

Attitudes About Sexual Activity Among Postmenopausal Women in Different Ethnic Groups: A Cross-sectional Study in Jahrom, Iran

Safieh Jamali^{1*}, Shohreh Javadpour², Leili Mosalanejad³, Razieh Parnian²

1- Research Center for Social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran

2- Faculty of Nursing and Midwifery, Jahrom University of Medical Sciences, Jahrom, Iran

3- Mental Health Department, Research Center for Social Determinants of Health, Jahrom University of Medical Sciences, Jahrom, Iran

Abstract

Background: Sexual function is affected by personal and interpersonal factors, familial and social traditions, culture, religion, menopause, and aging. So, ethnicity is a determining factor in sexual function. The present study aimed to investigate the prevalence of sexual dysfunction and attitudes towards sexuality in postmenopausal women among three different ethnic groups in Iran.

Methods: This cross-sectional study was conducted on 746 postmenopausal women between 50 and 89 years who referred to Honoree clinic, Jahrom in 2013. Among the study participants, 42.4% were Arab, 33.5% were Persian, and 24.1% were Lor. Data were collected about women's socio-demographic characteristics, attitudes regarding sexuality and sexual function. The descriptive statistics were used for demographic variables. Moreover, ANOVA, post hoc (LSD) was used. Besides, $p < 0.05$ was considered statistically significant.

Results: The participants' mean age was 60.10 ± 6.89 years and the total mean score of Female Sexual Function Index (FSFI) was 19.31 ± 8.5 . In addition, 81.5% of the women had sexual dysfunction (FSFI < 26.55) and only 147 women (18.5%) had normal sexual function (FSFI > 26.55). Sexual dysfunction was 75.3% in Arabs, 83.2% in Persians, and 86.1% in Lors. Besides, the most prevalent sexual dysfunction was dyspareunia in Arabs and arousal disorder in Persians and Lors.

Conclusion: The results of this study showed that sexual dysfunction is considerable among postmenopausal women. The most prevalent sexual dysfunction was dyspareunia in Arabs and arousal disorder in Persians and Lors.

Keywords: Ethnic groups, Menopause, Sexual dysfunction, Women's attitude.

To cite this article: Jamali S, Javadpour Sh, Parnian R, Mosalanejad L. Attitudes About Sexual Activity Among Postmenopausal Women in Different Ethnic Groups: A Cross-sectional Study in Jahrom, Iran. *J Reprod Infertil.* 2016;17(1):47-55.

* Corresponding Author:
Safieh Jamali, Department
of Midwifery, Faculty of
Nursing and Midwifery,
Jahrom University of
Medical Sciences, Jahrom,
Iran

E-mail: safieh_jamali@
yahoo.com

Received: Jan. 1, 2015

Accepted: Jun. 13, 2015

Introduction

Making attempts towards women's health is one of the priorities of health programs. Women comprise half of the world population and almost 90% of women reach the age of 65 years. Therefore, menopause is one of the life stages and women spend one third of their life time at this stage (1). Menopause is defined as disruption of menstrual cycles following reduction of ovaries' activities at the end of the fertility period. This phenomenon has a large number of effects and can lead to physical, emotional, and so-

cial disorders (2). Menopause is in fact the main phenomenon in middle-aged women's life which is important with regard to personal, cultural, and social dimensions. It is also of great importance as one of the health issues in women's fertility (3). On the other hand, sexual activity is a major issue in individuals' quality of life. Increase of life expectancy and the growing elderly population have made sexual health an important issue in menopausal women (4). Sexual instinct can be influenced by factors, such as diseases, drug consump-

tion, drug abuse, social problems, aging, and menopause, eventually disturbing individuals' mental health (5). Lumen reported the prevalence of sexual dysfunction as 43% among the women between 18 and 59 years old and pointed to the importance of menopause as a factor increasing these disorders (6). Although physiological and pathological changes are responsible for such changes (5), women's attitude towards menopause plays a key role in creation or elimination of the problems (7). However, there are not many studies that report attitude towards sexual function in menopause women and the available studies mentioned different or incoherent results.

Wang et al. showed that sexual activity is related to sexual knowledge and attitudes among men and women over 65 years (8). Although it is a fact that sexual attitudes of older women are restricted, studies didn't mention any age-related decrease in sexual activity and they also didn't confirm a decrease in frequency of sexual intercourse among menopausal women (9, 10).

