

1 A randomized Study comparing Video-Based Mindfulness Cognitive Therapy (MBCT) to Video-
2 Based Traditional Cognitive Behavioural Treatment (CBT) in a Sample of Women struggling to
3 reach Orgasm
4

5 *Introduction*

6 A large number of women have never experienced orgasms and/or frequently express
7 difficulties in reaching them. Orgasmic disorder, or anorgasmia, represents the second most common
8 sexual difficulty experienced by women. Approximately 24% of all women have either always suffered
9 from orgasmic dysfunction (primary anorgasmia) or have experienced this difficulty in a transient
10 manner (secondary anorgasmia) [1]. The female orgasmic disorder is characterized by a difficulty in
11 experiencing orgasms and/or markedly reduced intensity of orgasmic sensations during 75% to 100%
12 of all sexual activity [2]. In addition, this sexual difficulty is known to considerably, and negatively,
13 impact women's quality of life, causing both personal distress and conflicts within the couple [3]. In
14 fact, orgasmic dysfunction also strongly relates to communication difficulties with one's partner about
15 sexuality [4].

16 The etiology of orgasmic dysfunction is often multifactorial. As a result, the clinical evaluation
17 inquires for information regarding diagnostic criteria, the development of the disorder, and its
18 emotional, cognitive, behavioral, and relational repercussions. Clinicians must also account for the
19 woman's age, stimulations received, and general sexual experience [5]. Women with these difficulties
20 often present a general lack of the latter, including the learning and use of masturbation [6].

21 Several studies report that women struggling to reach orgasms also show a greater tendency
22 towards engaging in cognitive distraction [7, 8, 9, 10]. In fact, they present a higher number of
23 dysfunctional cognitive schemas and self-focused negative beliefs, which subsequently lead to negative
24 emotions [11]. Compared to orgasmic women, these women also demonstrate fewer focus on their own

1 bodily sensations, less referral to erotic thoughts during sexual activities with a partner [12], and more
2 negative emotions such as shame, guilt, anxiety, and emotional distress [13]. The resulting negative
3 thoughts and emotions may be monopolizing women's attentional resources by diverting them from
4 the present moment and, therefore, reduce their interoceptive awareness [14, 15]. In addition, the latter
5 is lower at baseline in women suffering from anorgasmia, implying that they struggle to perceive their
6 bodily sensations when they are physically excited [16].

7 The importance of focusing one's attention during sexual encounters was originally brought to
8 light by Masters and Johnson [17]. The authors coined the term *spectatoring*, which refers to fully
9 observing one's own sexual and physiological reactions during sexual activities (lubrication,
10 erection...), rather than being immersed in the sensory and erotic aspects of them (worries, sensations,
11 emotions...). Masters and Johnson [17] recommended the use of the *sensate focus* to their patients, in
12 order to overcome performance-related or fear of failure cognitions. Multiple CBT treatments for
13 orgasmic disorder have been developed based on this principle, including directed masturbation [18],
14 and the 12-step *Becoming orgasmic* self-administered treatment [19], which borrows strategies from
15 cognitive-behavioral sexual therapy (e.g. elaboration of fantasies, masturbation) to enhance the sexual
16 abilities of the woman and her partner. Systematic desensitization [20], coital alignment [21, 22], and
17 sexual communication [23] constitute examples of other commonly used techniques within the
18 program.

19 This *Becoming Orgasmic* treatment seems effective across three different formats. A study
20 comparing the standard couple therapy, group therapy, and a self-administered bibliotherapy with
21 minimal therapist contact established that all three versions significantly improved subjective
22 satisfaction, as well as behavioral measures in women suffering from secondary orgasmic dysfunction
23 [24]. When the treatment was performed with a partner, the program led to slightly superior results.
24 However, the authors highlight the need for less expensive treatments (both time- and money-wise),

1 endorsing the bibliotherapy approach as the preferred choice. Several meta-analyses also corroborate
2 the efficiency of sexology bibliotherapy approaches for improving the female sexual response [25, 26,
3 27].

4 In parallel, video-based CBT represents a promising, alternative treatment for sexual
5 dysfunction. Stemming from traditional cognitive and behavioral approaches to sex therapy [e.g.,17,
6 28], these interventions convey the additional advantage of guaranteeing both privacy and anonymity
7 [29]. Jones and McCabe [29] established a 5-session web-based CBT program for female sexual
8 difficulties, entitled *the Revive Program*. The authors acknowledged two main limitations of their
9 treatment, namely the lack of contact with the therapist throughout the program and the absence of
10 psychoeducation provided regarding female sexual functioning. In addition, they encouraged
11 researchers to incorporate mindfulness-based exercises in future online interventions, a modality often
12 missing.

13 In fact, the current literature shows that treatments for orgasmic dysfunction are grounded in a
14 classical CBT approach consisting of cognitive modification and restructuring. However, third-wave
15 CBT has integrated mindfulness exercises for many years now [30], particularly in dialectic-behavioral
16 therapies and acceptance and commitment approaches [31] for depression and anxiety. Mindfulness is
17 defined as “the awareness that emerges through paying attention, on purpose, in the present moment,
18 and nonjudgmentally, to the unfolding of experience moment by moment” [32]. In more concrete terms,
19 the state of mindfulness results from the maintenance of one's attention on the present experience, such
20 as bodily sensations, thoughts, and emotions that may spontaneously appear in one's consciousness.
21 This curious and benevolent observation is accompanied by a non-judgmental attitude for all aspects
22 of the experience, whether they are pleasant or unpleasant [33]. Mindfulness allows individuals to
23 escape a mode of thinking entitled the "automatic pilot", where one's attention is automatically
24 captured by aspects of a specific experience [34]. Mindfulness encourages individuals to focus on their

1 current experience instead [32]. Researchers believe this psychological skill can be trained [35, 36].

2 Among the numerous mindfulness-based interventions that currently exist, the most commonly
3 used include the *Mindfulness-Based Stress Reduction* (MBSR) for chronic pain management [37], and
4 the *Mindfulness Based Cognitive Therapy* (MBCT) for depressive relapse prevention [38]. Mindfulness
5 has demonstrated its effectiveness in the treatment of diverse psychopathological disorders [37, 39, 40,
6 41, 42], particularly regarding the reduction of stress, anxiety, and depressive symptoms [43]. The
7 technique expands attention skills [44, 45, 46], promotes the management of intrusive thoughts and
8 ruminations [47], and encourages self-acceptance and compassion. It also seems to reduces the intensity
9 of one's emotions [48] and self-judgment [49, 50, 51]. In line with this, the results of a recent meta-
10 analysis on the efficacy of MBCT for depressive symptoms [52] were two-fold: the treatment was
11 superior to non-active control conditions (e.g. wait-list), and led to similar outcomes compared to other
12 active forms of therapies (e.g. CBT), both immediately after treatment and at 6-month follow-up.
13 Hence, it is surprising that mindfulness, although widely used across psychopathological disorders, has
14 yet to be integrated into the treatment of orgasmic dysfunction.

