

CME

What's New in Sex Therapy

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ABSTRACT

Introduction. “Is there anything new in sex therapy?” Has the field of sex therapy been stagnating and failing to develop new treatments? Clearly, the important pharmaceutical advances of the past 11 years have overshadowed the developments in the field of sex therapy.

Aim. The goal of this manuscript is to call attention to the recent innovations in the field of sex therapy.

Method. Review of the literature.

Results. There are four candidates to consider: (i) combination medical and psychological therapy; (ii) the technique of mindfulness for women with complaints of arousal disorder and low sexual desire; (iii) Internet sexual therapy and; and (iv) reconceptualization of genital pain and psychological interventions for women with these complaints. This article reviews the literature in these areas and offers commentary regarding the benefits and limitations of the research. Finally, future directions for research in these four areas are discussed.

Conclusions. Psychological innovation and intervention remains a vital aspect in the field of sexual medicine. New methods continue to be developed and appraised and the methodology, design, and sophistication of sex therapy outcome research have significantly advanced. **Althof SE. What's new in sex therapy. J Sex Med 2010;7:5–13.**

Key Words. Sex Therapy; Cognitive Behavioral Sex Therapy; Psychotherapy; Combination Therapy; Integrated Therapy; Psychological Sexual Dysfunction; Hypoactive Sexual Desire Disorder; Mindfulness; Internet Therapy; Genital Pain

Introduction

Is there anything new in sex therapy? This question or slightly different versions of this question are frequently asked of me by my colleagues in urology, gynecology, family practice, and endocrinology. Leaders in the field of sex therapy are also raising this question. Schover and Leiblum wrote about the stagnation of sex therapy in 1994 and criticized clinicians for failing to develop innovative sex therapy techniques [1]. Others have criticized the early (studies in the 1970s and 1980s) sex therapy outcome studies for their: (i) small sample sizes; (ii) not including control groups (waiting list, no treatment, attention placebo controls); (iii) not randomizing subjects to different conditions; (iv) failing to offer clear-cut definitions of diagnostic criteria to permit replication; (v) not

including assessments of long-term outcome; (vi) not adequately describing the therapy method utilized; (vii) not employing a manual guiding the therapeutic interventions; and (viii) not using psychometrically sound validated questionnaires [2,3].

While the criticisms of the early sex therapy outcome studies are valid, as are Schover and Leiblum's comments urging more innovation and inspiration regarding clinical applications, sex therapy has continued to evolve and mature, generating higher level research studies and promising clinical innovations. Clearly, the important pharmaceutical advances of the past 11 years have overshadowed any new developments in the field of sex therapy. Following the introduction of the phosphodiesterase type 5 inhibitor (PDE5i) drugs in 1998 and 2003 and their robust efficacy and safety,

some thought that sex therapy, at least for men with erectile dysfunction (ED), would cease to exist. Clearly, that has not been the case and I continue to believe that sex therapy remains a vital intervention on its own or combined with medical interventions. Even when a sexual problem such as ED is primarily organic in etiology, sex therapy is often a critical component to the success of the medical intervention.

The goal of this article is to review recent innovations in the field of sex therapy. There are four candidates to consider in terms of “what is new.” The first is the combining of psychological and medical therapy; second is the incorporation of “mindfulness” techniques for women with complaints of low sexual desire and arousal disorder; third is the use of the Internet to provide psychological intervention; and fourth is the reconceptualization of genital pain disorders and psychological interventions for women with genital pain. Obviously, there may be other contenders regarding innovation that are not included in this review (e.g., psychosexual interventions with cancer survivors, the diagnosis of persistent genital arousal disorder or the prominence given the role of confidence in the restoration of erectile function). However, after consulting several leading experts, there was general consensus on these four topics. This article will review the literature in these areas and offer commentary regarding the benefits and limitations of these approaches. Finally, future directions for research in these four areas will be discussed.

What Is Sex Therapy?

Sex therapy is a specialized form of psychotherapy that draws upon an array of technical interventions known to effectively treat male and female sexual dysfunctions (e.g., in the case of female anorgasmia, directed masturbation). Treatment may be conducted in an individual, couples, or group format, depending upon the initial problem, the judgment of the therapist, the motivation of the patient(s), and practical considerations of both patient(s) and therapist [4].

