Women's Health Bull. 2015 January; 1(3): e25147. DOI: 10.17795/whb-25147

Published online 2014 November 22. **Research Article**

Evaluation of Factors Affecting Sexual Desire During Menopausal Transition and Post Menopause

Maryam Rabiee [1,*]; Malihah Nasirie [2]; Nafisah Zafarqandie [1]

[1]Faculty of Medicine, Shahed University, Tehran, IR Iran
[2]Faculty of Medicine, Tarbiat Modaress University, Tehran, Iran

*Corresponding author: Maryam Rabiee, Faculty of Medicine, Shahed University, Tehran, IR Iran. Tel: +98-2188969438, E-mail: dr_rabi_maryam@yahoo.com

Received: November 5, 2014; **Accepted:** November 9, 2014

Background: One of the most common problems of women especially during transient menopause and post menopause is reduction in sexual desire which affects their social and psychological health.
Objectives: The present study attempted to evaluate the impact of some personal and social factors, common age-related complaints, and follicular stimulating hormone and estradiol on sexual desire.
Patients and Methods: This cross-sectional study was conducted on 201 females, aged 45-60 years old, without any history of psychological illness, and not receiving any hormone therapy including estrogen-progesterone. They filled three questionnaires; menopausal rating scale (MRS), symptom checklist 90 and their sexual interests and demographic characteristics. The data were analyzed using Pearson Chi-square tests and logistic regression (using SPSS 18).
Results: A deceasing sexual desire was observed in 34.7% of the cases. A statistically significant relationship was found between reduced sexual desire and physical complaints and mood changes including anxiety and depression. Women who were widowed or divorced exhibited a significantly higher reduction in sexual desire. There was a significant correlation between sexual satisfaction and sexual desire. However, no significant relationship was observed between sexual desire and hot flashes, dyspareunia and level of estradiol and FSH.
Conclusions: Mental and physical health of women and their sexual satisfaction play a more effective role in predicting sexual desire, regardless of age and hormonal changes during this period.

Keywords: Libido; Menopause; Premenopause; Moods

1. Background

Sexual activity is an important part of women's lives, which has drawn the attention of public health centers and medical and pharmaceutical institutions. Sexual desire, arousal, orgasm followed by a sense of comfort and satisfaction are the four stages of sexual response in women (1). Recently, the definition of sexual desire has been reviewed and defined as interest in sexual expression. This definition is in contrast with previous definitions of sexual desire, as the urgency or pressure for sexual activity occurring with the activity of certain systems in the brain, and as a certain feeling which urges the individual to seek sexual experience or respond to a sexual stimulation or so called libido (2). So, sexual desire may spontaneously occur without sexual stimulation or may follow arousal (1-3). In one of the biggest studies on women's sexual activity, decrease in sexual desire has been introduced as the main problem in women aged between 18 to 81 years where women aged 45 to 64 years had higher sexual distress compared to younger or older women (4, 5). In some studies it has been asserted that sexual dysfunction, especially decrease in sexual desire, enhances with increasing age. Although it seems that increasing age and hormonal changes are not the only effective factors in decreasing sexual desire. In this context, individual general health status, mental health, psychological problems and stress play effective roles in sexual desire, regardless of ageing and the status of menopause (6, 7). Despite the important role of sexual desire in maintaining the relations between couples and preventing feeling old which unconsciously affects the quality of life, there have been few researches conducted on the subject in Iran.

2. Objectives

The aim of the present research was to study the changes in sexual desire of women around the time of menopause and determine the role of symptoms of menopausal transition including hot flashes, physical symptoms, vaginal dryness, and urinary problems in sexual desire. This study also answered questions concerning whether sexual activity is a function of the individual's general health and if psychological factors have an effect on sexual desire. It also examined the impact of follicular stimulation hormone (FSH) and estradiol on sexual desire.