15 Research on mindfulness-based approaches for the more specific treatment of female sexual
16 difficulties is nonetheless on the rise. Interestingly, a study looking at women's mindfulness skills
17 during dyadic sexual activities found that women with anorgasmia suffered from a deficit in the latter
18 compared to orgasmic women [53]. Several studies show encouraging results regarding the
19 effectiveness of mindfulness-based interventions for improving women's overall sexual response, with
20 respect to desire, arousal, lubrication, orgasm, and sexual satisfaction [54, 55, 56]. Mindfulness also
21 reduces both sexual distress [54, 56, 57] and sexual pain [57, 58]. For example, an 8-week MBCT for
22 sexuality (MBCT-S) program was evaluated in a sample of 26 women suffering from hypoactive sexual
23 desire and lack of arousal [55]. Largely derived from the MBCT program [38], the MBCT-S includes
24 mindfulness exercises (body scan, mindful eating) and cognitive behavioral sex therapy techniques

(sexual education and exercises), as well as homework prescriptions. The treatment led to significant improvements in sexual functioning but not in sexual pain, leaving pre- and post-intervention scores of the latter unchanged. The authors also observed reductions in the symptoms of depression following MBCT-S. More recently, a 6-session web-based self-administered treatment ($N=26$), which integrated frequent contacts with the study therapist, yielded similar results. Compared to a wait-list control group, it significantly improved both sexual functioning and sexual distress in women who reported suffering from these [56].

Earlier studies examining the incorporation of mindfulness within sexological treatments [59, 60] observed that it reduced cognitive distractions and performance anxiety during sexual activities, while increasing awareness of sexual stimuli. Indeed, mindfulness may promote interoceptive awareness [54, 16] and remove three barriers to female sexual functioning (*i.e.*, lack of attention, self-judgment and depressive symptomatology) that could otherwise also hinder access to this awareness [16, 55]. Recently, a meta-analysis on the effectiveness of mindfulness for sexual difficulties [61] highlighted that mindfulness-based therapies significantly improve women's sexual functioning and, more specifically, the subjective perception of their sexual satisfaction and desire, which could subsequently increase sexual arousal. This research illustrates the benefit associated with the integration of mindfulness into the treatment of female sexual difficulties and, particularly, of orgasmic difficulties. However, it is important to note that most studies compare mindfulness-based treatments to wait-list control groups [54, 57] or omit control groups entirely [55, 60], thereby prompting the need for careful interpretations of their results.

To the best of our knowledge, only two studies have compared a mindfulness-based treatment to an active control group (e.g., CBT). The first focused on a small sample of women suffering from both sexual distress and a history of childhood sexual abuse [62], They were assigned to two treatment sessions of either MBCT ($N=12$) or CBT ($N=8$). MBCT participants reported significantly greater

1 subjective sexual arousal responses following the sessions, compared to those in the CBT group.
2 However, both treatments were equally effective in reducing sexual distress. The second, more recent
3 study allocated participants from a sample of women suffering from sexual pain ($N=130$) to one of two
4 8-week treatment groups; MBCT or CBT [63]. Although both treatments significantly increased
5 feminine sexual functioning, MBCT appeared to be more effective in reducing associated sexual pain.

6 To the best of our knowledge, this is the first large randomized study comparing a self-
7 administered video-based treatment, comprising mindfulness and specific cognitive-behavioral sex
8 therapy (MBCT) techniques and designed for women seeking help to achieve orgasms, to an active
9 control group. The latter consisted of a similar self-administered treatment based solely on CBT. Our
10 hypothesis is as follows: MBCT self-administered treatment videos should be more effective than CBT
11 in improving sexual functioning and reducing sexual distress in women suffering from difficulties to
12 reach orgasm.

14 *Materials and Method*

15 **Participants**

16 A convenience sample of 106 women, aged 18 to 60 years ($M = 33.95$, $SD = 10.64$), was
17 recruited for participation. Inclusion criteria included (1) being in an intimate and sexual relationship
18 of at least three months and (2) being a minimum of 18 years of age. Participants were excluded from
19 the study if they presented symptoms of acute depression, attentional disorders, recurrent panic attacks,
20 psychotic disorders (hallucinations, delusions), dissociations, and psychological sequelae of physical,
21 emotional, or sexual abuse.

23 **Recruitment and Procedure**

24 Participants were recruited on a voluntary basis between November 15th, 2014 and January

31st, 2015. An advertisement entitled "*Free self-administered treatment to facilitate the reach of orgasm: A study for women in relationships*" was posted on several websites and sent by email to contacts. We asked the latter to distribute it widely in the aim of initiating a snowball effect. The listing presented the study and its projected timeline (running from February to March 2015), after which it prompted participants for their contact information and for the completion of an informed consent form. A total of 157 French-speaking women responded to the advertisement by completing the online questionnaire on Limesurvey. Each were subsequently contacted by phone and email, by either a PhD student in Psychology or a master's student in Family and Sexual Sciences, both trained in mindfulness-based approaches. The researchers controlled for the inclusion and counter-indication criteria, explained the unfolding of the study, and answered participants' questions.

Before study onset, participants placed a 100-euro deposit onto a frozen bank account of the Université catholique de Louvain. The participants were to receive the down payment in its entirety two months upon study completion, after responding to the last set of questionnaires, or immediately upon abandonment of the study. The participants were randomly assigned to receive either the experimental (MBCT) or the control treatment (CBT). The randomization process was automated and online-based, allocating the participants to groups depending upon the order in which we received the deposits: the first participant was assigned to the MBCT treatment and the second participant to CBT, alternating as such. The existence of the two conditions remained unbeknownst to the participants. The study itself then comprised four distinct stages.

Stage 1 (pre-intervention): Two weeks prior to the start of the program, the participants completed three online questionnaires: the *Female Sexual Function Index – FSFI* [64], the *Female Sexual Distress Scale – FSDS-R* [65], and the *Sexual Five-Facet Mindfulness Questionnaire – FFMQ-S* [66]. They then received login details for a website hosting their respective self-administered treatment videos, which were the only accessible and visible content to the participants.

