33
CSI	47.2	49.0	21.2	45.8	47.0	21.8	51.2	52.0	19.6	0.36
SSS-W	93.1	93.0	23.4	91.8	93.0	22.5	96.7	93.5	26.0	0.45
MSIS	114.6	118.0	34.3	114.5	116.0	33.7	114.8	123.0	37.0	0.98
IOS	4.2	4.0	2.0	3.6	3.0	1.9	5.9	6.0	1.3	†
FSFI-6	16.2	17.0	6.1	16.4	18.0	6.2	15.6	17.0	6.3	0.64

CSI = Couple's Satisfaction Index; FSFI-6 = six-item Female Sexual Function Index; IOS = Inclusion of the Other in the Self Scale; MSI = Miller Social Intimacy Test; SSS-W = Sexual Satisfaction Scale for Women.
*$P \le .05$; †$P \le .01$.

Levels of Marital (Relational) Intimacy

Before data analysis, a latent factor score representing relational intimacy was created for each participant using principle components factor analysis with varimax rotation using the standardized IOS, MSIS, and CSI total scores (Table 1). This approach was taken to decrease measurement-specific and random errors and is recommended for maximizing construct measurement.[37] The factor analysis strongly supported a single-factor solution for the intimacy variable (78.9% variance accounted for; factor loadings for the IOS, MSIS, and CSI were 0.85, 0.88, and 0.94, respectively; eigenvalue = 2.24). The resultant intimacy factor score was used in all mediation models described below.

Mediation Analyses

Mediation analyses were completed using a bias-corrected bootstrapping procedure with 95% CIs.[38] Bootstrapped CIs are preferred over traditional mediation methods, such as the Sobel method, because of the lack of restrictive assumptions regarding the sampling distribution of the indirect effect and increased reliability for detecting mediating effects. Bootstrapping was used to estimate and determine the statistical significance of all total, direct, and indirect effects determined by whether CIs included 0.0. An indirect effect refers to the impact of an independent variable on a dependent variable through a mediating variable. PROCESS 2.15 for SPSS 22 (IBM Corp, Armonk, NY, USA)[39] was used for all analyses, using models 4 (simple mediation) and 59 (moderated mediation), and 10,000 samples were derived from the original sample ($n = 64$) by a process of resampling with replacement. Effect ratios (ERs; indirect effect divided by total effect) estimate the percentage of the relation between impaired sexual functioning and each sexual outcome (total effects) that is attributable to intimacy (indirect effect).[40] ERs were deemed appropriate because the model results and parameter values reported conformed to recommended guidelines. However, because consensus guidelines for determining and interpreting the effect size of indirect effects are somewhat unclear, these metrics should be interpreted with caution.[39,40]

An a priori power analysis indicated 53 participants were needed for power of at least 0.80 to detect indirect effects based on the expected moderate-to-large magnitude associations among study variables.[41]

RESULTS

Tables 2 and 3 present participant characteristics. The clinic settings differed significantly on mean age ($P < .01$) and marital duration ($P < .02$). These variables initially were considered potential covariates in all models; however, neither variable was a significant covariate in any mediation model ($P \ge .09$ for all comparisons), and the pattern of results was identical without covariates. Therefore, models are reported without covariates.

The first hypothesis examined marital intimacy as a mediator of the relation of impaired sexual functioning to sexual

Table 3. Descriptive statistics according to sexual functioning groups

Variable	Impaired		Non-Impaired		
	Median	IQR	Median	IQR	*P* value
Frequency of intercourse	1.00	18	8.00	12	†
Married	14.00	16	12.00	21	.38
Age	44.00	21	40.00	20	.42
Summary scores					
CSI	44.50	31.75	67.00	21.50	*
FSFI	13.00	8	23.00	4	†
FSFI subscales					
IOS	4.00	3	6.00	3	.05
MSI	114.00	44.75	142.00	35.50	*
SSS-W	84.50	18	120.00	22	†

CSI = Couple's Satisfaction Index; FSFI = Female Sexual Function Index; IOS = Inclusion of the Other in the Self Scale; IQR = interquartile range; MSI = Miller Social Intimacy Test; SSS-W = Sexual Satisfaction Scale for Women.
*$P \le .05$; †$P \le .01$.