3. Patients and Methods

This cross-sectional study was conducted during 2009-2010, on 201 females aged from 45 to 60 years. The subjects studied were friends or relatives of women referring to prenatal control clinics in Hazrat-e Zeinab and Shahid Mostafa Khomeini Health Centers. Having briefed the volunteers on the study, they enrolled for the research, if agreed to participate in the program. The inclusion criteria were the absence of hormone replacement therapy (HRT), hormonal medications like contraceptive pills, agonist of gonadotropin releasing hormone (GnRh), lacking history of any mental illness requiring hospitalization or treatment with psychiatric drugs, having no communication problems and being literate. Having provided the written informed consent the participants were given 3 questionnaires. One questionnaire was about their general and personal characteristics including age, marital status, profession, number of offspring, living spouse. Other information were about kidney disease, heart conditions, diabetes and other diseases if any, in addition to daily exercise, saying prayer and reciting Quran at least once a week and having friendly relations with friends or neighbors. The second was a standard questionnaire comprising the severity of menopausal symptoms (menopausal rating scale) which was categorized into four groups. These were vasomotor (hot flashes), somatic or physical (heart conditions and palpitations, bone and joint pain, sleeping problems, memory impairment), urogenital (incontinence, dysuria, decreased sexual desire, dyspareunia) and psychological conditions (depression, irritability, anxiety) (8). The third questionnaire was a part of psychological checklist 90 (SCL90) which defined psychological problems (9). This part was excerpt from transition including depression part (16 questions) and Anxiety part (9 questions). The reliability and validity of the tests had first been measured in Iran by Bakhshaie et al. (10). Sexual desire was measured based on menopausal rating scale (MRS) questionnaire. This questionnaire has four parts; somatic (physical), psychological, hot flash and uro-genital problems (including sexual desire). The last part measured sexual desire based on being interested in having sex (unrelated to the number of intercourses, orgasm or fantasizing) which was developed on a scale of four grades as no (0), low (1), medium (2) and intense (3), based on menopausal rating scale MRS questionnaire. Their height and weight were measured carefully and then the subjects were examined by a gynecologist and ultimately sent to the laboratory for measuring the level of FSH and estradiol. The levels of hormones were measured using a specific enzyme-linked immunosorbent assay (ELISA) kit with 0.5 sensitivity. The answers given to the MRS and SCL90 questionnaires were scored on a scale of 5 grades of discomfort including none (0), a little (1), to some extent (2), high (3) and intense (4). The sum of coefficients for discomfort was then measured for each aspect of menopausal rating system and the severity of menopause. Next, the sum of discomfort coefficients were measured for each aspect of depression and anxiety divided by the number of questions related to that aspect (16 and 9 respectively) calculated up to two decimal points, thus providing rough scores for these two aspects. This is a standard method for obtaining rough scores to evaluate the patients (10). The scores were divided into two groups of <1 and ≥ 1. Subjects having the scores ≥ 1 were diagnosed as depressed or anxious, and referred for psychiatric consultation. Data analysis was done using SPSS statistical software (version 18), Pearson Chi-square and logistic regression statistical tests with $P < 0.05$ considered as statistically significant.

4. Results

Five subjects were excluded from the study for incomplete filling of the questionnaires, thus resulting in 97.5% response rate. In the study group, 128 subjects (65.3%) showed no reduction in sexual desire, in contrast to 68 women (34.7%) who exhibited lower sexual desire. The average age of the participants was 50.67 ± 4.7. The average age of females with reduced sexual desire was 50.23 ± 4.07 and that of females with no reduction in sexual desire was 50.67 ± 78.40. The results showed that there was no significant relationship between age and decreasing sexual desire ($P = 0.52$). 88 females (46.57%) were in post menopause and 108 (54.5%) were in menopause transition (Figure 1). In regard to reduction in sexual desire, 30 (34.1%) women were in post menopause and 38 (35.2%) subjects were in menopause transition states. There was no significant difference between women in menopausal transition and post-menopause period in decreasing sexual desire ($P = 0.89$). A significant relationship was found between reduced sexual desire and the status of being widowed or divorced in 44 (22%) females who did not have husbands ($P = 0.04$). Also, no significant difference was observed in sexual desire between two groups of females with and without employment, regular exercise, performing prayers, reciting Quran, and socializing with friends (Table 1).

The average Body Mass Index (BMI) was 26.82, which according to the T-test had no significant relationship with reduction in sexual desire ($P = 0.13$). There was no statistically significant relationship between underlying diseases and reduction in sexual desire (Table 1). This study showed that females experiencing sexual satisfaction also had more sexual desire ($P = 0.001$). The prevalence of complaints about menopausal symptoms indicated by MRS, included 80.3% for physical (somatic) symptoms of menopause, 56.5% for hot flashes, 45.5% for vaginal dryness, and 20.9% for urinary problems. The results of this study showed that there was a significant relationship between somatic symptoms and reduction in sexual desire ($P = 0.032$). However, we found no significant relationship ($P = 0.24$) between urinary problems such as stress incontinence and urge incontinence and decreas-

ing sexual desire (Table 2). The prevalence of depression in the study group was 20.9% and that of anxiety was 20.4%. Decreasing sexual desire was present in 67 (34.7%) of subjects with mood changes. There was a significant relationship between anxiety (P = 0.01) and depression (P = 0.04) and reduction in sexual desire (Table 2).