Stage 2 (self-administered treatment): A once-weekly email informed participants of a new video release. The women received a total of seven videos, which they were required to watch in respect of the release order, as many times as they pleased. Each video concluded by the prescription of sexological exercises for the upcoming week, which participants were to perform alone and/or with their partner. The MBCT group completed additional mindfulness-based exercises. Both treatments are detailed in Appendix 1.

At any time throughout the program, it was also possible for participants to contact the researcher for any questions that might arise. Three women originally requested help as they experienced difficulties accessing the first video. However, there were no other inquiries for the remainder of the study.

Stage 3 (post-intervention): Immediately following the end of the self-administered treatment, the participants responded to the same online questionnaires presented in Stage 1. In addition, we evaluated the frequency and duration of engagement in the prescribed home exercises (*i.e.*, sexological exercises for both groups and additional meditation exercises for MBCT participants), involvement and satisfaction with the self-administered treatment, and the proportion of videos viewed alone or with a partner. After completing the questionnaires, the participants received the first half of their deposit back (*i.e.*, 50 euros). All self-administered treatment videos remained accessible online between post-intervention and the 2-month follow-up assessment.

Stage 4 (follow-up): Two months upon completion of the self-administered treatment, the participants filled out the same questionnaires in an effort to evaluate whether the intervention effects were maintained. Subsequently, they received the second half of their deposit (*i.e.*, 50 euros).

The study was approved by the Ethics Committee of the Psychological Sciences Research Institute.

Measures

Sociodemographic questionnaire

Based on existing literature, the researcher developed an 11-item sociodemographic questionnaire. It comprised 4 basic information items (age, education level, duration of the current relationship, gender of the partner), 1 medical item (medication intake), 1 therapy-related item (ongoing psychological treatment or meditation practice), and 5 items relating to sexual activity (frequency of sexual activities alone and with a partner, frequency of reaching orgasm alone or with a partner, general ability to reach of orgasm. Each possible response consisted of either a dichotomous choice (yes or no) or a Likert scale, the latter of which ranged from "none" to "more than 10" or depicted numbered data ("number of months" to "number of years").

Female Sexual Function Index

The Female Sexual Function Index – FSFI [64], measuring female sexual functioning, is a self-report questionnaire composed of six subscales: desire (2 items), arousal (4 items), lubrication (4 items), orgasm (3 items), sexual satisfaction (3 items) and pain (3 items). The 19 items are answered on a 6-point Likert scale ranging from 0 (no sexual activity) to 5 (very high or very often), or from 1 (almost never or never) to 5 (almost always or always).

To calculate the score for each subscale, the individual item scores must be added up, then multiplied by the subscale factor. The sum of all six subscale scores represents the total score. The original questionnaire validation study showed a high internal consistency with a Cronbach alpha of .86 [64]. This reliability was further confirmed within our sample, with a Cronbach alpha of .94 at pre- and post-intervention (T1-T2) and .95 at follow-up (T3). The Cronbach's alphas for the subscales range from .79 to .95 (T1-T2-T3), thereby supporting the reliability of the tool as a measure of women's sexual functioning.

Female Sexual Distress Scale – Revised

The Sexual Distress Scale – FSDS-R [65] was developed to provide a standardized quantitative measure of sexual-related personal distress. This questionnaire is composed of 13 items rated on a 5-point Likert scale (0 = never, 1 = rarely, 2 = often, 3 = very often, 4 = always). A total score equal to, or greater than, 11 signals the presence of sexual distress. The scale validation study showed a high internal consistency with a Cronbach alpha of .86. This tool thus seems to reliably discriminate between women with or without sexual distress. It was translated into French through a *back-translation* procedure, with the scale being independently translated by two people to prevent translation errors associated with the English version. Its reliability was confirmed within our sample, with a Cronbach alpha of .93 to .94 (T1-T2-T3).

Sexual Five-Facet Mindfulness Questionnaire

The Sexual Five-Facet Mindfulness Questionnaire – FFMQ-S [66] is an adapted version of the Five-Facet Mindfulness Questionnaire [67], specifically designed to assess women's ability for mindfulness during dyadic sexual activities. It is composed of 19 items divided into five facets: observing experience, describing experience, acting with awareness, non-judgment and non-reactivity on psychological phenomenon. Each item is ranked on a 5-point Likert scale ranging from 1 (never true) to 5 (always true). The total score and/or the individual scores of the five mindfulness facets can be used when interpreting its results. The items followed by "R" are reversed before the calculation of each facet score. The validation study showed a high internal consistency with a Cronbach alpha of .87 [66]. This reliability was confirmed within our sample with a Cronbach alpha of .77 at pre-intervention (T1), .84 at post-intervention (T2), and .81 at follow-up (T3).

Questionnaire of involvement and adherence to the treatment

The researcher elaborated a specific post-treatment questionnaire that inquired about satisfaction and involvement in the self-administered treatment. Both groups responded to 1 yes or no item regarding treatment satisfaction (“Generally-speaking, were you satisfied with the self-administered treatment?”) and to 4 items investigating participant engagement in the treatment, two of which were yes/or no options (*i.e.*, “Were the self-administered treatment videos viewed with the partner?”; “Did you view all 7 videos of the self-administered treatment at least once?”). Additionally, 2 questions investigated the time allocated weekly to the prescribed exercises at home, with response options ranging from « I did not engage in the prescribed exercises » to « > 60 minutes » (*i.e.*, “How much time per week did you engage in the sexological exercises (a) alone, (b) with your partner?”). Similarly, 1 supplementary item for the MBCT group asked about time dedicated specifically to the mindfulness exercises (*i.e.*, *How much time did you allocate to mindfulness exercises per week?*”), with possible responses ranging from “I did not follow the prescribed meditation exercises” to “> 60 minutes”.

Intervention

The sexological content of both video-based treatments is predominantly grounded in CBT and the bibliotherapeutic manual *Becoming orgasmic* [19]. Their efficiency having been proven for the treatment of female orgasmic dysfunction, the programs aim to improve both the woman’s sexual functions and her partner’s. The treatments were entitled “*Facilitating the reach of orgasm*”. The content for each video focused on one specific theme, namely 1) Understanding orgasm, 2) Creating an erotic context, 3) Enjoying foreplay, 4) Developing your erotic imagination, 5) Stimuli favorable for orgasm, 6) Living better with your body and 7) Moving smoothly. The videos in both groups featured sexological information and exercises, sexological prescriptions to be performed alone and/or

1 with a partner, as well as two videos (corresponding to number 3 and 5) to watch as a couple.