According to Krantarat et al.'s study about attitudes of menopause women, 96% of women reported having sex in menopause as a natural normal part of life, 95% reported having sex to make their partner happy whereas 77% reported sex as a method to make themselves happy (11).

Some women consider menopause as the period of freedom because they have no responsibilities towards their children and are not afraid of getting pregnant any more. Thus, they may feel more comfortable and be more sexually active compared to the period before menopause. For some other women, on the other hand, this period is the beginning of worries, incidence of signs of old age, and end of attractiveness (12). In spite of the fact that women might be sexually inactive during their reproductive ages, menopause might reduce their sexual capability and make showing sexual feelings disgusting for them (13). Thus, reduction of sexual desire and satisfaction is one of the concerns during menopause. In general, marital satisfaction is one of the main factors in life (14). The prevalence of sexual dysfunction was 4 times higher in menopausal women compared to those in the reproductive ages (15). Besides, reduction of sexual attractiveness, desire, and activity was the most common complaint after menopause (16). Researchers demonstrated that 35% of menopausal women reported reduction of sexual desire and 62% reported this disorder in various stages of life. The prevalence of reduction of sex-

ual desire was reported to be 47%, 54%, 42%, and 24% in English, Italian, French, and German menopausal women, respectively (17). The prevalence of sexual dysfunction is varied in different countries. Nonetheless, a limited number of studies have been conducted on sexual function in different races and ethnicities.

Huang performed a study on 4 groups of menopausal women with different races and showed that Black and Latin women had higher sexual desire compared to White and Asian ones. In addition, the highest frequency of intercourse was related to Latin women, while the lowest frequency was related to Black and Asian ones (18).

In another study conducted on 44-55 year old women with different races, African-American women were more sexually active compared to White ones (19). Also, Nusbaum carried out a research on White and African women above 40 years old and showed that reduction of lubrication was more prevalent among the Whites compared to the African-Americans (20).

Although researchers have recently had the responsibility to use scientific methods for providing the necessary compatibility and eliminating or reducing the problems during menopause (21), less attention has been paid to such women's sexual problems. Therefore, these problems might be quite common during this period. Furthermore, studies have mostly focused on the prevalence of these disorders and a limited number of researches have investigated sexual function in different ethnicities. Because of the geographical status of Iran, many races and ethnicities have lived here from many years ago. Most of them are Fars, Lors and Arabs, so these three groups were selected as the community of this research. These ethnicities are different in culture and habits that can affect the sexual function. So considering the fact that Iran is a multiethnic country, the present study aimed to determine the prevalence of sexual dysfunction and compare it in the menopausal women in these three different ethnicities.

Methods

The present cross-sectional study was conducted on 746 postmenopausal women referring to gynecology clinics and Honaree clinic of Jahrom, Iran from April to October 2013. The study was approved by the Ethics Committee of the Jahrom University of Medical Sciences. After receiving the written informed consent, postmenopausal women were asked to answer the questionnaire by

themselves. It took about 25-30 *min* to complete the questionnaire form and the Female Sexual Function Index (FSFI) instrument. The questionnaire was read for the illiterate women and their responses were recorded.

Exclusion criteria were, chronic diseases (hypertension, heart disease, diabetes), women with continuous hormone therapy, having physical problems of spinal cord injury, mutilation, paralysis, having psychological problems or taking antidepressants or sedative medications.

The inclusion criteria of the study were women with natural menopause with ≥ 12 months since the last menstrual period and ≥ 50 years of age. All women lived with their sexual partners.

Data collection tools were questionnaires. These questionnaires were composed of three parts, the first part was the demographic part, which included age, education, occupation, body mass index, the second part was to assess sexual function by FSFI and the third part was the sexual attitudes.

