Caspian J Reprod Med, 2017, 3 (2): 21-26

Caspian Journal of Reproductive Medicine

Journal homepage: www.caspjrm.ir

Original article

Prevalence and severity of menopausal symptoms among menopausal women, Babol, Iran

Sorayya Mohammadzadeh[1], Zeinab Hedayati[2], Niloufar Ahmadi[3], Fatemeh Bayyani[3] Sepideh Mashayekh-Amiri[3,*]

[1] Educational Psychology, Islamic Azad University, Sari Branch, sari, Iran
[2] Port Moody Secondary School, British Columbia, Canada
[2]Student Committee Research, Babol University of Medical Sciences, Babol, Iran
[3]Babol University of Medical Sciences, Babol, Iran

Received: 5 Nov 2017 Accepted: 20 Dec 2017

Abstract

Background: Understanding prevalence of various menopausal symptoms and symptom severity in Iran will enhance reproductive health care. The aim of the study was to determine the prevalence and severity of menopausal symptoms among menopausal women in Babol, Iran.

Methods: A cross sectional study was conducted on the 150 healthy postmenopausal women aged between 45–65 years in Babol city (located in Northern Iran), and cluster sampling was used as a method of sampling. The questionnaires used in this study include: symptom score card for measuring the frequency and severity of menopausal symptoms and socio demographic data.

Results: The mean ± SD age at natural menopause was 48.5 ± 4.1 years. The most prevalent symptoms were back pain and joint pain (48.7%), anxiety and unusual tiredness (48.0%), irritability (46.7%), muscle pains (44.0%) and hot flashes (42.7%). The average overall symptom score card in the study for menopausal symptoms was 22.1 ± 9.8. The severity of symptoms was in the range of mild to moderate in 42% of samples, and 58% of samples had moderate to severe symptoms.

Conclusion: This study showed that more than half of the women had moderate to severe menopausal symptoms and an earlier mean age of menopause (48.5 y) for women in Babol, Iran.

Keywords: Menopause; Prevalence; Women's health

Introduction

Menopause is defined as permanent cessation of menstrual bleeding for at least 12 months as a result of stopping ovarian activity (1, 2). Worldwide, the age range of menopause is between 40–58 years (3). Previous studies showed that the mean age of menopause in different regions of Iran is lower than that in developed countries (4-6). Probable reasons for lower menopausal age in developing countries include the survey method, population sample and the difference in the definition of menopause (7).

The most common symptoms reported during the menopausal period include: hot flashes, night sweats, sleeplessness, psychological distresses (anxiety and depression), decreased sexual function, urogenital atrophy, vaginal dryness and bone and joint pains (8-10). The most reported symptoms among menopausal symptoms are vasomotor symptoms (hot flashes and night sweats) (11). Most women (Approximately 80%) experience hot flashes and night sweats within three months after natural or artificial menopause (12). several studies have shown that the incidence of hot flashes in the United States is higher than in developing countries, while its rates are lower in Asian women (13-16). Psychological symptoms include sleep disorder, depression, irritability, and anxiety which may affect the quality of life the women (17). Somatic symptoms include joint and muscle pain, palpitation, dizziness, fatigue (18). Symptoms of sexual dysfunction may include decreased libido, vaginal dryness, dyspareunia, and urological symptoms (17). Some studies report urogenital symptoms (vaginal atrophy and dyspareunia), vasomotor symptoms and

*Correspondence author: Sepideh Mashayekh-Amiri, Department of Midwifery, Faculty of Nursing Midwifery, Babol University of Medical Sciences, Ganj-Afroz Ave, Babol, Iran, Tel: +11-32199596 Email: sepidehmashayekh@yahoo.com

[Downloaded from caspjrm.ir on 2026-10-16]

[DOI: 10.22088/caspjrm.3.2.21]

other menopausal symptoms such as depression, anxiety and sleeplessness which could have a negative effect in the life of post-menopausal women (19, 20).

