

The Effect of Individualised Homeopathic Treatment on Low Sexual Desire in Perimenopause

ABSTRACT

Purpose: The aim of the study was to ascertain the effect of individualised homeopathic treatment on low sexual desire in perimenopausal females between the ages of 40 and 60 years old.

Method: This descriptive case study design recruited thirteen perimenopausal females between the ages of 40 and 60 by means of purposive sampling. Nine participants completed the study. Participants were treated with an individualised homeopathic remedy.

Procedure: The study consisted of four consultations per participant over a period of 12 weeks. A single individualised homeopathic remedy was administered to each participant and the potency, dosage and frequency of administration was tailored to each person in accordance with the principles of classical homeopathy. The desire and arousal subscales of the Female Sexual Function Index (FSFI) was completed at each consultation in order to assess changes in sexual desire and arousal across time. Item 13 of the Female Sexual Distress Scale - Revised (FSDS-R) was utilised to assess changes in distress related to low sexual desire.

Results: Results suggest that individualised homeopathic treatment may be beneficial in alleviating low sexual desire in seven out of nine perimenopausal females between the ages of 40 and 60 years old.

Conclusion: The results of this small pilot study suggest that individualised homeopathic treatment was effective in alleviating low sexual desire in perimenopause. The results also appear to confirm the beneficial effect of individualised homeopathic treatment on the additional symptoms associated with perimenopause. In order to verify the results, the study should be repeated using a larger sample group over a longer period of time.

Key words: Low sexual desire, perimenopause, individualised homeopathic treatment

INTRODUCTION

Low sexual desire, or decreased libido, is one of the most prevalent sexual complaints in females and can affect both pre- and postmenopausal women (Kingsberg, 2010:2907). A study conducted in the United States showed prevalence rates of low sexual desire to be as high as 26.7% among premenopausal females and 52.4% among naturally menopausal females (West *et al.*, 2008:1441).

It is common for sexual desire in females to vary somewhat from day to day based on stressful events and other life influences. Many females however find that their interest in sex, as well as the intensity of their sexual desire, gradually decreases with age. This is often attributed to changing hormone levels as well as the genital changes associated with decreasing hormone levels which naturally occur with aging (Kingsberg, 2010:2907-2908).

In some cases the decline in sexual desire may not be very severe and will therefore not have a major impact on a woman's quality of life. In other cases the decrease or loss of sexual desire can be very distressing to the female (Kingsberg, 2010:2908). In cases where it is associated with personal distress and certain other criteria are also met, low sexual desire can be classified as Hypoactive Sexual Desire Disorder (HSDD) or Female Sexual Interest/Arousal Disorder (FSIAD) (American Psychiatric Association, 2000:n.p.; American Psychiatric Association, 2013:13). Research shows that clinicians associate HSDD with a vast array of emotional problems such as low self-esteem and feelings of inferiority, shame, anger, embarrassment and inadequacy, among others (Goldstein *et al.*, 2009:1353).

Currently there is no standard treatment for low sexual desire in females. Available treatment options include education, psychological therapy options and hormone replacement therapy (HRT) in cases where hormonal causes are suspected, such as during menopausal transition (Basson, 2011:2525). Treatment options are however not equally effective and for many women the risks associated with pharmacological treatments, such as hormone replacement therapy, often outweigh the benefits (Hendrix, 2011:2519; Presant, 2015:n.p.).

Homeopathic treatment has shown to be beneficial for a variety of climacteric symptoms (Artemi *et al.*, 2005:127; Buhling *et al.*, 2013:96; Heymans *et al.*, 2013:141), however there has been very little research conducted to date on its effect on low sexual function related to perimenopause. As a complementary medical approach, homeopathy is especially suited to treating all the symptoms of the perimenopausal period, including low sexual desire. Rather than focusing on isolated

symptoms, individualised homeopathy treats holistically and emotional symptoms are considered to be as important as the physical symptoms (MacEoin, 1997:xv). Homeopathic remedies are highly diluted, do not cause side effects, and are therefore deemed safe to use (De Schepper, 2010:39). Further investigation however is required to determine the effect of individualised homeopathic treatment on female sexual function during menopausal transition.

Prevalence of Low Sexual Desire in Perimenopause

There are currently no South African statistics on low sexual desire however a study conducted by Grigoriou *et al.* (2013:125-127) on 1025 Greek women who were either perimenopausal or in their first five postmenopausal years, showed prevalence rates of 34.5% for sexual symptoms. Of the 1025 females, 19.5% experienced a mild decrease in libido, 20.8% a moderate decrease and 18.8% a severe decrease. A review article written by Magon *et al.* (2012:63) concluded that perimenopausal women report significantly less sexual desire than premenopausal women. Rosen *et al.* (2012:505) also found a higher incidence of HSDD in peri-menopausal and early postmenopausal females.

Pharmacological Treatment of Low Sexual Desire

Currently no standard treatment for low sexual desire in females exists. In cases of low sexual desire where a clear aetiology exists, for example mood or endocrine disorders, the underlying cause should be addressed. Patients using SSRIs for depression whom subsequently suffer from sexual dysfunction, might benefit from switching to an anti-depressant with fewer sexual side effects. Low sexual desire specifically occurring as a symptom of menopause is traditionally treated with HRT (Basson, 2011:2523-2525).

Katz *et al.* (2013:1807) tested Addyi® (flibanserin), a 5-HT_{1A} agonist/5-HT_{2A} antagonist, in premenopausal women with HSDD with promising results. The drug, initially developed as an anti-depressant, regulates levels of the sexual excitatory neurotransmitters dopamine and norepinephrine. It also produces a temporary decrease in serotonin, a sexual inhibitory neurotransmitter, in specific regions of the brain. Common side effects experienced by the treatment group included somnolence, dizziness and nausea, leading to 9.3% of the treatment group discontinuing use of the product due to adverse effects.

