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Bibliotherapy interventions for female low sexual desire: erotic fiction versus self-help

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ABSTRACT

Low sexual desire is the number one complaint that women bring to their health care practitioners. Limited research demonstrates that written materials (or bibliotherapy) increase sexual desire in women. The aim of this study was to further the literature by conducting a comparative study on the efficacy of two types of written materials when read by women struggling with low sexual desire: self-help versus erotic fiction. Thirty-five women across the two conditions completed sexual functioning measures at two time points (pre-intervention and post-intervention), with 27 women completing a six-week follow-up. Participants reading both types of books made statistically significant gains on the two measures of desire, arousal, lubrication, satisfaction, orgasm, pain reduction, and overall sexual functioning. In both conditions, those participating in a six-week follow-up maintained their gains in desire, satisfaction, pain reduction, and overall sexual functioning. Findings are discussed within the context of treatment for low sexual desire in women. Implications are discussed.

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Female; hypoactive sexual desire disorder; bibliotherapy

Introduction

The most common sexual concern that women struggle with is low or absent sexual desire. Research finds that 24%–36% of women between the ages of 30 and 59 will experience low sexual desire at some point in their lives (Brotto, Bitzer, Laan, Leblum, & Luria, 2010; West et al., 2008). Indeed, low sexual desire is the most common sexual complaint that women bring to their health care practitioners (Basson, 2007). Additionally, experiencing low sexual desire is linked to a decrease in marital satisfaction and diminished overall quality of life (Brotto, Basson, & Luria, 2008). Despite the high prevalence of low sexual desire among women and its associated psychological issues (Brotto et al., 2008), there is currently no standard treatment available (McNab & Henry, 2006) and it has been described as one of the most difficult sexual issues to treat (Basson, 2007).

Empirically evaluating treatment options for women suffering from low sexual desire is a pressing concern. However, to date, there have only been a handful of studies providing evidence for the efficacy of treatment for low sexual desire (Heiman, 2002). The face-to-

face treatment that appears to be most promising is a short-term (i.e. three session) mindfulness-based group psycho-educational intervention (Brotto et al., 2008). Despite the effectiveness reported for this intervention, a significant downside is its accessibility. Specifically, it requires the presence of clinicians trained in this specific protocol. Additionally, treatments for sexual dysfunctions are often not covered by insurance companies (Westheimer, 2007), further limiting the accessibility of such a treatment for a great number of women.

One affordable and accessible psychological treatment for sexual dysfunction that has been the focus of recent research is bibliotherapy. Indeed, the anonymity, and low-cost involved in purchasing a book, especially to be shipped or downloaded via the internet allows for treatment to reach women who may not be able to access services for a variety of reasons. Based on research on the effectiveness of self-help books for other sexual issues (e.g. anorgasmia) as well as the assertion that self-help occupies “a stable position in ... treatment” (van Lankveld, 2009, p. 143) of sexual dysfunctions, Mintz and colleagues recently conducted two studies on the effectiveness of self-help for women struggling with low sexual desire. In a first study, Mintz, Balzer, Zhao, and Bush (2012) reported that compared to those in a wait-list control group, women who read *A Tired Woman's Guide to Passionate Sex* (Mintz, 2009) made greater gains on measures of sexual desire, sexual arousal, and sexual satisfaction. A second study (Balzer & Mintz, 2015) compared the effectiveness of this previously studied book, a similar self-help book (*Reclaiming Your Sexual Self*, Hall, 2004), and a wait-list control group. Based on their findings, the authors concluded that both books are equally effective in terms of the outcome of desire, but that whether or not the Mintz (2009) book has greater effectiveness in terms of other domains of sexual functioning is equivocal. Nevertheless, for the domain of sexual desire, Balzer and Mintz (2015) reported effect sizes for both books in the range considered large by Cohen (1988), mirroring effect sizes for the Mintz (2009) book found by Mintz et al. (2012) in their first study. Additionally, in both studies those reading the books maintained their gains in desire at follow-up. Balzer and Mintz (2015) concluded that clinicians could now feel confident recommending self-help books to clients with low sexual desire, but nevertheless recommended additional study of bibliotherapy for low desire.

While some researchers use the term bibliotherapy as synonymous with self-help (e.g. Balzer & Mintz, 2015; Mintz et al., 2012; van Lankveld, 2009), it is important to note that others define this term more inclusively. Specifically, Hubin, Sutter, and Reynaert (2011) define bibliotherapy broadly as including both traditional self-help and erotic fiction, pointing out that both types of reading material are useful in increasing sexual desire among those suffering from low desire. With respect to erotic fiction, Hubin et al. (2011) state that when treating women with problems with sexual desire, “... a significant number of clinicians include exercises designed to stimulate the erotic imagination especially by recommending that their female patients read erotic works” (p. 90).

Despite this proclaimed widespread use of erotic fiction by clinicians, there is a dearth of empirical research on the effectiveness of erotic fiction in increasing desire. Research conducted over 30 years ago found that reading erotic material increased sexual arousal and sexual drive in a representative sample of women from the United States (Schmidt, Sigusch, & Scafer, 1973). Two similarly dated studies (Coles & Shamp, 1984; Mosher & Greenberg, 1969) found that reading erotica enhanced women's sexual desire. In short,

the limited literature on the effect of reading erotic fiction on female sexual functioning is decades old. Most important, we could locate no current studies examining the effectiveness of reading erotica among women struggling with low sexual desire.