2 The MBCT experimental condition contained additional instructions and exercises.
3 Specifically, we adapted the *Mindfulness Based Cognitive Therapy (MBCT)* protocol [38] for women
4 seeking help to reach orgasm. Each session began with a classic mindfulness exercise (breathing
5 awareness, body scan...), before proceeding with giving directions on being mindful throughout sexual
6 activities (*e.g.*, mindful awareness of the movement of the pelvis or of one's genitals). As a result, all
7 sexological exercises and prescriptions in the MBCT self-administered treatment were to be done in
8 mindfulness. For example, although both groups were asked to perform the reciprocal sensual back
9 massage (sensate focus), MBCT participants had the additional instruction of being mindful throughout
10 it (See session 3, Appendix 1). In addition, MBCT participants practiced three- to twelve-minute-long
11 mindfulness meditation exercises, after which they provided feedback on their own experience of the
12 exercise, reporting on thoughts, feelings or bodily sensations (See Appendix 1, column 1). The
13 complete programs of both treatments are available in Appendix 1, including the specific mindfulness
14 instructions.

Results

Before study onset, two women withdrew from the study for personal reasons. In addition, women no longer in a relationship ($N=3$), and those reporting they usually reach orgasm during sexual activities ($N=36$), were removed from the analyses. A total of 65 women suffering from difficulties to reach orgasm, aged 18 to 58 years ($M=32.66$, $SD=9.48$) and in relationships ranging from 4.8 months to 34 years ($M=7.91$, $SD=8.48$), were randomly allocated to the MBCT ($N=35$) or CBT ($N=30$) group. Most women were heterosexual (80%) and were highly educated (92.2% were in possession of least a bachelor's degree). The participants presented a mean FSFI score of 23.41 ($SD=6.39$), and mean sexual distress score of 21.18 ($SD=11.72$), thereby confirming that, on average, they suffered from clinical female sexual dysfunction and clinical sexual distress (clinical levels indicated by scores below 26 and equal to or above 11, respectively [64, 65]).

As expected from participant randomization, samples across the two conditions did not significantly differ across any of the questionnaires (FSFI, FSDS-R, FFMQ-S), as well as in terms of age, level of education, medication intake, frequency of sexual activities (alone/with the partner), sex therapy counseling, couples therapy and meditation practice (Table 1).

INSERT TABLE 1

Following treatment, participants across the two conditions did not significantly differ in terms of self-involvement in treatment, treatment satisfaction, frequency and time spent viewing videos, and completion of prescriptions, both alone and with a partner. Most women were satisfied with the self-administered treatment (MBCT = 86%, CBT = 97%) and viewed all videos at least once (MBCT = 91%, CBT = 90%), most often with their partner (MBCT = 54%, CBT = 77%). Within the CBT group, fulfilment rate of the prescribed sexological exercises to be completed alone were as follows: on a weekly basis, 7%, 20%, 46%, 20%, and 7% of the participants reported, respectively, not dedicating

any time to the latter, less than 5 minutes, 5 to 10 minutes, 10 to 20 minutes, and 20 to 30 minutes practices. In terms of the sexological exercises to be completed with the partner, 26% of the women reported not completing any, 23% spent less than 5 minutes, 17% spent 5 to 10 minutes, 23% spent 10 to 30 minutes, and 10% spent 30 à 60 minutes engaging in them. In contrast, the MBCT report the following weekly time allocated to sexological exercises to be completed alone: 32%, 20%, 17%, 14%, 15%, and 12% of the women reported, respectively, not engaging in any of the exercises, dedicating less than 5 minutes, 5 to 10 minutes, 10 à 20 minutes and 20 to 30 minutes to their practice. With respect to the exercises prescribed with the partner, 40% of the participants refrained from completing them, 20% reported less than 5 minutes, 14% spent 5 to 10 minutes, 15% spent 10 to 30 minutes, and 12% spent 30 to 60 minutes on these exercises, on a weekly basis. Regarding the between-session mindfulness exercises set in the MBCT group, 23% of the women did not perform any meditation of any kind, 29% spent less than five minutes per week on meditation, 17% spent five to ten minutes, 17% spent 10 to 20 minutes, and 14% spent more than 20 minutes per week.

After checking for significant outliers, normality (*i.e.*, kurtosis and skewness statistics), and homogeneity of variances, we applied repeated-measure general linear models using SPSS 25 to compare the two groups (*i.e.*, between participant factor) on each dependent variable across time (*i.e.*, the within-participant factor). Compare mean analyses for paired samples were only conducted when the interaction effect between condition and time was significant (*i.e.*, $p < .05$).

Improved sexual functioning

As shown in Table 2, our results show a main effect of time between T1 (pre-intervention) and T2 (post-intervention) on the total FSFI score ($F(1, 63) = 13.171$; $p = .001$; $\eta^2 = .173$), which was maintained at follow-up (Table 2).

INSERT TABLES 2 AND 3

The results also reveal a main effect of time between T1 and T2 on five dimensions of the FSFI: sexual desire ($F(1, 63) = 6.029$; $p = .017$; $\eta^2 = .087$), sexual arousal ($F(1, 63) = 7.463$; $p = .008$; $\eta^2 = .106$), lubrication ($F(1, 63) = 7.103$; $p = .010$; $\eta^2 = .101$), orgasm ($F(1, 63) = 20.440$; $p = .000$; $\eta^2 = .234$), and sexual satisfaction ($F(1, 63) = 8.910$; $p = .004$; $\eta^2 = .124$) (Table 2). Between post-intervention (T2) and the 2-month follow up, the effects for sexual desire, arousal, orgasm, satisfaction, and general sexual functioning are maintained. However, a time effect was observed for both sexual pain ($F(1, 63) = 4.057$; $p = .048$; $\eta^2 = .060$) and lubrication ($F(1, 63) = 4.471$; $p = .038$; $\eta^2 = .017$). At follow-up, lubrication decreased, while pain scores increased.

Interestingly, there was no main effect of time between T1 and T2 for the sexual pain dimension but a time*group interaction effect was nonetheless observed ($F(1, 63) = 7.890$; $p = .007$; $\eta^2 = .111$). The mean paired comparison tests imply that the sexual pain dimension significantly decreased between T1 and T2 in the CBT group, with an average effect size ($t(30) = 3.604$, $p = .001$, $d = -.54$). However, there were no significant changes in sexual pain for MBCT participants between T1 and T2 ($t(35) = .766$, $p = .449$, $d = .14$). Thus, CBT appears to be more effective for reducing sexual pain compared to MBCT (Tables 2 and 3).