Psychosexual evaluation goes beyond traditional psychological assessment to examine the patient’s or couple’s sexual history, current sexual practices, relationship quality and history, emotional health, and contextual factors (e.g., young children, chronic illness, financial concerns, cul-

tural beliefs, etc.) currently influencing their lives. The patient’s developmental history is examined for influences upon current functioning. Assessment of all the relevant medical and biological factors is necessary to understand the genesis and maintenance of the current difficulty.

Sexual therapy techniques comprise behavioral/cognitive interventions as well as psychodynamic, systems, relationship, and educational interventions (e.g., reading, videotapes, illustrations, anatomical models). While employing traditional psychotherapeutic techniques—support, interpretation, confrontation, cognitive reframing, and homework to name a few, sex therapy incorporates specific technical interventions such as sensate focus to diminish performance anxiety, stop-start to help patients with premature ejaculation, directed masturbation for anorgasmia, and insertion of dilators paired with relaxation for sexual pain disorders. Effective comprehensive treatment often involves collaboration with other specialists such as urologists, gynecologists, endocrinologists, family practice physicians, internists, cardiologists, neurologists, nurse practitioners, physician assistants, or physical therapists.

Innovation 1: Combination Medical and Psychological Treatment

In psychiatry, the concept of combination or integrated therapy is not new. It is the standard of care for the treatment of depression, and research has demonstrated that combining antidepressants with psychotherapy is superior to either treatment alone [5]. Combination therapy is also employed in the treatment of childhood anxiety, schizophrenia, and posttraumatic stress disorder [6,7].

Several authorities in the field have criticized the manner in which we currently deliver sexual health care and advocate for more of a combined therapy approach [8–11]. Combination therapy addresses the relevant biological/medical as well as psychosocial issues that predispose, precipitate, and maintain sexual dysfunction. Combining medical and psychological interventions harnesses the power of both treatments to enhance efficacy, increase treatment and relational satisfaction, and decrease patient discontinuation [8]. Combination therapy also provides patients with rapid symptom amelioration, thereby “jump starting” the treatment process. Too often, medical treatments for sexual dysfunction, those approved and those off-

label, are narrowly or mechanistically directed at sexual function alone and fail to address the salient psychosocial issues. Likewise, psychological intervention alone may be time-consuming, costly, and may fail to yield rapid symptom amelioration.

PDE5i are efficacious in 70% of men with ED; yet, 60–70% of individuals discontinue treatment [12]. In response to the high discontinuation rate, urologists began implementing “optimization strategies” that target patient education, dose optimization, need for sexual stimulation, and follow-up [13–15]. However, none of these “treatment optimization” proposals address crucial psychosocial issues such as: restarting a sexual life after an extended period of abstinence, partner resistance, partner concerns or dysfunction, lack of confidence, performance anxiety, depression, relationship issues, men with unconventional sexual scripts, and unrealistic expectations [16]. Combination therapy would include all the medical optimization recommendations while simultaneously addressing the psychosocial barriers that hinder treatment efficacy, satisfaction, and compliance. Additionally, combination therapy would address the important partner issues that may impede treatment progress or success.

Given the multiply determined nature of female sexual dysfunctions, it is likely that combination medical and psychological therapy will ultimately (when a drug becomes approved for FSD) be of significant benefit to women as well [17]. Likewise, although there are no approved medications for premature ejaculation in the United States (Dapoxetine was recently approved in Sweden, Finland, Austria, Germany, and Italy), combination therapy is likely to offer significant benefits to men and their partners with this condition [18].

Research Supporting Combination Therapy

The majority of research on combination therapy focuses on ED. This evolving body of literature compares men with ED taking a PDE5i, or those utilizing intercavernosal injection or vacuum pump therapy with a comparable group of men who receive the same medical treatment and some form of psychological intervention. The population of men with ED includes those with psychogenic ED only, mixed ED, and one study of men who underwent radical prostatectomy. The results of these studies demonstrate that combined medical and psychological treatment results in improved efficacy of the medical interventions,

decreased discontinuation rates, enhanced treatment, and sexual satisfaction compared with medical therapy alone [19–28].