Given this dearth of research on the effectiveness of reading erotica, prior research demonstrating the effectiveness of self-help, and the need for validated treatments for women suffering with low desire, this study examined the effectiveness of both self-help and erotic fiction. Hypotheses were that, among women self-reporting low sexual desire, reading both a self-help book and an erotic fiction book will result in positive change over time in sexual desire and perhaps other aspects of sexual functioning, with neither more effective than the other immediately upon reading. Conversely, based on the finding that non-violent erotic online pornography produces only short-term increases in women's sexual desire (Fisher & Davis, 2007; Kohut & Fisher, 2013), it is hypothesized that the erotic fiction book will not result in maintenance of gains over time. On the other hand, based on prior research (Balzer & Mintz, 2015; Mintz et al., 2012), it is anticipated that among those reading the self-help book, gains will be maintained over time. It is hoped that this study will assist women struggling with low desire and clinicians working with such women in choosing reading materials to boost desire.

Methods

Participants

Married women between the ages of 30 and 55 who self-identified as having low sexual desire in their otherwise happy marriages were recruited through listservs, flyers, and radio advertisements. Data were collected in three waves, with a total of 47 adult women completing the pre-test measures. Participants were then randomly assigned to either the self-help or erotic fiction group, with 20 being assigned to former and 27 being assigned to the latter. A higher number of participants were assigned to the erotic fiction group in Wave 3 due to the emerging trend of higher attrition in the erotic fiction group (see Discussion). To explain, in order to have sufficient data after attrition to compare the two groups at post-test, more participants were assigned to the erotic fiction group. Only those completing pre-test and post-test measures were included in the final sample, which included 35 participants (self-help (SH) $n = 19$; erotic fiction (EF) $n = 16$), as 12 participants (SH: $n = 1$; EF: $n = 11$) did not complete post-test measures. All participants identified as heterosexual and married. The average marriage length across groups was 11.45 years, and the average age of participants was 40.83 years. All participants were residing in the United States and most ($n = 33$; 94%) identified as White. Most ($n = 22$; 62.9%) identified as Christian. All participants reported having some college experience, with 34.3% having a master's degree. Most participants reported household incomes between \$50,000 and over \$100,000. Additionally, about 63% of the participants had children currently living at home.

Measures

The Female Sexual Function Index (FSFI; Rosen et al., 2000) is a widely used, 19-item scale that was used to measure sexual desire, as well as five additional domains or

subscales of female sexual functioning, specifically arousal, lubrication, orgasm, satisfaction, and pain. The domain score ranges are: desire 1.2–6; arousal 0–6; lubrication 0–6; orgasm 0–6; satisfaction 8–6; and pain 0–6. Additionally, the six domain scores are added to obtain a total score which represents overall sexual functioning and can range from 2 to 36, with a higher score indicating greater sexual functioning. Rosen et al. (2000) report good ($r = .88$) two to four week test–retest reliability for the total scale and individual domains ($r = .79–.86$), as well as very good internal consistency for both the total scale ($\alpha = .97$) and the individual domains ($\alpha = .89–.96$). In this study, the internal consistency (α) for the pre-test, post-test, and follow-up, respectively, was as follows: FSFI total ($\alpha = .94, .96, .96$); desire ($\alpha = .73, .87, .92$); arousal ($\alpha = .94, .95, .82$); lubrication ($\alpha = .97, .95, .97$); orgasm ($\alpha = .94, .97, .95$); satisfaction ($\alpha = .72, .68, .77$); and pain ($\alpha = .97, .97, .97$).

The Hurlbert Index of Sexual Desire (HISD; Apt & Hurlbert, 1992) was used as a second measure of sexual desire. This 25-item self-report measure assesses an individual's level of reported sexual desire as defined by its emotional, behavioral, and cognitive components. Total scale scores range from 0 to 100, with individual items rated on a five-point Likert-type scale, ranging from 0 (all of the time) to 4 (never). Higher scores indicate higher levels of sexual desire. Beck (1995) reports that the HISD had good internal consistency ($\alpha = .86$), test–retest reliability ($r = .86$), and concurrent, construct, and discriminant validity. The internal consistency in this study was $\alpha = .76$ at pre-test, $\alpha = .80$ at post-test, and $\alpha = .93$ at follow-up.