Sexual distress decrease

Our results show a main effect of time on the FSDS-R score between T1 and T2 ($F(1, 63) = 18.034$; $p < .001$; $\eta^2 = .223$), which is maintained at follow-up (Table 2). The decrease in sexual distress seems to be equivalent across both groups.

Discussion

To the best of our knowledge, this is the first study to examine the effects of incorporating mindfulness elements to a video-based CBT intervention for women suffering from difficulties to achieve orgasm. Our hypothesis asserted that a video-based Mindfulness Cognitive Therapy (MBCT) would be more effective than a video-based Traditional Cognitive Behavioral Treatment (CBT) in improving female sexual functioning and reducing sexual distress.

Contrary to our initial hypothesis, the statistical analyses revealed that sexual functioning significantly increased across both treatment groups between pre- and post-intervention. In fact, we observed a 16% and 9% increase in score in the CBT and MBCT groups, respectively. This effect was maintained at the two-month follow-up. Regarding the FSFI subscales, it appears that sexual desire (10% and 8% change), arousal (9% and 13%), lubrication (8% and 11%) sexual satisfaction (11% and 14%), and, more importantly, orgasm (34% and 43%) significantly, and respectively, increased for participants in MBCT and CBT groups. Moreover, a significant reduction in sexual pain (20%) was observed for participants benefiting from the CBT – but not MBCT – self-administered treatment. At follow-up, these effects were not maintained for both lubrication and sexual pain. Indeed, scores for lubrication in the MBCT and CBT groups significantly decreased (2% and 6%, respectively), whereas sexual pain worsened (2% and 9%). Finally, a significant reduction in sexual distress of 24% and 29% between pre- and post-intervention was observed for MBCT and CBT groups, respectively. These effects appear to be sustained after two months.

Our findings relative to the CBT group are in line with previous internet- and CBT-based treatments for female sexual difficulties [29]. They also support previous studies that randomized participants between MBCT and CBT treatments [62,63], and where both significantly improved feminine sexual functioning [63] and decreased sexual distress [62]. Several reasons for these

equivalent effects across conditions could be proposed. To begin with, the CBT group completed sexological exercises that were closely related to mindfulness. For example, the sensate focus by Masters and Johnson [17], proposed in both treatments, requires participants to focus their attention towards their own bodily sensations during sexual activities (e.g., the massage sensate focus). As a result, it is possible that directing one's attention to the present moment, which was influenced by both treatments, may represent the core mechanism driving the similar results between the two groups.

Another possible explanation lies in the video duration across treatments. The MBCT self-administered treatment offered not only sexological exercises, but also 3 to 12-minute-long mindfulness exercises to be directly performed during and between each video. This may have created an overload effect among MBCT participants. In fact, 7% and 26% of the CBT participants failed to complete any of the sexological exercises by themselves, nor with their partner, respectively. In contrast, these numbers rose to 32% and 40%, respectively, for the MBCT group. Despite this, we nonetheless observe a significant improvement in nearly all subtypes of sexual functioning, as well as a decline in sexual distress. In addition, although a telephone-based contact with the therapist was proposed throughout the treatment, as recommended in previous studies [29], the participants overlooked this function. This absence of contact may therefore explain the lack of participant implication in the prescribed exercises (*i.e.*, sexological exercises performed alone or with one's partner, and the meditations specific to the MBCT group) and, consequently, in any differential effect between conditions.

Moreover, mindfulness is a core psychological competence that requires thorough skill acquisition and regular training [35, 36]. However, 20% of the participants in the MBCT group did not dedicate time to mindfulness practice outside the self-administered treatment videos. This could be explained by the fact that, unlike previous studies [54, 57, 60, 62], the women were randomly administered to the mindfulness group without accounting for the motivation required for appropriate

1 application of the technique. Participants were informed that the self-administered treatment consisted
2 of sexological information and exercises, without knowing that they would be performing mindfulness
3 per se.

4 Additionally, our results also show that the CBT group appeared to be more effective for sexual
5 pain reduction, as compared to MBCT. This suggests a slight superiority effect for CBT with respect
6 to pain-related outcomes. A possible explanation worth mentioning is the nature of the mindfulness
7 exercises per se. In fact, the latter promote exposure to – and less avoidance of – pleasant or unpleasant
8 bodily sensations, emotions and thoughts [32]. One could thus posit that the MBCT participants learned
9 to become more aware of their own bodily sensations throughout treatment, including the presence of
10 any sexual pain. In turn, this awareness may have led these participants to rate their pain more severely
11 at post-intervention compared to those in the CBT group, for whom pain may have been less detectable
12 throughout the study. This could explain the reduction in sexual pain ratings observed only in the CBT
13 group. Finally, pain ratings before treatment onset may be responsible for the lack of differential effect
14 observed between groups. Indeed, the CBT participants presented higher sexual pain values compared
15 to those in the MBCT group before the start of treatment (see Table 1), which rendered an improvement
16 in pain scores more feasible for the former. This suggestion replicates a study by Hucker and McCabe
17 [56] reporting that a video-based mindfulness intervention for women with several female sexual
18 problems was superior to a wait-list control group. The authors observed an improvement in sexual
19 functioning, but not in sexual pain, and a reduction in sexual distress in the mindfulness group. They
20 believe the lack of decrease in sexual pain was the result of their sample presenting, on average, pain
21 scores approaching the minimum FSFI value. This implies that the women presented almost no sexual
22 pain before treatment onset and that, consequently, a further improvement was almost impossible.
23 Future studies should not only account for this but should also offer video-based treatments for women
24 suffering more specifically from sexual pain.

1 In line with this idea, the results support the feasibility of the video-based intervention.
2 Although dropout rates for face-to-face sex therapy for women suffering from sexual difficulties is
3 usually 49% [28], only two participants withdrew from our study, both before treatment onset. We
4 hypothesize that the treatment format was influential in this finding. Participants were given access to
5 the online self-treatment videos at their convenience, in complete respect of their privacy and
6 anonymity, which represents a core advantage of self-administered treatments.

7 It is important to nuance our results in light of existing limitations concerning the methodology
8 and issues regarding the mindfulness approach itself. Given that our study did not include a wait list
9 control group, caution is warranted regarding the interpretation of these results. In addition, our results
10 cannot be generalized to a clinical population of women with anorgasmia as diagnosed by the DSM-V
11 [2]. In fact, our convenience sample is composed of women in relationships who report a general
12 inability to reach orgasm. Moreover, the use of self-report questionnaires and the absence of
13 assessments obtained for both the partner involvement and treatment quality all represent variables that
14 should be accounted for in future studies. Finally, mindfulness acts at the level of attentional processes
15 and strives to modify well-entrenched automatic behaviors. Thus, it is likely that a two-month follow-
16 up does not offer sufficient long-term perspective to fully capture the impact of the mindfulness-based
17 approach.

