CME

Eastern Approaches for Enhancing Women's Sexuality: Mindfulness, Acupuncture, and Yoga

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ABSTRACT

Introduction. A significant proportion of women report unsatisfying sexual experiences despite no obvious difficulties in the traditional components of sexual response (desire, arousal, and orgasm). Some suggest that nongoal-oriented spiritual elements to sexuality might fill the gap that more contemporary forms of treatment are not addressing.
Aim. Eastern techniques including mindfulness, acupuncture, and yoga, are Eastern techniques, which have been applied to women's sexuality. Here, we review the literature on their efficacy.
Methods. Our search revealed two empirical studies of mindfulness, two of acupuncture, and one of yoga in the treatment of sexual dysfunction.
Main Outcome Measure. Literature review of empirical sources.
Results. Mindfulness significantly improves several aspects of sexual response and reduces sexual distress in women with sexual desire and arousal disorders. In women with provoked vestibulodynia, acupuncture significantly reduces pain and improves quality of life. There is also a case series of acupuncture significantly improving desire among women with hypoactive sexual desire disorder. Although yoga has only been empirically examined and found to be effective for treating sexual dysfunction (premature ejaculation) in men, numerous historical books cite benefits of yoga for women's sexuality.
Conclusions. The empirical literature supporting Eastern techniques, such as mindfulness, acupuncture, and yoga, for women's sexual complaints and loss of satisfaction is sparse but promising. Future research should aim to empirically support Eastern techniques in women's sexuality. **Brotto LA, Krychman M, and Jacobson P. Eastern approaches for enhancing women's sexuality: Mindfulness, acupuncture, and yoga. J Sex Med 2008;5:2741–2748.**

Key Words. Sexual Satisfaction; Mindfulness; Acupuncture; Yoga; Eastern Techniques; Spirituality

Background

As summarized by Tiefer [1], treatments for sexual dysfunction in men and women have changed dramatically over the past several decades. From the psychoanalytic influence of Freud (19th and 20th centuries), to the behaviorally oriented skills-focused work of Masters and Johnson (1960s–1970s), to the humanistic sexology movement characterized by the work of Maslow, Hartman and Fithian, LoPiccolo, Dodson, and others (1960s–1970s), and finally to the powerful influence of the Viagra-inspired medical model era (1990s to the present), the treatment of women's sexual difficulties has not seen the magnitude of scientific advancements that the treatment of men's sexual difficulties has benefited from. Instead, the medical model of women's sexuality has been challenged [1], and "female sexual dysfunction" has been labeled as a marketing tactic by pharmaceutical companies [2]. There has also been an effort toward identifying and testing nutriceuticals—herbs, oils, and other natural products that might improve a dull sexual response [3–5].

However, a conundrum exists in that a healthy sexual response per se does not necessarily signify overall sexual satisfaction and lack of sexual distress. On the contrary, 5.5% of American women

aged 30–79 years reported unsatisfying sexual activity [6] despite experiencing no difficulties in desire, arousal, and orgasm. Although 49% of women in a general outpatient setting experienced sexual difficulties according to a questionnaire, 80.5% reported being quite satisfied with their sexual responses [7]. Moreover, 8% of American women aged 20–65 years report marked distress about their sexual relationship and 5.4% reported personal distress despite not having any manifest sexual problems [8]. In the Global Study of Sexual Attitudes and Behavior [9], 7.7–17.4% of women aged 40–80 years reported finding sex not pleasurable. Taken together, these data suggest that for at least a small proportion of women, sexual complaints hinge upon feeling dissatisfied, although there may be no obvious impairments in desire, arousal, or orgasm, as traditionally conceptualized by the Diagnostic and Statistical Manual of Mental Disorders, 4th text revision (DSM-IV-TR) [10]. Some have argued that such experiences can be described as boring, dry, and unemotional, calling for nongoal-oriented spiritual elements to sexuality [11]. Eastern techniques, with their origin in the Kama Sutra of the 4th to 6th centuries, might provide some of the spiritual dimensions that, traditionally, Western approaches have been lacking.