Procedures

Once campus Institutional Review Board approval was obtained, advertisements were distributed through local flyers, radio, social media, and email listservs for universities and sexuality related interest groups. The advertisements sought heterosexual, married women who felt satisfied with their marriages but bothered by their low sex drive. Interested individuals responded via phone or email to the recruitment advertisements. After confirmation that they met the inclusion criteria (i.e. 30–55, married women, self-identified as having low sexual desire in otherwise happy marriages), they were provided with additional information regarding the study including being sent the informed consent to examine. Participants then indicated willingness to partake in the study and 51 participants indicated such willingness. These 51 participants were then sent a link to the informed consent and the pre-test survey. Following the completion of the pre-test surveys, participants also completed a separate identification survey where they were asked for their name, email, and mailing address, as well as if they would like to receive a paper or an electronic version of the book. Participants were then assigned to either the self-help or erotic fiction condition. Participants in each condition were then mailed or emailed either the self-help book or the erotic fiction book with an accompanying letter, which provided detailed instructions for reading the book. These instructions were identical for both groups. Three weeks after mailing the books, an email was sent to participants reminding them that they had three more weeks to read the book. Approximately six weeks after the estimated date of arrival of the books, participants in both conditions were sent a link to the post-test survey. Participants were also reminded, as per the informed consent, that in six weeks they would receive a final set of follow-up questionnaires.

Upon filling out the final survey set, all participants were fully debriefed and provided with additional resources and referrals in the community for sexual concerns. Across all three survey administrations (pre-test, post-test, and follow-up), participants not responding within five days were emailed up to three reminders, each spaced five days apart. In addition to receiving copies of the books, as an additional incentive, participants who completed the post-test were offered a \$5 Starbucks gift card, and participants who completed the follow-up survey were offered a second \$5 Starbucks gift card.

Interventions

A Tired Woman's Guide to Passionate Sex (Mintz, 2009) is a 237-page self-help book designed as a treatment for heterosexual women experiencing low sexual desire. This book was chosen due to prior research on its efficacy (Balzer & Mintz, 2015; Mintz et al., 2012). The book contains three foundational chapters, including the author's story, the causes of low sexual desire, and the physical and emotional benefits of sex. The second foundational chapter details the multitude of reasons for low sexual desire, highlighting stress as a major cause. Following the foundational chapters are six chapters, each containing one step in a six-step psycho-educational and cognitive behavioral treatment program. Two appendices provide additional information (i.e. finding a therapist, resources for other sexual and psychological concerns).

Passion: Erotic Romance for Women (Bussel, 2010) is a 219-page collection of fictional erotic short stories. This book was chosen through the following procedure. First, a post was made to the listserv for the American Association for Sex Counselors, Educators, and Therapists (AASECT) describing the study and asking for recommendations for erotic books. The most mentioned and recommended three books were then examined by the researcher and an expert in female sexuality. *Passion: Erotic Romance for Women* was then chosen due to its length and target audience being most similar to *A Tired Woman's Guide to Passionate Sex*. The 20 short stories in this book were produced by well-known writers of female erotica who have been published in a variety of other collections, as well as won awards for their writing. The content and nature of these stories were judged to hold appeal to women in long-term relationships looking to rekindle romance and passion in their sex life. However, all the stories in the book are based on heterosexual couples, with an overarching theme of passionate seduction.

Results

Preliminary analyses

First, the data were screened in order to assess for missing data, outliers, and assumptions of normality. No missing data or outliers were detected. However, the FSFI pain subscale was transformed to correct for the negative skewness (± 3 SD) displayed at all three time points (pre-test, post-test, and follow-up). One-way analyses of variance (ANOVAs) were conducted to test whether there were differences in demographic or pre-test outcome variables between: (1) those who completed only the pre-test and those who completed both the pre-test and post-test; and (2) those who completed the measures at the first, second, and third time point and those who completed measures at the first and second time

points only. In the overall sample, as well as in the self-help and erotic-fiction conditions, no differences were found. Similarly, ANOVAs were used to test whether there were differences in demographic or pre-test outcome variables between the self-help and erotic fiction group, and no significant differences were found for any variables except the FSFI desire subscale. Specifically, individuals in the self-help group indicated lower levels of desire at pre-test ($M = 1.73$, $SD = 0.59$) than did participants in the erotic fiction group ($M = 2.28$, $SD = 0.76$), $F(1, 34) = 2.634$, $p = 0.023$. Thus, the analysis for the FSFI desire subscale was adjusted to reflect pre-group differences (i.e. use of ANCOVA [Analysis of Co-Variance] rather than an ANOVA).