A range of psychological interventions has been used in these studies, including: a 90-minute psychoeducational group, weekly group treatment, weekly individual counseling, and the use of a manual instructing men how to treat themselves with optional telephone assistance from a therapist. These consistent results challenge us to move beyond traditional postures and paradigms. Applying these findings to the ordinary world of medical care delivery is the challenge.

Steggell et al. [29] describes an adaptation of combination therapy to men with premature ejaculation. These men were randomly assigned to either 20 mg of paroxetine or 3–8 sprays of Prem-jact (a lidocaine-based spray) for 4 weeks followed by a 4-week behavioral intervention during which the pharmacotherapy was discontinued. Intravaginal ejaculatory latency time (IELT) was recorded for each episode of intercourse by stopwatch. After 4 weeks of pharmacotherapy (paroxetine or Prem-jact), compared with baseline, men with lifelong and acquired PE demonstrated an eightfold improvement in IELT. During the next 4 weeks of behavioral therapy only, the IELT of men with lifelong PE returned to baseline, while acquired PE men maintained a 3.5-fold increase over baseline.

Steggell did not directly contrast pharmacotherapy alone with a combined psychological and medical treatment because of the unique nature of his study population. The men in Steggell’s study consisted primarily of Bangladeshi Muslim men residing in London who had previously rejected psychological interventions in favor of medical solutions for their sexual problems. By first providing them with a medical treatment, the author was engaging the patients and providing them with a rapid symptom resolution. This made them more amenable to the behavioral and educational interventions in the last 4 weeks of the study.

Future studies of combination therapy should employ larger, more heterogeneous populations and directly contrast combination therapy against pharmacotherapy alone. The interventions should be manualized so that they can be replicated by others. These studies should employ validated measures to assess psychosocial outcomes, employ less arbitrary measures of success, and report on at least 6 months of follow-up after cessation of therapy. Finally, it would be interesting to see

more data on combination therapy and its impact on partners.

Innovation 2: Mindfulness

Mindfulness is an innovative technique imported into the field of sexual medicine from Buddhist teachings of over 2,500 years ago. Before judging mindfulness as “far out,” “flakey,” or “too touchy feely,” consider that research has shown mindfulness to be helpful in the regulation of chronic pain and reduction of anxiety and stress [30–32].

Mindfulness is a mental state, characterized by concentrated awareness of one’s thoughts, actions, or motivations. It is described as a “relaxed wakefulness” or “nonjudgmental, present-moment awareness [33,34]. It quiets the busy mind distracted by judgments and internal commentary and allows individuals to observe and participate in life without getting caught up in their inner dialogues. These internal distractions/dialogues interfere with focusing on sexual pleasure, sensation, or intimacy. They lead individuals to become preoccupied with nonerotic thoughts or behaviors that generate performance anxiety, unpleasant monitoring of performance, and critical assessments of themselves or their partner. The here and now of sensation, pleasure, and eroticism is lost in the distractions of the busy and judgmental mind.

Brotto et al. [35] developed a mindfulness-based psychoeducation (PED) intervention for women who underwent hysterectomy following the diagnosis of gynecologic cancer. The three-session PED intervention sought to lessen sexual arousal and desire complaints and improve relationship satisfaction, body image distortion, depression, and maladaptive beliefs about sexuality. The PED consisted of: cognitive-behavioral exercises targeted to sexual arousal and desire complaints (e.g., body image distortion, maladaptive beliefs about sexuality, relationship distress, etc.); mindfulness exercises; and homework assignments involving reading, self-observation, behavioral exercises, and couple communication.

Assessments consisted of baseline and end-of-treatment administration of the Female Sexual Function Index (FSFI), Female Sexual Distress Scale (FSDS), Sexual Interest and Desire Inventory (SIDI), Detailed Assessment of Sexual Arousal (DASA), Beck Depression Inventory (BDI), Dyadic Adjustment Scale (DAS), Film

Scale, and psychophysiological assessment of sexual arousal.

At the completion of the three PED sessions, compared with baseline, the women demonstrated improvements in desire, arousal, distress, depression, and overall quality of life. Marginally significant improvements in physiological sexual arousal (vaginal pulse amplitude) and relationship satisfaction were also reported. The subjects also underwent a qualitative debriefing in which they identified mindfulness training as the most important aspect of the psychoeducational intervention.