Due to increased life span, women nowadays spend one third of their lives in menopause (21). The severity and prevalence of menopausal symptoms depend on many different factors, such as geographical situation, socio-economic status and cultural back ground (22-25). The severity of menopausal symptoms may affect the quality of life the women. Thus, effective factors on the severity of menopausal symptoms are important (26-28). In this study we determine the prevalence and severity of menopausal symptoms among menopausal women in Babol city, Iran.

Materials & Methods

This cross-sectional study was conducted on 150 healthy postmenopausal women aged between 45–65 years in Babol City, and the cluster sampling method was used as a method of sampling. At first, several clusters were randomly selected among primary health care centers in the city, thereafter all eligible individuals in each cluster (based on health records at the clinic) were included in the study. The ethics approval for the implementation of the research was obtained by the Ethics Committee of Babol University of Medical Sciences (MUBABOL, HRI.REC.1395.7). A written consent form was obtained from all participants in the study. Women were free to continue in the study or withdraw from it, then after filling the informed consent form, their blood pressure, weight, height and body mass index (BMI) were measured. Women's weight was measured using digital scales without shoes and minimal clothing. Height was recorded with a measuring tape (29). BMI was computed using the formula weight (kg)/height^2 (m) (30).

The inclusion criteria was women aged 45-65 years, having the ability to comprehend a questionnaire with the help of a questioner, whose last menstruation occurred at least 1 year prior to the study, a normal cervical smear test, no history of thyroid disease, breast cancer or stroke and no psychiatric treatment. Postmenopausal women with endocrine disorder, chronic disease, acute disorder, any type of cancer, who had hormone replacement therapy in the previous six months, smoke or drink alcohol, had amenorrhea secondary to ovarian surgery, hysterectomy or chemo radiotherapy were excluded.

Study tools included socio-demographic data, Symptom Score Card used in measuring the severity of menopausal symptoms, and socio-demographic data includes: age, educational level, occupation, marital status, age of marriage, age of menopause, income, number of pregnancies, number of deliveries, and number of abortions.

Menopausal symptoms were assessed using the symptom score card, which is a standard questionnaire which was translated into Persian using forward and backward translation methods. The Symptom Score Card includes 20 important menopausal symptoms such as hot flashes, light headedness, headaches, irritability, depression, feelings of being unloved, anxiety, mood changes, sleeplessness, unusual tiredness, backache, joint pains, muscle pains, new facial hair, dry skin, crawling feelings under the skin, less sex drive, dry vagina, uncomfortable intercourse and urinary frequency. Validity and reliability questionnaires were assessed by Delavar et al. (31). The severity of each self-reported symptom during the previous 2 weeks was scored ranging from (0 to 3) none to severe. A total score of 15 or more means that hormone therapy (HT) can be beneficial. The data gained from each questionnaire were analyzed by SPSS version 16.

Results

In this study, 150 questionnaires were completed. The mean ± SD age of enrolled women was 54.3 ± 4.06 years with the range of 45-65 years. The mean ± SD age at natural menopause of the participant, which was 48.5 ± 4.08 years and the median age was 49.0 years. Overall, 141 (94%) women were married and 133 (88.7%) women had no income (housewife), 41.3% reported enough income. Marital age among the women ranged from 10 to 51 years, with a mean ± SD of 18.9 ± 5.3 years. More than 79.3% (n = 119) of the participants had a low elementary education level. The mean ± SD monarchal age was 13.5± 1.6 years. Among married women, the parity number ranged from 0 to 8 with a mean ± SD of 3.4 ±1.5 birth. There were 123 (82%) women who did not have an abortion. The mean ±SD weight of the women was 73.0 ± 11.3 kg, and the median weight was 73.0 kg. The mean ± SD height was 158.9± 5.7 cm. The mean ± SD BMI

[Downloaded from caspjrm.ir on 2026-10-16]

[DOI: 10.22088/caspjrm.3.2.21]

was 28.9± 4.5 kg/m2. The mean± SD waist circumference was 96.9± 1.3cm (Table 1).