Short-term efficacy of interventions

Although a common strategy is to conduct an omnibus multivariate analysis of variance F -test followed with univariate analyses, many statisticians recommend separate univariate F -tests on each outcome variable, with a Bonferroni correction used (Enders, 2003; Huberty & Morris, 1989; Jaccard & Guilamo-Ramos, 2002). Additionally, multiple univariate tests are recommended in exploratory studies in which new treatments are being investigated (Huberty & Morris, 1989); because this is the first study in over 20 years examining erotic fiction as well as only the third study examining self-help for low sexual desire, ANOVAs were considered especially appropriate. We thus conducted repeated measures ANOVAs using pre- and post-test scores on the dependent measures, except for the FSFI desire where, as noted earlier, due to pre-test differences between the groups, an ANCOVA was conducted. For this ANCOVA, post-test scores on the FSFI desire subscale were the dependent variables, group membership (erotic fiction, self-help) was the independent variable, and FSFI desire subscale pre-test scores were the covariate. Across all ANOVA and ANCOVAs, to protect against the effects of inflated Type I error with running multiple analyses, we used the Holm (1979) modified Bonferroni method; the traditional Bonferroni method (α/k) often has low statistical power, whereas the Holm approach is more powerful and adequately maintains experiment wise error rates (Jaccard & Guilamo-Ramos, 2002). To examine comparative changes over time (pre- to post-test) across groups (self-help vs. erotic fiction), the ANOVA or ANCOVA Group X Time interaction was examined. Additionally, in light of our hypothesis that there would be no difference between the two interventions and that both would result in short-term increases in sexual desire, even if this interaction was not significant (i.e. the groups were found not to differ), we also examined the main effects of time. If the time effect was significant (i.e. demonstrating an overall significant change over time across all participants), we more specifically examined these changes within both interventions (i.e. self-help and erotic fiction) by calculating within group pre-test to post-test effect sizes. Effect sizes represent a simple way of quantifying the size of a difference, and thus for interventions studies can be defined as "... a standardized, scale-free measure of the relative size of the effect of an intervention" (Turner & Bernard, 2006, p. 42). For small samples, the Hedges g effect size is recommended as it corrects for the small sample bias inherent in Cohen's d (Cumming, 2012; Turner & Bernard, 2006), and in fact can be relied upon when total sample sizes are less than 20 (Lakens, 2013; Turner & Bernard, 2006). More specifically, we calculated the Hedges g_{av} (correlation between pre-test and post-test accounted for and denominator is average standard) and interpret these

Table 1. Mean, standard deviations, and within group pre -to post-test effect sizes.

Measure	Self-help group (N = 19)					Erotic fiction group (N = 16)				
	Pre-test		Post-test		Hedges <i>g</i>	Pre-test		Post-test		Hedges <i>g</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
HISD***	36.52	9.08	41.68	11.95	0.47	39.50	6.95	43.87	9.04	0.52 [†]
Desire**	1.73	0.59	2.87	1.05	1.31	2.28	0.76	3.67	0.90	1.73
Arousal**	2.46	1.32	3.22	1.81	0.46	3.16	1.58	3.90	1.40	0.48
Lub*	3.07	1.84	3.74	2.00	0.34	4.21	1.67	4.80	1.46	0.36
Sat***	2.88	0.84	3.75	1.21	0.81	2.75	0.54	4.22	1.01	1.76
Orgasm**	2.71	1.84	3.47	2.05	0.38	3.07	1.52	4.22	1.83	0.66 [†]
Pain***	2.56	1.53	2.88	1.52	0.20	2.82	1.52	3.22	1.40	0.26
FSFI***	15.44	6.57	19.90	8.52	0.57	18.32	5.33	24.05	6.17	0.96 [†]
total										

Note: For all measures, higher scores indicate higher levels of sexual functioning. Using Cohen's (1988) conventions of small = .20, medium = .50, and large = .80+.

HISD = Hurlburt Index of Sexual Desire (range = 0–100); Desire = Female Sexual Functioning Index Desire subscale (range = 1.2–6); Arousal = Female Sexual Functioning Index Arousal subscale (range = 0–6); Lub = Female Sexual Functioning Index Lubrication subscale (range = 0–6); Orgasm = Female Sexual Functioning Index Orgasm subscale (range = 0–6); Sat = Female Sexual Functioning Index Satisfaction subscale (range = 0–6); and Pain = Female Sexual Functioning Index Pain subscale (range = 0–6). Total = Female Sexual Functioning Index total score (range = 2–36). For all measures, higher scores indicate higher levels of sexual functioning.

[†]indicates magnitude of pre-test to post-test effect size is greater for that intervention than the other intervention.

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$.

with Cohen's (1988) cautious rule of thumb: .2 = small, .5 = medium, and .8 = large). These results are presented below and Table 1 summarizes the means, standard deviations, and within group pre-test to post-test effect sizes.

The ANOVAs and ANCOVA yielded no significant interaction effects for any of the dependent variables, indicating that the one group did not change to a greater extent than did the other. However, all dependent variables showed significant time effects. For both measures of desire, time effects were as follows: for HISD, $F(1, 34) = 12.13$, $p = 0.001$ and for FSFI desire, $F(1, 34) = 11.95$, $p = 0.002$. On the HISD, in the self-help group, the pre-test score increased from 36.52 to 41.68 at post-test and the Hedges g was 0.47 (small), whereas in the erotic fiction group, the score increased from 39.50 at pre-test to 43.87 at post-test and the Hedges g was 0.52 (medium). On the FSFI desire, in the self-help group, the pre-test score increased from 1.73 at pre-test to 2.87 at post-test and the Hedges g was 1.31 (large), whereas in the erotic fiction group, the score increased from 2.28 at pre-test to 3.67 at post-test with the Hedges g also large (1.73). Results for the FSFI desire subscale are depicted in Figure 1.

As shown in Table 1, all the remaining FSFI subscales (satisfaction, pain, orgasm, arousal, and lubrication) showed time effects as well. Examining within group pre-test to post-test effect sizes, in the self-help group, the FSFI satisfaction displayed a large effect size while all remaining effects were in the small range. In the erotic fiction group, effect sizes were large for satisfaction, medium for orgasm, and small for arousal, pain, and lubrication.