Brotto et al. [35] concluded that the PED, while “directly targeting psychological constructs such as thoughts, affect, and behavior, psychological treatments can evoke physiological change. The finding that perceived genital arousal was most increased after the PED in women who were hormonally replete suggests that a certain baseline level of hormones might be necessary in order for improvements in sexual response, through a behavioral intervention, to be borne out. There is also the suggestion that women with more depressed mood might especially respond to the intervention since quality of life scores improved most in women with higher baseline depressive scores.”

In a subsequent study on mindfulness training, Brotto et al. sought to examine the efficacy of their PED intervention in women with female arousal disorder and desire complaints without gynecologic cancers [34]. Based on feedback from the initial study, the authors developed a manual for the therapist and homework assignments for patients and sought to conduct the PED in a group rather than in an individual setting. They administered the same measures and physiological assessments as in the earlier study. After three group PED sessions, compared with baseline, women’s score on the desire subscale of the FSFI and SIDI significantly increased, while their distress scores significantly decreased.

Approximately one-third of Brotto et al.’s sample were survivors of childhood sexual abuse (CSA); two-thirds were not. At baseline, these two groups did not differ on the BDI, DAS, DASA, SIDI, or on any subdomain of the FSFI except arousal, where CSA survivors had significantly lower scores. After the three-session PED, in a post hoc analysis, women with a history of CSA improved more than women without such a history on all FSFI subdomains, FSDS total score,

and BDI. Similarly, there was a more marked reduction in negative affect during the physiological assessment while watching the erotic film from pre- to post-PED in the women with a history of CSA compared with the women without such a history.

Mindfulness interventions help women to be present and attend to pleasurable erotic sensations. Distractions from a “busy mind” that tend to be nonerotic, negative, and judgmental are minimized. Mindfulness training appears to have special relevance to women with sexual arousal and desire complaints who are depressed and survivors of CSA.

The prior two studies did not utilize a control group; presently, the authors are conducting a randomized controlled study of their mindfulness PED. It would also be interesting to include partners in this intervention to see if that might facilitate even more change. The enhanced benefits of the mindfulness intervention for women survivors of CSA and depressed women with sexual arousal and desire problems are a fascinating finding that requires replication and further study. The development of a therapist manual allows others to easily duplicate the intervention, and the ability to conduct the intervention in groups allows for efficiency, reduced cost, and the benefits of group support.

Innovation 3: Sex Therapy on the Internet

Sex therapy delivered via the Internet is a controversial notion. There are several ethical and professional challenges to be overcome; nonetheless, use of the Internet poses several advantages for patients that include: easy accessibility, anonymity, practicality, reducing embarrassment or humiliation, geographical isolation, time constraints, and the availability of specialized psychological care in communities where there is no trained professional. Internet psychotherapy has been successfully used to treat panic disorder, social phobia, depression, and recurrent headache [36–39]. Some of the challenges for therapists conducting Internet therapy include concerns with patient honesty, losing the subtle and not-so-subtle visual and auditory cues present in face-to-face psychotherapy, not being able to easily pick up nuance in written text and professional issues concerning liability, and consent to treating and providing therapy to patients where one is not licensed. There are also

concerns regarding confidentiality and security of Internet connections. Finally, physicians are concerned with prescribing medication over the Internet without physically examining a patient or gathering a detailed and accurate medical history.

There are four articles that examine the benefits of providing Internet treatment to individuals with sexual problems [40–43]. All are exploratory in nature, and report on small samples of patients. Two of the four focus on treatment of men with ED.

In a pilot study with eight subjects, Hall examined online sex therapy for men and women with a diverse range of sexual dysfunctions including: anorgasmia, vaginismus, dyspareunia, premature ejaculation, delayed ejaculation, and ED [40]. The number of e-mail sessions ranged between 2 and 23. Online therapy began with patients completing a Problem Evaluation Form which solicited sexual history and information about the specific dysfunction. Based on the patient’s responses to the form, the online therapist devised a treatment plan. At the conclusion of treatment, patients completed an online evaluation form.