There was not a noticeable relationship between vasomotor problems (hot flashes) and changes in sexual desire (P = 0.19). Among 105 subjects with vaginal dryness, 33 (31.4%) people had decreased sexual desire, although the relationship between them was not significant (P = 0.26). In 120 subjects, the level of serum FSH was higher than 20 mμ/mL, of whom 47 (36.7%) exhibited reduction in sexual desire. The serum level of estradiol was lower than 40 pg/mL in 56 subjects of whom 18 (33.1%) had decreased sexual desire. However, there was no statistically significant relationship between FSH (P = 0.41) and estradiol (P = 0.63) and sexual desire. Logistic regression was used for multivariate analysis. The variables that were significant in the first analysis were entered into the logistic model. These variables included depression, anxiety, somatic problems, psychological problems and sexual satisfaction. This analysis showed statistical significance only with respect to sexual satisfaction (P < 0.001 and OR = 0.124), indicating that sexual desire was 88% higher in women who experienced sexual satisfaction than the other women.

Table 1. The Relation Between Sexual Desire and Social Characteristics and Underling Disease

Variable	Reduction in Sexual Desire	No Reduction in Sexual Desire	P Value
Job			0.20
Housewife	104	55	
Employed	20	11	
Reading Quran			0.48
Yes	74	36	
No	42	28	
Having relationship			0.90
Yes	44	23	
No	64	35	
Exercise			0.75
Regularly	46	16	
Never	73	49	
Marital status			0.001
Married	64	87	
Single/widowed/divorcee	3	39	
kidney disease			0.13
Yes	11	2	
No	115	65	
Diabetes			0.80
Yes	14	7	
No	112	60	

Table 2. The Relationship Between Sexual Desire and Psycho-Physical Factors [a]

Variable	Reduction in Sexual Desire	No Reduction in Sexual Desire	P Value
Urinary problems score [b]	0.53 ± 1.01	0.36 ± 0.87	0.24
Physical problems score [b]	3.44 ± 2.68	2.64 ± 2034	0.032
Psychological problems [b]	3.38 ± 2.94	1.96 ± 2.5	0.001
Anxiety [c]	0.62 ± 0.72	0.42 ± 0.55	0.045
Depression [c]	0.62 ± 0.62	0.29 ± 0.58	0.013

[a] Data are presented as Mean ± SD.
[b] Data are based on menopausal rating scale.
[c] Data are based on psychological checklist 90.