Finally, the FSFI total time effect was $F(1, 34) = 24.22$, $p = 0.00$. In the self-help group, FSFI total scores increased from 15.44 at pre-test to 19.90 at post-test and the effect size was 0.57 (medium). In the erotic fiction group, FSFI total scores increased from 18.32 at pre-test to 24.05 at post-test, and the effect size (Hedges g) was 0.96 (large).

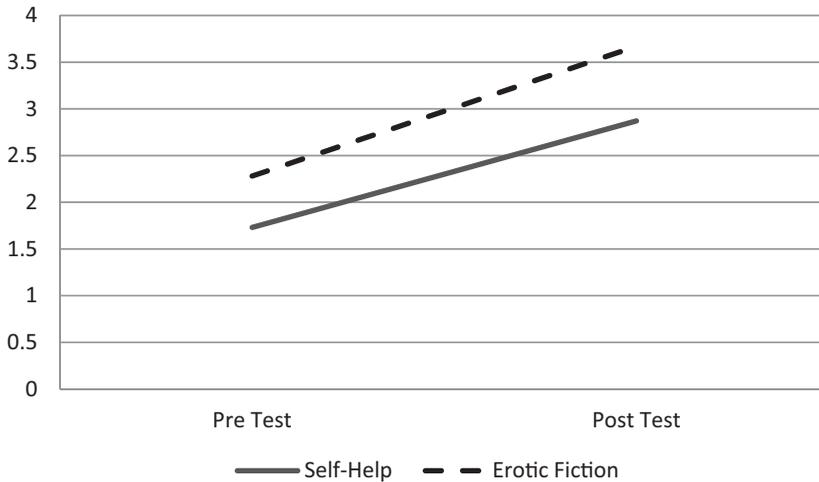


Figure 1. Short-term time effects for FSFI desire.

Longer term efficacy of the interventions

Of the 35 participants in the two groups who completed the post-test measure, 27 completed the follow-up measure six weeks later, with 16 participants in the self-help group and 11 participants in the erotic fiction group. Despite the significance of the findings, given these small numbers, these results should be considered exploratory.

To determine the longer term efficacy (i.e. six-week follow-up) of each type of bibliotherapy intervention, we conducted repeated measures ANOVAs comparing participants' scores on the dependent measures at pre-test, post-test, and six-week follow-up, with the Holm (1979) modified Bonferroni method used. Because the aim was to determine if each intervention resulted in maintenance of gains, rather than to compare maintenance across interventions, these analyses were conducted separately for each group. Because of their significance in examining maintenance of gains, Hedges g effect sizes for pre-test to follow-up scores are provided along with Cohen's (1988) interpretations (i.e. .2 = small, .5 = medium, and .8 = large). Table 2 includes the means, standard deviations, ANOVA results, and Hedges g effect sizes for each group. These results are also summarized below.

Self-help group

Significant time effects were found for FSFI desire, $F(1, 15) = 16.35, p = 0.00$; FSFI satisfaction, $F(1, 15) = 7.60, p = 0.006$; FSFI pain, $F(1, 15) = 19.79, p = 0.00$; and FSFI total, $F(1, 15) = 7.73, p = 0.005$. On all, *post hoc* analyses indicated that pre-test and post-test scores differed significantly and that pre-test and follow-up scores differed significantly, but the post-test scores and follow-up scores did not differ significantly, indicating that gains were maintained at follow-up. Additionally, for FSFI desire, satisfaction, pain and, total the Hedges g pre-test to follow-up effect sizes were in the large range. Lubrication and orgasm had effect sizes in the medium range, and HISD and arousal had effect sizes in the small range.

Table 2. Summary table for the long-term effects of time on dependent variable.

Measure	Pre-test		Post-test		Six-week follow-up		95% confidence intervals			Hedges <i>g</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	Pre- to post	Post- to follow-up	Pre- to follow-up	
HISD										
SH	36.5	9.88	42.62	12.81	40.50	17.05	[-10.30, -1.95]	[-2.04, 6.29]	[-9.61, 1.61]	0.27
EF	37.0	4.81	40.42	8.24	41.45	12.67	[-9.449, 2.045]	[-6.333, 4.878]	[-12.831, 3.922]	0.44
Desire										
SH***	1.83	0.60	3.00	1.09	3.11	1.10	[-1.65, -0.68]***	[-0.50, 0.28]	[-1.76, -0.80]***	1.40
EF***	2.12	0.67	3.32	0.82	3.16	1.31	[-1.824, -0.576]**	[-0.489, 0.816]	[-1.844, 0.228]*	0.96
Arousal										
SH	2.41	1.25	3.50	1.50	2.71	1.29	[-1.98, -0.20]	[0.10, 1.48]	[-1.14, 0.54]	0.23
EF	3.30	1.75	3.76	1.64	2.70	1.39	[-1.277, 0.349]	[0.424, 1.703]	[-0.433, 1.643]	0.36
Lub										
SH	3.00	1.66	4.08	1.60	4.21	1.88	[-2.10, -0.08]	[-0.73, 0.47]	[-2.40, -0.04]	0.66 [†]
EF	4.22	1.80	4.69	1.70	4.17	2.21	[-0.968, 0.041]	[-0.622, 1.659]	[-1.210, 1.319]	0.02
Sat										
SH**	2.80	0.77	3.75	1.22	4.00	1.40	[-1.57, -0.33]**	[-0.98, 0.48]	[-1.93, -0.47]**	1.03
EF**	2.68	0.56	3.96	1.03	3.56	1.36	[-1.916, -0.584]**	[-0.033, 0.833]	[-1.721, -0.024]*	0.81
Orgasm										
SH	2.62	1.67	3.75	1.72	3.75	1.88	[-2.14, -0.11]	[-0.96, 0.96]	[-2.13, -0.13]	0.61 [†]
EF	2.90	1.70	4.03	2.05	3.89	2.30	[-1.866, -0.388]	[-0.818, 1.109]	[-1.916, -0.048]	0.47
Pain										
SH***	2.57	1.48	3.17	1.22	4.67	2.04	[-1.05, -0.15]***	[-2.09, -0.92]	[-2.81, -1.40]***	1.14
EF***	2.40	1.66	3.16	1.58	4.65	2.34	[-1.565, 0.038]***	[-2.953, -0.028]	[-3.269, -1.240]**	1.06
FSFI total										
SH**	15.25	6.01	21.26	7.11	22.47	7.91	[-9.48, -2.54]**	[-3.93, 1.52]	[-11.19, -3.25]***	1.00 [†]
EF**	17.65	6.02	22.95	7.12	22.14	9.81	[-7.685, -2.897]***	[-3.144, 4.744]	[-9.005, 0.023]*	0.53

