

ORIGINAL RESEARCH

Mindfulness-Based Group Therapy for Men With Situational Erectile Dysfunction: A Mixed-Methods Feasibility Analysis and Pilot Study



Jennifer A. Bossio, PhD,^{1,2} Rosemary Basson, MD, FRCP,³ Miriam Driscoll, MD, FRCP,³ Shauna Correia, MD, FRCP,³ and Lori A. Brotto, PhD^{1,4}

ABSTRACT

Introduction: Recent advances in sexual health research support the benefits of mindfulness-based therapy (non-judgmental present-moment awareness) for the treatment of women’s sexual dysfunction.

Aim: To determine whether it is feasible to implement an adapted, empirically supported treatment protocol for female sexual dysfunction to the specific needs of men with situational erectile dysfunction (ED).

Methods: A mixed-methods approach was taken for this feasibility pilot study. A total of 10 men ($M_{age} = 40.3$, $SD = 14.01$, $Range = 20–67$) with a diagnosis of situational ED were recruited to participate in a 4-week mindfulness-based treatment group. The group was adapted from protocols shown to be effective for women with sexual dysfunction and edited to include content specific to situational ED. Sessions were 2.25 hours in length, included daily home-practice activities, and integrated elements of psychoeducation, sex therapy, and mindfulness skills. Men completed questionnaires (International Index of Erectile Functioning, Relationship Assessment Scale, Five Facets of Mindfulness Questionnaire, a treatment expectation questionnaire) at 3 time points (prior to treatment, immediately after treatment, and 6 months after treatment). 5 men ($M_{age} = 44.4$, $SD = 15.76$, $Range = 30–67$) participated in qualitative exit interviews.

Main Outcome Measure: Findings support the feasibility of adapting a mindfulness-based group treatment for situational ED.

Results: With respect to feasibility, the dropout rate was 10%, with 1 participant who did not complete the treatment. Comparisons between Time 1 and Time 3 self-reports suggested that this treatment protocol holds promise as a novel means of impacting erectile functioning (Cohen’s $d = 0.63$), overall sexual satisfaction (Cohen’s $d = 1.02$), and non-judgmental observation of one’s experience (Cohen’s $d = 0.52$). Participants’ expectations for the treatment were generally positive and correlated to self-reported outcomes ($r = .68–.73$). Qualitative analyses revealed 6 themes: normalization, group magic, identification of effective treatment targets, increased self-efficacy, relationship factors, and treatment barriers.

Clinical Implications: In a shift toward a biopsychosocial framework for the treatment of men’s sexual dysfunction, clinicians may consider incorporating mindfulness to address psychosocial and psychosexual components of dysfunction.

Strength & Limitations: This is the first study—to our knowledge—to adapt mindfulness protocols for use with men’s sexual dysfunction. Because this is a pilot study aimed at feasibility, the sample size is small and no control group was included, thus conclusions about efficacy and generalizability cannot be made.

Conclusion: The current study suggests that a mindfulness group therapy framework offers a feasible and potentially promising treatment avenue for men with situational ED. **Bossio JA, Basson R, Driscoll M, et al. Mindfulness-based group therapy for men with situational erectile dysfunction: A mixed-methods feasibility analysis and pilot study. J Sex Med 2018;15:1478–1490.**

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¹University of British Columbia, Department of Obstetrics and Gynaecology, Gordon & Leslie Diamond Health Care Centre, Vancouver, BC, Canada;

²University of British Columbia, Department of Urologic Sciences, Gordon & Leslie Diamond Health Care Centre, Vancouver, BC, Canada;

³University of British Columbia, UBC Sexual Medicine Program, Department of Psychiatry, Vancouver General Hospital Blusson Centre, Vancouver, BC, Canada;

⁴Women’s Health Research Institute, Vancouver, BC, Canada

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INTRODUCTION

Erectile dysfunction (ED) refers to the persistent inability to attain or maintain an erection sufficient for satisfying sexual performance.¹ At least one-third of men will experience ED at some point in their lifetime, with rates increasing to over 75% for men 70 years of age or older.^{2,3} Current models of male sexual arousal, such as the Dual Control Model⁴ or the Sexual Tipping Point model⁵ take into account the complex etiology of this extremely prevalent sexual dysfunction. These models propose that a man's sexual response is mediated by an interplay between inhibitory and excitatory mechanisms, and individuals vary in the propensity for each.⁴ In light of research demonstrating the complexity of ED etiology and the inseparable "psyche and soma," clinical practice and research supports the shift toward an integrative, biopsychosocial approach to the treatment of ED.^{6–13}

Presently, clinical trials focus mainly on pharmacotherapies for ED; specifically, phosphodiesterase-5 inhibitors (PDE5is), despite strong evidence to support the benefits of an integrative approach. Presently, empirical research documenting the development and evaluation of psychosocial treatments is limited, and what research does exist is criticized for its low quality.^{14,15} For example, there is, as of yet, no consensus on the number of psychological treatment sessions, partner involvement, theoretical orientation, or meaningful treatment outcomes. Further, ED treatment studies have yet to evaluate efficacy for men in same-sex relationships.

We propose that an effective psychosocial approach to the treatment of men's sexual dysfunction—in particular, situational ED (ie, ED is limited to certain contexts, typically in the presence of performance demands¹⁶)—would target attentional, cognitive, and neurobiologic mediators that perpetuate erectile difficulties. In recent years, the sex therapy field has broadened to include mindfulness-based interventions,^{17,18} which is an evidence-based approach believed to address these very mechanisms.¹⁹ Mindfulness refers to non-judgmental, present-moment awareness;²⁰ the non-judgmental stance being integral to reducing a man's reactivity to the situational loss of erectile function.