Of the eight patients, online therapy significantly improved sexual function significantly in two, much in three, slightly in two, and for one, it stayed the same. All eight patients reported an improved self-awareness and 6/8 said their sexual knowledge improved. Obviously, this was an uncontrolled study not using validated questionnaires with a very small number of patients. However, it was designed as a pilot study and suggests that Internet sex therapy may benefit some patients.

Leusink and Aarts [41] investigated the effectiveness of electronic consultations to 219 men suffering from ED. Unlike the previous study, after completing an online history form, the authors provided prescriptions for PDE5i as well as suggestions for psychological interventions. The International Index of Erectile Function and a General Assessment Question were given pre- and post-online therapy and response to both were compared. Eighty-one percent of men reported improved erectile function at the conclusion of their consultation. This study did not include a comparison group, making it difficult to assess whether similar outcomes would have been achieved following face-to-face consultation, or might have been due to spontaneous recovery.

McCabe and Price [42] evaluated the effectiveness of an Internet-based treatment program for ED and compared a combined medical and psy-

chological Internet intervention with only a psychological Internet intervention. Each arm of the study received the same psychological treatment intervention. Outcome measures included the International Index of Erectile Dysfunction, Self-Esteem and Relationship Questionnaire, Kansas Marital Satisfaction Scale, Index of Sexual Satisfaction, and World Health Organization Quality of Life BREF. The psychological intervention was a cognitive-behavioral intervention targeted to resolve psychological and relationship factors related to ED. The Internet program called Rekindle consisted of three treatment components: sensate focus, communication exercises, and unlimited e-mail contact with a therapist. Subjects and their partners were encouraged to spend approximately 2 weeks completing each of the five treatment modules. The entire Rekindle Internet program took 10 weeks to complete. The purpose of e-mail contact (unlimited) was to resolve any individual or relationship problems that the men experienced as a result of the sensate focus or communication exercises.

Both the combined therapy and psychological intervention only groups demonstrated improvements in sexual function from pretest to posttest. There were no significant differences between either treatment. Similarly, compared with baseline, at the end of treatment, both groups demonstrated significant improvements in relationship satisfaction. The authors suggest that in cases where ED is more severe or has been established for a significant period of time, a more intensive Internet intervention may be necessary. Additionally, they point out that when other comorbid sexual dysfunctions are present, or when the level of discord within the general relationship is high, Rekindle may also need to be supplemented with additional treatment.

McCabe et al. [43] conducted another study where they compared the Rekindle program with a no-treatment control group. After completion of the study, subjects in the control arm could participate in the treatment arm. Men in the treatment arm reported improved erectile function and relationship satisfaction in contrast to men in the control group. The sexual gains of men in the Rekindle group remained stable for 3 months following the termination of treatment. While the second study employed a control group and utilized validated outcome measures, the numbers of subjects enrolled in the study was relatively small

(12 in Rekindle, 19 in the control arm) and there was no involvement or data from partners.

The use of the Internet shows promise for offering therapeutic interventions to patients suffering from sexual dysfunctions. However, more work remains to be done in terms of extending the Internet offerings to larger and more diverse populations of subjects and providing extended follow-up regarding the stability of change. Additionally, the aforementioned challenges of protecting patient's privacy, consent, and concerns with liability need to be addressed. Finally, regulatory agencies and professional societies need to address the legal and ethical issues of delivering care via the Internet. Policy recommendations have not kept up with the pace of technological change.

Innovation 4: Reconceptualization of Genital Pain and Psychological Interventions for Genital Pain

Binik and his coworkers [44,45] have cogently argued for the reclassification of vaginismus and dyspareunia from sexual dysfunctions to genital pain disorders. Although genital pain disorders can interfere with sexual function, Binik et al. urge us to focus on the pain and not the function with which it interferes. They emphasize treating these disorders by utilizing an array of pain management strategies. Two important studies highlight this important reconceptualization.

Bergeron et al. [46] report on 78 women with provoked vulvar vestibulitis who were randomly assigned to one of three conditions: biofeedback, cognitive behavioral psychotherapy, or vestibulectomy. The women were assessed at the end of treatment, 6 months post-treatment, and 2.5 years later. At the end of treatment, women in all three groups reported lessening of symptoms. At the 6-month follow-up, vestibulectomy resulted in approximately twice the pain reduction of the other two interventions. All three groups significantly improved on measures of psychological adjustment and sexual function from pretreatment to the 6-month follow-up.