Note: SH = Self-help book intervention ($N = 16$); EF = Erotic fiction book intervention ($N = 11$). Using Cohen's (1988) conventions of small = .20, medium = .50, and large = .80+.

HISD = Hurlburt Index of Sexual Desire (range = 0–100); Desire = Female Sexual Functioning Index Desire subscale (range = 1.2–6); Arousal = Female Sexual Functioning Index Arousal subscale (range = 0–6); Lub = Female Sexual Functioning Index Lubrication subscale (range = 0–6); Org = Female Sexual Functioning Index Orgasm subscale (range = 0–6); Sat = Female Sexual Functioning Index Satisfaction subscale (range = 0–6); and Pain = Female Sexual Functioning Index Pain subscale (range = 0–6). Total = Female Sexual Functioning Index total score (range = 2–36).

[†]indicates magnitude of treatment (pre-test to follow-up Hedges *g*) effect size is greater for that intervention than the other intervention. For all measures, higher scores indicate higher levels of sexual functioning. Significance levels next to scale name pertain to repeated measures ANOVAs; significance levels next to confidence intervals pertain to pairwise comparisons.

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$.

Erotic fiction group

Significant time effects were found for FSFI desire, $F(1, 10) = 8.29, p = 0.009$; FSFI satisfaction, $F(1, 10) = 10.37, p = 0.005$; FSFI pain, $F(1, 10) = 12.20$; and FSFI total, $F(1, 10) = 10.93, p = 0.004$. On all, *post hoc* analyses indicated that pre-test and post-test scores differed significantly, and pre-test and follow-up scores differed significantly, but that post-test and follow-up scores did not differ significantly. As in the self-help group, these results indicated that the gains made at post-test were maintained at follow-up. For all but FSFI desire, satisfaction, and pain the pre-test to follow-up effect sizes were in the large range. The effect size for FSFI total was in the medium range, with HISD, arousal, lubrication, and orgasm in the small range. See Table 2 for details. Additionally, Figure 2 presents results for the overall sexual functioning across both groups for all three time points.

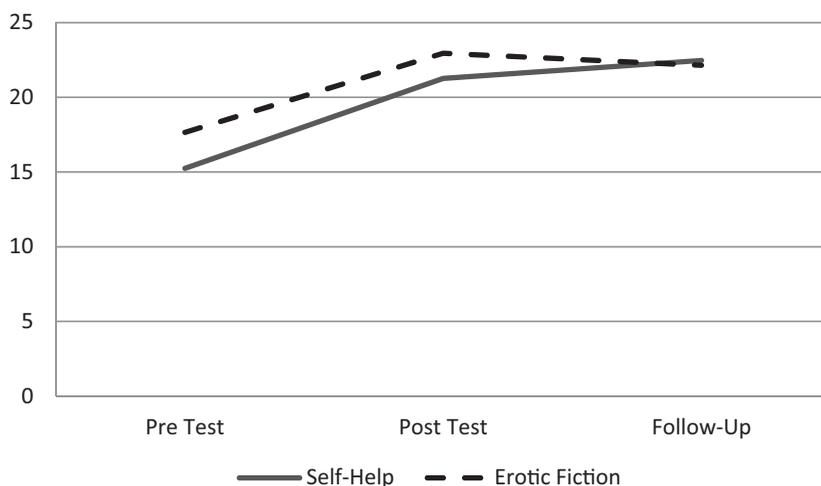


Figure 2. Longer term time effects on FSFI total.