18 These observations generate new directions for future research. Firstly, future studies should
19 also propose mindfulness-based interventions for women suffering from clinical sexual distress and/or
20 orgasmic disorder. Undoubtedly, this would allow for a better investigation of the impact of
21 mindfulness across female sexual dysfunction, and for clarification regarding whether these clinical
22 populations could truly benefit from additional mindfulness components. Moreover, we believe that
23 proposing a study entitled “*Facilitating the reach of orgasm* through a psycho-bodily approach”, as
24 opposed to “*Facilitating the reach of orgasm*” would generate greater engagement in the participants.

1 In addition, it is imperative to insist on mandatory exercise completion between sessions. This would
2 allow us to include participants characterized by high intrinsic motivation for this approach and,
3 consequently, promote better treatment adherence and results. Similarly, it seems important to remove
4 the sexological exercises in the CBT group that appear to be overlapping with mindfulness (e.g., sensate
5 focus). Furthermore, it is imperative to ensure that the time dedicated to the treatment videos and
6 prescribed exercises is equivalent across both treatment conditions. These alterations could prevent a
7 possible overload effect, whilst prompting interest for this technique in people originally lacking one.
8 Methodologically wise, studies should include a wait-list control group to distinguish improvements
9 specific to MBCT, as well as 6- and 12-month follow-up sessions to enable participants to fully
10 consolidate mindfulness-related skill learning.

11 12 *Conclusion*

13
14 In conclusion, our results replicate previous studies that have examined the benefit obtained
15 from incorporating mindfulness within treatments for female sexual difficulties [56, 62, 63]. The
16 results indicate that video-based Mindfulness Cognitive Therapy (MBCT) appeared as effective as
17 video-based Traditional Cognitive Behavioral Treatment (CBT) for women in relationships who report
18 difficulties in reaching orgasms. Nonetheless, video-based MBCT could offer an alternative to face-to-
19 face therapy for women with orgasm difficulties, for those interested in a psycho-bodily approach, and,
20 more importantly, for those wishing to preserve their anonymity. Consequently, future studies should
21 offer long-term evaluations and target clinical populations (e.g., anorgasmia), which could further
22 benefit from the self-administered MBCT.

Bibliography

1. Laumann E, Gagnon J, Michael R, Michaels S. The social organization of sexuality : sexual practices in the United States. University of Chicago: Chicago 1994.
2. American Psychiatric Association, DSM-5 Task Force. (2013). Diagnostic and statistical manual of mental disorders: DSM-5™ (5th ed.). Arlington, VA, US: American Psychiatric Publishing, Inc.. <http://dx.doi.org/10.1176/appi.books.9780890425596>
3. IsHak WW, Bokarius A, Jeffrey JK, Davis MC, Bakhta Y. Disorders of orgasm in women: A literature review of etiology and current treatments. J Sex Med 2010; 7(10):3254-3268. <https://doi.org/10.1111/j.1743-6109.2010.01928.x>
4. Kelly, MP, Strassberg, DS, Turner CM. Communication and associated relationship issues in female anorgasmia. J Sex Marital Ther 2004; 30(4):263-276. <https://doi.org/10.1080/00926230490422403>
5. Wright J, Lussier Y, Sabourin S. Manuel clinique des psychothérapies de couple. [Clinical book of couples psychotherapy]. Presses de l'Université du Québec : Canada 2006.
6. Kelly MP, Strassberg DS, Kircher, JR. Attitudinal and experiential correlates of anorgasmia. Arch Sex Behav 1990;19(2):165-177. <https://doi.org/10.1007/BF01542230>
7. Cuntim M, Nobre P. The role of cognitive distraction on female orgasm. Sexologies 2011; 20(4):212-214. <https://doi.org/10.1016/j.sexol.2011.08.001>
8. Dove NL, Wiederman MW. Cognitive distraction and women's sexual functioning. J Sex Marital Ther 2000; 26(1):67-78. <https://doi.org/10.1080/009262300278650>
9. Tavares IM, Laan ETM, Nobre PJ. Cognitive-Affective Dimensions of Female Orgasm: The Role of Automatic Thoughts and Affect During Sexual Activity. J Sex Med 2017; 14: 818-828.

10. Tavares IM, Laan ETM, Nobre PJ. Sexual Inhibition is a Vulnerability Factor for Orgasm Problems in Women. *J Sex Med* 2018;15: 361-372.
11. Nobre PJ, Pinto-Gouveia J. Cognitive and emotional predictors of female sexual dysfunctions: preliminary findings. *J Sex Marital Ther* 2008; 34:325-342. <https://doi.org/10.1080/00926230802096358>
12. De Sutter P, Day J, Adam F. Who are the orgasmic women? Exploratory study among a community sample of French-speaking women, *Sexologies* 2014; 23(3): 93-100. <https://doi.org/10.1016/j.sexol.2014.05.003>
13. Birnbaum GE. The meaning of heterosexual intercourse among women with female orgasmic disorder. *Arch Sex Behav* 2003; 32(1):61-71.
14. Basson R. A model of women's sexual arousal. *J Sex Marital Ther* 2002; 28(1): 1-10. <https://doi.org/10.1080/009262302317250963>
15. Janssen E, Everaerd W, Spiering M, Janssen J. Automatic processes and the appraisal of sexual stimuli: Toward an information processing model of sexual arousal. *J Sex Res* 2000; 37(1):8-23. <https://doi.org/10.1080/00224490009552016>
16. Silverstein RG, Brown ACH, Roth HD, Britton WB. Effects of mindfulness training on body awareness to sexual stimuli: Implications for female sexual dysfunction. *Psychosom Med* 2011; 73(9):817-825. <https://doi.org/10.1097/PSY.0b013e318234e628>
17. Masters W, Johnson V. Les mésententes sexuelles et leur traitement. Laffont: Paris 1971.
18. LoPiccolo J, Lobitz C. The role of masturbation in the treatment of orgasmic dysfunction. *Arch Sex Behav* 1972; 2(2) :163-171. <https://doi.org/10.1007/BF01541865>
19. Heiman J, LoPiccolo L, LoPiccolo J. Becoming Orgasmic: A Sexual Growth Program for Women. Englewood Cliffs, N.J: Prentice-Hall, 1976. Print.