On the 4th of June 2015, a joint committee expert panel for the FDA recommended that flibanserin, dubbed the “female Viagra” by the news media, be approved as the overall risk/benefit profile of the drug was acceptable. The drug failed in both 2010 and 2013 to be recommended for approval

(Andalo, 2015:n.p.). The current recommendation occurred amidst accusations of gender discrimination against the FDA. The panel itself described the benefit of the drug as “moderate” or “marginal”, but considering that no other approved treatment is currently available for HSDD, they agreed that the drug should be made available with appropriate warning labels and education (Schulte, 2015:n.p.; Presant, 2015:n.p.). The drug is not yet registered in South Africa (University of Cape Town, 2015:n.p.)

Testosterone treatment for women with HSDD is being researched but remains controversial. There are approved testosterone therapies available for females in Europe, but currently not in the United States or South Africa. The American Endocrine Society recommends against the use of testosterone as safety and efficacy data pertaining to longer term use is not yet available (Basson, 2011:252; Guidozzi *et al.*, 2014:540). According to a review article by Davis and Braunstein (2012:1140, 1144-1145) testosterone therapy, either with or without concurrent oestrogen therapy, is effective in relieving the symptoms of HSDD in postmenopausal females. Concerns however exist that long term use in females could potentially damage the cardiovascular system, as well as stimulate endometrial and breast tissue, possibly leading to development of carcinoma. The studies they reviewed however showed that the most common adverse effects experienced with testosterone therapy was androgenic effects such as hirsutism and acne, with little adverse cardiovascular effects or stimulation of breast and endometrial tissue observed in low-dose therapy. Despite this, available safety data is not yet conclusive.

Psychological Therapies

A study conducted by Mintz *et al.* (2012:473,475) showed promising results for the use of bibliotherapy in low sexual desire that were, in the participant’s opinion, caused by stress and exhaustion. The intervention in this study consisted of reading a copy of a self-help book titled: “A Tired Woman’s Guide to Passionate Sex”. Females in the intervention group showed greater improvement in the desire, arousal and satisfaction domains as well as in general sexual functioning than women in the wait-list control (WLC) group, who only received the book after completing the post-test assessment.

Brotto and Basson (2014:44, 50) tested the effect of a mindfulness-based cognitive behavioural sex therapy (MBCST) presented over four group-sessions. Mindfulness is an ancient practice which involves being aware of and accepting the present moment in a non-judgmental way. Mindfulness-based cognitive therapy (MBCT) has previously been shown to relieve anxiety and depression and also to prevent the relapse of depression. There is a strong link between depression

and HSDD, and females suffering from HSDD generally experience more depressed and anxious thoughts. They also tend to have a lower self-image and are more emotionally labile. Paying attention to the present moment can help females with HSDD increase their awareness of sexual responses as they unfold moment by moment, and can also help limit distracting thoughts, which can inhibit sexual arousal. In this study the females in the treatment group showed significant improvement in sexual function in the desire, arousal, lubrication and satisfaction domains when compared to the control group. This effect was still present at a six-month follow-up.

According to Basson (2011:2525) women with sexual dysfunction associated with relationship problems may benefit from couples therapy.

Herbal Treatment

Akhtari *et al.* (2014:n.p.) demonstrated that *Tribulus terrestris*, or bindii, was effective in improving sexual function in premenopausal females suffering from HSDD. Participants showed significant improvement in their FSFI scores for the sexual desire, arousal and satisfaction domains. According to Gama *et al.* (2014:45, 48), the chemical substance protodioscin, which is converted into DHEA (an androgen), is derived from the *Tribulus terrestris* plant. Their study also demonstrated improvement in the sexual function of females treated with a daily dose of 250mg *Tribulus terrestris* extract.

Ginkgo biloba extract (GBE) is a herbal extract which enhances blood flow, nitric oxide and further promotes smooth muscle relaxation, all of which are important components of proper female sexual function. Studies investigating the effect of GBE on female sexual desire have however produced conflicting results (Pebdani *et al.*, 2014:262). Meston *et al.* (2008:17) found no beneficial effect beyond placebo in either short- or long term treatment with GBE in females with sexual dysfunction. The clinical trial conducted by Pebdani *et al.* (2014:265) however showed that GBE significantly improves sexual desire in menopausal women.

MATERIALS AND METHODS

Study Design

This descriptive case study design consisted of four consultations per participant over a period of 12 weeks. A single individualised homeopathic remedy was administered to each participant and the potency, dosage and frequency of administration was tailored to each person in accordance with the principles of classical homeopathy.

The desire and arousal subscales of the Female Sexual Function Index (FSFI) were completed at each consultation in order to assess changes in sexual desire and arousal across time. Item 13 of the Female Sexual Distress Scale - Revised (FSDS-R) was utilised to assess changes in distress related to low sexual desire. All consultations were supervised by a qualified homeopathic practitioner.

Recruitment of Participants

Thirteen perimenopausal females between the ages of 40 and 60 were recruited by means of purposive sampling. Advertisements were placed at the University of Johannesburg Doornfontein Campus, in local newspapers in Kempton Park and Edenvale, and at pharmacies and health shops in the Benoni area after relevant permission was obtained.

Participants had to meet the following criteria in order to be included in the study:

- Females, aged 40-60 years, who were perimenopausal (up to one year after final menses);
- Low sexual desire present for at least three months;
- At least two of the additional common signs and symptoms of perimenopause present for at least three months such as menorrhagia, irregular menses, amenorrhoea, hot flushes, night sweats, heart palpitations, insomnia, fatigue, mood swings, irritability, anxiety, memory and/or concentration loss, headaches, joint pain and vaginal dryness; and
- A history of normal libido, with onset of low sexual desire coinciding with or appearing after the onset of other symptoms of perimenopause.