Female Sexual Function Index (FSFI) is a questionnaire designed by Rosen et al. This questionnaire consists of 19 questions investigating the subjects in 6 domains of sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and pain during intercourse. In this questionnaire, the questions are scored based on 0/1-5 scoring system and the score of each domain is calculated through summing up the scores of that domain's questions and multiplying the obtained number by the multiplier factor of that domain. It should be mentioned that sexual desire is covered by questions 1 and 2, excitement by the sum of questions 3, 4, 5, and 6, lubrication by adding questions 7, 8, 9, and 10, orgasm by the sum of questions 11, 12, and 13, sexual satisfaction by adding questions 14, 15, and 16, and pain by summing up questions 17, 18, and 19. In addition, multiplier factors of 0.6, 0.4, and 0.3 are used for domains including 2, 3, and 4 questions, respectively. In general, each domain has a minimum (0-1.2/1.8) and a maximum (6). In addition, the sexual function total score is obtained from the sum of the scores of all the domains and is ranged from 2 to 36. The cut-off score used to demarcate sexual dysfunction on the total FSFI score was obtained from a validation study that compared FSFI scores in women with documented sexual dysfunction with those of dysfunction-free volunteers and determined a total score below 26.55 to denote sexual dysfunction (22).

According to the study by Safarinejad, <10, 11-

17, 18-23, and >23 scores were defined as severe, average, mild, and no disorders, respectively (23). The cut-off scores to determine the presence of difficulties on the six domains of the FSFI were obtained from published sources (22, 24, 25). Accordingly, scores less than 4.28 on the desire domain, less than 5.08 on the arousal domain, less than 5.45 on the lubrication domain, less than 5.05 on the orgasm domain, less than 5.04 on the satisfaction domain, and less than 5.51 on the pain domain were used to classify participants as having difficulties in that domain. Researchers translated this questionnaire to the language of their study populations and determined its reliability and validity as well. Overall, FSFI questionnaire is a general standard one in which the reliability and validity were determined by Rosen et al. in a study conducted in 2000. Mohammadi also performed a study in Shahed University, Iran in 2004 and confirmed the reliability as well as the validity of the questionnaire (26, 27). In this study, the Persian version of FSFI was used because Persian is the main national language in Iran. All people from different ethnicities in Iran are familiar with this language. So it isn't necessary to translate FSFI for different ethnicities in Iran.

The other data collection tool was sexual attitudes self-made questionnaire which consisted of 12 questions that required participants to indicate whether they agree or disagree with the statements using the following scales: 1- disagree, 2- undecided, 3- agree. A final score was obtained for the total scale by summing responses graded with scores, ranging between 12-48. Lower scores showed negative sexual attitudes while higher scores showed positive attitudes. They were categorized as negative (scores 17-32), medium (scores 33-38) and positive (scores 39-48). According to Hashemi's study, the questionnaire's face and content validity were evaluated by ten gynecologists and psychiatrists who were expert in the field of sexual health. The reliability of the questionnaire was assessed using test-retest and inter-rater reliability. In these methods, first a trained questioner completed questionnaires for 30 participants, then another observer filled the same questionnaire. After one week, the first questioner filled them out again. Using statistical analysis, the results of two observatories as inter-rater reliability and two assessment of first questioner as test-retest reliability were compared. Both were confirmed by $r=0.91$ and $r=0.85$, respectively (28). The reliability of the questionnaire and questioners by using

test-retest and inter-rater method was assessed as well and it was confirmed by $r=0.88$ and $r=0.87$, respectively too.

Statistical analysis: Finally, the data were analyzed statistically using SPSS (Statistical Package for the Social Sciences, version 16) and descriptive statistics (including frequency, percent, mean, standard deviation, maximum and minimum) for the sociodemographic variables. Chi-square, one-way ANOVA and post hoc tests were used to determine the inter-domain correlations in the groups. Besides, $p<0.05$ was considered statistically significant.

Results

The present study was conducted on 746 postmenopausal women in the age range of 50-89 and with the mean age of 60.10 ± 6.89 years. Almost 36.7% of the cases had no formal education. Most of the women (40.6%) in our study group were housewives. Among the women who answered the question about BMI, most (42.5%) were obese. Of all, only 35 women (4.7%) were current smokers. Almost 60.5% of women had no knowledge on menopause (Table 1). Comparing the sexual function in each domain, the lowest mean score was noted in the domain of desire (2.82 ± 1.40), arousal (3.10 ± 1.55), followed by orgasm (3.11 ± 1.73), pain (3.25 ± 1.73), lubrication (3.31 ± 1.78), and satisfaction (3.72 ± 1.50). There was no significant relationship between attitude and sexual function domains.