The benefits of mindfulness-based interventions have been documented for sexual difficulties in women, including genital pain,^{21,22} sexual interest/desire difficulties,^{23–25} sexual problems following gynecologic cancer,^{26,27} and sex-related distress associated with a history of sexual abuse.²⁸ The hypothesized mechanisms of benefit from mindfulness as a treatment, such as reduction of evaluation and critique of sexual sensations, cognitive distractions, distress, and improved attentional processing of sexual stimuli, map on closely to the factors involved in the development and maintenance of sexual difficulties in men.^{4,5}

As mindfulness continues to gain momentum as an evidence-based treatment for women's sexual difficulties, the utility of this intervention for male sexual dysfunction holds promise.^{17,29–31} In women, mindfulness reduces anxiety, sexual distress,

improves sexual satisfaction,²³ and is thought to reduce performance anxiety.³² Further, mindfulness shares similarities with *sensate focus*, a fundamental component of traditional sex therapy^{33,34} and a common treatment for sexual difficulties in men.^{17,29,35} To our knowledge, only 1 study to date has employed the use of meditative practices as a treatment for ED.³⁶ Sunnen³⁶ reported a small-scale descriptive and unpublished study, in which 7 of 9 patients experienced recovery of their erectile functioning within 2 weeks of practicing meditation (it should be noted, however, that it is unclear whether the meditative practices in this study were in line with contemporary understandings of mindfulness). We theorized that mindfulness may improve situational ED by reducing anxiety³⁷ that inhibits a sexual response and focusing attention on physical and mental sexual stimuli over distractors, both of which are documented antecedents to men's sexual response.^{38,39}

The purpose of this study was to examine the feasibility of a novel mindfulness-based group treatment for situational ED. We used a combination of quantitative analyses as well as qualitative exploration, given demonstrated benefits when these methodologies are combined for elucidating understudied aspects of human sexuality.^{40–44} The primary goals of this study were: (i) perform a comprehensive analysis of the lived experience of men who partake in this treatment (ie, qualitative analyses of exit interview content) to help guide the multiphase model of development and evaluation of complex psychosocial interventions for men with sexual difficulties; (ii) determine whether it is feasible to adapt an empirically supported treatment protocol for female sexual dysfunction to the specific needs of men (ie, retention, men's expectations for treatment); and (iii) assess participants' self-reported outcomes 6 months following group participation (ie, self-reported sexual function, relationship functioning, mindfulness), as well as the impact of expectations on self-reported outcomes. Given the exploratory nature of this early-stage feasibility study, we did not make specific predictions about outcomes.

METHOD

Participants

Men seeking treatment for situational ED were eligible to participate. Inclusion criteria were men who met the diagnostic criteria for situational ED according to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition⁴⁵ for a minimum 6-month duration, fluent in English, and 19 years of age or older. Men were eligible regardless of relationship status and sexual orientation. Men were deemed ineligible if they had a current diagnosis of a sexual dysfunction other than situational ED. Men with active physical illness (cardiovascular disease, diabetes, etc.), disabilities, or unstable mental health concerns (eg, anxiety, current depressive episode) that would interfere with self- or partnered-sexual activities were also excluded, because these conditions could prevent participants from engaging in

Table 1. Therapeutic content of the treatment group

Session	In-Session Meditation	Sexuality Education and Exercises	Home Practice (Length/day)
1	Raisin exercise	<ul style="list-style-type: none"> • Physiology and pathophysiology of erectile functioning and situational ED • Impact of “goal-oriented” sex • Rationale for mindfulness and ED • Sexual response model • Informal mindfulness practice 	Mindful breathing (40 minutes) Informal mindfulness practice (10 minutes)
2	Body scan	<ul style="list-style-type: none"> • Review of home practice • 5-part cognitive model • Dealing with thoughts in mindfulness 	Body scan (40 minutes) Informal mindfulness practice (10 minutes)
3	Breath and movement	<ul style="list-style-type: none"> • Review of home practice • Thinking traps • Non-goal directed sex • Pie chart exercise exploring important elements of “enjoyable” sex • Introduction to sensate focus 	Exercise of their choice (body scan, mindful breathing, or mindful movement) (40 minutes) Informal mindfulness practice (10 minutes)
4	Breath, body, sounds, and thoughts 3-minute breathing space	<ul style="list-style-type: none"> • Review of home practice • Maintaining practice beyond the group and trouble-shooting techniques for long-term practice • Check out and solicitation of feedback about the group 	Continuing regular practice of their choice (40 minutes) Continuing informal mindfulness practice (10 minutes)

ED = erectile dysfunction.

some or all aspects of the treatment. Men taking antidepressant medications were eligible, provided they had no changes to their medication over the 2 months leading up to participation and they confirmed intention to keep their medications stable. Men who had a prescription for PDE5is were asked to discontinue their use of this medication during the time period between completion of their Time 1 (pretreatment) and Time 2 (immediately posttreatment) questionnaires.

Adaptation of the Mindfulness Intervention to Men

The treatment manual developed for this study integrated elements of mindfulness, sex therapy, and psychoeducation. Mindfulness exercises were founded on the mindfulness-based cognitive therapy program for depression relapse,⁴⁶ although elements of sex therapy were founded on clinical experience and the clinic’s treatment manuals for women’s sexual difficulties that have been shown to be effective treatments for women’s sexual interest/arousal disorder,²⁵ low sexual desire,²³ and provoked vestibulodynia.^{22,47} Information specific to male sexuality, erectile functioning, and general male sexual dysfunction was generated for the purpose of this manual by the authors based on current research and clinical experience to tailor it to the target audience of men with situational ED. 2 versions of the treatment manual were developed: 1 for facilitators and 1 for participants.^{48,49} The facilitator manual provided a detailed outline of content and exercises to guide each session. The participant manual contained educational material as well as instructions and handouts corresponding to activities completed in session and at home between sessions.

Each session followed the general format of a mindfulness exercise with inquiry, review of home-practice activities from the

week prior, introduction to educational and sex therapy material with group discussion, and review of home-practice activities for the week ahead. See [Table 1](#) for a breakdown of session content. Participants were provided with audio recordings for the guided mindfulness practice and were encouraged to complete the practice a minimum of 6 out of the 7 days between sessions.

Measures

Demographics

Demographic, sexual history, and relationship information were collected through investigator-derived self-report questions.

Exit Interview

After completion of the group treatment, participants were asked a series of questions about their experience participating in the study in a semi-structured feedback interview. The interviewer asked questions that addressed the following: an invitation to provide general feedback about their experience in the group, the personal impact of attending the group, whether they would recommend the group to other men, and their thoughts about the group format of the treatment.