Participants were excluded from the study if they had had:

- Cessation of menses for more than one year (postmenopause);
- A total hysterectomy;
- Early menopause (before age 40);
- Pelvic or abdominal surgery in the preceding six months;
- Gynaecological disorders such as endometriosis, uterine fibroids, dyspareunia or vaginismus;
- Chronic diseases that affected sexual desire;
- Made use of chronic medications that could have affected sexual desire: HRT; oral contraceptives; anti-depressants; benzodiazepines; beta-blockers; opioids; carbamazepine (anti-seizure drug) or antihistamines; or
- Pregnant or lactating women or childbirth in the preceding 12 months.

Data Collection and Analysis

During the course of the study the relevant subscales of the FSFI as well as Item 13 of the FSDS-R were completed at four weekly intervals by each participant. The participants were given a new form to complete at each consultation and did not have access to previously completed forms.

All the qualitative data was obtained by means of case-takings and follow-up consultations. The data was then utilised to repertorise the case by means of Mercurius Repertorisation Software Complete Repertory 2014 version 5.3.0.17 (Van Zandvoort, 2014). The qualitative data was further used to write descriptive case studies. The scores obtained from the two FSFI subscales were used to assess changes in desire and arousal across time and scores obtained from the FSDS-R Item 13 were utilised to assess changes in distress related to low sexual desire. These changes were represented graphically. Due to the small sample size and qualitative nature of the cases no statistical analysis was done.

RESULTS

Thirteen participants were recruited; nine completed the study. Two participants were disqualified at the end of the first consultation and no prescription was given and two participants withdrew from the study.

Information obtained from the FSFI subscales as well as Item 13 of the FSDS-R is represented graphically in order to demonstrate any changes in sexual desire, sexual arousal, and distress related to low sexual desire across time. The desire domain of the FSFI consists of two items. The first item measures the frequency of sexual desire over the preceding four weeks, while the second item measures the level or intensity of sexual desire. (Gerstenberger, 2010:3101). The minimum score possible for this subscale is 2 and the maximum score possible is 10. A score of 5 and below for the desire subscale indicates sexual dysfunction, while a score of 6 and above indicates the absence of sexual dysfunction (Gerstenberger, 2010:3098).

The arousal domain of the FSFI contains four items. The minimum score possible for this subscale is zero and the maximum score possible is 20. A score of zero for the arousal subscale indicates no sexual activity during the preceding four weeks, but provides no further information. According to Maserejian *et al.* (2012:45) a score of 1 for question 4 of this subscale indicates the presence of arousal problems. The lower the score obtained in the particular FSFI subscale, the higher the degree of sexual dysfunction in that particular domain.

The maximum score possible for Item 13 of the FSDS-R is 4 and the minimum score possible is zero. A higher score indicates a higher level of distress, while a score of zero indicates no distress related to low sexual desire.

Changes in Sexual Desire

Information obtained by means of the sexual desire subscale of the FSFI revealed the following:

- At the time of the first consultation, all nine participants obtained scores of 5 or below for this subscale, confirming the presence of low desire. Six of the participants obtained a score of 2, which is the minimum score possible.
- By the final consultation, seven participants (78% of participants) obtained scores of 6 and above for this subscale, indicating a successful therapeutic outcome.

Figure 1 below graphically illustrates the mean score rating for all participants for the desire subscale of the FSFI during the course of the study. By the second consultation (week four), the average score was still below 5. An average score of 6, indicating a successful therapeutic outcome, was reached by the third consultation (week eight). The final average score of 6 obtained at the fourth and final consultation (week 12), indicates that individualised homeopathic treatment may be beneficial in alleviating low sexual desire in perimenopause.