According to the results, 14.8%, 20.7%, 30.4%, and 34.2% of the study participants had severe, average, mild, and no sexual dysfunction, respectively.

Domain scores suggestive of difficulties related to desire was prevalent in 647 cases (86.7%); arousal in 682 (91.8); lubrication in 659 (88.6%); orgasm in 646 (86.9%); poor satisfaction in 593 (79.7%); and pain in 672 (90.40%). The prevalence of the sexual problems has been shown in table 2. The common disorders were arousal dysfunction and dyspareunia. Besides, the prevalence of sexual dysfunction was 75.3% in Arabs, 86.1% in Lurs, and 83.2% in Persians.

Furthermore, 52.49% of the women had a negative attitude towards having sex during menopause. However, 34.6% mentioned that sexual relationships were exhilarating for menopausal women, and 83% stated that these relationships led to their husbands' happiness. On the other

Table 1. Sociodemographic and menopause knowledge of the study population (n=746)

Characteristics	n	%
Age (years)		
50-55	242	32.4
56-60	166	22.3
>60	338	45.3
Educational level		
Uneducated	274	36.7
Primary school	201	26.9
Secondary school	145	19.6
College or university	125	16.8
Body Mass Index		
BMI 20-24.9	177	23.7
BMI 25-29.9	252	33.8
BMI >29.9	317	42.5
The source of information on menopause		
Physician, midwife/nurse	268	35.9
Neighbors-relatives	387	51.9
Books-magazines-newspaper-TV-radio-internet	91	13.2

hand, 30% of the women believed that having sex during menopause was shameful, 30% stated that it was against Iranian culture, and 18% considered having sexual relationships in this period as a sin. Moreover, 30% of the women expressed that they were ashamed because of the physical changes which had occurred due to aging. Nonetheless, 65.5% mentioned that sexual relationships were quite pleasing since they were not worried about getting pregnant. Overall, the most prevalent sexual dysfunction was dyspareunia in Arab women and arousal disorders in Persian and Lor ones (Tables 3 and 4).

Regarding the participants' attitude towards having sex during menopause, 30% of the Arab and Persian women stated that it was shameful and

Table 2. Prevalence of sexual dysfunction according to FSFI scores among postmenopausal women (n=746)

Domain	Sexual dysfunction		No sexual dysfunction		Domain FSFI (Mean±SD)
	n	%	n	%	
Desire	647	86.7	99	13.3	2.82±1.40
Arousal	682	91.8	61	8.20	3.10±1.55
Lubrication	659	88.6	85	11.40	3.31±1.78
Orgasm	646	86.9	97	13.10	3.11±1.73
Satisfaction	593	79.7	151	20.30	3.72±1.50
Pain	672	90.40	71	9.60	3.25±1.73
Total score	599	81.5	136	18.50	19.31±8.50

Table 3. Frequency of sexual dysfunction in each area among the three groups

Domain	Sexual dysfunction			P-value
	Arab (n=316)	Persian (n=250)	Lor (n=180)	
Desire	81.6	87.6	94.4	p<0.001
Arousal	86.7	94.8	96.6	p<0.001
Lubrication	88	83.6	96.1	p<0.001
Orgasm	81.3	90.4	96.1	p<0.001
Satisfaction	77.5	81.6	80.9	p<0.001
Pain	89.2	88.4	95.5	p<0.001
Total score	75.3	83.2	86.1	p<0.001

Table 4. Sexual function score in each domain and sexual function total score in the 3 groups (M±SD)

Domain	Arab (n=316)	Persian (n=250)	Lor (n=180)	P-value
Desire	3.04±1.53	2.82±1.30	2.43±1.20	p<0.001
Arousal	3.33±1.58	3.10±1.39	2.69±1.62	p<0.001
Lubrication	3.38±1.71	3.54±1.81	2.88±1.81	0.001
Orgasm	3.38±1.73	3.07±1.61	2.69±1.81	p<0.001
Satisfaction	3.73±1.56	3.88±1.37	3.49±1.54	0.027
Pain	3.52±1.60	3.16±1.77	2.90±1.85	p<0.001
Total score	20.46±8.60	19.60±7.87	16.85±8.54	p<0.001

*P-value ANOVA and post hoc test: between first, second, and third groups

28.7% believed it is against Iranian culture. Also, 34% of the Lor women reported that having sexual activity during menopause was shameful and 32% mentioned it is against Iranian culture.