Retention

Retention was determined by recording the number of men who began the treatment group compared with the number of men who completed the treatment group.

Expectations for Treatment

A series of investigator-designed questions were asked to assess participants’ motivation for treatment including motivation to

engage in a group setting, motivation to practice mindfulness, expectations for improvement due to the treatment, and how logical they believe the treatment to be for their presenting complaint. Answers were provided on an 11-point Likert-type scale from 0–10, where 0 indicated no expectation and 10 indicated highest expectations. Reliability analyses for the 3 time points produced a range of Cronbach's alpha from 0.66–0.80.

International Index of Erectile Functioning (IIEF)

The IIEF⁵⁰ is a 15-item validated measure of men's self-reported sexual functioning that assesses erectile functioning, intercourse satisfaction, orgasmic function, sexual desire, and overall satisfaction over the past 4 weeks. Items are answered on a 6-point Likert-type scale where lower scores indicate worse sexual functioning. For the purpose of this study, we limited analyses to 2 subscales: overall satisfaction and erectile functioning. Reliability analyses for the current sample produced a Cronbach's alpha range from 0.82–0.93 for the 3 time points assessed.

Relationship Assessment Scale (RAS)

The RAS⁵¹ is a brief, 7-item measure to assess satisfaction within one's relationship. Items are answered on a 5-point Likert-type scale to indicate an individual's current feelings toward their relationship (eg, "How good is your relationship compared with most?"). Higher scores indicate better perceived relationship functioning. Reliability analyses for the 3 time points assessed produced a range of Cronbach's alpha from 0.61–0.78.

Five Facet Mindfulness Questionnaire (FFMQ)

The FFMQ⁵² is a 39-item measure that assesses 5 facets of mindfulness: observing sensation, describing sensations, acting with awareness, non-judging of inner experience, and non-reactivity to inner experience. Items are responded to on a 5-point Likert-type scale from 1 (never/very rarely true) to 5 (very often/always true). Higher scores indicate higher endorsement of the mindfulness facets. Reliability analysis for the current sample produced Cronbach's alpha ranging from 0.69–0.76.

Procedure

Men were recruited from the available pool of patients referred to the BC Center for Sexual Medicine in Vancouver, British Columbia, Canada. As part of standard care at this center, men underwent a comprehensive biopsychosocial clinical interview conducted by physicians with a specialization in sexual medicine. Partners were also assessed individually as well as with participants, if applicable. A diagnosis of situational ED was confirmed by 1 of the physicians before study enrollment. Patients meeting the diagnostic criteria for situational ED and who were deemed prospective participants were informed about the study by their physician and provided a 1-page information sheet about the study with contact information for the study coordinator. Upon contacting the study coordinator, more information about the

study was provided, eligibility was assessed, and a consent form was provided.

Upon receiving a signed consent form, participants were sent a link to the first of 3 online questionnaire packages, and they were scheduled to participate in the next available treatment group. The treatment groups consisted of 3–8 men. Groups were 2.25 hours in length and held once a week for 4 consecutive weeks. Sessions were co-facilitated by a clinical psychology resident and 2 sexual medicine physicians, all with training in mindfulness-based therapy and considerable experience in treating sexual disorders. The Time 1 (pretreatment) online questionnaire package was completed before beginning the 4-week treatment group. 1 week following the end of the treatment group, men were sent a follow-up online questionnaire package (Time 2), and the Time 3 questionnaire package was sent 6 months after completion of the treatment group.

After completing the 4-week treatment group, all participants were invited to take part in an exit interview. Exit interviews were conducted by a female research associate who was a registered clinical counselor. The research associate was not involved in the delivery of the treatment group, and she contacted participants by e-mail, informing them that the purpose of the interview was to gain a better understanding of men's experiences participating in a group mindfulness-based program. The semi-structured interview was conducted privately either by phone or in-person at Vancouver General Hospital, and audio-recorded with permission. Interviews lasted between 16 and 40 minutes and were transcribed by a research assistant.

All procedures were approved by the University of British Columbia Research Ethics Board and the associated hospital clinical research ethics board.

Qualitative Analysis

A team of 3 researchers (1 investigator, 2 research assistants) who were not involved in conducting the exit interviews performed the qualitative data analysis of the interview transcriptions. An initial meeting of the 3 raters took place to discuss general impressions of the transcripts. The raters independently reviewed the transcripts, developed their own list of themes that emerged, and noted passages from the interviews that corresponded to the themes. A second meeting was held for detailed discussions and to compile a final list of themes that was agreed upon by all. Analyses were completed using a Phenomenological approach, which is based on the premise that knowledge and meaning are embedded in everyday experiences.^{40,53} Thus, qualitative data analyses explored participant's lived experience participating in the treatment group.⁵⁴ A Grounded Theory Approach was incorporated in the analysis process^{55,56} to develop hypotheses from the data collected to direct future research. In line with the Grounded Theory Approach, 2 steps of coding were followed: open coding (concepts were pulled from the specific wording that participants used in the interviews) and axis coding (properties and dimensions of concepts were established).

Quantitative Data Analysis

Linear mixed-effects model analysis was used to explore patient-reported outcomes because: (i) It allows for individual differences to be included in the model as a random effect; (ii) Using maximum likelihood estimation in linear mixed-effects model allows for the use of all available data to evaluate the parameter values and is currently considered the state of the art method for handling missing data;⁵⁷ and (iii) Linear mixed-effects models perform well with small samples.^{58,59} The linear mixed-effects models evaluated the main effect of time (ie, pretreatment [Time 1], immediately after treatment [Time 2], or 6 months after treatment [Time 3]). Cohen's *d* effect sizes were calculated between Time 1 and Time 3 and reported for all analyses of interest as a measure of the magnitude of any self-reported changes in outcome measures. Based on previous research evaluating mindfulness-based groups for women's sexual difficulties,^{22,23} we predicted largest effect sizes would be observed between Time 1 and 3 (ie, pretreatment measures and the 6-month follow-up).