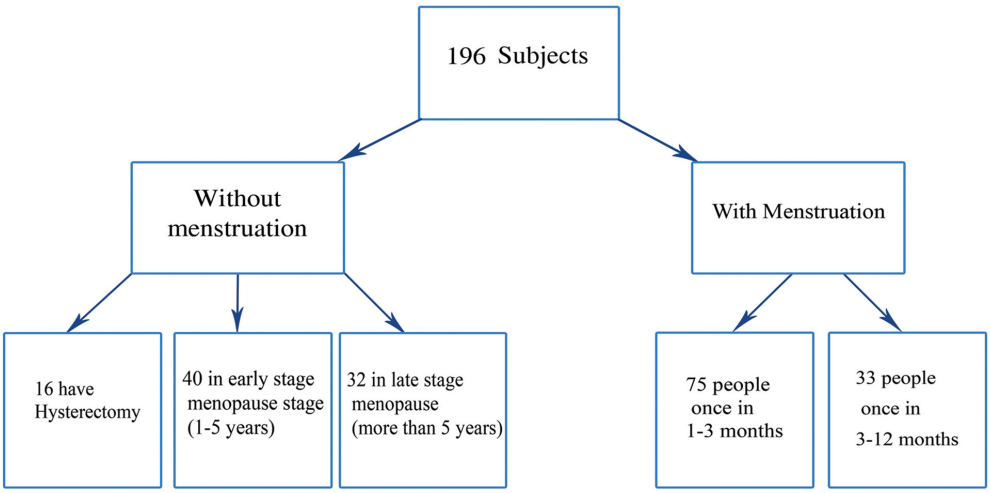

Figure 1. Characteristics of Menstruation in Females Under Study

5. Discussion

In this study, 30% of females in transient menopause and post menopause period had reduction in sexual desire. However, no differences were found between reduction in sexual desire in transient menopausal women and post-menopausal women. These findings were similar to some studies which indicated that changes in sexual desire were independent of menopausal stages and Sexual desire decreases in transient menopause-menopause period, especially in the first year of post menopause (11-13). The present study showed no significant relationship between sexual desire and social and personal characteristics like job, number of children, socializing with friends, performing prayers, reading books and doing exercises. However, Woods et al. found a significant relationship between doing exercise and sexual desire. This discrepancy may be attributed to different application of exercise in the two studies. In our study the participants were asked if they did any exercises, whereas in the study of Woods et al., the effect of exercise on sexual desire was evaluated after giving the subjects special exercises for a certain period of time (2). A study conducted by Mohammad Alizadeh charandabiee et al. showed no significant relationship between social factors and disorders in sexual functioning (14). They found a significant relationship between mood changes and reduction in sexual desire, a finding confirmed by the study of Mahyar et al. on disorders of sexual functioning in psychological patients, who concluded that there was a significant relationship between sexual desire and depression and physical complaints (15). The study of Nappi et al. (16) reported a significant relationship between depression and anxiety, and sexual activity. Subjects with higher scores in mood changes had the worst sexual functioning (16). Other studies also showed a negative relationship between psychological complaints and sexual interest (3, 5, 7).

One of the common complaints in transient menopause-menopause period is physical complaint, where 80% of females in the study group suffered from physical problems, which were significantly associated with reduction in sexual desire, a finding consistent with other studies (6, 16, 17). This study found no significant relationship between hot flashes and vaginal dryness, and decreased sexual desire, a finding similar to the studies of Gracia et al. and Reed et al. (17, 18). However, Mohammad Alizadeh charandabiee et al. and some other studies indicated a marked relationship between hot flashes, night sweating, and reduced sexual desire (6, 14). Some studies indicated that decreased vaginal lubrication resulting from lower level of estrogen at this age, and associated dyspareunia caused sexual desire reduction which was in contrast to our findings (17-19). The reason for this discrepancy may be that the subjects under study were in the early stages of menopause-menopausal transition, where the effect of estrogen on vaginal dryness and associated dyspareunia was not expressed in most cases. In our study one of the effective factors impacting sexual desire is sexual satisfaction. Sexual desire was 88% higher in women who had sexual satisfaction than in other women, a condition confirmed by other studies (5, 20). Because menopause and its symptoms depend on steroids, which in turn is dependent on FSH. The relationship between the level of these two hormones and sexual desire has been investigated. There was no statistically significant relationship between the amounts of FSH higher than 20 mμ/ml and estradiol lower than 40 pg/mL with sexual desire reduction. Longitudinal studies

on females aged 45 and more, conducted by Dennerstein et al. and by Bachmann et al. showed no significant relationship between lower level of estrogen and decreased sexual desire in all stages of menopause (6, 21). However, the role of estrogen and androgen was considered important by other studies (3, 7).

One of the most important limitations of this study was cultural problems, especially in regard to Asian females and those with religious backgrounds. Also in the present study the history of sexual problems and the relationship between the spouses has not been investigated. Sexual desire changes in transient menopause-post menopause period. Physical and psychological problems in women play an important role in sexual desire. Therefore, the diagnosis and treatment of such disorders would improve the quality of sexual desire.

Acknowledgements

Special thanks to colleagues in the clinics of Hazrat-e Zeinab and Shahid Mostafa Khomeini Educational Treatment Centers and Medical Research Center of Shahed University.

Authors' Contributions

Maryam Rabiee: study concept and design, acquisition of data. Malihah Nasirie: analysis and interpretation of data: Maryam Rabiee and Nafisah Zafarqandie: drafting of the manuscript. Maryam Rabiee and Nafisah Zafarqandie: critical revision of the manuscript for important intellectual content. Malihah Nasirie: statistical analysis.