20. Andersen BL. Primary orgasmic dysfunction: diagnostic considerations and review of treatment. *Psychol Bul* 1983; 93:105-136. <http://dx.doi.org/10.1037/0033-2909.93.1.105>
21. Eichel EW, Eichel JD, Kule S. The technique of coital alignment and its relation to female orgasmic response and simultaneous orgasm. *J Sex Marital Ther* 1988; 14(2):129-141. <https://doi.org/10.1080/00926238808403913>
22. Hurlbert, DF, Apt C. The coital alignment technique and directed masturbation: a comparative study on female orgasm. *J Sex Marital Ther* 1995; 21:21-29. <http://dx.doi.org/10.1080/00926239508405968>
23. Everaerd W, Dekker J. A comparison of sex therapy and communication therapy: couples complaining of orgasmic dysfunction. *J Sex Marital Ther* 1981; 7(4):278-289. <https://doi.org/10.1080/00926238108405429>
24. Libman, E., Fichten C.S., Brender, W., Burstein, R., Cohen, J., Binik., G. A comparison of three therapeutic formats in the treatment of secondary orgasmic dysfunction. *J Sex Marital Ther* 1984; 10(3), 147-59.
25. Gould, R.A., Clum, G.A. A meta-analysis of self-help treatment approaches. *Clin Psychol Rev* 1993; 13(2), 169-186.
26. Marrs, R.W. A meta-analysis of bibliotherapy studies. *Am J Community Psychol* 1995; 23(6), 843-870.
27. Van Lankveld, J. Bibliotherapy in the treatment of sexual dysfunctions: a meta-analysis. *K Consult Clin Psychol* 1998; 66(4), 702-708.
28. McCabe, M. P. Evaluation of a cognitive behavior therapy program for people with sexual dysfunction. *J Sex Marital Ther* 2001; 27, 259–271.
29. Jones, L., & McCabe, M. P. The effectiveness of an internet-based psychological treatment program for female sexual dysfunction. *J Sex Med* 2011; 8, 2781–2792.

- 1 30. Ost LG. Efficacy of the third wave of behavioral therapies: A systematic review and meta-
2 analysis. *Behav Res Ther* 2008; 46:296–321. <https://doi.org/10.1016/j.brat.2007.12.005>
- 3 31. Hayes SC. Acceptance and commitment therapy, relational frame theory, and the third wave
4 of behavior therapy. *Behav Ther* 2004 ; 35:639–65. [https://doi.org/10.1016/S0005-7894\(04\)80013-3](https://doi.org/10.1016/S0005-7894(04)80013-3)
- 5 32. Kabat-zinn J. Au coeur de la tourmente, la pleine conscience. MBCR, la réduction du stress
6 basée sur la Mindfulness. De boeck : Bruxelles, 2009.
- 7 33. Hayes SC, Strosahl K, Wilson KG. Acceptance and Commitment Therapy: An experiential
8 approach to behavior change. Guilford Press: New York 1999
- 9 34. Heeren, A, Philippot P. Les interventions basées sur la pleine conscience : Une revue
10 conceptuelle et empirique. *Rev. Que. Psychol* 2010 ; 31(3) :37-61. <http://hdl.handle.net/2078.1/91961>
- 11 35. Kabat-Zinn J. Mindfulness-based intervention in context: Past, present and future. *Clin*
12 *Psychol Sci Pract* 2003 ; 10 :144-156. <https://doi.org/10.1093/clipsy.bpg016>
- 13 36. Shapiro S, Carlson LP, Austin JA, Freedman B. Mechanism of mindfulness. *J Clin Psychol*
14 2006; 62(3):373-386. <https://doi.org/10.1002/jclp.20237>
- 15 37. Kabat-Zinn J : An outpatient program in behavioral medicine for chronic pain patients based
16 on the practice of mindfulness meditation: Theoretical considerations and preliminary results. *Gen*
17 *Hosp Psychiatry* 1982 ; 4 :33-47. [https://doi.org/10.1016/0163-8343\(82\)90026-3](https://doi.org/10.1016/0163-8343(82)90026-3)
- 18 38. Teasdale JD, Segal ZV, Williams MG. How does cognitive therapy prevent depressive
19 relapse and why should attentional control (mindfulness training) help? *Behav Res Ther* 1995 ;
20 33 :25-39. [https://doi.org/10.1016/0005-7967\(94\)E0011-7](https://doi.org/10.1016/0005-7967(94)E0011-7)
- 21 39. Kaplan KH, Goldenberg DL, Galvin NM. The impact of meditation-based stress reduction
22 program on fibromyalgia. *Gen Hosp Psychiatry* 1993; 15:284-289. [https://doi.org/10.1016/0163-](https://doi.org/10.1016/0163-8343(93)90020-O)
23 8343(93)90020-O

40. Baer RA, Smith GT, Hopkins J, Krietemeyer J, Toney L. Using self-report assessment methods to explore facets of mindfulness. *Assessment* 2006; 13:27-45. <https://doi.org/10.1177/1073191105283504>
41. Chiesa A, Serretti A. Mindfulness-based stress reduction for stress management in healthy people: a review and meta-analysis. *Altern Complement Med* 2009; 15(5): 593-600. . <https://doi.org/10.1089/acm.2008.0495>
42. Brown KW, Ryan RM. The benefits of being present: Mindfulness and its role in psychological well-being. *J Pers Soc Psychol* 2003; 84: 822-848. <http://dx.doi.org/10.1037/0022-3514.84.4.822>
43. Khoury B, Lecomte T, Fortin G, Masse M, Therien P, Bouchard V, Chapleau M-A, Paquin K, Hofmann SG. Mindfulness-based therapy: A comprehensive meta-analysis. *Clin Psychol Rev* 2013; 33:763-771. <https://doi.org/10.1016/j.cpr.2013.05.005>
44. Chambers R, Lo B, Allen N. The impact of intensive mindfulness training on attentional control, cognitive style, and affect. *Cognit Ther Res* 2008;32(3):303-322. <http://dx.doi.org/10.1007/s10608-007-9119-0>
45. Jha AP, Krompinger J, Baime MJ. Mindfulness training modifies subsystems of attention. *Cogn Affect Behav Neurosci* 2007; 7(2):109-119. <https://doi.org/10.3758/CABN.7.2.109>
46. Valentine ER, Sweet PLG. Meditation and attention: A comparison of the effects of concentrative and mindfulness meditation on sustained attention. *Ment Health Relig Cult* 1999; 2(1):59-70. <https://doi.org/10.1080/13674679908406332>
47. Heeren, A, Philippot P. Changes in ruminative thinking mediate the clinical benefits of mindfulness: Preliminary findings. *Mindfulness* 2011; 2:8-13. <http://dx.doi.org/10.1007/s12671-010-0037-y>