Two-thirds of the original sample was reassessed 2.5 years after the end of treatment [47]. The women underwent a gynecological exam and completed a structured interview and pain and sexual function questionnaires. Compared to the 6-month follow-up, the women reported less pain and there were no differences between the three treatments. Higher pretreatment pain intensity

predicted poorer outcomes at the 2.5-year follow-up for all three treatments.

Backman et al. [48] reported on 27 women with provoked vulvar vestibulitis who participated in a combination treatment of physical and psychosexual therapy. Psychotherapy aimed to increase the patient's awareness between her thoughts and somatosensory responses, improve sexual function, and reduce stress from daily living. Physical therapy was targeted to increase the patient's knowledge about her genital anatomy and function, desensitize the mucosa, reduce pain, and restore function in the pelvic floor muscles. On average, patients received 12 and 15 sessions of psychotherapy and physical therapy, respectively. Seventy-nine percent of the women considered themselves to be cured or greatly improved. Intercourse frequency was significantly increased, sexual function improved, and coital pain was reduced. The authors concluded that women can benefit from combined treatment that addresses both their pain and the psychosexual issues associated with the pain.

Bergeron's study was a randomized trial that employed validated questionnaires. The Backman et al. study was not a randomized controlled trial and did not utilize validated questionnaires. Both studies demonstrate the importance of reconceptualizing vulvar vestibulitis as a genital pain disorder and developing multiple strategies to help improve these women's experience of pain, sexual function, and overall quality of life.

Conclusion

Psychological innovation remains a vital aspect in the field of sexual medicine. New methods continue to be developed and appraised. The methodology, design, and sophistication of sex therapy outcome studies and the development of validated questionnaires have also advanced the field. While it remains difficult to fund and conduct large scale randomized controlled trials of psychological interventions, the past decade has seen several innovative and exciting innovations. Combination therapies hold great promise to harness the power of both the medical and psychological aspects that precipitate and maintain sexual and genital pain problems.

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References

- 1 Schover L, Leiblum S. The stagnation of sex therapy. *J Psychol Human Sex* 1994;6:5-30.
- 2 Heiman J, Meston C. Empirically validated treatment for sexual dysfunction. *Annu Rev Sex Res* 1997;8:148-94.
- 3 Spence S. *Psychosexual therapy: A cognitive-behavioral approach*. London: Chapman and Hall; 1991.
- 4 Althof S, Leiblum S, Chevret M, Hartman U, Levine S, McCabe M, Plaut M, Rodrigues O, Wylie K. Psychological and interpersonal dimensions of sexual function and dysfunction. In: Lue T, Basson R, Rosen R, Giuliano F, Khoury S, Montorsi F, eds. *Sexual medicine: Sexual dysfunctions in men and women*. Paris: Edition 2004; 2004:75-116.
- 5 Keller MB, McCullough JP, Klein DN, Arnow B, Dunner D, Gelenberg A, Markowitz J, Nereroff C, Russel J, Thase M, Trivedi M, Zajecka J. A comparison of nefazodone, the cognitive behavioral-analysis system of psychotherapy, and their combination for the treatment of chronic depression. *N Engl J Med* 2000;342:1462-70.
- 6 Nathan P, Gorman J. *A guide to treatments that work*. New York: Oxford University Press; 1998.