RESULTS

Sample Characteristics

12 men participated in the treatment groups. Due to late enrollment of 2 participants, 10 were consented to participate in the research portion of the study and completed questionnaires. The final sample at Time 1 consisted of 10 men ($M_{\text{age}} = 40.3$, $SD = 14.01$, Range = 20–67), and at Time 2 and Time 3 the sample consisted of 9 men ($M_{\text{age}} = 42.5$, $SD = 12.79$, Range = 30–67). 6 men reported that they were in a married or common-law relationship ($M_{\text{length}} = 5.00$ years, $SD = 6.61$, Range = 1–22 years), 2 reported that they were single, and 1 reported that he was casually dating, but all participants reported being sexually active within the past 4 weeks. At Time 2, 1 man's relationship status changed from married to separated, and this remained the case at Time 3. Demographic information is presented in Table 2. 5 men were available and agreed to participate in exit interviews ($M_{\text{age}} = 44.4$, $SD = 15.76$, Range = 30–67).

Qualitative Exit Interview Results

6 themes emerged from these interviews, including: normalization, group magic, identification of effective treatment targets, increased self-efficacy, relationship factors, and treatment barriers. See below for a more in-depth interpretation of these findings.

Quantitative Data Results

Retention

1 participant dropped out after the first treatment session, resulting in a dropout rate of 10%.

Expectations for Treatment

At baseline, men reported that they believed the treatment was logical in terms of alleviating their ED concerns ($M = 8.40$,

Table 2. Participant demographic information

Characteristics	Time 1 (N = 10)
Age (M, SD)	40.3 (14.01)
Education (n, %)	
Some high school	1 (10%)
Some college/undergraduate degree	2 (20%)
College/undergraduate degree	5 (50%)
Graduate/professional school degree	2 (20%)
Occupation status (n, %)	
Employed full-time	8 (80%)
Unemployed	1 (10%)
Retired	1 (10%)
Self-identified ethnicity (n, %)	
Caucasian	7 (70%)
Southeast Asian	1 (10%)
Mixed race	1 (10%)
First Nations	1 (10%)
Sexual orientation (n, %)	
Opposite-sex attracted	9 (90%)
Same-sex attracted	1 (10%)
Relationship status (n, %)	
Single, not dating	3 (30%)
Dating 1 partner regularly	1 (10%)
Married/common-law	6 (60%)

M = mean; SD = standard deviation.

$SD = 2.12$), that they were motivated to fully participate in group sessions ($M = 8.3$, $SD = 2.26$), and that they were motivated to participate fully in between-group daily home-practice activities ($M = 9.10$, $SD = 1.66$). Self-reported expectations for improvements in ED as a result of the treatment were moderate ($M = 6.30$, $SD = 1.83$).

Pearson correlations were conducted with the 4 questions assessing expectations for treatment at baseline (ie, how logical the treatment is, motivation to participate in the group, motivation to complete home practice, expectations for ED improvement) with Time 3 outcomes (ie, self-reported erectile functioning, relationship satisfaction, facets of mindfulness). Higher endorsement of the treatment as logical corresponded to larger improvements in self-reported overall satisfaction with erectile functioning ($r = .73$, $P = .03$). Motivation to fully participate in group sessions was correlated with improvements in self-reported mindfulness ($r = .68$, $P = .04$), and non-judgment ($r = .68$, $P = .04$), whereas motivation to practice mindfulness between sessions was correlated with increasing scores in non-judgment ($r = .69$, $P = .04$). Expectations for improvement in erectile functioning as a result of the treatment were not significantly correlated with any measured outcomes. See Table 3 for a complete list of correlations.

Erectile Functioning

A mixed-models analysis revealed no significant effect of time for self-reported erectile functioning, via the IIEF subscale of erectile functioning, $F(2, 16.34) = 2.42$, $P = .12$. Although the

Table 3. 2-way Pearson correlations between treatment expectation questions and other outcome variables

Treatment expectation questions	IIEF Erectile Functioning Subscale (n = 9)	IIEF Overall Enjoyment Subscale (n = 9)	Relationship Adjustment Scale (n = 7)	Mindfulness Total Score (n = 9)	Mindfulness Non-Judgment Subscale (n = 9)
Logical: "To what extent do you think the treatment you will receive is logical in terms of alleviating your erectile dysfunction concerns?"	.58	.73*	.48	.14	.06
Improve: "To what extent do you expect improvement in your erectile dysfunction as a result of this treatment?"	.35	-0.16	-0.08	.63	.64
Motivated to participate: "To what extent are you motivated to participate fully in group sessions?"	.29	-0.13	.60	.68*	.68*
Motivation to practice activities: "To what extent are you motivated to participate fully in the between-group daily home practice activities?"	.26	-0.12	.57	.38	.69*

IIEF = International Index of Erectile Function.

* < .05.

mixed-model did not reach significance, the IIEF erectile functioning subscale score improved between Time 1 and Time 3 by a medium effect size (Cohen’s $d = 0.63$). A mixed-models analysis revealed a marginally significant effect of time for the IIEF subscale of overall satisfaction with one’s sex life, $F(2,16.73) = 3.60, P = .05$. Follow-up pairwise comparisons revealed a non-significant effect between Time 1 and Time 3 ($P = .06$). However, a large effect size (Cohen’s $d = 1.02$) was obtained between these time points, suggested that overall satisfaction may have improved over time, and these gains were sustained 6 months after the end of treatment (Figure 1).

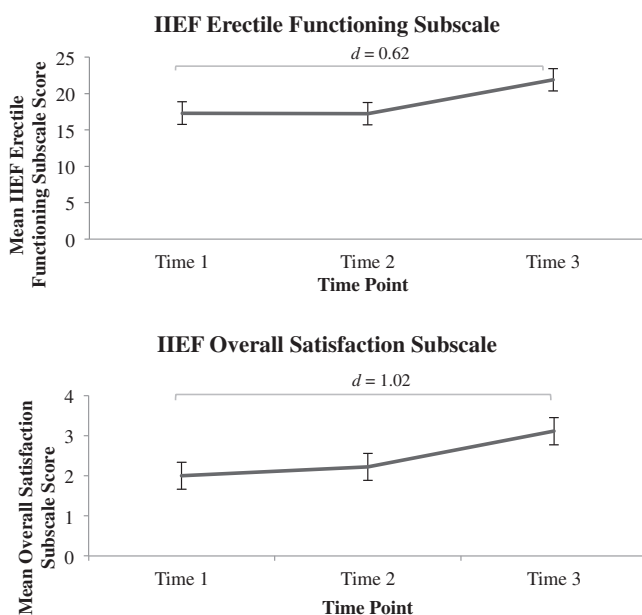


Figure 1. International Index of Erectile Function Erectile Functioning Subscale Score and Overall Satisfaction Subscale over 3 time points. Note: Error bars represent standard error of the mean. Cohen’s d effect sizes reported between Time 1 and Time 3.