In the present study, the most frequent symptoms reported during the previous 2 weeks were back pain and joint pain (48.7%), anxiety and unusual tiredness (48%), irritability (46.7%), Muscle pains (44%) and hot flashes (42.7%). The prevalence of menopausal symptoms according to the symptom score cards are shown in Table 2.

Table1. Socio demographic characteristics, reproductive history and body mass index of participants with natural menopause

Variable	n (%)
Marital status	
Married	141(94.0)
Single, divorce, widow	9 (6.0)
Educational level	
Under diploma	119(79.3)
Diploma, over diploma	31(27.7)
Occupation	
In work	133(87.7)
Out work	17(11.3)
Age at menarche	
<13	81(54.0)
≥13	69(46.0)
Parity	
<3	70(46.7)
≥3	80(53.3)
Gravidity	
<3	84(56.0)
≥3	66(44.0)
Abortion	
Induced	18(12.0)
Spontaneous	27(18.0)
Use of hormone	
Yes	31(20.7)
No	19(79.3)
Monthly cost	
<1000000	
≥1000000	55(36.7)
Income	
<1000000	95(63.3)
≥1000000	88(58.7)
BMI*	
<25(Normal or less)	33(22.0)
≥25(over weight, obsess)	117(78.0)

*Body mass index = weight (kg)/height^2(m)

The average overall symptom score card in the study for menopausal symptoms was 22.09 ± 9.8. The severity of symptoms was in the range of mild to moderate in 42% of samples and 58% of samples had moderate to severe symptoms.

Discussion

It is important to identify the menopausal symptoms women experience in order to improve their quality of life and clinical care. In this study, the mean age of menopause was 48.5 years, this finding was similar to that reported by women from Ahvaz (48.86 ± 7.19 years) (32).

Table 2. Socio demographic characteristics, reproductive history, and body mass index of participants with natural menopause

Symptom	No complain/ Mild	Moderate/ Severe
Hot flushes	86(57.3)	64(42.7)
Light-headed feeling	121(80.7)	29(19.3)
Headaches	114(76)	36(24)
Irritability	80(53.3)	70(46.7)
Depression	97(64.7)	53(35.3)
Unloved feelings	106(70.7)	44(29.3)
Anxiety	78(52)	72(48)
Mood changes	93(62)	57(38)
Sleeplessness	90(60)	60(40)
Unusual tiredness	78(52)	72(48)
Backache	77(51.3)	73(48.7)
Joint pains	77(51.3)	73(48.7)
Muscle pains	83(55.3)	67(44.7)
New facial hair	132(88)	18(12)
Dry skin	99(66)	51(34)
Crawling feeling under skin	128(85.3)	22(14.7)
Less sexual feeling	96(64)	54(36)
Dry vagina	89(59.3)	61(40.7)
Uncomfortable intercourse	93(62)	57(38)
Urinary frequency	109(72.7)	41(27.3)

Data are presented as n (%).

However, another study in Babol reported a mean age of menopause lower than this study (47.7) (31). In addition, the age of menopause in other Asian countries also shows variety in results: Lahore (49.0) (33), Iran (47.4) (34), Saudi Arabia (48.9) (35), Malaysia (47.9) (36).

Approximately 80% of postmenopausal women reported varying in type and also severity (37). In the present study, the most common symptoms reported during the previous 2 weeks were back pain and joint pain, this finding is similar to several studies in Iran (7,

[Downloaded from caspjrm.ir on 2026-10-16]

[DOI: 10.22088/caspjrm.3.2.21]

38). The prevalence of joint and muscle pain in postmenopausal women ranged from 15.8% to 90.2%, and lower back pain or backache from 29.8% to 80.0% (39). In a study by Chim et al. somatic symptoms such as 'low backache with muscles and joints pain' (51.4%) were the most prevalent symptoms (13). In Malaysia, the most common symptoms were found to be joint and muscle pain (84.3%) (36). In Turkey, joint and muscle discomfort were symptoms most often associated with menopause (18). Overall, the most common complication in menopausal women was reported to be hot flashes by many studies (40, 41). In our study, the prevalence of hot flashes during the previous 2 weeks was found to be lower than that in Western countries (42, 43) and higher than that in Asian countries. Menopausal women have been reported to have a low prevalence of hot flashes in Asia (9.8%-38.5%) (39, 44). Vasomotor symptoms (VMS) usually occur due to hormonal changes in menopause. Other crucial factors in menopause include genetics, cultural context and diet (45).