In this article, we will discuss three Eastern techniques that have received varying degrees of attention as they might relate to women's sexuality. These are mindfulness, acupuncture, and yoga. Although these techniques have been described as important for women's sexual health, in some cases for millennia in spiritual works and practice, the scientific literature supporting their efficacy for women's sexual complaints is relatively sparse. The goal of this brief review is to discuss the limited empirical data on mindfulness, acupuncture, and yoga as they have been applied to the treatment of sexual difficulties. The reader will note the paucity of well-controlled trials in this area, despite a rich history of writing on these topics in historical texts.

Mindfulness Meditation

Mindfulness can be succinctly described as nonjudgmental, present-moment awareness [12]; however, mastery of the practice of mindfulness is not accomplished easily. It has roots in Buddhist meditation where it has been practiced for many millennia. Although it is a nonreligious practice, transcending all religious affiliations, there is a spiritual component to mindfulness [13]. In the past three decades, molecular biologist-turned-mindfulness expert Jon Kabat-Zinn has brought mindfulness to Western health care—to both medical and psychiatric illness—through his mindfulness-based stress reduction groups at the University of Massachusetts Medical Center [14,15]. Mindfulness has also become popularized through a large number of books written for Western health professionals and the lay public [16]. As summarized by Brotto and Heiman [17], mindfulness has been applied and tested in empirical research for a host of medical illnesses, including pain disorders, depression, anxiety, affect dysregulation related to Borderline Personality Disorder, substance abuse, eating disorders, psychosis, and child behavior problems, and most recently has been implemented in the elementary school education system. Improvements in the ability to be present (i.e., mindful) predicted changes in spirituality, and changes in both these domains led to improvements in psychological and medical symptoms [13]. Brain imaging research suggests that when individuals practice dispositional mindfulness and are instructed to label affect (as opposed to avoiding it), this results in enhanced prefrontal cortex activity and lessened bilateral amygdalar activation [18]. Compared to novices, long-term meditators also showed less neural activation in brain regions involved with discursive thoughts and more activation in circuits related to attention [19]. The finding that mindfulness practice is associated with activity in the anterior cingulate cortex and dorsolateral prefrontal areas strongly supports neural plasticity [20].

Very recently, mindfulness has been incorporated into a brief, psychoeducational treatment program for women with sexual desire and arousal disorders [21,22] and found to be effective as part of a larger treatment program that included psychoeducation, cognitive and behavioral skills, and couples therapy exercises. Using a combination of in-session and at-home homework exercises, these two studies found that women qualitatively reported that the mindfulness component was the most valuable aspect of treatment [17].

Specifically, mindfulness was introduced to women by giving them instructions on how to be mindful in their nonsexual life. They were introduced to the topic with the following:

> Many of us go through life not living in the present moment. We fluctuate between thinking in the future (worrying, planning, thinking), and living in the past (reviewing past events, conversations, plans). We miss out on valuable and meaningful experiences in the present. We have evolved to multi-task, and this reinforces mindlessness. However, in instances when we wish to be present, such as the sexual scenario, it is difficult if not impossible for us to turn off the cerebral chatter. The net effect is a reduction in arousal, thereby making the sexual experience less rewarding and pleasurable.
> (Brotto, Basson, Luria, unpublished treatment manual)

It is helpful, at this point, to do a simple mindfulness exercise to acquaint women with the notion that they are capable of focusing their dispersed mind. There are many different introductory mindfulness exercises that can be selected [14] (e.g., Kabat-Zinn discusses looking at, feeling, smelling, and tasting a raisin, in great detail, as one excellent introduction to mindfulness); however, we often use one involving pennies. In a group of women, the facilitator hands out one penny per woman (randomly) and provides the following instructions:

> Look very closely at your penny. Try to study it in detail. Try to take it in as much as you can while integrating your different senses, one at a time. Use your senses of touch, smell, sight, and sound to become intimately in tune with your penny. [This continues for approximately five minutes.] When you feel like there is nothing else you can take in about your penny, please place it on the table in front of you.