- 1 48. Philippot P, Baeyens C, Douilliez C. Specifying emotional information: Regulation of
2 emotional intensity via executive processes. *Emotion* 2006 ; 6:60-571. [http://dx.doi.org/10.1037/1528-](http://dx.doi.org/10.1037/1528-3542.6.4.560)
3 3542.6.4.560
- 4 49. Jain S, Shapiro SL, Swanick S, Roesch SC, Mills PJ, Bell I, Schwartz GE. A randomized
5 controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states
6 of mind, rumination, and distraction. *Ann Behav Med* 2007; 33(1):11-21.
7 https://doi.org/10.1207/s15324796abm3301_2
- 8 50. Kuyken W, Watkins E, Holden E, White K, Taylor RS, Byford S, Evans A, Radford
9 S, Teasdale JD, Dalglish T. How does mindfulness-based cognitive therapy work? *Behav Res Ther*
10 2010; 48(11):1105-1112. <https://doi.org/10.1016/j.brat.2010.08.003>
- 11 51. Van Dam NT, Sheppard SC, Forsyth JP, Earleywine M. Self-compassion is a better
12 predictor than mindfulness of symptom severity and quality of life in mixed anxiety and depression. *J*
13 *Anxiety Disord* 2011 ; 25(1) :123-130. <https://doi.org/10.1016/j.janxdis.2010.08.011>
- 14 52. Goldberg, S. B., Tucker, R. P., Greene, P. A., Davidson, R. J., Kearney, D. J., & Simpson,
15 T. L. (2019). Mindfulness-based cognitive therapy for the treatment of current depressive symptoms:
16 A meta-analysis. *Cognitive Behaviour Therapy*, 10.1080/16506073.2018.1556330
- 17 53. Adam F, Géonet M, Day J, De Sutter P. Mindfulness skills are associated with female
18 orgasm? *Sex Relation Ther* 2015; 30(2):256-267. <https://doi.org/10.1080/14681994.2014.986085>
- 19 54. Brotto, L. A., Erskine, Y., Carey, M., Ehlen, T., Finlayson, S., Heywood, M., ...Miller, D.
20 A brief mindfulness-based cognitive behavioral intervention improves sexual functioning versus wait-
21 list control in women treated for gynecologic cancer. *Gynecol Oncol* 2012; 125(2) :320–325.
22 <http://doi.org/10.1016/j.ygyno.2012.01.035>

55. Paterson L, Handy A, Brotto LA. Pilot Study of Eight-Session Mindfulness-Based Cognitive Therapy Adapted for Women's Sexual Interest/Arousal Disorder. *J Sex Res* 2016; 54(7): 859-861. <https://doi.org/10.1080/00224499.2016.1208800>
56. Hucker, A., McCabe, M. Incorporating Mindfulness and Chat Groups Into an Online Cognitive Behavioral Therapy for Mixed Female Sexual Problems. *J Sex Res* 2015; 52 (6) : 627-639. <https://doi.org/10.1080/00224499.2014.888388>
57. Brotto, L. & Basson, R. & Smith, K. & Driscoll, M. & Sadownik, L. Mindfulness based Group Therapy for Women with Provoked Vestibulodynia. *Mindfulness*, 2014; 6(3) :417–432. <http://dx.doi.org/10.1007/s12671-013-0273-z>
58. Brotto L, Chivers M, Millman R, Albert A. Mindfulness-Based Sex Therapy Improves Genital-Subjective Arousal Concordance in Women With Sexual Desire/Arousal Difficulties. *Arch Sex Behav* 2016 ; 45(8):1907-1921. <https://doi.org/10.1007/s10508-015-0689-8>
59. Brotto, L, Krychman M, Jacobson P. Eastern approaches for enhancing women's sexuality: Mindfulness, acupuncture, and yoga. *J Sex Med* 2008; 5: 2741-2748. <https://doi.org/10.1111/j.1743-6109.2008.01071.x>
60. Brotto LA, Basson R, Luria M: A mindfulness-based group psychoeducational intervention targeting sexual arousal disorder in women. *J Sex Med* 2008; 5: 1646-1659. <https://doi.org/10.1111/j.1743-6109.2008.00850.x>
61. Stephenson, K., Kerth. Effects of Mindfulness-Based Therapies for Female Sexual Dysfunction: A Meta-Analytic Review. *J Sex Res* 2017: 54 (7) :832-849. <https://doi.org/10.1080/00224499.2017.1331199>
62. Brotto, L., Seal, B., Rellini, A. Pilot Study of a Brief Cognitive Behavioral Versus Mindfulness-Based Intervention for Women With Sexual Distress and a History of Childhood Sexual Abuse. *J Sex Marital Ther* 2012; 38(1) :1-27. <https://doi.org/10.1080/0092623X.2011.569636>

63. Brotto, L., Bergeron, S., Zdaniuk, B., Driscoll, M., Grabovac, A., Sadownik, L., Smith, K., Basson, R. A Comparison of Mindfulness-Based Cognitive Therapy Vs Cognitive Behavioral Therapy for the Treatment of Provoked Vestibulodynia in a Hospital Clinic Setting. *J Sex Med* 2019; 16(6): 909-923. <https://doi.org/10.1016/j.jsxm.2019.04.002>

64. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, Ferguson D, D'Agostino R. The female sexual function index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000; 26:191-208. <https://doi.org/10.1080/009262300278597>

65. Derogatis L, Clayton A, Lewis-D'agostino D, Wunderlich G, Fu Y. Validation of the female sexual distress scale-revised for assessing distress in women with hypoactive sexual desire disorder. *J Sex Med* 2008; 5(2):357-364. <https://doi.org/10.1111/j.1743-6109.2007.00672.x>

66. Adam F, Heeren A, Day J, De Sutter P. Development of the Sexual Five-Facet Mindfulness Questionnaire (FFMQ-S): Validation among a community sample of French-speaking women. *J Sex Res* 2015; 52(6):617-626. <https://doi.org/10.1080/00224499.2014.894490>

67. Heeren, A, Douilliez C, Peschard V, Debrauwere L, Philippot P. Cross-cultural consistency of the Five-Facet Mindfulness Questionnaire: Adaptation and validation in a French sample. *Eur Rev Appl Psychol* 2011; 61 :147-151. <https://doi.org/10.1016/j.erap.2011.02.001>