In our study, the second and third most common symptoms among menopausal women was anxiety and unusual tiredness. Islam et al. reported prevalence of anxiety (17.3% to 81.2%), depression (24.4% to 77.4%), irritability (21.8% to 75.9%) and tiredness from 33.3% to 83.8% (39). Mulhall et al. found that the absence of anxiety and depression during premenopausal time may not predict an absence of symptoms during the postmenopausal period (46).

Urogenital (UG) symptoms are one of the most common symptoms of menopause. These symptoms include vaginal dryness, dyspareunia, and urinary incontinence (UI) (20, 47). The prevalence of UG symptoms in another study was 67% (48). A study in Turkey reported vaginal discharge (23%), urologic problems (68.8%) and dyspareunia (45.3%) (49).

A small sample size was the limitation of this study. Therefore, we suggested to design a study with a larger sample size to better identify the prevalence and severity of menopausal symptoms in menopausal women in Babol. Another limitation was the self-reporting technique used to measure the severity. One strength of the current study was the use of symptom score card as an internationally valid scale to assess menopausal symptoms.

Conclusion

The findings of this study showed that the average age of menopause was lower in Babol (48.5). However, we can't generalize this to all women in Babol because our sample size was small. Approximately 60% of Baboli women had moderate to severe symptoms in the previous two weeks. According to the symptom score card, more than half of the women had a score above 15. In addition, this study showed that joint pain and backache had a high prevalence than other symptoms in menopausal women in Babol. Therefore, counseling menopausal women to reduce the severity of menopausal symptoms could be beneficial and health providers should pay attention to all symptoms in a menopausal women's care.

Acknowledgements

The authors acknowledge the assistance of Iranian post menopausal women for their participation in this study as well as the financial support of Babol University of Medical Sciences and staff at the health centers.

Conflicts of Interest

There is no conflict of interest among the authors.

References

1. Organization WH. Research on the menopause in the 1990s. Report of a WHO Scientific Group. World Health Organ Tech Rep Ser. 1996;866:1-107.
2. Taechakraichana N, Jaisamrarn U, Panyakhamlerd K, Chaikittisilpa S, Limpaphayom KK. Climacteric: concept, consequence and care. J Med Assoc. Thai. 2002;85 Suppl 1:S1-15.
3. Moilanen JM, Aalto AM, Raitanen J, Hemminki E, Aro AR, Luoto R. Physical activity and change in quality of life during menopause--an 8-year follow-up study. Health Qual Life Outcomes. 2012;10:18.
4. Fallahzade H, Taft AD, Tafti MD, Hoseini F, Hoseini H. Factors affecting quality of life after menopause in women. Journal of Shahid Sadoughi University of Medical Sciences. 2011;18(6):552-8.
5. Golshiri P, Akbari M, Abdollahzadeh MR. Age at natural menopause and related factors in Isfahan, Iran. Journal of menopausal medicine. 2016;22(2):87-93.
6. Rajaeefard A, Mohammad-Beigi A, Mohammad-Salehi N. Estimation of natural age of menopause

[Downloaded from caspjrm.ir on 2026-10-16]

[DOI: 10.22088/caspjrm.3.2.21]