Pennies are then collected, and the facilitator hands all the pennies to the person on her right (or left) and instructs that woman to find her original penny. Once she does, she hands the remaining pennies to the woman on her right, and the process continues until all women have found their original pennies. Inevitably, women are able to find their original pennies and are pleasantly surprised that they were able to successfully complete this task. In our experience, (nearly) all women feel that they have a problem with remaining focused; they are highly distractible. However, after this penny exercise, they accept the notion that they can focus their mind if they so choose. With the gentle verbal reminders of the group facilitator, women can learn to visualize their distractions as floating away on a conveyor belt as opposed to getting consumed in them. After noticing and describing their distractions from a distance, they are encouraged to return to the task at hand: to focus on their body. With these principles of nonjudgmental awareness, women then complete a body scan exercise (usually 20–30 minutes) in session, as described by Kabat-Zinn [14]. This exercise involves attending to the sensations in many (specific) parts of the body. Women are encouraged to practice the body scan at least a few times a week, in addition to daily practice (usually 10 minutes) of mindfulness during another activity (e.g., mindfulness while eating, driving, having a conversation, playing a sport or instrument, etc). They are also asked to rate their perceived ability to be present on a scale from 0 to 100.

With this foundation, and trouble-shooting along the way, women are then given a set of body-focused mindfulness exercises to practice at home. These exercises are borrowed from the self-help directed masturbation program as outlined in *Becoming Orgasmic* [23]. The first exercise is called a "focusing exercise" (usually 20 minutes). Women are asked to visually attend to their bodies during and after a bath or shower. They are encouraged to describe what they see in nonjudgmental ways, and are given a list of possible statements to repeat during the exercise, such as "my body is my own," "it is alive," and "I appreciate the following aspects of my body." The "self-observation" exercise asks women to use a hand-held mirror to observe their genitals (usually 20 minutes). They are provided with an anatomical diagram of the female genitals to allow them to label their different parts. They are reminded that this is a nonsexual exercise with the sole goal of allowing women to remain in the present while letting any judgments about themselves, their bodies, or how they are struggling with the exercise to float away. The exercise entitled "Self-Observation and Touch" asks that women gently touch their own genitals while repeating the self-observation exercise (usually 20 minutes). Again, the goal is nonsexual and is focused on nonjudgmental present awareness. After approximately 6 weeks of practice, the exercise is then modified to incorporate a sexual goal. The woman is encouraged to repeat the self-observation and touch exercise, but this time, before beginning, to imagine herself as a competent sexual, feminine, and sensual woman. Based on the finding that women who "try on" a sexual cognitive schema show an increased sexual response to a sexual stimulus [24], we hypothesized that the positive sexual schema followed by a mindfulness exercise might lead to an enhanced sexual arousal response for women. This remains to be tested in empirical trials. A discussion around incorporating mindfulness while being sexual, either alone or with a partner, then ensues.

Although there have only been two published studies that have directly tested the efficacy of a mindfulness-based sex therapy intervention for women with low desire and arousal, both studies showed a significant improvement in several domains of sexual response and a decrease in sexual distress [21,22]. A limitation of these studies that must be acknowledged is the absence of a control group and the fact that both studies emerged from the lab of the primary author. Moreover, mindfulness was incorporated into a larger program of cognitive, behavioral, relational, and educational work; thus, the extent to which the improvements were due to mindfulness vs. due to one of the other components remains to be tested. Nonetheless, mindfulness techniques appear to bear some promise in the treatment of women's sexual concerns and may fill a spiritual gap missing among a proportion of women who are sexually dissatisfied.