Relationship Functioning

For men who reported being in a relationship at the time of enrolment ($n = 7$), mixed-models analysis for RAS total scores indicated a small effect size in the negative direction between Time 1 and Time 3 (Cohen’s $d = 0.38$), indicating a minor decrease in self-reported relationship adjustment; however, this effect did not reach significance, $F(2, 13.88) = 2.47, P = .12$ (Figure 2).

Mindfulness

A mixed-models analysis revealed a small effect of time for self-reported mindfulness between Time 1 and Time 3 (Cohen’s $d = 0.34$), using the FFMQ total score, $F(2, 10.67) = 1.02, P = .39$. An analysis of the non-judgment scale of the FFSQ was performed. This revealed a medium effect between Time 1 and Time 3 (Cohen’s $d = 0.52$), indicating improved ability to view sensations (ie, physical sensations, thoughts) with equanimity, $F(2, 17.29) = 4.86, P = .02$ (Figure 3).

DISCUSSION

Discussion of Qualitative Outcomes

This section explores the themes that emerged from the exit interviews. Note that names of participants have been changed to protect participant confidentiality.

Theme 1: Normalization

Nearly all men described attending the group as having normalized their experience with situational ED, and that this normalization was therapeutically important to them. Commonly held sexual beliefs about the male gender and masculinity dictate that men need to “always be ready for sex” and tie masculinity to virility and “sexual performance” (for example, see Zilbergeld⁶⁰). The experience of situational ED

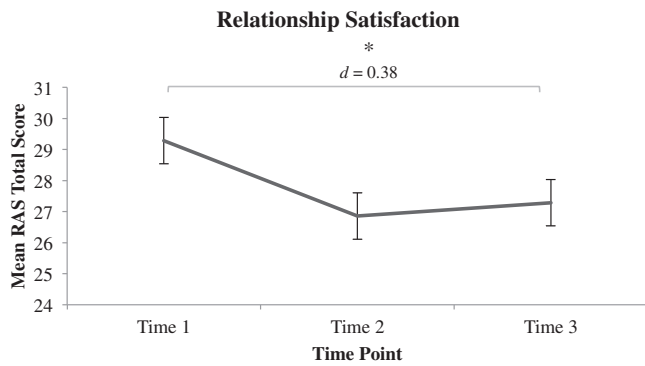


Figure 2. Relationship Assessment Scale Total Score over 3 time points. Note: Error bars represent standard error of the mean. Cohen’s *d* effect sizes reported between Time 1 and Time 3. * < .05.

tends to be isolating for men, which can exacerbate the problem by increasing perceived performance demands. In contrast, attending a group therapy setting with other men who shared in the experience of being unable to achieve or maintain an erection in a partnered (ie, “high-performance demand”) situation was perceived as therapeutic in and of itself for the men who attended this treatment group. Validation of one’s experience and recognition of shared humanity is an important aspect of psychotherapy, and may, in the long term, lead to reduction in stigmatization of male sexual dysfunction. Further, learning that losing erection is in accordance with normal physiology when the mind is focused on “performance demands” or anxious thoughts instead of positive sexual sensations, translates to situational ED

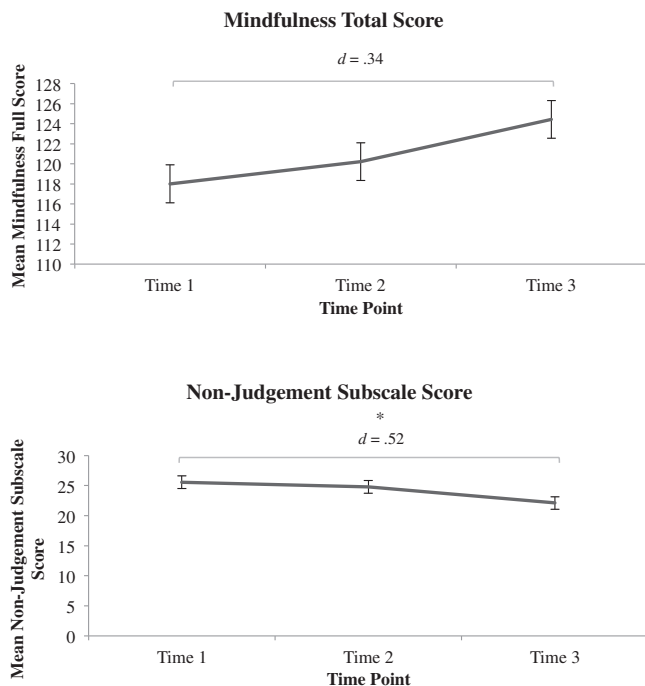


Figure 3. FFMQ total score and Non-Judgment Subscale score over 3 time points. Note: Error bars represent standard error of the mean. Cohen’s *d* effect sizes reported between Time 1 and Time 3. * < .05.

as a normative, logical, and common experience. The following quote illustrates 1 man’s experience of the normalization process:

I have to say that it was nice to finally have some type of an outlet to ... be involved with other individuals who were having the same sort of issues, because I have always felt that when it has come to that topic [of ED] I was always on an island ... So to have other people in the same room with the same kind of issues and for us to just be able to discuss things and share things was validating ‘cause it had been a long time ... So having that outlet ... it was good for me ... (Daniel, married, 39)

The fact that participants found the group to be logical, and that the group emphasized the rationale for applying mindfulness as an intervention to male sexual dysfunction appeared to be an important therapeutic element to this intervention, which is in line with the documented importance of patient expectation in predicting therapeutic outcomes.⁶¹ Based on participant feedback, it also appears that the group setting in which this information was delivered further emphasized normalization of situational ED, which may, in turn, have worked to reduce performance demands. It should be noted that no research, to our knowledge, has compared group and individual psychosocial interventions for men with sexual difficulties with respect to feasibility or efficacy. Based on patient experiences from the current group-based intervention, we believe that there is sufficient support in favor of the feasibility of development and evaluation of group therapy interventions for male sexual dysfunction, especially with respect to increasing self-acceptance and reducing performance-related anxiety. However, more research is needed to determine for whom group therapy or individual therapy would be most appropriate, or at which point in the treatment process 1 modality should be prioritized, if any.