Discussion

As far as the authors of this study could determine, this is the first study in approximately 20 years to evaluate the effects of erotic fiction on female sexual functioning (e.g. Coles & Shamp, 1984; Mosher & Greenberg, 1969; Schmidt et al., 1973). It is also the first study we could locate to specifically assess the effectiveness of erotic fiction for women suffering from low sexual desire. Finally, it is the first study to compare the effectiveness of erotic fiction versus self-help for alleviating low sexual desire among women. In line with predictions made at the outset of the study, women in both conditions (i.e. those who read the erotic fiction book and the self-help book) experienced significant improvement in sexual desire (across two measures). They also evidenced increased satisfaction, arousal, lubrication, orgasm, overall sexual functioning, as well as decreased sexual pain. As predicted, there were in fact no statistically significant differences between the two types of books. In line with our predictions of similar effectiveness at post-test, FSFI desire and satisfaction evidenced similarly large effect sizes in the self-help group and the erotic fiction group. However, the within group pre-test to post-test effect for the other measures of sexual functioning evidenced effect sizes in the small range for the self-help book group and of varying magnitudes for the erotic fiction book group. Also, contrary to our prediction that these gains would be maintained only in the self-help group at the six-week follow-up, both groups maintained their gains at follow-up on one of the measures of desire (FSFI desire), as well as on measures of satisfaction, pain, and overall sexual functioning. Further, other than the medium effect size for overall sexual functioning in the erotic fiction group, the effect sizes were in the same range (i.e. large) for both groups. In short, in both the short- and long-term, both books resulted in a similar pattern of change across time with the erotic fiction book perhaps resulting in greater change at post-test (i.e. following initial reading).

The similar efficacy of the two books in increasing sexual desire and sexual functioning is noteworthy, particularly given that one was written as a treatment and the other was not. Specifically, the self-help book was written as an intervention for women with low

sexual desire, and it incorporated psychological principles and techniques, while the erotic fiction book was written from an entertainment rather than a treatment perspective. One explanation for the equivalency of two books written from diverse perspectives is that both books comprise effective albeit distinct treatments that impact women's sexual thoughts and functioning. For instance, the self-help book might promote sexual functioning via psychological techniques such as cognitive behavioral methods and mindfulness, or by encouraging women to engage in honest communication with their partners, whereas the erotic fiction book might improve sexual functioning based upon arousing feelings upon reading and by providing written models of passionate sex. In sum, both books may be effective, but through different mechanisms of change.

Another explanation for the equivalency of the two books is that there is a construct that cuts across both. Specifically, perhaps both books (i.e. the self-help book, which offered women guidance, validation, and normalization regarding sexual dysfunction and the erotic-fiction book, which promoted women's ideas, thoughts, and fantasies about sex) provided women a feeling of empowerment and control. Richgels (1992) argued that low sexual desire in heterosexual women is "the result of a woman's gender role socialization and the systematic control of her sexuality by the dominant culture." Keeping with this feminist perspective, other researchers analyzing the relationship between women's gender roles and a mutually satisfying sexual relationship with a male partner claim that "social messages typically discourage women from initiating sex" (Zimmerman, Holm, Daniels & Haddock, 2002). It is therefore possible that both books were efficacious because they provide messages that encouraged women to embrace their sexual desires and pleasures. In this way, each book might have empowered women, and provided a feeling of being in control of one's own desire.

Another explanation for the equivalent changes in both groups is that those in both groups engaged in an act of doing something that drew their attention to sexuality. Relatedly, both books could have been effective simply based on the women's belief that these books would be helpful. Of note, past research comparing placebo medications to active pharmacological treatments for female sexual dysfunction has shown that women in the placebo condition often improve significantly in their sexual functioning. This finding, which mirrors findings of randomized controlled placebo trials for other conditions (e.g. irritable bowel syndrome, and chronic lower back pain), has led some to speculate that believing that something is going to help may actually spur physical changes through a mind-body interaction (Kaptchuk et al., 2008; Marchand et al., 1993; Meston, 2004). In this study, it is possible that simply participating in this study, and reading a book, provided the women with a sense that they were doing something to enhance their sexual well-being. This, in turn, might have been sufficient to improve their sexual functioning. Future research conducted with a qualitative methodology could help to more clearly ascertain the mechanism of change across both books, and to determine if their equivalency is due to distinct mechanisms of change, an active change mechanism that cuts across both, or perhaps a placebo effect. A study directly comparing one of these books to a placebo medication which participants are told is effective in increasing desire would also be quite informative.

Another area that deserves additional investigation is the unpredicted maintenance of gains in the erotic fiction group. It is not surprising that many of the gains made by the