- 7 Walkup JT, Albano AM, Piacentini J, Birmaher B, Compton S, Sherrill J, Ginsburg G, Rynn A, McCracken J, Waslick B, Lyengar S, March J, Kendall P. Cognitive behavioral therapy, sertraline, or a combination in childhood anxiety. *N Engl J Med* 2008;359:2753–66.
- 8 Althof S. Sex therapy in the age of pharmacotherapy. *Annu Rev Sex Res* 2006;XVII:116–32.
- 9 Perelman M. Combination therapy for sexual dysfunction: Integrating sex therapy and pharmacotherapy. In: Balon R, Segraves R, eds. *Handbook of sexual dysfunction*. New York: Taylor and Francis; 2005:13–41.
- 10 Rosen R. Medical and psychological interventions for erectile dysfunction; toward a combined treatment. In: Leiblum S, Rosen R, eds. *Principles and practices of sex therapy*. New York: Guilford Press; 2000.
- 11 McCarthy M, McDonald D. Psychobiosocial versus biomedical models of treatment: Semantics or substance. *Sex Relat Ther* 2009;24:30–7.
- 12 Rosen RC, Fisher WA, Eardley I, Niederberger C, Nadel A, Sand M. The multinational Men's Attitudes to Life Events and Sexuality (MALES) study: I. Prevalence of erectile dysfunction and related health concerns in the general population. *Curr Med Res Opin* 2004;20:607–17.
- 13 Brock G, Carrier S, Casey R, Tarride J, Elliott S, Dugre H, Rousseau C, D'Angelo P, Defoy I. Can an educational program optimize PDE5i therapy? A study of Canadian primary care practices. *J Sex Med* 2007;4:1404–13.
- 14 Hatzichristou D, Moysidis K, Apostolidis A, Bekos A, Tzortzis V, Hatzimouratidis K, Loannidis E. Sildenafil failures may be due to inadequate patient instructions and follow-up: A study on 100 non-responders. *Eur Urol* 2005;47:518–22; discussion 22–3.
- 15 McCullough AR, Barada JH, Fawzy A, Guay AT, Hatzichristou D. Achieving treatment optimization with sildenafil citrate (Viagra) in patients with erectile dysfunction. *Urology* 2002;60:28–38.
- 16 Althof S. When an erection alone is not enough; biopsychosocial obstacles to lovemaking. *Int J Impot Res* 2002;14:S99–104.
- 17 Perelman M. Clinical application of CNS-acting agents in FSD. *J Sex Med* 2007;4:280–90.
- 18 Perelman M. A new combination treatment for premature ejaculation. A sex therapist's perspective. *J Sex Med* 2006;3:1004–12.
- 19 Abdo CH, Afif-Abdo J, Otani F, Machado AC. Sexual satisfaction among patients with erectile dysfunction treated with counseling, sildenafil, or both. *J Sex Med* 2008;5:1720–6.
- 20 Banner LL, Anderson RU. Integrated sildenafil and cognitive-behavior sex therapy for psychogenic erectile dysfunction: A pilot study. *J Sex Med* 2007; 4:1117–25.
- 21 Hartmann U, Langer D. Combination of psychosexual therapy and intra-penile injections in the treatment of erectile dysfunctions: Rationale and predictors of outcome. *J Sex Educ Ther* 1993;19:1–12.
- 22 Lottman PE, Hendriks JC, Vrugink PA, Meuleman EJ. The impact of marital satisfaction and psychological counselling on the outcome of ICI-treatment in men with ED. *Int J Impot Res* 1998;10:83–7.
- 23 Melnik T, Abdo CH. Psychogenic erectile dysfunction: Comparative study of three therapeutic approaches. *J Sex Marital Ther* 2005;31:243–55.
- 24 Phelps JS, Jain A, Monga M. The PsychoedPlusMed approach to erectile dysfunction treatment: The impact of combining a psychoeducational intervention with sildenafil. *J Sex Marital Ther* 2004;30:305–14.
- 25 Titta M, Tavolini IM, Moro FD, Cisternino A, Bassi P. Sexual counseling improved erectile rehabilitation after non-nerve-sparing radical retropubic prostatectomy or cystectomy—Results of a randomized prospective study. *J Sex Med* 2006;3:267–73.
- 26 Wylie KR, Jones RH, Walters S. The potential benefit of vacuum devices augmenting psychosexual therapy for erectile dysfunction: A randomized controlled trial. *J Sex Marital Ther* 2003;29:227–36.
- 27 Aubin S, Heiman J, Berger B, Murralo A, Liu Y. Comparing sildenafil alone vs. sildenafil plus brief couple sex therapy on erectile dysfunction and couple's sexual and marital quality of life: A pilot study. *J Sex Marital Ther* 2009;35:122–43.
- 28 Bach A, Barlow D, Wincze J. The enhancing effects of manualized treatment for erectile dysfunction among men using sildenafil: A preliminary investigation. *Behav Ther* 2004;35:55–73.
- 29 Steggall M, Fowler C, Pryce A. Combination therapy for premature ejaculation: Results of a small-scale study. *Sex Relat Ther* 2008;23:365–76.
- 30 Kabat-Zinn J, Lipworth L, Burney R. The clinical use of mindfulness meditation for the self-regulation of chronic pain. *J Behav Med* 1985;8:163–90.
- 31 Kabat-Zinn J, Massion A, Kristeller J, Peterson L, Fletcher K, Pbert L, Lenderking W, Santorelli S. Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. *Am J Psychiatry* 1992;149:936–43.
- 32 Miller J, Fletcher K, Kabat-Zinn J. Three-year follow-up and clinical implications of a mindfulness-based stress reduction intervention in the treatment of anxiety disorders. *Gen Hosp Psychiatry* 1995; 17:192–200.
- 33 Austin J. *Zen and the brain*. Cambridge: MIT Press; 1998.
- 34 Brotto L, Basson R, Luria M. A mindfulness-based group psychoeducational intervention targeting