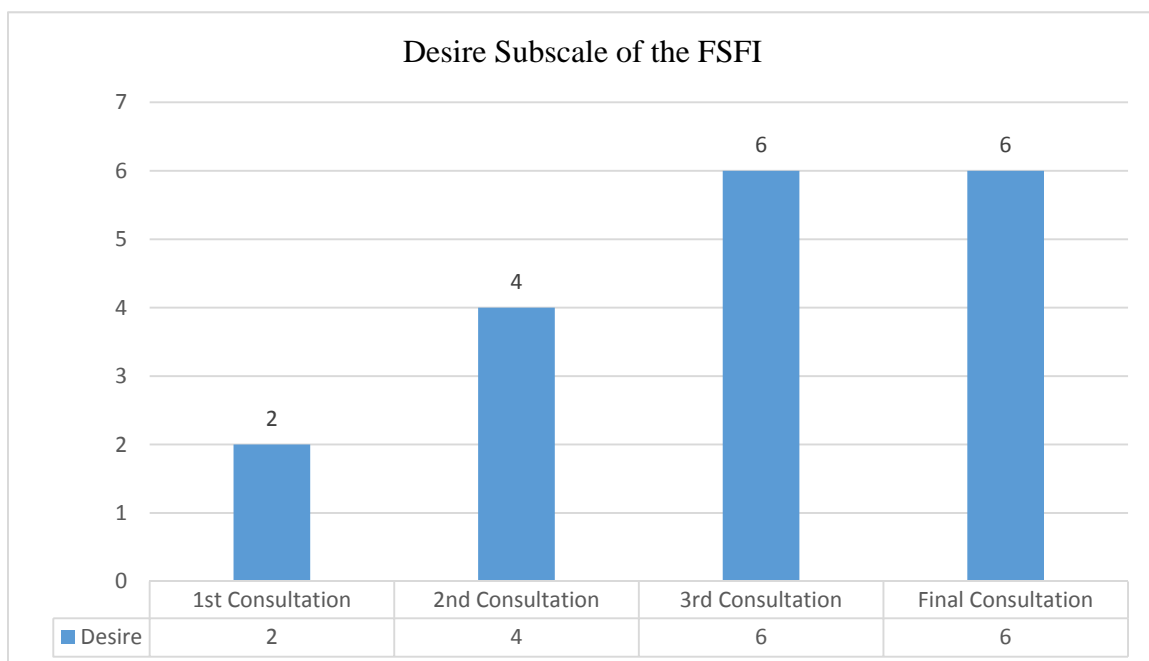


Figure 1: Average scores obtained for the desire subscale of the FSFI during the course of the study

Changes in Sexual Arousal

Information obtained by means of the arousal subscale of the FSFI revealed the following:

- At the time of the first consultation only one participant obtained a score of 1 for question 4, indicating the presence of arousal difficulties (Maserejian *et al.*, 2012:5).
- By the second consultation a second participant obtained a score of 1 for question 4. This particular participant obtained a score of zero at the first consultation due to no sexual activity taking place during the four weeks prior to the first consultation.
- By the third and fourth consultations none of the participants obtained a score of 1 for question 4. No arousal problems were therefore considered to be present by the end of the treatment period.

Figure 2 below graphically illustrates the average scores obtained for question 4 of the arousal subscale of the FSFI during the course of the study. Scores of zero, indicating that no sexual activity took place during the preceding four weeks, were not included in the total average scores. At the time of the first consultation the average score for question 4 was 3 out of a maximum possible score of 5. By the second consultation the average score had increased to 4, where it remained for the duration of the study. The average score well above 1 for question 4 of the arousal subscale indicates that arousal difficulties were not prevalent among the sample group.

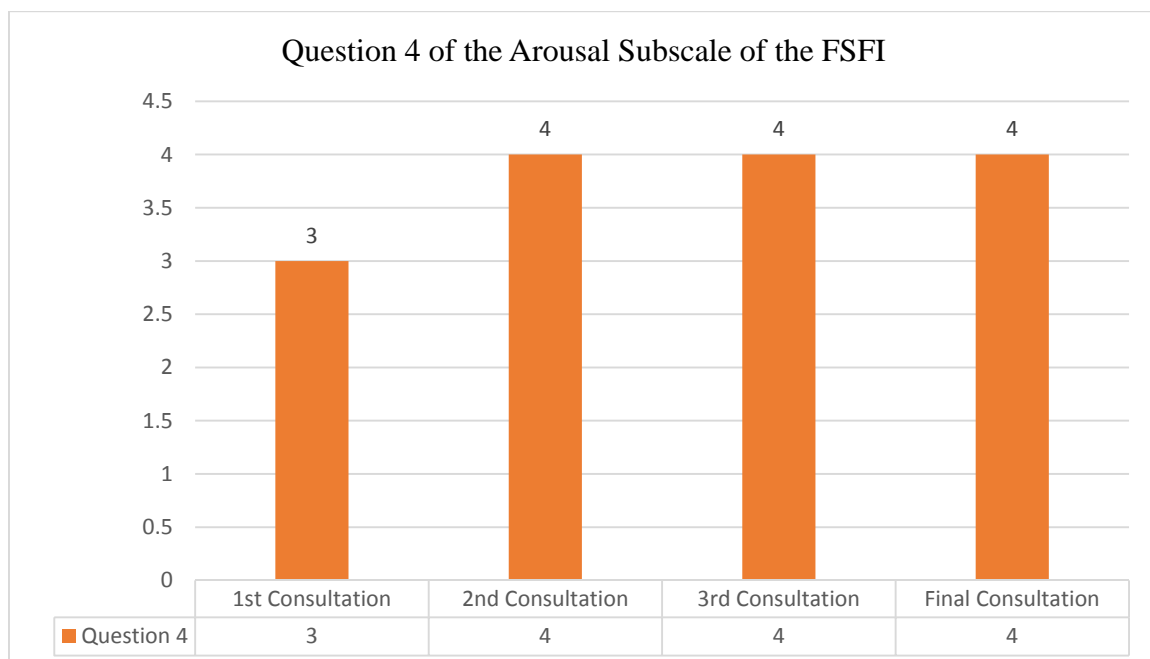


Figure 2: Average scores obtained for question 4 of the arousal subscale of the FSFI during the course of the study

Figure 3 below graphically illustrates the average scores for all participants obtained for the arousal subscale of the FSFI during the course of the study. Scores of zero, indicating that no sexual activity took place, were not included in the total average scores. The results show a gradual increase (10% at a time) in the average score until the third consultation. By the time of the fourth consultation there is a slight decrease (10%) in the average score, but the score remained slightly higher (10%) than pre-treatment scores. The small variation in scores across time could be due to the low incidence of arousal difficulties in the sample group.