Discussion

Many studies assessed the attitude and sexual dysfunction in menopause women but few studies are done about ethnicity and comparing them in our country. According to the study results, the most prevalent sexual dysfunctions among menopausal women were arousal disorder and dyspareunia. The prevalence of sexual dysfunction was 81.5% in this study. Kaboudi also conducted a study on 141 menopausal women in Kermanshah and reported that the prevalence of sexual responses disorders in desire and arousal phases was 70% (29). However, the prevalence of these disorders was estimated to be 40% by Olaoloram in Nigeria (30), 35.9% by Valadares (31) and 72.4% by Arman et al. (32). Moreover, Ponholzer reported that dyspareunia is the most prevalent sexual disorder. In that study, the total prevalence of sexual dysfunction was 29.6% and the prevalence rates of dyspareunia, arousal disorder, orgasmic disorder, lack of satisfaction, and insufficient lubrication were 67.8%, 60.9%, 59.1%,

52.2%, and 50.4%, respectively (33). These results were in agreement with those of the present study. These disorders might be attributed to women's negative attitude toward menopause and sexual relationships in this period as well as to some physiological changes resulting from reduction of levels of some hormones, particularly estrogen. In fact, menopausal women undergo a lot of endocrine, physical, and mental changes due to deprivation from estrogen, which cause considerable distress and disability in them (34, 35). One of such changes is urogenital atrophy which leads to various signs and symptoms and affects women's tranquility and life quality. In this regard, Brown stated that vaginal atrophy and dyspareunia were less common among the women who were more sexually active (36). In general, almost two third of the women above 60 years experience sexual dysfunction and dyspareunia (37). In the current study also, nearly 80% of the participants stated that they had few sexual relationships with their husbands, which could have played a role in vaginal atrophy and dyspareunia. Furthermore, investigation of sexual function in menopausal women revealed that arousal decreased in this period leading to an increase in dyspareunia and vulvodynia (38). Lack of sexual desire and arousal could also lead to orgasmic disorder and lack of sexual satisfaction which have a negative impact on couples' relations. Thus, these disorders must be prevented in menopause (39, 40).

In the present study, the lowest mean score was related to sexual desire. Olaoloram mentioned that sexual desire was influenced by aging in such a way that menopausal women reported this disorder more than premenopausal ones (30). The study by Lorenzi et al. showed that sexual desire had reduced in 60.6% of the menopausal women (41). Also, in a study which was conducted on menopausal women in Iran, 70.3% of the participants reported reduction of sexual activity after menopause and 56.4% had sexual dysfunction. Besides, the prevalence rates of dyspareunia and reduction of sexual desire were 55.6% and 70%, respectively (42).

Chedraui also evaluated middle-aged women's sexual desire and stated that women's sexual responses at these ages were affected by aging and signs of menopause (43), which is consistent with the findings of the current study. Similarly, Meryn indicated that aging and long-term relationships with one's spouse were effective in reduction of couples' sexual desires (44).

Our study results demonstrated a significant decrease in all dimensions of sexual function in all the three ethnicities. In addition, it seems Arabs are different from 2 other ethnicities because the most prevalent sexual dysfunction was dyspareunia among Arab women and arousal disorder was the common problem among Persian and Lor ones. With aging, sexual activity is more affected by culture and individuals' behavior rather than physiology and hormones (45). Hence, racial, ethnic, and cultural differences and social traditions have been mentioned as the reasons for differences in the prevalence rates of sexual disorders. The present study results also showed that the participants of the three groups suffered from different sexual disorders.

In patriarchal societies, talking about sexual desire and satisfaction is considered as a taboo and women do not take satisfaction of sexual needs (46, 47). Besides what women learn about love, sexual issues, and sexual relationships in family and religion, it is the culture that identifies the acceptable degree of satisfaction with sexual relations for them (23). Moreover, women's attitude toward sexual function in menopause has a great effect on the prevalence of disorders and it was mentioned in Hashemi et al.'s study (28). In this study, almost one third of the women in all the three groups mentioned that having sex during menopause was shameful and 30% believed it is against Iranian culture. Nonetheless, the women with different ethnicities had gained various sexual function scores. Thus, cultural, social, and racial factors can to some extent justify the differences among the three groups (48-50).