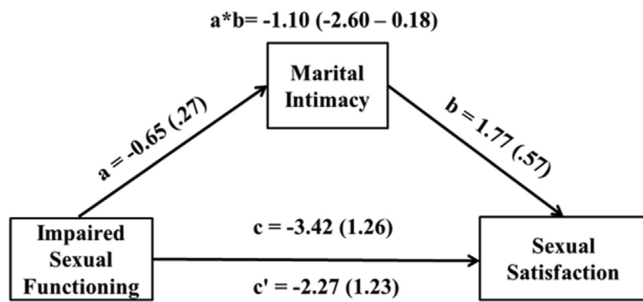

Figure 1. Mediation pathways of impaired sexual functioning predicting sexual satisfaction. Values represent unstandardized coefficients. Values in parenthesis reflect standard error except the indirect a*b pathway which displays 95% CI.

satisfaction and sexual distress, respectively (Figures 1 and 2, Table 4). Impaired sexual functioning exerted a significant indirect effect on sexual satisfaction (ER = 31.2%) and sexual distress (ER = 33.2%) through marital intimacy (B = −1.10 and −1.17; all 95% CIs exclude 0.0). Inspection of the directionality of effects indicated that women with impaired sexual functioning reported lower marital intimacy, which in turn predicted lower sexual satisfaction and greater sexual distress. Lower marital intimacy accounted for sizeable proportions of the relations between impaired sexual functioning and sexual satisfaction (ER = 31%) and sexual distress (ER = 33%).

The second hypothesis examined marital intimacy as a mediator between impaired sexual functioning and sexual frequency (Figure 3, Table 4). Women with impaired sexual functioning reported more infrequent intercourse (mean difference = 5.12 days), which was significantly mediated by marital intimacy (B = −1.55). The ER indicated that intimacy accounted for 30% of this association. (The mediation models were repeated with each individual intimacy indicator. The pattern of results was identical for sexual frequency across all three indicators. The CSI also was a significant mediator for distress but not for sexual satisfaction. The MSIS did not significantly mediate sexual satisfaction and distress. However, all non-significant results were in the direction of reported effects, with 95% CIs narrowly overlapping with 0.0.)

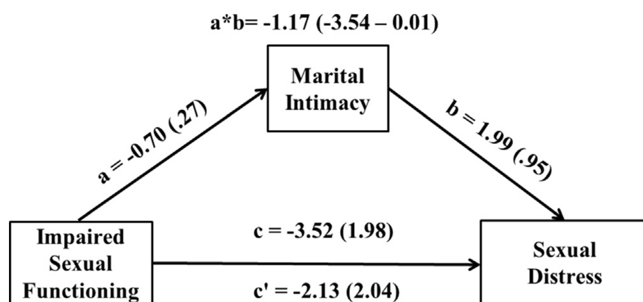

Figure 2. Mediation pathways of impaired sexual functioning predicting sexual distress. Values represent unstandardized coefficients. Values in parenthesis reflect standard error except the indirect a*b pathway which displays 95% CI.

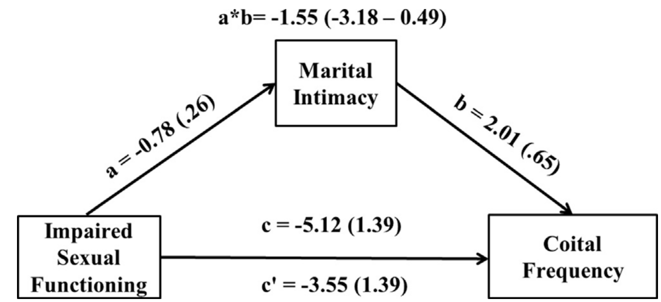

Figure 3. Mediation pathways of impaired sexual functioning predicting coital frequency. Values represent unstandardized coefficients. Values in parenthesis reflect standard error except the indirect a*b pathway which displays 95% CI.

Additional moderated mediation analyses probed whether these indirect effects identified were altered by age and marital duration. Results showed that the mediated relation between sexual functioning and satisfaction through relational intimacy was strongest for older women (P = .04). All other indirect effects were independent of age (P = .41−.95) and marital duration (P = .18−.76).