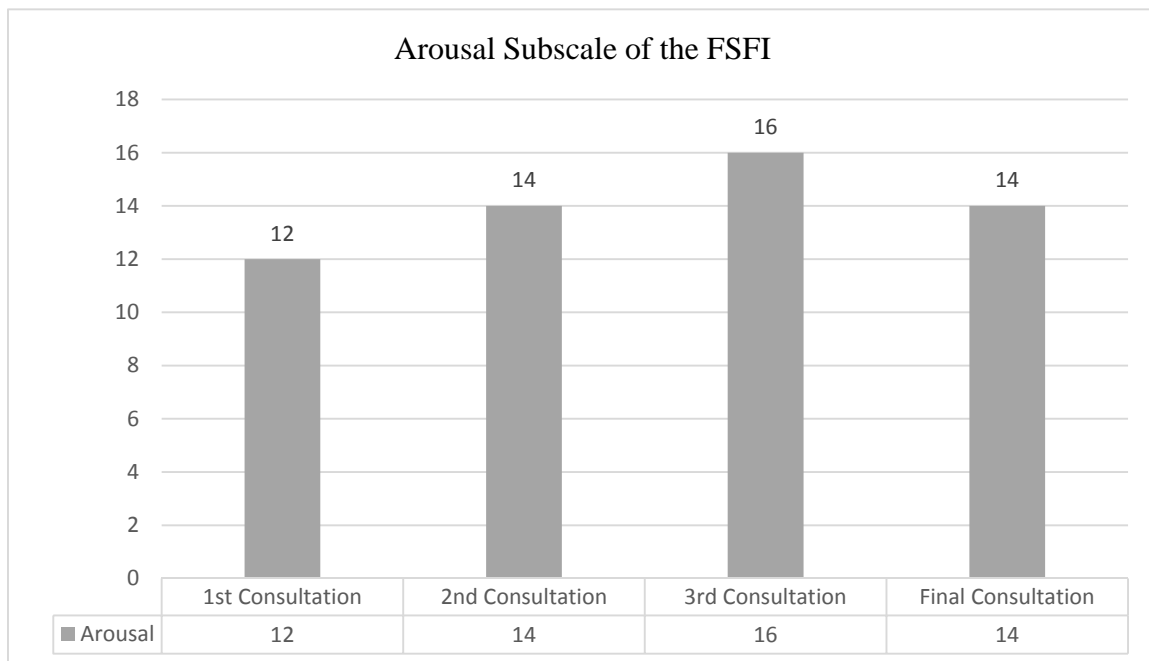


Figure 3: Average scores obtained for the arousal subscale of the FSFI during the course of the study

Changes in Distress Related to Low Sexual Desire

Information obtained by means of Item 13 of the FSDS-R showed the following:

- At the time of the first consultation, all nine participants reported some level of distress related to their low sexual desire.
- By the final consultation only one participant reported frequently feeling distressed and one reported always feeling distressed by low sexual desire.

Figure 4 below graphically illustrates the average scores obtained for Item 13 of the FSDS-R during the course of the study. The marked decline in the total average score shows that individualised homeopathic treatment was beneficial in alleviating distress related to low sexual desire.

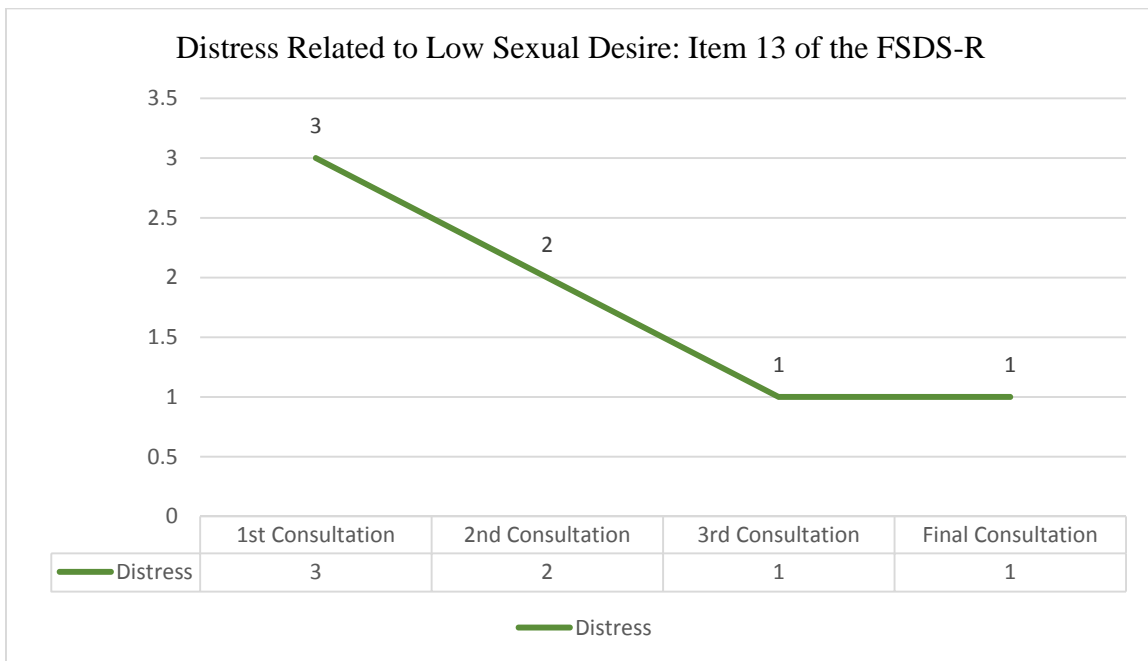


Figure 4: Average scores obtained for Item 13 of the FSDS-R during the course of the study

Remedy Frequency

During the course of the study some remedies were prescribed more frequently than others. Table 1 provides a summary of the remedies and potencies prescribed during the course of the study.