Theme 2: Group Magic

Men mentioned a number of therapeutic aspects of the treatment group that they felt comprised an important part of their experiences; we have termed this theme “group magic.” The content of this theme was not directly related to mindfulness training (eg, improved attentional focus or introspective awareness) or sex therapy (eg, increased comfort with/knowledge about sexual intimacy), but instead related to the non-specific therapeutic process effects. Most men mentioned perceiving the treatment group as a “safe” or “supportive” environment, which encouraged sharing and ultimately contributed to feelings of validation or normalization. For example, 1 man noted that he appreciated having “a safe environment to share and to listen” (Ethan, single, 32). Another man shared that “it was nice to finally have some type of an outlet” (Daniel, married, 39). Later, Daniel explained that the experience of self-disclosing his experiences was a key component in his improvement, and in developing a sense of hope for future improvement; this sentiment was shared by others.

As a primarily skills-based group, we hypothesized that motivation to practice would be an important aspect in skill-acquisition.⁶² Men who participated in the exit interviews

touched on this, mentioning other members of the group as a motivational factor in their practice. 1 man noted, “there’s some accountability, let’s say, to actually doing the exercises” (Craig, dating, 32). This observation is consistent with findings from the quantitative outcomes, in which self-reported motivation to practice mindfulness at home between groups was correlated to improvements in non-judgment. Accountability to the group may have—in part—motivated men to complete home practice of mindfulness, which may in turn contribute to developing this skill. However, it is important to acknowledge that we did not assess amount of mindfulness practice between groups in the current study, thus future research needs to better quantify amount of at-home practice, and evaluate this with outcomes.

Future treatments that incorporate an element of skill-building, be they attention-training (ie, mindfulness practice), sex therapy skills (eg, masturbatory re-training, sensate focus), or cognitive behavioral therapy (CBT) skills (eg, thought-tracking or thought-challenging techniques), should consider the potential role of a group format in fostering accountability. This, however, should also be considered within the context of individual factors and men’s willingness to participate in a group setting. For some men, particularly those for whom anxiety may be prohibitively severe, the costs and benefits of addressing sexual concerns in a group setting should be discussed with the patient, and they should be encouraged to make a decision regarding the context of treatment, be it individual or group-based. Further, as economical factors may dictate the availability of group vs individual treatment options, future research should explore reasons that men decline to participate in a group-treatment format or chose 1 treatment modality over the other.

Theme 3: Effective Treatment Targets

Men noted that mindfulness training helped improve self-reported awareness of factors that contribute to their situational ED. Men agreed that present-moment awareness helped them identify anxiety, or more specifically “performance anxiety” as an important antecedent to their ED. For some men, this was the first time they saw anxiety as playing a role in their sexual difficulties. For example:

In terms of sexual experiences, I guess to approach them in the future in a way that would reduce my level of anxiety ... because that for me was a big issue, I would just get so anxious and nervous and worried. So I think learning to deal with that anxiety was helpful for me. (Ethan, single, 32)

Another example of the role of performance anxiety:

[I have] concerns and worries if—you know—is my penis going to be erect and am I going to be able to have sex? [The concerns and worries] create this kind of performance-focused kind of aspect to that sex. (Anthony, married, 54)

These observations about anxiety are consistent with situational ED literature, as well as proposed models of male sexual dysfunction.^{63–65} Anxiety stemming from performance demands

or spectating (ie, observing oneself and their behaviors) are important precipitating and maintaining factors in situational ED. Participants’ acknowledgment of the role of anxiety in their ED was in line with the experimenters’ rationale for adapting mindfulness as a new treatment for situational ED, because mindfulness has been shown to be an effective treatment for anxiety.³⁷ Developing interventions that specifically target anxiety seem to hold promise as a psychosocial intervention for ED. Further, considering the role of trait-anxiety vs state-anxiety (ie, performance demands) in situational ED may be useful in ensuring that the stress-reduction techniques included are best suited to the type of anxiety present.

Although men emphasized anxiety as an effective treatment target, other treatment targets were mentioned. The utility of learning to integrate present-moment awareness into sexual activity was highlighted by a number of participants: “Clearing away the cluttered thoughts” (Brent, single, 67) or “I’m so focused on trying to make [my partner] happy that I’m not [present]” (Anthony, married, 54). It should be noted that although participants subjectively reported the ways in which they believed mindfulness was helpful in their sexual functioning, the actual mechanisms of change remain unknown without a control group, or a formal assessment of factors that account for the changes mentioned. Other proposed mechanisms that should be assessed include the role of improved communication with a partner, increased partner intimacy, decreasing the impact of erroneous sexual beliefs, or overall enjoyment of sexual activities.

Theme 4: Increased Self-Efficacy

Participants reported feelings of helplessness before attending group. Some men had used PDE5is with only minimal effectiveness. Across the board, men reported that learning practical tools to cope with their ED provided a sense of hope and allowed for self-acceptance: “I am becoming more comfortable with having situational erectile dysfunction” (Anthony, married, 54). The psychoeducational aspect of the group, such as improved understanding of the contributing factors to sexual dysfunction, further bolstered a sense of self-efficacy. For example: “Education on erectile dysfunction [was] helpful because I wasn’t aware of even just like how it works and—you know—like the sort of biological and physical processes that take place and all that” (Ethan, single, 32). Finally, men reported that they could see generalizability of the skills acquired in the group to other parts of their life: “[the skills we learned are] very valuable [for] other things, other than the stuff that we were talking about [ie, situational ED]” (Brent, single, 67).