Considering the menopausal women's attitude towards sexual function, 33% stated that sexual relations were shameful at this stage, 30% mentioned that they were against Iranian culture, and 18% believed them to be a sin. The study by Wang et al. revealed a correlation between sexual activity and knowledge and attitude of the men and women above 65 years old (8). In the current study, 60.5% of the women had no information about the signs of menopause which could have resulted in sexual dysfunction as well as their negative attitude towards sexual relations during this period.

According to the results of a previous study which was conducted on 27500 men and women between 40 and 80 years from 29 countries, 82% of the women and 76% of the men believed that having sex was necessary for keeping a relation.

Additionally, 65% of the men and 57% of the women were against the idea that the elderly should not have sex, which implies that sexual desire increases even after menopause (51). It seems that in addition to biological, cultural, and social status, women's attitude towards sexual desire affects their sexual function. The current study findings indicated that 60.5% of the women had no information about the signs of menopause, 51.9% had obtained information from their relatives and neighbors, and only 35.9% had gained information from health staff and midwives. In the same line, Garsia et al. reported that the increase of sexual dysfunction and other signs of menopause resulted from their lack of sexual knowledge (52). Hence, increase of sexual knowledge in this period causes sexual dysfunction resulting from menopause signs and the changes in sexual behaviors not to be considered abnormal; rather, it leads to making attempts to handle, eliminate, or reduce these problems. Thus, sexual knowledge plays a key role in prevention and treatment of female sexual dysfunction.

In this study, one of the strong points was using FSFI questionnaire which contains all the key dimensions of sexual function, has a high reliability as well as validity, and has been less used in Iranian context. In addition, the individuals referring to the clinic had a specific socio-cultural status and a considerable amount of time had to be spent for explaining the questions and obtaining accurate answers. Nevertheless, since it was the first time that these issues were discussed with them, their answers were quite honest and reliable. The limitation of our research is that this study was performed in Iran for the first time and the result of the study from Jahrom (a city of Iran) can not be generalized. Therefore, more studies with more sample size should be performed in different ethnicities and races. The weakness of our study is that sexual performance of the partners is not assessed; as it is known, male sexual dysfunction can be one of the effective factors in the couple's sexual performance.

Conclusion

The prevalence of sexual dysfunction was 80% and the most common disorders were arousal disorders and dyspareunia. In addition, 50% of the women had negative attitudes towards having sex during menopause. Furthermore, investigation of the frequency of sexual dysfunction in various ethnic groups demonstrated that the prevalence of

these disorders could be different depending on ethnicity and mental and physical health status. Therefore, the health personnel are recommended to hold continuous training courses regarding sexual activities for menopausal women, refer the individuals suffering from sexual dysfunction to consultants and psychotherapists, and make the women at the end of their reproductive ages familiar with physiological changes during menopause and train them how to deal with such changes. Since the types of sexual dysfunctions vary in different cultures, this issue is suggested to be assessed in ethnicities with larger populations. In addition, qualitative studies are required to be conducted in order to determine sexual behaviors and provide facilities for sexual health which can eventually affect the menopausal women's quality of life.

Acknowledgement

This study was approved and financially supported by Jahrom University of Medical Sciences.