Remedy Name and Potency:	Number of Prescriptions:
<i>Lycopodium clavatum</i> LM1	1
<i>Mercurius solubilis</i> 6cH	3
<i>Natrum muriaticum</i> 6cH	2
<i>Natrum muriaticum</i> 30cH	1
<i>Natrum muriaticum</i> LM1	1
<i>Nux vomica</i> 30cH	2
<i>Nux vomica</i> 200cH	1
<i>Sepia officinalis</i> 30cH	7
<i>Sepia officinalis</i> LM1	1
<i>Sulphur</i> 6cH	1
<i>Sulphur</i> 30cH	2
<i>Sulphur</i> 200cH	1
<i>Sulphur</i> LM potencies	4

Table 1: Summary of remedies prescribed during the course of the study

DISCUSSION

Trends Observed

Low Sexual Desire

At the start of the study all nine participants obtained scores below 5 for the desire subscale of the FSFI, verifying that all participants suffered from low sexual desire. At the time of the second consultation (week four), only two participants (one and six) obtained scores of 6 and above (a successful therapeutic outcome) for the desire subscale, while the remaining seven participants all continued to obtain scores of 5 and below. By the third consultation (week eight), four participants (one, three, four and nine) obtained scores of 6 and above, while four participants (two, five, six and eight) obtained scores of 5 and below. Participant seven was not available at week eight and therefore did not complete the relevant questionnaires. At the time of the final consultation (week 12) seven participants obtained scores of 6 and above while only two participants (two and five), continued to obtain scores of 5 and below. An unsuccessful therapeutic outcome was therefore observed in two cases.

Sexual Arousal

The mean score obtained for question 4 of the arousal subscale over the 12 week period indicates that arousal difficulties were uncommon in this sample group.

Distress Related to Low Sexual Desire

Scores obtained by means of Item 13 of the FSDS-R indicate that all nine participants experienced some level of distress related to their low sexual function at the start of the study. In six of the seven cases where a successful therapeutic outcome was observed, the expected pattern of a decrease in distress, coinciding with an increase in sexual desire, was noted. One participant deviated from this pattern as she obtained a score of 2 for Item 13 at both the first as well as the final consultation, despite her sexual desire scores increasing from 2 to 6 during the course of the study. This may be explained by the fact that, while her sexual function had definitely shown improvement during the course of the treatment, her sexual desire had not reached normal premenopausal levels yet and was still causing her some distress. Her distress score was also not excessively high to begin with, indicating only occasional distress.

Homeopathic Prescriptions

Certain remedies and certain potencies were indicated more frequently than others. Some remedies also proved to be more effective in alleviating low sexual desire and other perimenopausal symptoms.

Commonly Prescribed Remedies

The two most frequently prescribed remedies were *Sulphur* and *Sepia officinalis*, with a total of eight prescriptions each during the study period. This was followed by *Natrum muriaticum* with a total of four prescriptions.

Commonly Prescribed Potencies

The two most frequently prescribed potencies were 30cH, with 12 prescriptions, and LM potencies with seven prescriptions. Six prescriptions were written for 6cH potencies and only two for 200cH.

Effective Remedies

The remedy demonstrating the highest number of successful therapeutic outcomes is *Sulphur*, prescribed in three of the seven cases where a successful therapeutic outcome was observed. In one of the three cases *Sulphur* proved successful in a 6cH, in another case LM potencies were used, and in the third case *Sulphur* proved successful in a 30cH. *Sepia officinalis* 30cH follows closely, demonstrating efficacy in two out of the seven successful cases. In the remaining two successful cases, *Natrum muriaticum* and *Mercurius solubilis* were prescribed, proving effective in one case each.

On repertorisation *Sulphur*, *Sepia officinalis* and *Natrum muriaticum* all scored a 3 for the rubric *Female, sexual, libido, desire, diminished* and are therefore strongly indicated for this symptom. *Mercurius solubilis* however did not score for this rubric, yet produced a successful therapeutic outcome. This can once again be explained by the fact that low sexual desire is a multifactorial problem influenced by mental, emotional and physical factors. As the participant's energy levels, mood and general well-being improved during the course of the study, so also did her sexual desire.

Other Factors Affecting Results

It is possible that factors other than the prescribed individualised homeopathic remedy could have influenced the results.

Relationship Factors

The focus of the study was on low sexual desire as a symptom of perimenopause and the researcher therefore deliberately did not explore existing relationship problems. Only information spontaneously offered by participants were included in the write-up of case histories in chapter four, and participants were not prompted for any further information regarding difficulties in their relationships with their sexual partners. It is therefore not clear what influence, if any, relationship

factors had on the results obtained in this study. Future studies exploring female sexual function should therefore consider the effect of relationship factors on female sexuality.

Sample Size and Duration of the Study

The sample size of the study was small and the results can therefore not be generalised to the larger population (low external validity). A larger sample size will also be more amenable to statistical analysis. As low sexual desire is a complex, multifactorial problem, a longer study duration might have demonstrated better results. The study also did not explore whether the amelioration of symptoms obtained during the study period were maintained after the cessation of treatment.

The Homeopathic Consultation

According to Steinkopf (2015:1), the placebo effect in medicine does not only refer to a therapeutic response to an inert treatment, but also includes additional aspects of medical treatment such as a positive doctor-patient relationship. Research shows that certain aspects of the homeopathic consultation itself, such as openness, sensitivity and a non-judgmental attitude demonstrated by the practitioner, can produce a powerful therapeutic effect in for example rheumatoid arthritis patients (Brien *et al.*, 2012:514). Even though all the participants in this study received an active homeopathic remedy, the intrinsic nature of the homeopathic case-taking itself could therefore have produced a placebo effect and contributed to the positive results.

The Hawthorne Effect

According to McCambridge *et al.* (2014:268), the Hawthorne effect in research refers to the phenomenon that the awareness of being studied or having one's behaviour evaluated can lead to changes in behaviour in order to please the researcher. Observational and non-blinded studies are especially vulnerable to the Hawthorne Effect (Fernald *et al.*, 2012:83). Due to the qualitative nature of the study considerable interaction took place between the researcher and the participants, which may have rendered the study susceptible to the Hawthorne Effect.