Acupuncture

Acupuncture is one of the treatment modalities within the medical system of traditional chinese medicine (TCM). It has been practiced for thousands of years in China and other Asian countries, and is gaining acceptance within the Western medical community. TCM believes that sex drive and desire are from "Yuan Chi." Yuan Chi is defined as primordial or genuine chi and can be thought of as the life essence provided at conception by both parents [25]. Yuan Chi is stored in the kidney, and its primary function is to promote normal bodily growth and development as well as to maintain the health and vigor of all bodily functions [25]. Yuan Chi can be depleted over time by poor diet, excessive lifestyle and stress, and diseases such as cancer and their subsequent treatments. Thus, when considering the complex issue of sexual function in women, it is imperative to consider the unique nature of each woman, which calls for a unique treatment plan tailored to the specific patterns of imbalance. Such imbalance is a focus of the TCM diagnosis (often the prelude to acupuncture sessions), which includes a tongue and pulse diagnosis as well as detailed history concerning diet, lifestyle, and medical as well as emotional health.

According to the TCM theory, there are more than 2,000 acupuncture points on the human body connected with 12 main and 8 secondary "meridians" or channels. Pain and disease are the result of these channels becoming blocked. To restore healthy energy, thin, sterile needles are inserted into specific points along these meridians. Western medicine's view is that the placement of acupuncture needles at specific pain points releases endorphins and opioids, the body's natural painkillers, and perhaps immune system cells as well as neurotransmitters and neurohormones in the brain. Research has shown that glucose and other bloodstream chemicals become elevated after acupuncture [26]. According to the National Institutes of Health's National Center for Complementary and Alternative Medicine, there is also evidence that stimulating acupuncture points enables electromagnetic signals to be relayed at a greater rate than under normal conditions. This may increase the flow of healing or pain-killing natural chemicals to injured areas.

Acupuncture has been used treat a variety of pain conditions, symptoms, and internal medicine pathologies including adult postoperative and chemotherapy-induced nausea and vomiting, postoperative dental pain, addiction, stroke rehabilitation, headaches, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, carpal tunnel syndrome, and asthma [27]. Acupuncture has become popular in the treatment of men and women with hot flashes with some success [28], although there is also a strong placebo response [26]. A review of acupuncture treatment studies concluded that there is strong evidence to support the notion that acupuncture provides pain relief, often for patients for whom other traditional methods have failed [27].

Acupuncture effects may have a delayed onset and occur gradually, but continue well after the needles have been removed. Murray [29] found that acupuncture is considered safe, relatively free of side effects, does not disturb physiology, and may be less expensive for patients than other traditional treatments such as medication. The strong placebo response seen in patients seeking acupuncture treatment suggests they may be anticipating improvements. For this reason, sham control studies are essential [26].

Despite the fact that clinical studies have investigated acupuncture as a treatment for pain disorders ranging from chronic duodenal ulcers, back pain, and dysmenorrhea, only two studies have been identified to date that utilized acupuncture as a treatment for vestibulodynia or provoked vestibular pain in women. In a study of 12 women with chronic vestibulodynia, five once-weekly acupunc-

ture sessions were helpful for some patients [30], but the authors did not recommend it as a treatment to be employed routinely. Treatment effects were measured by "general inquiry" (not specified), a visual analog pain scale, and a quality of life questionnaire (not described). A control group was not used.

Danielsson and colleagues [31] similarly used acupuncture to treat 14 women with vestibulodynia. Participants were treated with acupuncture once or twice a week for a total of 10 sessions. The researchers measured treatment effects with a focus on self-reported quality of life and self-reported pain in response to vestibular touch by the woman herself. Of the 13 participants who completed treatment, 11 rated their sexual pain as being less pronounced, with 10 reporting that they continued to perceive an improvement 3 months following acupuncture.