- sexual arousal disorder in women. *J Sex Med* 2008;5:1646–59.
- 35 Brotto L, Heiman J, Goff B, Greer B, Lentz G, Swisher E, Tamimi H, Van Blaricom A. A psycho-educational intervention for sexual dysfunction in women with gynecologic cancer. *Arch Sex Behav* 2008;37:317–29.
- 36 Carlbring P, Westling B, Ljungstrand P, Ekselius L, Andersson G. Treatment of panic disorder via the Internet: A randomized trial of a self-help program. *Behav Ther* 2001;32:751–64.
- 37 Christensen H, Griffiths K, Jorm A. Delivering interventions for depression by using the Internet: Randomized controlled trial. *Br Med J* 2004;328:265–9.
- 38 Lange A, Rietdijk D, Hudcovicova M, Ven J, van de Schreiken B, Emmelkamp P. Interapy: A controlled randomized trial of the standardized treatment of post-traumatic stress through the Internet. *J Consult Clin Psychol* 2003;71:901–9.
- 39 Strom L, Petterson R, Andersson G. A controlled trial of self-help treatment of recurrent headache conducted via the Internet. *J Consult Clin Psychol* 2000;68:722–7.
- 40 Hall P. Online psychosexual therapy: A summary of pilot study findings. *Sex Relat Ther* 2004;19:167–78.
- 41 Leusink P. Treating erectile dysfunction through electronic consultation: A pilot study. *J Sex Marital Ther* 2006;32:401–7.
- 42 McCabe M, Price E. Internet-based psychological and oral medical treatment compared to psychological treatment alone for ED. *J Sex Med* 2008;5:2338–46.
- 43 McCabe MP, Price E, Piterman L, Lording D. Evaluation of an internet-based psychological intervention for the treatment of erectile dysfunction. *Int J Impot Res* 2008;20:324–30.
- 44 Binik YM, Pukall CF, Reissing ED, Khalife S. The sexual pain disorders: A desexualized approach. *J Sex Marital Ther* 2001;27:113–6.
- 45 Binik Y, Reissing E, Pukall C, Flory N, Kimberley A, Khalife S. The female sexual pain disorders: Genital pain or sexual dysfunction. *Arch Sex Behav* 2002;31:425–9.
- 46 Bergeron S, Binik YM, Khalife S, Pagidas K, Glazer H, Meana M, Amsel R. A randomized comparison of group cognitive—Behavioral therapy, surface electromyographic biofeedback, and vestibulectomy in the treatment of dyspareunia resulting from vulvar vestibulitis. *Pain* 2001;91:297–306.
- 47 Bergeron S, Khalife S, Glazer HI, Binik YM. Surgical and behavioral treatments for vestibulodynia: Two-and-one-half year follow-up and predictors of outcome. *Obstet Gynecol* 2008;111:159–66.
- 48 Backman H, Widenbrant M, Bohm-Starke N, Dahlof L. Combined physical and psychosexual therapy for provoked vestibulodynia—An evaluation of a multidisciplinary treatment model. *J Sex Res* 2008;45:378–85.