DISCUSSION

The present investigation examined the meditating role of marital intimacy in the association of impaired female sexual functioning with several sexual behavioral and psychological outcomes (sexual frequency, sexual satisfaction, and sexual distress). Some interesting results emerged from this study. Women with impaired sexual functioning reported lower sexual satisfaction and greater sexual distress than women without impaired sexual functioning, and this difference was mediated by lower rates of perceived marital intimacy. This suggests a compensatory role for marital intimacy in protecting relational and sexual interference associated with impaired sexual functioning and mirrors other research implicating the protective function of marital closeness, especially in permanent relationships.[12,22,27] Further, results are consistent with and provide support for social exchange models, such as the interpersonal exchange model of sexual satisfaction, that view sexual satisfaction as a balance between sexual rewards and costs. In this frame, greater relational intimacy operates as a protective factor through enhancing relationship reward or by increasing sexual frequency and satisfaction or as a factor that decreases sexual costs such as distress. Because distress increases as sexual desire discrepancy between marital partners intensifies,[42] the results speak to the possibility that intimacy also might serve as a marker for discrepant partner desires.

Although marital intimacy mediated some associations, a link persisted between impaired sexual functioning and sexual satisfaction and sexual distress. This connection underscores the potential negative impact impaired sexual functioning can pose on women's general sex life despite adequate perceived levels of

Table 4. Impact of female sexual dysfunction and intimacy on sex frequency, satisfaction, and distress*

Path		Frequency of sex (n = 61)					Satisfaction (n = 62)					Distress (n = 60)				
		$B_{unstand}$	$SE_{unstand}$	B_{stand}	SE_{stand}	*P* value	$B_{unstand}$	$SE_{unstand}$	B_{stand}	SE_{stand}	*P* value	$B_{unstand}$	$SE_{unstand}$	B_{stand}	SE_{stand}	*P* value
	Total effect															
c	ISF → sexual functioning	−5.12	1.39	−0.97	0.26	‡	−3.42	1.26	−0.74	0.27	‡	−3.52	1.98	−0.79	0.27	.08
	direct effects															
a	ISF→ intimacy	−0.78	0.26	−0.77	0.26	‡	−0.65	0.27	−0.65	0.26	†	−0.70	0.27	−0.18	0.40	†
b	Intimacy → sexual functioning	2.01	0.65	0.44	0.12	‡	1.77	0.57	0.43	0.13	‡	1.99	0.95	0.33	0.13	†
c′	ISF → sexual functioning	−3.55	1.39	−0.63	0.26	†	−2.27	1.23	−0.46	0.26	0.07	−2.13	2.04	−0.58	0.27	.30
	indirect effects (through mediator)															
ab	ISF → intimacy → sexual functioning	−1.55	0.67	−0.34	0.14	‡	−1.10	0.60	−0.28	0.14	†	−1.17	0.89	−0.21	0.12	†
	95% CI of bootstrap	−3.18 to −0.49					−2.60 to −0.18					−3.54 to −0.01				
	effect ratio, %	30.2					31.2					33.23				
	model summary	R^2 = 0.30				‡	R^2 = 0.24				‡	R^2 = 0.12				†

The "Sexual outcome (patient report)" heading spans all three outcome groups (Frequency of sex, Satisfaction and Distress).

ISF = impaired sexual functioning; SE = standard error; stand = standarized; unstand = unstandarized.
*Bias-corrected bootstrapping was used for all analyses with covariates. Path labels reflect standard nomenclature (cf Fritz and MacKinnon[41]); c and c′ reflect the total and direct effects of female sexual dysfunction on sexual functioning before and after accounting for intimacy symptoms, respectively.
†$P \le .05$; ‡$P \le .01$.

marital intimacy. Collectively, this primary finding highlights the important interplay among relational factors in women's sexual health in general and in women with chronic sexual health difficulties such as impaired sexual functioning.

Contrary to other studies, younger women in this sample did not report higher levels of distress about their sexual functioning, satisfaction, or intimacy.[14,43] This finding suggests that the indirect effect of sexual dysfunction on these characteristics through marital intimacy might be independent of age. This could reflect the overall older age of the sample compared with previous studies that more often included younger collegiate convenience samples that are less representative of treatment-seeking women in clinical practice. Another possible reason for this finding is that younger women might have more autonomous self-perceptions, less worries about attractiveness, and thus less distress for mate guarding.[44]

The second hypothesis was confirmed; specifically that relational intimacy mediated the impact of impaired sexual functioning on lower sexual frequency. Women with impaired sexual functioning reported experiencing lower relational intimacy and less frequent sexual encounters than women with non-impaired sexual functioning, consistent with prior research.[45] Notably, the magnitude of the effect indicated that intimacy accounted for 1.5 days of the 5-day difference in sexual frequency reported by the groups. This illustrates the intentional nature of female sexual desire and how committing to engage in sexual activity is a complex decision-making process.[46,47] For instance, Giles and McCabe[48] found that women with FSD who might experience less physical satisfaction during sex nevertheless are more likely to be motivated by relational intimacy-based reasons to have sex, deriving a sense of sexual satisfaction from such sexual activity.[48] These findings extend previous studies demonstrating that physical aspects of sexual response in women, including arousal, vaginal lubrication, and orgasm, were poor predictors of distress, whereas relational consequences played a mediating role between the two factors.[5,22] Taken together, this finding emphasizes the need for providers to take relational issues into greater consideration when patients report feeling distressed about their impaired sexual functioning or coital frequency.