CONCLUSION

The aim of this study was to determine the effect of individualised homeopathic treatment on low sexual desire in perimenopause.

This embedded mixed method case study design took place over a period of 12 weeks and consisted of four consultations per participant at four week intervals. A complete case history was taken and participants completed the desire and arousal subscales of the FSFI, as well as Item 13

of the FSDS-R, at each of the four consultations. A single individualised homeopathic remedy was prescribed for each participant in accordance with the principles of classical homeopathy. No adverse effects were noted during the course of the study.

The results of this small pilot study suggest that individualised homeopathic treatment was effective in alleviating low sexual desire in seven out of nine perimenopausal females between the ages of 40 and 60 years old. At the end of the study seven participants obtained scores of 6 and above for the desire subscale of the FSFI, indicating a successful therapeutic outcome. The results also appear to confirm the beneficial effect of individualised homeopathic treatment on the additional symptoms associated with perimenopause. In order to verify the results, the study should be repeated using a larger sample group over a longer period of time.

This study contributed to the body of homeopathic knowledge by demonstrating effectiveness in an area that remains under-researched and provides a basis for future research on the effect of homeopathy on low sexual desire in females.

REFERENCES

Akhtari, E., Raisi, F., Keshavarz, M., Hosseini, H., Sohrabvand, F., Bioos, S., Kamalinejad, M. & Ghobadi, A. (2014). *Tribulus Terrestris* for Treatment of Sexual Dysfunction in Women: Randomized Double-Blind Placebo-Controlled Study. *DARU Journal of Pharmaceutical Sciences*, 22(40):n.p.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR*. Washington, DC, American Psychiatric Association. Pp. 245-262.

American Psychiatric Association. (2013). *Highlights of changes from DSM-IV-TR to DSM-V*. American Psychiatric Publishing. Retrieved from: <http://www.dsm5.org/Documents/changes%20from%20dsm-iv-tr%20to%20dsm-5.pdf> (Accessed 10 August 2014). Pp. 13-14.

Andalo, D. (18 June 2015). 'Female Viagra' Wins Approval from FDA Expert Panel. *The Pharmaceutical Journal*, n.p. Retrieved from: <http://www.pharmaceutical-journal.com/news-and-analysis/news/female-viagra-wins-approval-from-fda-expert-panel/20068740.article>. (Accessed 3 July 2015).

Artemi, A., Peck, K.S. & Torline, J.R. (2005). *The effect of the homeopathic similimum in the treatment of climacteric symptoms*. M.Tech (Homeopathy). [Unpublished]: University of Johannesburg. Retrieved from: <https://ujdigispace.uj.ac.za> (Accessed 10 August 2014). Pp. 127.

Basson, R. (2011). Gynecology and Obstetrics: Sexual Dysfunction in Women. *The Merck Manual nineteenth edition*. Edited by Porter, R. S & Kaplan, J.L. New Jersey: Merck Sharp & Dohme Corp. Pp. 2521-2525.

Brien, S.B., Leydon, G.M. & Lewith, G. (2012). Homeopathy Enables Rheumatoid Arthritis Patients to cope with their Chronic Ill Health: A Qualitative Study of Patient's Perceptions of the Homeopathic Consultation. *Patient Education and Counseling*, 89:507–516.

Brotto, L.A. & Basson, R. (2014). Group Mindfulness-Based Therapy Significantly Improves Sexual Desire in Women. *Behaviour Research and Therapy*, 57:43-54.

Buhling, K.J., v. Daniels, B., v. Studnitz, F.S.G., Eulenburg, C. & Mueck, A.O. (2013). The Use of Complementary and Alternative Medicine by Women Transitioning through Menopause in

Germany: Results of a Survey of Women Aged 45-60 years. *Complementary Therapies in Medicine*, 22:94-98.

Davis, S.R. & Braunstein, G.D. (2012). Efficacy and Safety of Testosterone in the Management of Hypoactive Sexual Desire Disorder in Postmenopausal Women. *Journal of Sexual Medicine* 9:1134-1148.

De Schepper, L. (2010). *Classical homeopathy for the professional*. New Delhi: B Jain Publishers. Pp. 5-300.

Fernald, D.H., Coombs, L., DeAlleaume, L., West, D. & Parnes, B. (2012). An Assessment of the Hawthorne Effect in Practice-based Research. *Journal of the American Board of Family Medicine*, 25(1):83-86.

Gama, C.R.B., Lasmar, R., Gama, G.F., Abreu, C.S., Nunes, C.P., Geller, M., Oliveira, L. & Santos, A. (2014). Clinical Assessment of *Tribulus terrestris* Extract in the Treatment of Female Sexual Dysfunction. *Clinical Medicine Insights: Women's Health*, 7:45-50.

Gerstenberger, E.P., Rosen, R.C., Brewer, J.V., Meston, C.M., Brotto, L.A., Wiegel, M. & Sand, M. (2010). Sexual Desire and the Female Sexual Function Index (FSFI): A Sexual Desire Cutpoint for Clinical Interpretation of the FSFI in Women with and without Hypoactive Sexual Desire Disorder. *Journal of Sexual Medicine*, 7:3096-3103.

Goldstein, I., Lines, C., Pyke, R. & Scheld, J.S. (2009). National Differences in Patient–Clinician Communication Regarding Hypoactive Sexual Desire Disorder. *Journal of Sexual Medicine*, 6:1349-1357.