in Iranian women: A meta-analysis study. Koomesh. 2011;13(1):1-7.
7. Delavar MA, Hajiahmadi M. Factors Affecting the Age in Normal Menopause and frequency of Menopausal Symptoms in Northern Iran. Iranian Red Crescent medical journal. 2011;13(3):192-198.
8. Agan K, Ozmerdivenli R, Degirmenci Y, Caglar M, Basbug A, Balbay EG, et al. Evaluation of sleep in women with menopause: results of the Pittsburg Sleep Quality Index and polysomnography. Journal of the Turkish German Gynecological Association. 2015;16(3):149-152.
9. Dennerstein L, Randolph J, Taffe J, Dudley E, Burger H. Hormones, mood, sexuality, and the menopausal transition. Fertility and sterility. 2002;77 Suppl 4:S42-48.
10. Maturana MA, Breda V, Lhullier F, Spritzer PM. Relationship between endogenous testosterone and cardiovascular risk in early postmenopausal women. Metabolism: clinical and experimental. 2008;57(7):961-965.
11. Miller HG, Li RM, editors. Measuring hot flashes: summary of a National Institutes of Health workshop. Mayo Clinic Proceedings; 2004: Mayo Foundation for Medical Education and Research.
12. Speroff L, Fritz MA. Clinical gynecologic endocrinology and infertility: lippincott Williams & wilkins; 2005.
13. Chim H, Tan BHI, Ang CC, Chew EMD, Chong YS, Saw SM. The prevalence of menopausal symptoms in a community in Singapore. Maturitas. 2002;41(4):275-282.
14. Grisso JA, Freeman EW, Maurin E, Garcia-Espana B, Berlin JA. Racial differences in menopause information and the experience of hot flashes. J Gen Intern Med. 1999;14(2):98-103.
15. Ho SC, Chan SG, Yip YB, Cheng A, Yi Q, Chan C. Menopausal symptoms and symptom clustering in Chinese women. Maturitas. 1999;33(3):219-227.
16. Johnson SR. Menopause and hormone replacement therapy. Med Clin North Am. 1998;82(2):297-320.
17. Anderson D, Melby MK, Sievert LL, Obermeyer CM. Methods used in cross-cultural comparisons of psychological symptoms and their determinants. Maturitas. 2011;70(2):120-126.
18. Sievert LL. Menopause as a measure of population health: an overview. American Journal of Human Biology. 2001;13(4):429-433.
19. Geukes M, van Aalst MP, Nauta MC, Oosterhof H. The impact of menopausal symptoms on work ability. Menopause (New York, NY). 2012;19(3):278-282.
20. Nappi RE, Lachowsky M. Menopause and sexuality: prevalence of symptoms and impact on quality of life. Maturitas. 2009;63(2):138-141.
21. Rapkin AJ. Vasomotor symptoms in menopause: physiologic condition and central nervous system approaches to treatment. American journal of obstetrics and gynecology. 2007;196(2):97-106.
22. Brown DE, Sievert LL, Morrison LA, Reza AM, Mills PS. Do Japanese American women really have fewer hot flashes than European Americans? The Hilo Women's Health Study. Menopause (New York, NY). 2009;16(5):870-876.
23. Freeman EW, Sherif K. Prevalence of hot flushes and night sweats around the world: a systematic review. Climacteric: the journal of the International Menopause Society. 2007;10(3):197-214.
24. Melby MK, Lock M, Kaufert P. Culture and symptom reporting at menopause. Hum Reprod Update. 2005;11(5):495-512.
25. Palacios S, Henderson VW, Siseles N, Tan D, Villaseca P. Age of menopause and impact of climacteric symptoms by geographical region. Climacteric : the journal of the International Menopause Society. 2010;13(5):419-428.
26. Hassa H, Tanir HM, Yildirim A, Senses T, Oge T, Mutlu FS. Associated factors with urogenital score in natural and surgical menopause. Maturitas. 2005;52(1):65-69.
27. Mahadeen A, Halabi J, Callister LC. Menopause: a qualitative study of Jordanian women's perceptions. International Nursing Review. 2008;55(4):427-433.
28. Utian WH. Quality of life (QOL) in menopause. Maturitas. 2007;57(1):100-102.
29. Gracia CR, Freeman EW. Acute consequences of the menopausal transition: the rise of common menopausal symptoms. Endocrinology and Metabolism Clinics. 2004;33(4):675-689.
30. Higgins D. Patient assessment part 5--measuring pulse. Nursing times. 2008;104(11):24-25.
31. Delavar MA, Hajiahmadi M. Age at menopause and measuring symptoms at midlife in a community in Babol, Iran. Menopause (New York, NY). 2011;18(11):1213-1218.