Theme 5: Relationship Factors

For participants who were in a current relationship, their partner was reported to be an important factor in their ED treatment process. Research has demonstrated the role of partner or relationship factors in the contribution and maintenance of situational ED. Relatedly, the role of partners in same- and

opposite-sex attracted men should be considered, because some differences in psychological factors impacting sexual functioning have been shown across these groups.⁶⁶ Participants did note the perceived importance of learning more effective communication skills in the treatment process:

The communication really helped too. I find now that if my wife feels that maybe [the ED is] coming on again, that she knows what to do. You know, instead the reaction before was quite negative. It was kinda like “stop, forget it.” Where now it’s a little bit different ... instead we both just take a deep breath and can usually get out of it. (Daniel, married, 39)

Although relationship variables were addressed in the psychoeducation material presented, future research should consider including partners, when applicable, in psychosocial intervention for men’s sexual dysfunction. Whether this is in the form of groups for couples dealing with ED (after all, sexual dysfunction is frequently considered a “couples” issue^{65,67}) or including 1 partner session to involve and educate partners, or something in between, these decisions should be guided by empirical support.

Of course, consideration should be given to the unique needs of men who are seeking help for situational ED when they are not in a relationship, because this introduces a unique but important set of factors. Although some men who took part in the exit interview were single, no participants spoke to how psychological treatments might best address the different needs of partnered vs single men. Clinical researchers can consider the costs and benefits of developing treatment groups that combine men in a relationship and men who are not, or treating these groups separately. It should be noted that of the participants who were not in a relationship, none provided feedback to suggest that they felt “left out” or that their needs were not addressed by the current group.

Theme 6: Barriers to Effective Treatment

Because this study was aimed at determining feasibility, we were interested in aspects of the group that could be improved, or barriers experienced by participants. 1 factor that was addressed by all participants of the exit interview was the fact that the group was not long enough. This was illustrated through comments such as: “[participants needed] more time” (Anthony, married, 54); “It would have been nice to ... obviously there was the course outline, but even to have more time just to have open discussion” (Daniel, married, 39); “4 weeks seems too short for—to me, anyways—to see benefits from it” (Craig, dating, 32). This is interesting and unexpected feedback, given that the group was a considerable commitment at 4 weekly 2.25-hour sessions, with the invitation to complete 40-minute formal mindfulness practices each day between groups. Our decision to develop a 4-week protocol was based on previous studies for mindfulness-based interventions to address sexual difficulties in women that lasted 4 weeks during the feasibility phase.²³ The response we received from men clearly indicated that, for the men who opted to participate in this group, they would have preferred it to last

longer than 4 weeks. Perhaps participants recognized that 4 weeks was not sufficient time to learn mindfulness skills, or not enough time to fully integrate this new skill into their lives.

Other feedback regarding the group format included a desire for additional time for participants to share their experiences with one another. These results were very encouraging to the investigator team, because they seem counter to a popular belief that men can be averse to help-seeking for emotionally related issues,⁶⁸ especially with respect to sexual dysfunction.⁶⁹ We consider this feedback to be evidence in favor of feasibility of a group format for the treatment of men’s sexual dysfunction. It should be noted, though, that sharing one’s story is not in line with mindfulness-based therapies, and it also opens the possibility for co-rumination, or excessively discussing problems with a focus on negative feelings.^{70,71} This 4-session program was not a support group, thus clinicians should consider this suggestion carefully. Little is known about co-rumination in men, in particular with respect to sexual difficulties. More information is needed about efficacy of skills-based psychological treatments compared with peer-support groups.

Discussion of Feasibility Outcomes

The data support the feasibility of mindfulness-based group therapy as a psychological intervention for situational ED as evidenced by only 1 participant dropping out of treatment. The dropout rate of 10% in the current study was lower than the typically observed dropout rate of mindfulness-based stress reduction groups of approximately 20%,^{72–74} and was sustainably lower to an online CBT therapy intervention for male sexual dysfunction,⁷⁵ in which the dropout rate was 58%. Because psychosocial interventions have been shown to improve adherence to PDE5i treatment programs,^{15,76} the question remains whether this effect applies in both directions; that is, would using PDE5is in tandem with the current mindfulness-based group further minimize dropout rates? Our data do not permit an analysis of factors that may have predicted reasons the 1 participant dropped out.

Participants’ self-reported expectations for the group further supported the feasibility of this pilot mindfulness intervention for a male sample. Participants indicated that they believed the treatment was very logical, that they were very motivated to take part in the group setting, and that they were very motivated to complete the daily mindfulness practice between sessions. Interestingly, these strong positive endorsements were observed despite moderate expectations for improvement in erectile functioning. This apparent contradictory finding again brings to question what meaningful end points should be considered in the development or evaluation of treatments for situational ED and sexual dysfunction more broadly.

The observation that the current sample of men strongly believed in this psychological treatment suggests that they saw a role for a treatment that addresses a wider range of contributing factors beyond erectile rigidity only; this is supported by the qualitative results. Indeed, 1 study exploring models of sexual

response found that men with sexual dysfunction were more likely to view their sexual functioning as multifactorial, whereas men without sexual difficulties were more likely to identify with a model of sexual desire that emphasized its biologic underpinnings.⁷⁷ Perhaps offering treatments that consider the psychosocial aspect of sexual dysfunction as well as the biologic may help improve treatment adherence and patient outcomes by better addressing men's stated needs.

Consistent with past research, treatment expectations were related to outcomes in the current sample.⁷⁸ Because mindfulness is often considered an "attention-training skill," it is perhaps no surprise that men who reported higher motivation to participate in the group and complete between-group practice reported higher levels of self-reported mindfulness (especially non-judgment) at their 6-month follow-up visit. Although these findings may suggest that motivation to practice before treatment could translate to more practice (and, in turn, into improvements in ability to observe experiences non-judgmentally), the current study did not include a metric of mindfulness practice completed between sessions, and thus we cannot draw these conclusions at this time. Future research should explore the relationship between motivation to practice at baseline and actual amount of mindfulness practice completed, as well as the relationship between practice and outcomes. Further, individual factors that predict treatment expectations should also be considered when exploring treatment options for male sexual dysfunction.