Grigoriou, V., Augoulea, A., Armeni, E., Rizos, D., Alexandrou, A., Dendrinou, S., Panoulis, K. Lambrinoudakie, I. (2013). Prevalence of Vasomotor, Psychological, Psychosomatic and Sexual Symptoms in Perimenopausal and Recently Postmenopausal Greek Women: Association with Demographic, Life-Style and Hormonal Factors. *Gynecological Endocrinology*, 29(2):125-128.

Guidozzi, F., Alperstein, A., Bagratee, J.S., Dalmeyer, P., Davey, M., De Villiers, T.J., Hirschowitz, S., Kopenhager, T., Moodley, S.P., Roos, P., Shaw, A., Shimange, O., Smith, T., Thomas, C., Titus, J., van der Spuy, Z. & van Waart, J. (2014). South African Menopause Society

Revised Consensus Position Statement on Menopausal Hormone Therapy, 2014. *South African Medical Journal*, 104(8):537-543

Hendrix, L. (2011). Gynecology and Obstetrics: Menopause. *The Merck Manual nineteenth edition*. Edited by Porter, R. S & Kaplan, J.L. New Jersey: Merck Sharp & Dohme Corp. Pp. 2518-2520.

Heymans, S.R., Solomon, E.M. & Cable, S. (2013). *The effect of the homeopathic similimum, using the Grant Bentley Method, on climacteric symptoms*. M.Tech (Homeopathy). [Unpublished]: University of Johannesburg. Retrieved from: <https://ujdigispace.uj.ac.za> (Accessed 10 August 2014). Pp. 143.

Katz, M., DeRogatis, L.R., Ackerman, R., Hedges, P., Lesko, L., Garcia, M. & Sand, M. (2013). Efficacy of Flibanserin in Women with Hypoactive Sexual Desire Disorder: Results from the Begonia Trial. *Journal of Sexual Medicine*, 10:1807-1815.

Kingsberg, S. (2010). Hypoactive Sexual Desire Disorder: When is Low Sexual Desire a Sexual Dysfunction. Patient Highlights. *Journal of Sexual Medicine*, 7(8):2907-2908.

MacEoin, B. (1997). *Homeopathy for menopause*. Vermont: Healing Arts Press. P. 6.

Magon, N., Chauhan, M., Malik, S. & Shah, D. (2012). Sexuality in Midlife: Where the Passion goes? *Journal of Mid-Life Health*, 3(2):61-65.

Maserejian, N.N., Shifren, J., Parish, S.J., Segraves, R.T., Huang, L. & Rosen, R.C. (2012). Sexual Arousal and Lubrication Problems in Women with Clinically Diagnosed Hypoactive Sexual Desire Disorder: Preliminary Findings from the Hypoactive Sexual Desire Disorder Registry for Women. *Journal of Sex & Marital Therapy*, 38:41-62.

McCambridge, J., Witton, J. & Elbourne, D.R. (2014). Systematic Review of the Hawthorne Effect: New Concepts are needed to Study Research Participation Effects. *Journal of Clinical Epidemiology*, 67:267-277.

Meston, C.M., Rellini, A.H. & Telch, M.J. (2008). Short- and Long-term Effects of *Ginkgo biloba* Extract on Sexual Dysfunction in Women. *Archives of Sexual Behaviour*, 37(4):530-547.

- Mintz, L.B., Balzer, A.M., Zhao, X. & Bush, H.E. (2012). Bibliotherapy for Low Sexual Desire: Evidence for Effectiveness. *Journal of Counselling Psychology*, 59(3):471-478.
- Pebdani, M.A., Taavoni, S., Seyedfatemi, N. & Haghani, H. (2014). Triple-Blind, Placebo-Controlled Trial of *Ginkgo biloba* Extract on Sexual Desire in Postmenopausal Women in Tehran. *Iranian Journal of Nursing and Midwifery Research*, 19(3):262-265.
- Presant, C.A. (15 June 2015). 'Female Viagra' - Libido Liberation or Gender Hype? *Huffington Post*, n.p. Retrieved from: http://www.huffingtonpost.com/cary-a-presant-md/female-viagra_b_7572522.html. (Accessed 3 July 2015).
- Rosen, R.C., Connor, M.K., Miyasato, G., Link, C., Shifren, J.L., Fisher, W.A., Derogatis, L.R. & Schobelock, M.J. (2012). Sexual Desire Problems in Women Seeking Healthcare: A Novel Study Design for Ascertaining Prevalence of Hypoactive Sexual Desire Disorder in Clinic-Based Samples of U.S. Women. *Journal of Women's Health*, 21(5):505-515.
- Schulte, B. (2015). FDA Advisory Panel Recommends Approval of 'Female Viagra'. *The Washington Post*, n.p. Retrieved from: <http://www.washingtonpost.com/news/to-your-health/wp/2015/06/04/widely-varying-views-of-female-viagra-emerge-at-fda-hearing/>. (Accessed 3 July 2015).
- Steinkopf, L. (2015). The Signaling Theory of Symptoms: An Evolutionary Explanation of the Placebo Effect. *Evolutionary Psychology*, 13(3):1-12.
- University of Cape Town. (2015). *Flibanserin for Hypoactive Sexual Desire Disorder (HSDD)*. Retrieved from: <http://www.mic.uct.ac.za/MIC/News/Sep15/PregFlib>. (Accessed 27 January 2016).
- Van Zandvoort, R. (2014). Complete repertory 2014, Mercurius homeopathic software, version 5.3.0.17. (Computer software). Aeon Group.
- West, S.L., D'Aloisio, A.A., Agans, R.P., Kalsbeek, W.D., Borisov, N.N. & Thorp, J.M. (2008). Prevalence of Low Sexual Desire and Hypoactive Sexual Desire Disorder in a Nationally Representative Sample of US Women. *Archives of Internal Medicine*, 168(13):1441-1449.