[Downloaded from caspjrm.ir on 2026-10-16]

[DOI: 10.22088/caspjrm.3.2.21]

32. Ziagham S, Sayhi M, Azimi N, Akbari M, Davari Dehkordi N, Bastami A. The relationship between menopausal symptoms, menopausal age and body mass index with depression in menopausal women of Ahvaz in 2012. Jundishapur Journal of Chronic Disease Care. 2015;4(4).
33. Yahya S, Rehan N. Age, pattern and symptoms of menopause among rural women of Lahore. Journal of Ayub Medical College, Abbottabad : JAMC. 2002;14(3):9-12.
34. Asadi M, Jouyandeh Z, Nayebzadeh F. Prevalence of menopause symptoms among Iranian women. Journal of Family and Reproductive Health. 2012;6(1):1-3.
35. Addar M, El Desouki M, Babay Z. Correlates of age at menopause and osteoporosis in Saudi women. Clinical and experimental obstetrics & gynecology. 2005;32(2):135-137.
36. JAHAN FS, Abdul RB, Shah RB, NOR ABI, SHARIFAH NB, SITI AB. Age of menopause and menopausal symptoms among Malaysian women who referred to health clinic in Malaysia. 2006.
37. McKinlay SM, Brambilla DJ, Posner JG. The normal menopause transition. Maturitas. 1992;14(2):103-115.
38. Masjoudi M, Amjadi MA, Leyli EKN. Severity and frequency of menopausal symptoms in middle aged women, rasht, Iran. Journal of clinical and diagnostic research: JCDR. 2017;11(8):QC17-QC21.
39. Islam MR, Gartoulla P, Bell RJ, Fradkin P, Davis SR. Prevalence of menopausal symptoms in Asian midlife women: a systematic review. Climacteric: the journal of the International Menopause Society. 2015;18(2):157-176.
40. Al-Olayet AY, Al-Qahtani IF, Al-Essa DI, Al-Saleek FH, Al-Moutary RN, Al-Mudimeg LM, et al. Severity of menopausal symptoms, and knowledge attitude and practices towards menopause among Saudi women. Scientific Research and Essays. 2010;5(24):4077-4079.
41. Askari F, Basiri MK, Basiri MM, Torabi s, Gholamfarkhani S, Mohareri m, et al. Age of natural menopause and the comparison of incidence of its early complications in menopause transition stages in women from Gonabad city. 2012.
42. Kronenberg F. Menopausal hot flashes: a review of physiology and biosociocultural perspective on methods of assessment. The Journal of nutrition. 2010;140(7):1380S-5S.
43. Philp HA. Hot flashes--a review of the literature on alternative and complementary treatment approaches. Alternative medicine review : a journal of clinical therapeutic. 2003;8(3):284-302.
44. Chim H, Tan BH, Ang CC, Chew EM, Chong YS, Saw SM. The prevalence of menopausal symptoms in a community in Singapore. Maturitas. 2002;41(4):275-282.
45. 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):306-3014.
46. Mulhall S, Andel R, Anstey KJ. Variation in symptoms of depression and anxiety in midlife women by menopausal status. Maturitas. 2018;108:7-12.
47. Bozkurt N, Ozkan S, Korucuoglu U, Onan A, Aksakal N, Ilhan M, et al. Urogenital symptoms of postmenopausal women in Turkey. Menopause (New York, NY). 2007;14(1):150-156.
48. Gupta N, Aggarwal M, Sinha R, Varun N. Study on Prevalence and Severity of Urogenital Complaints in Postmenopausal Women at a Tertiary Care Hospital. Journal of mid-life health. 2018;9(3):130-134.
49. Oskay UY, Beji NK, Yalcin O. A study on urogenital complaints of postmenopausal women aged 50 and over. Acta obstetricia et gynecologica Scandinavica. 2005;84(1):72-78.

[Downloaded from caspjrm.ir on 2026-10-16]

[DOI: 10.22088/caspjrm.3.2.21]