Acupuncture has also been considered for sexual complaints focused on lack of desire or libido. Given that hormonal treatment might be precluded in some women with chronic medical illness or with a history of malignancy, alternative, nonpharmacological treatment approaches may be more desirable. Acupuncture is a nontraditional approach to distressing lack of sexual desire that has been found effective in a small case series (Krychman ML, unpublished data). We report on one case of a woman treated for distressing lack of libido with acupuncture:

GJ is a 53-year-old woman with a history of stage I breast cancer treated with a lumpectomy, radiation, and chemotherapy who presented to a sexual medicine center complaining of vaginal dryness, painful intercourse, and reduced sexual desire. All symptoms, but particularly the loss of desire, were distressing. She did have a past history of being able to self-stimulate to arousal and orgasm with sexual satisfaction. She and her husband were in a couple's marital therapy focusing on improving communication. On physical examination, she had a moderate amount of vaginal atrophy with decreased rugae, decreased lubrication, and decreased labial size. Her vaginal pH was compatible with atrophic changes. She was prescribed minimally absorbed local vaginal estrogen tablets and continued use of moisturizers and lubricants. She declined estrogen cream use. GJ was counseled regarding erotic reading, cuing exercises, bibliotherapy, self-stimulation techniques, and alternative sexual positioning. She was also referred to begin a structured acupuncture program that specifically addressed libido concerns.

GJ had a total of 12 visits with the acupuncturist. The Balance Method [32], first introduced in the United States by Master Tung in the early 1970s and later expanded upon by Richard Tan, OMD, was used as a guide for the acupuncture therapy of GJ. Her initial diagnosis was kidney yin and yang deficiency, and the Balance Method, along with herbal therapy, was intended to tonify both the deficiencies in kidney yin and yang, which are paramount in the overall vitality of physical, mental, and spiritual being. In TCM, kidney yang is most closely associated with a lack of sexual desire and is common in women with GJ's particular history. During her first visit, she received an acupuncture treatment focused on addressing these deficiencies. On her second visit, she was given herbal therapy in capsule form consisting of a combination of herbs in four capsules twice daily. By visit 3, she was reporting feeling much better overall, sleep was improved, mood and emotional status improved, and her relationship counseling was going well. By visit 5, the needle protocol was changed to reflect a change in the pulse showing an overactivity of the liver energy most likely due to the stress of coming out of retirement to return to work for her family's company. She was reporting sleep disturbances and higher levels of emotional stress. The acupuncturist also instituted a castor oil hot pack over the liver area at this time. She continued her herbal formula as described previously. This needle protocol was continued throughout her remaining visits, but her herbal formula was changed at the sixth visit to give more focus to kidney yin deficiency, based on the pulse diagnosis. At her final visit, she reported a consistent overall improvement in her sense of well-being and emotional status. Her energy was good, sleep was normalized, and her emotional status was stable. She was going out of the country for a few months but would continue on her herbal formula during her trip.

At her 4-month follow-up, she reported decreased dryness without pain on penetration. She also described a significant improvement in libido, which she directly attributed to her acupuncture treatments. Although it is impossible to verify the mechanisms of action that led to this woman's improvement (given that she was also in counseling and that there was no control group),

she maintained that acupuncture was the critical ingredient. Controlled studies are warranted to further elucidate any possible connections between acupuncture and libido.

Yoga

Another practice with Eastern roots that has been applied to sexual functioning is yoga. The word yoga is a Sanskrit word with a literal translation "union" [33]. Yoga is a practice that involves both physical postures known as "asanas" and breathing techniques called "pranayamas." In addition, there is a cognitive component focusing on meditation and concentration, which aids in achieving the goal of union between the self and the spiritual. Some discuss yoga as "physical mindfulness." In some yogas, there is the repetition of sound syllables known as "mantras," which aid practitioners in achieving focus and freedom from conscious thought. Francoeur [33] explains, "When the whole body is disciplined to aid the gradual suspension of consciousness, one can experience a state of pure ecstasy that is without thought or sensation."