References

1. Gibbs RS, Karlan BY, Haney AF, Nygaard IE. *Danforth's Obstetrics and Gynecology.* 9 ed: Lippincott Williams & Wilkins; 2008.
2. Woods NF, Mitchell ES, Smith-Di Julio K. Sexual desire during the menopausal transition and early postmenopause: observations from the Seattle Midlife Women's Health Study. *J Womens Health (Larchmt).* 2010;**19**(2):209–18.
3. Basson R. Hormones and sexuality: current complexities and future directions. *Maturitas.* 2007;**57**(1):66–70.
4. Trompeter SE, Bettencourt R, Barrett-Connor E. Sexual activity and satisfaction in healthy community-dwelling older women. *Am J Med.* 2012;**125**(1):37–43 e1.
5. Avis NE, Brockwell S, Randolph JF, Jr., Shen S, Cain VS, Ory M, et al. Longitudinal changes in sexual functioning as women transition through menopause: results from the Study of Women's Health Across the Nation. *Menopause.* 2009;**16**(3):442–52.
6. Bachmann GA, Leiblum SR, Sandler B, Ainsley W, Narcessian R, Shelden R, et al. Correlates of sexual desire in post-menopausal women. *Maturitas.* 1985;**7**(3):211–6.
7. Hartmann U, Philippsohn S, Heiser K, Ruffer-Hesse C. Low sexual desire in midlife and older women: personality factors, psychosocial development, present sexuality. *Menopause.* 2004;**11**(6 Pt 2):726–40.
8. Kakkar V, Kaur D, Chopra K, Kaur A, Kaur IP. Assessment of the variation in menopausal symptoms with age, education and working/non-working status in north-Indian sub population using menopause rating scale (MRS). *Maturitas.* 2007;**57**(3):306–14.
9. Derogatis LR, Rickels K, Rock AF. The SCL-90 and the MMPI: a step in the validation of a new self-report scale. *Br J Psychiatry.* 1976;**128**:280–9.
10. Bakhshaie J, Sharifi V, Amini J. Exploratory Factor Analysis of SCL90-R Symptoms Relevant to Psychosis. *Iran J Psychiatry.* 2011;**6**(4):128–32.
11. Mishra GD, Kuh D. Health symptoms during midlife in relation to menopausal transition: British prospective cohort study. *BMJ.* 2012;**344**.
12. Arman S, Fahamiee F, Zahraniee R. To Compare sexual dysfunction between premenopausal and postmenopausal women. *J Arak Univ Med Sci.* 2005;**8**(3):1–7.
13. Cawood EH, Bancroft J. Steroid hormones, the menopause, sexuality and well-being of women. *Psychol Med.* 1996;**26**(5):925–36.
14. Mohammad Alizadeh charandabiee S, Rezaiee N, Hakimiee S, Montazariee A, Karimiee P, Khatamieesh.. Sexual function of post-menopausal women and its predicts factors :A community based study in Ilam,Iran 2011. *IJ OGI.* 2012;**15**(23):1–9.
15. Mahyar A, Iranpoor GH, Noohie S. Sexual dysfunction and psychological quality in women. *Anddeesheh Va Raftar.* 2003;**9**(2):22–9.
16. Nappi RE, Albani F, Santamaria V, Tonani S, Magri F, Martini E, et al. Hormonal and psycho-relational aspects of sexual function during menopausal transition and at early menopause. *Maturitas.* 2010;**67**(1):78–83.
17. Gracia CR, Sammel MD, Freeman EW, Liu L, Hollander L, Nelson DB. Predictors of decreased libido in women during the late reproductive years. *Menopause.* 2004;**11**(2):144–50.
18. Reed SD, Newton KM, LaCroix AZ, Grothaus LC, Ehrlich K. Night sweats, sleep disturbance, and depression associated with diminished libido in late menopausal transition and early postmenopause: baseline data from the Herbal Alternatives for Menopause Trial (HALT). *Am J Obstet Gynecol.* 2007;**196**(6):593 e1–7.
19. Dennerstein L, Dudley E, Burger H. Are changes in sexual functioning during midlife due to aging or menopause? *Fertil Steril.* 2001;**76**(3):456–60.
20. Avis NE, Zhao X, Johannes CB, Ory M, Brockwell S, Greendale GA. Correlates of sexual function among multi-ethnic middle-aged women: results from the Study of Women's Health Across the Nation (SWAN). *Menopause.* 2005;**12**(4):385–98.
21. Dennerstein L, Randolph J, Taffe J, Dudley E, Burger H. Hormones, mood, sexuality, and the menopausal transition. *Fertil Steril.* 2002;**77 Suppl 4**:S42–8.