Conflict of Interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

References

- Moazzami F. Comparison of the effects of soy supplementation and HRT on menopause consequences in menopausal women [master's thesis]. Tehran (Iran): Tarbiat Modares University, midwifery; 2001 Mar. Menopause Overview 8, The Post menopausal population; p. 110-7.
- Lobo RA, Kelsey J, Marcus R. Menopause: biology and pathobiology. 1st ed. San Francisco: Academic Press; 2000. 384 p.
- Satherland C, Hinchliff SM, Hinchliff S, Rogers R. Women's health: a handbook for nurse. 2nd ed. Edinburgh: Churchill Living Stone; 2001. 362 p.
- Moghassemi S, Ziaei S, Haidary Z. Effect of Tibolone on sexual function in healthy postmenopausal women. J Gorgan Univ Med Sci. 2010;11(4):21-8.
- Ports H, Buvat J. Standard practice in sexual medicine. 4th ed. Philadelphia: Blackwell publishing; 2006. 124 p.
- Tan O, Bradshaw K, Carr BR. Management of vulvovaginal atrophy-related sexual dysfunction in postmenopausal women. Menopause. 2012;19(1):109-17.
- Bloch A. Self-awareness during the menopause. Maturitas. 2002;41(1):61-8.
- Wang TF, Lu CH, Chen IJ, Yu S. Sexual knowledge, attitudes and activity of older people in Taipei, Taiwan. J Clin Nurs. 2008;17(4):443-50.
- Kaplan HS. Sex, intimacy, and the aging process. J Am Acad Psychoanal. 1990;18(2):185-205.
- Dennerstein L, Dudley EC, Guthrie JR. Predictors of declining self-rated health during the transition to menopause. J Psychosom Res. 2003;54(2):147-53.
- Peeyananjarassri K, Liabsuetrakul T, Soonthornpun K, Choobun T, Manopsilp P. Sexual functioning in postmenopausal women not taking hormone therapy in the Gynecological and Menopause Clinic, Songklanagarind Hospital measured by Female Sexual Function Index questionnaire. J Med Assoc Thai. 2008;91(5):625-32.
- Sadock JB, Sadock AV. Comprehensive textbook of psychiatry. 7th ed. Newyork: Lippincott-Williams & Wilkins; 2007. 1582 p.
- Ohadi B. Feelings and human sexual responses. 7th ed. Tehran: Naghsh khorshid publications; 2003. 171 p.
- Young M, Denny G, Young T, Luquis R. Sexual satisfaction among married women age 50 and older. Psychol Rep. 2000;86(3 Pt 2):1107-22.
- Blumel JE, Castelo-Branco C, Binfa L, Gramegna G, Tacla X, Aracena B, et al. Quality of life after the menopause: a population study. Maturitas. 2000; 34(1):17-23.
- Modelska K, Litwack S, Ewing SK, Yaffe K. Endogenous estrogen levels affect sexual function in elderly post-menopausal women. Maturitas. 2004; 49(2):124-33.
- Nappi RE, Nijland EA. Women's perception of sexuality around the menopause: outcomes of a European telephone survey. Eur J Obstet Gynecol Reprod Biol. 2008;137(1):10-6.
- Huang AJ, Subak LL, Thom DH, Van Den Eeden SK, Rugins AI, Kuppermann M, et al. Sexual function and aging in racially and ethnically diverse women. J Am Geriatr Soc. 2009;57(8):1362-8.
- 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.
- Nusbaum MM, Braxton L, Strayhorn G. The sexual concerns of african american, asian american, and white women seeking routine gynecological care. J Am Board Fam Pract. 2005;18(3):173-9.
- Szwabo PA. Counseling about sexuality in the older person. Clin Geriatr Med. 2003;19(3):595-604.