In general, neither age nor marital duration altered the primary mediation results. This implies that the role of relational intimacy in mediating sexual outcomes in impaired sexual functioning is robust to individual differences in age and marital duration. This pattern is inconsistent with theoretical models that predict habituation of sexual frequency and sexual interest as a function of greater marital duration and relational intimacy.[20,21,49,50] The one exception to this pattern indicated that intimacy played a stronger mediating role in sexual satisfaction as age increased. This discovery expands on prior findings that showed a decrease in sexual frequency over time, with age being the factor most strongly predictive of sexual frequency.[51] Although this study was cross-sectional, older age predicted lower sexual frequency (*P* = .03). Future research should

examine the stability of the link between marital intimacy and sexual frequency and whether age might moderate this association.

The unique contribution of this study includes methodologic and statistical advances including the use of a sample of treatment-seeking married women in established relationships. Because of the permanence of the relationship, and a more solidified narrative of sex,[52] married women and women in long-term relationships have had more opportunities to develop adaptive behaviors that result in reaching desired levels of marital intimacy and are more likely to have learned to navigate their inner sexual maps within the relationship, despite challenges such as impaired sexual functioning. Thus, for married women with impaired sexual functioning, engaging in sexual intimacy might become a "choice" based on relational factors and commitment to the relationship rather than a physiologic drive. This speculation is consistent with the conclusions of a study that found that, in their sample, married couples had a high level of interpersonal exchange and commitment to the relationship, although the quality of their relationship was somewhat lower than for cohabitating or dating couples.[15] The use of bootstrapped mediation analyses and latent factor scores to improve construct measurement are notable strengths of this study.

LIMITATIONS

Limitations include lack of data about specific clinical diagnoses, reliance on only coital frequency, and a homogeneous sample in age, ethnicity, sexual orientation, and marital status. Recruitment from clinical settings might have oversampled women at risk for sexual dysfunction. Another limitation is combining different sexual dysfunctions under the umbrella term *impaired sexual functioning.* In addition, the FSFI-6 uses DSM-IV criteria to define risk for impaired sexual functioning, which is less stringently defined than current, more quantifiably defined DSM-5 definitions of the various sexual dysfunctions. Thus, caution is warranted on how the findings generalize to DSM-5—defined FSD. Future studies should include the two sexual partners' perspectives and examine subgroups based on physiologic and desire-based pathology and include more diverse measurements of sexual activities (ie, "outercourse," anal and oral sex).

The cross-sectional design also precludes causal interpretations and prevents the testing of competing models regarding the directionality of effects among sexual functioning, relational intimacy, satisfaction, and sexual outcomes (ie, reversing arrows does not distinguish plausible simple mediation models[53]). For instance, the present data and design cannot rule out the alternative possibility that sexual satisfaction or frequency of intercourse undergirds or improves relational intimacy or whether relations are attributable to unobserved physiologic or psychological factors (ie, depression). Given the close interrelations between these constructs, novel methodologic approaches (ie, high-resolution ecologic momentary assessment) in combination with statistical tools that can model reciprocal, transactional, or alternative causal influences will likely provide tractable information that can begin to disentangle causal relations. Replication in larger samples of cohabitating and dating couples, gay and lesbian couples, and including longitudinal and interventional designs are imperative to validate these conclusions and determine the generalizability of these findings to couples with diverse backgrounds and further theoretical relevance to family systems theory.

CONCLUSIONS

Existing evidence suggests that with marital satisfaction, a warm interpersonal climate matters more than sexual frequency, whereas relationship permanence drives sexual frequency.[54,55] Results also highlight the need for screening and assessment for impaired female sexual functioning.

Marital intimacy has an important role within the mosaic of female sexuality.[56—58] Targeting marital intimacy could enhance the efficacy of interventions aimed at increasing sexual functioning, sexual satisfaction, and decreasing sexual distress. Intimacy interventions should test for positive effects on key psychological and behavioral aspects of sexual functioning for women with impaired sexual functioning.

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