Discussion of Self-Reported Outcomes

The results of this small pilot study focus on feasibility and although not powered to detect efficacy of the tested intervention, the results can provide preliminary insight into the potential impact of mindfulness as a treatment for situational ED based on effect sizes. Self-reported erectile functioning is typically considered a primary end point of ED treatment studies, both by medical professionals and patients. Within the current sample, self-reported measures of erectile functioning did not significantly change immediately after participation in this 4-week treatment program, but a medium effect in the direction of improvement was observed between pretreatment measures and follow-up 6 months after treatment ended. Interestingly, an analysis of perceived overall satisfaction with one's sexual functioning revealed a large increase sustained at follow-up. This observation suggests that even a brief mindfulness-based intervention may result in improvements to men's ability to better enjoy their sexual lives, despite no significant change in self-reported ED symptomology (ie, the presence of a reliable erection, because IIEF scores—although improved—still indicated sexual dysfunction at Time 3). This finding is consistent with previous research demonstrating that psychological interventions improve the overall satisfaction subscale of the IIEF,⁷⁹ in tandem with other aspects of sexuality beyond erectile functioning (eg, partner satisfaction⁸⁰). Although replication of these findings with a much larger sample size is needed before we can make

inferences about efficacy, these results do lend support to the feasibility of adapting mindfulness to treat situational ED.

It should be noted that the clinical utility of findings reported here should be interpreted with caution, because the sample size is small and scores on the overall satisfaction scale of the IIEF fell below the clinical cut-off for sexual dysfunction at all time points assessed, suggesting that sexual dysfunction did persist. Note that shifting the goal of treatment away from erectile functioning alone toward sexual experience in the moment (perhaps including sexual satisfaction) is consistent with teachings of mindfulness and sensate focus; that is, reducing the focus on "goal-directed" sex and allowing attention to remain on sensations that could lead to enjoyment and expansion of one's sexual repertoire. Future research should consider including end points beyond reduction of presenting symptoms when evaluating psychological treatments for situational ED, particularly because future psychological treatment evaluation moves past the feasibility stage to assess preliminary efficacy and clinical utility.

Relationship factors are hypothesized to play an important role in male sexual dysfunction,⁸¹ and improvements to relationship functioning have been documented as a result of psychological treatments for ED.^{75,82,83} However, we did not observe meaningful changes in self-reported relationship adjustment within the current sample of men who were in a relationship at the outset of treatment. A longer duration of treatment may be needed to exert effects on relationship satisfaction. Alternatively, perhaps the sexual difficulties experienced by members of this group did not directly impact their relationships. Future research should consider including a partner element to treatments for male sexual dysfunction, be this including partners in all or part of the treatment process, as is carried out in some centers.⁸⁴

Our in-session exercises focused specifically on practicing non-judgment, and this was evidenced by the participants' increased self-reported ability to observe one's experience without judgment. In line with models of male sexual dysfunction,^{4,5} cognitive distraction is known to diminish a man's sexual response. 1 documented distraction that contributes to situational ED is distressing or self-critical cognitions regarding one's difficulty in achieving or maintaining an erection.^{85,86} We theorize that mindfulness practice may benefit men's sexual functioning by limiting their self-evaluation and criticism. This in turn may not only reduce distractions but also lessen anxiety that typically further impairs sexual response. Future research is needed to elucidate the mechanisms through which a regular mindfulness practice may impact a man's sexual experience, including amount of practice completed between sessions.

General Limitations

The sample size for the current study was small, and thus statistical analyses are limited, as are the generalizability of findings to the greater population. Further, the participants who agreed to participate in the current study may represent a select

sample of men who are interested and open to the features of this particular treatment paradigm, such as participating in a group treatment, or undertaking a treatment that is psychological in nature. Unfortunately, we do not have data on the number of men originally approached to take part in the study, or the reasons why men who were approached declined to take part. Presently, there is no research on the factors that predict men's willingness to engage in psychologically based treatment for sexual dysfunction, or the individual factors that might predict success in a therapy setting. Further, although we can theorize about the potential beneficial effects of a group setting for the treatment of sexual dysfunction, including peer support, destigmatizing, and cost effectiveness of delivering time-intensive treatments to group as opposed to individuals, future research is needed to support these assumptions, preferably in a much larger and adequately powered study.

Another limitation is the fact that this study did not include a control group. Without a control group we cannot, at this time, conclude that mindfulness accounted for the observed changes, if those changes were due to other elements of the treatment (eg, sex therapy, cognitive therapy skills, peer support), or a combination. This body of research would benefit from comparing a mindfulness group with a control group (ie, a supportive group where all mindfulness aspects are removed from the treatment manual), and a waitlist control group.

CONCLUSION

Despite a clear consensus within the field of sexual health supporting a biopsychosocial approach to the treatment of male sexual dysfunction,⁶ empirical support of these treatments is extremely limited. This is the first published study—to our knowledge—to adapt contemporary mindfulness-based therapy as a treatment specifically targeting male sexual dysfunction. The use of integrated quantitative and qualitative analyses provides valuable insights and considerations for researchers and clinicians, alike, in support of the feasibility of mindfulness as a potential treatment for male sexual dysfunction. Findings highlight the need for research into the utility and treatment efficacy of mindfulness for situational ED.

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Corresponding Author: Jennifer A. Bossio, PhD, UBC Sexual Health Lab, Gordon & Leslie Diamond Health Care Centre, 2775 Laurel Street, 6th Floor, Vancouver, BC V5Z 1M9 Canada. Tel: 613-929-5366; Fax: 604-875-4869; E-mail: jennifer.bossio@queensu.ca

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STATEMENT OF AUTHORSHIP

Category 1

- (a) **Conception and Design**
Jennifer Bossio; Rosemary Basson; Miriam Driscoll; Shauna Correia; Lori Brotto
- (b) **Acquisition of Data**
Jennifer Bossio; Rosemary Basson; Miriam Driscoll; Shauna Correia; Lori Brotto
- (c) **Analysis and Interpretation of Data**
Jennifer Bossio

Category 2

- (a) **Drafting the Article**
Jennifer Bossio
- (b) **Revising It for Intellectual Content**
Jennifer Bossio; Rosemary Basson; Miriam Driscoll; Shauna Correia; Lori Brotto

Category 3

- (a) **Final Approval of the Completed Article**
Jennifer Bossio; Rosemary Basson; Miriam Driscoll; Shauna Correia; Lori Brotto

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