22. Jamali S, Zarei H, Rasekh Jahromi A. The relationship between body mass index and sexual function in infertile women: A cross-sectional survey. *Iran J Reprod Med.* 2014;12(3):189-98.
23. Safarinejad MR. Female sexual dysfunction in a population-based study in Iran: prevalence and associated risk factors. *Int J Impot Res.* 2006;18(4):382-95.
24. Wiegel M, Meston C, Rosen R. The female sexual function index (FSFI): cross-validation and development of clinical cutoff scores. *J Sex Marital Ther.* 2005;31(1):1-20.
25. Meston CM. Validation of the Female Sexual Function Index (FSFI) in women with female orgasmic disorder and in women with hypoactive sexual desire disorder. *J Sex Marital Ther.* 2003;29(1):39-46.
26. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther.* 2000;26(2):191-208.
27. Mohammadi Kh, Heydari M, Faghihzadeh S. [The Female Sexual Function Index (FSFI): validation of the Iranian version]. *Payesh J.* 2008;7(3):269-78. Persian.
28. Hashemi S, Ramezani Tehrani F, Simbar M, Abedini M, Bahreinian H, Gholami R. Evaluation of sexual attitude and sexual function in menopausal age; a population based cross-sectional study. *Iran J Reprod Med.* 2013;11(8):631-6.
29. Beigi M, Fahami F. A Comparative study on sexual dysfunctions before and after menopause. *Iran J Nurs Midwifery Res.* 2012;17(2 Suppl 1):S72-5.
30. Olaolorun FM, Lawoyin TO. Experience of menopausal symptoms by women in an urban community in Ibadan, Nigeria. *Menopause.* 2009;16(4):822-30.
31. Valadares AL, Pinto-Neto AM, Osis MJ, Sousa MH, Costa-Paiva L, Conde DM. Prevalence of sexual dysfunction and its associated factors in women aged 40-65 years with 11 years or more of formal education: a population-based household survey. *Clinics (Sao Paulo).* 2008;63(6):775-82.
32. Arman S, Fahami F, Hassan Zahraee R. A comparative study on women's sexual functioning disorders before and after menopause. *Arak Med Univ J.* 2006;8(3):1-7.
33. Ponholzer A, Roehlich M, Racz U, Temml C, Madersbacher S. Female sexual dysfunction in a healthy Austrian cohort: prevalence and risk factors. *Eur Urol.* 2005;47(3):366-74.
34. Hacker NF, Moore JG, Gambone JC. *Essentials of obstetric and gynecology.* 4th ed. Philadelphia: Saunders; 2004. 215 p.
35. Ryan KJ, Berkowitz RS, Barbieri RL, Dunaif AE. *Kistner's gynecology and women health.* 7th ed. St. Louis: Mosby; 1999. 248 p.
36. Brown K. *Management guidelines for women's health nurse practitioners.* 6th ed. Philadelphia: F.A. Davis Company; 2000. 771 p.
37. Diokno AC, Brown MB, Herzog AR. Sexual function in the elderly. *Arch Intern Med.* 1990;150(1):197-200.
38. Meston CM. Aging and sexuality. *West J Med.* 1997;167(4):285-90.
39. Nappi RE, Lachowsky M. Menopause and sexuality: prevalence of symptoms and impact on quality of life. *Maturitas.* 2009;63(2):138-41.
40. O'Connell HE, Hutson JM, Anderson CR, Plenter RJ. Anatomical relationship between urethra and clitoris. *J Urol.* 1998;159(6):1892-7.
41. De Lorenzi DR, Saciloto B. [Factors related to frequency of sexual activity of postmenopausal women]. *Rev Assoc Med Bras.* 2006;52(4):256-60. Portuguese.
42. Omidvar S, Bakouie F, Amiri FN. Sexual function among married menopausal women in Amol (Iran). *J Midlife Health.* 2011;2(2):77-80.
43. Chedraui P, Perez-Lopez FR, San Miguel G, Avila C. Assessment of sexuality among middle-aged women using the Female Sexual Function Index. *Climacteric.* 2009;12(3):213-21.
44. Gott M, Hinchliff S. How important is sex in later life? The views of older people. *Soc Sci Med.* 2003;56(8):1617-28.
45. Speroff L, Glass RH, Kase NG. *Clinical gynecologic endocrinology and infertility.* Maryland, USA: Williams and Wilkins; 2005. 394 p. (OkDo KeY, editor. *Handbook of clinical Gynecologic Endocrinology*; vol. 74).
46. Ahmadvand MA. [Impact of education on changing the structure of sex discrimination schemata]. *Daneshvar Raftar J.* 2004;11(4):15-24. Persian.
47. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: prevalence and predictors. *JAMA.* 1999;281(6):537-44.
48. Elnashar AM, El-Dien Ibrahim M, El-Desoky MM, Ali OM, El-Sayd Mohamed Hassan M. Female sexual dysfunction in Lower Egypt. *BJOG.* 2007;114(2):201-6.
49. Oksuz E, Malhan S. Prevalence and risk factors for female sexual dysfunction in Turkish women. *J*

- Urol. 2006;175(2):654-8.
50. Heiman JR. Sexual dysfunction: overview of prevalence, etiological factors, and treatments. *J Sex Res.* 2002;39(1):73-8.
51. Floter A, Nathorst-Boos J, Carlstrom K, von Scholtz B. Addition of testosterone to estrogen replacement therapy in oophorectomized women: effects on sexuality and well-being. *Climacteric.* 2002; 5(4):357-65.
52. Garcia Padilla FM, Lopez Santos V, Toronjo Gomez AM, Toscano Marquez T, Contreras Martin A. [Evaluation of knowledge about climacteric in Andalusian women]. *Aten Primaria.* 2000;26(7): 476-81. Spanish.

Archive of SID