group who read the self-help book (i.e. *A Tired Woman's Guide to Passionate Sex*) were maintained at follow-up, given that this effect was found in two prior studies (Balzer & Mintz, 2015; Mintz et al., 2012). However, again contrary to the hypothesis, those reading the erotic fiction book evidenced similar long-term effects. The initial hypothesis that women in the erotic fiction group would not maintain long-term gains in sexual desire was based on a similar finding that women exposed to non-violent pornographic videos evidenced only short-term rather than long-term gains in sexual desire (Fisher & Davis, 2007; Kohut & Fisher, 2013). However, in retrospect, there may be important differences between reading a book and watching a video. Specifically, reading erotic fiction may encourage participants' imagination and development of fantasy to a greater extent than viewing sexually explicit material and hence, result in more long-term gains. This explanation is consistent with Salomon's (1983) argument that "the amount of learning stimulated by a medium varies as a function of the mental effort invested in it." It is possible that the mental investment utilized in reading erotic fiction allowed participants to learn skills to activate their imagination and engage in fantasy that could then be accessed for a longer duration even after finishing the book. Additionally, the fact that participants in this study were able to read and engage with erotic material in a setting where they would naturally choose to engage in sexual thoughts or behavior (i.e. at home rather than a laboratory) may also be responsible for the longer term maintenance of gains. To explain, in the studies where women watched sexually explicit media, the media was consumed in a laboratory setting which may be less comfortable or natural than at home. Finally, it is also possible that maintenance of gains is due to the women in this study continuing to read the book or seeking out additional erotic books. Future studies should assess for this. Nevertheless, even without such studies, this study bolsters the clinical recommendation (Hubin et al., 2011) that erotica is effective in increasing sexual desire among women suffering from low desire. It also bolsters recent studies supporting the effectiveness of self-help for these same women.

Despite such positive findings, this study suffered from some methodological concerns. First, as is the case with most bibliotherapy studies (van Lankveld, 2009), although statistical significance and medium to large effect sizes were found in a majority of the outcome measures, the sample size of the study was small ($N = 35$ at post-test and $N = 27$ at follow-up). Results thus need to be replicated. Second, the lack of diversity within the sample limits the generalizability of this study. For instance, most of the participants in this study identified as White, Christian, highly educated, and reported high-income levels. A study with a more diverse sample is sorely needed. Finally, both the self-help book and the erotic fiction book only cater to heterosexual married couples, thus limiting their clinical utility with same-sex individuals. A study with lesbian women suffering from low sexual desire is needed, using self-help written for this or a more inclusive population and erotic fiction written from a lesbian perspective. Another methodological shortcoming that deserves attention is the attrition rates. Although the 25% attrition rate in this study is below the typical 30%–35% attrition rates in other bibliotherapeutic studies (e.g. Floyd, Scogin, McKendree-Smith, Floyd, & Rokke, 2004; Malouff, Noble, Schutte, & Bhullar, 2010), it is noteworthy as there was a discrepancy in the attrition rates between the two intervention groups. Specifically, while there was only a 5% attrition rate in the self-help book group, the erotic fiction book group evidenced a 40% attrition

rate from pre-test to post-test. This may suggest that some participants may have had an initially stronger negative reaction to the erotic fiction book than the self-help book, with perhaps those staying in the study having a strong positive reaction. Certainly, this raises the concern of greater self-selection in the erotic fiction group than in the self-help book. Nevertheless, this situation may mirror real life, where only those women amenable to reading erotic fiction will benefit from it, even if suggested to do so by a counselor or therapist.

This study was also limited by the books chosen. Despite being chosen based on either prior research (self-help) or expert opinion (erotic fictions), another avenue for additional research is a study using different self-help and erotic fiction books. Additionally, research on the effectiveness of erotic fiction for other types of sexual dysfunctions could be conducted. The results found for longer term improvement in suggest that erotic fiction might also be helpful for female sexual pain concerns. Research could also explore the use of erotic fiction with couples instead of individuals. Finally, future research could also investigate the comparative efficacy of female centric visual pornography and erotic fiction for enhancing sexual desire.

Despite its limitations, the results of this study provide evidence that clinicians may consider recommending either one or both of the books (self-help and erotic fiction) used in this study with heterosexual female clients with low sexual desire. As noted by Mintz (2012), bibliotherapeutic interventions with evidence of efficacy can be used by clinicians before treatment begins, during counseling, or after termination of counseling in order to serve as an ongoing resource. Nevertheless, given the high dropout rate in the erotic fiction group, clinicians should closely monitor client reactions to the written materials. While this research is useful to clinicians working with women with low sexual desire, it would also be important to disseminate the findings of this research to the popular media, in that these books could be particularly useful to women who are unable to afford face-to-face counseling.

This study has broader implications beyond the efficacy of the two books studied here. First, this study supports Hubin et al.'s (2011) more inclusive definition of bibliotherapy for low sexual desire as including both self-help and imaginative sources (e.g. fictional books). Second, this study adds to the limited literature on the efficacy of bibliotherapy, which has the ability to provide treatment to larger populations in a non-stigmatizing modality (Harwood & L'Abate, 2010). Third, this study contributes to the understudied area of treatments for low sexual desire, providing those who suffer with two easily accessible and potentially effective remedies. It is hoped that this study will serve as a starting point for more current research on the efficacy of all types of bibliotherapeutic interventions for low sexual desire in women.

Disclosure statement

One of the study authors is also the author of one of the books under investigation, and thus stands to benefit from book sales that result from a publication on the efficacy of the book. However, book royalties are extremely low, rendering this conflict minimal. Also, previous bibliotherapy efficacy studies have been conducted by the authors of the books under investigation (e.g. Morokoff & LoPiccolo, 1986), and book authors holding responsibility for assessing the effectiveness of their products is in line with recent recommendations (McKendree-Smith et al., 2003). In this study, the book author was not involved in participant recruitment, data collection, or data analysis.

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