Yoga has been found to be significantly associated with improved psychological well-being and overall physical health [34–37]. Because of such benefits, yoga has been incorporated as an intervention for various medical ailments. For example, yoga has been widely used as an alternative treatment for side effects of cancer treatment such as disordered sleep [37,38]. In a systematic review of cancer patients by Smith and Pukall (in press) [39], they summarized that yoga interventions elicited significant improvements on measures of sleep, quality of life, stress, and depressed mood. A yoga intervention has also been found to improve mood among depressed individuals [40,41], and to reduce symptoms of chronic pain, chronic pancreatitis, and chronic low back pain [42–44].

Because of these direct effects, one might infer that yoga has a positive influence on sexual functioning. Notwithstanding this potentially important role of yoga in improving sexual health, most of the literature on the topic derives from nonempirical sources. In Tantric and Taoist traditions of yoga, there is an entire subset of yoga called *kundalini* devoted to improving sexuality. In yogic traditions, the human body has power centers, known as *chakras*, which reside in different parts of the body. The goal of *kundalini* yoga is to take the sexual energy that exists in the lowest chakra, the *kundalini*, and utilize body postures and breathing to direct it upward to other chakras through channels that connect body parts [33]. In doing so, kundalini energy is said to increase sexual pleasure and to extend the longevity of sex by facilitating orgasms without ejaculation in men. Despite the myriad of nonempirical data suggesting that yoga and sex are not only linked but potentially mutually beneficial, very little research has been conducted to substantiate these claims. In fact, we could identify only one empirical test of yoga on sexual function, with a focus on premature ejaculation in men. There are no empirical studies of yoga and sexuality in women.

In this study, Dhikav et al. [45] successfully treated Indian men with premature ejaculation with a yoga-based treatment. The 68 men who participated in the study were offered a choice between the yoga-based nonpharmacological treatment and the more traditional pharmacological intervention, fluoxetine (Prozac). In the yoga group, men were given a proscribed set of *asanas* and *pranayamas* to practice for 1 hour each day. Differential relaxation techniques, as well as perineal and pubococcygeal exercises, were included in the program. Notably, there was no component of sex therapy or sex education to men receiving the yoga intervention. Remarkably, all 38 men participating in the yoga group had both subjective and statistically significant improvements in their intraejaculatory latencies, similar to participants in the pharmacologic treatment group. There were no side effects or dropouts in this treatment arm. These data provide an excellent example of the potential usefulness of yoga as a nonpharmacological treatment for sexual disorders, and in a compelling way, suggest that this technique can be as effective as the more traditional Western medical approaches. To date, there have been no empirical studies of yoga on any aspect of women's sexual functioning or sexual satisfaction.

Conclusion

What do these Eastern approaches of mindfulness, acupuncture, and yoga offer that Western approaches do not? Here, we argue that they encourage a unity between mind and body that has become ignored by more contemporary sex therapy techniques and also by pharmaceutical efforts. Desynchrony between genital and subjective sexual arousal in women is well known [46,47].

Sexual pharmaceuticals are not approved for women, despite an aggressive research agenda that has focused on finding "the pink Viagra." It is clear that simply increasing the body's (genital) response does not address a woman's attitudes, beliefs, emotions, preoccupations, values, pressures, and other psychological elements that shape and influence her sexuality. Furthermore, amelioration of sexual symptoms may not translate into improved sexual satisfaction, as these two domains of sexuality appear to be desynchronous in some women [7–9]. Even in the domain of randomized controlled trials of cognitive–behavioral or other psychological treatments, the research is relatively sparse (with the exception of cognitive–behavioral therapy for vestibulodynia) with only modest effect sizes [48].

What may be missing from our contemporary approaches is a humanistic element, with a focus on mind–body connection. These techniques are not new and have been in practice among sexologists since the 1960s [1]. However, they have fallen out of favor in the current wave of evidence-based medicine. There is (limited) emerging evidence that Eastern techniques, including mindfulness, acupuncture, and yoga, might offer a unique approach to enhancing women's sexuality. With the development of sound theory and controlled studies, they might be the key for improving women's lack of sexual satisfaction.

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