

The Relationship between Social Support, General Health Status, and Severity of Menopause Symptoms among Postmenopausal Women in Northern Iran

ELIEH ABASI¹, AFSANEH KERAMAT²

¹Student Research Committee, School of Nursing and Midwifery, Shahroud University of Medical Sciences, Shahroud, Iran.

²Professor, Reproductive Studies and Women's Health Research Center, Shahroud University of Medical Sciences, Shahroud, Iran
Correspondence to Dr. Elieh Abasi

ABSTRACT

Background: Postmenopause is regarded as a critical stage of women's lives. Thus, it is of utmost importance to pay much attention to women's health status during this period. Accordingly, this study was to evaluate the severity of menopause symptoms and their relationship with general health status and social support in postmenopausal women.

Methods: This correlational-analytic study was conducted on a total number of 200 postmenopausal women aged 45-60 years living in the city of Sari, Iran, in 2018-2019. The data collection instruments consisted of Menopause Rating Scale (MRS), Medical Outcomes Study- Social Support Survey (MOS-SS), and General Health Questionnaire (GHQ). The data were also analyzed using SPSS, version 21.

Results: The mean age of menopause was 47.91. The results also showed that the correlation between general health status, social support, and severity of menopause symptoms was significant at the error level of 0.05 using the Wald Chi-squared test ($p < 0.05$). Besides, in the final model presented, all path coefficients were significant, and there was a direct relationship between social support and severity of menopause symptoms considering the mediating role of general health status.

Conclusion: It was concluded that promoting social support through increased general health status could reduce menopause symptoms in postmenopausal women.

Keywords: Social Support, General Health, Menopause Symptoms, Postmenopausal Women

INTRODUCTION

Natural menopause is defined as the permanent cessation of menstrual periods, determined retrospectively after a woman has experienced 12 months of amenorrhea without any other obvious pathological or physiological causes. It occurs at a median age of 51.4 years in normal women and reflects complete, or near complete, ovarian follicular depletion, with resulting hypoestrogenemia and high follicle-stimulating hormone (FSH) concentrations¹. Given that women's longevity has augmented over recent decades, they spend about one third of their lives in menopause². In this respect, general health status is described as physical, psychological, and social reactions to internal and external stimuli³. In this respect; in 1979, Goldberg divided general health status into four fields of physical health, anxiety, social function, and depression⁴.

Social support can be characterized as emotional and practical assistance that individuals believe is available to them⁵. The term social support often occurs in discussions of social relationships. This type of support also means having friends and other people including family, to turn to in times of need or crisis to give you a broader vision and positive self-image. Social support accordingly enhances quality of life and provides a buffer against adverse life events⁶. As people grow older; they may experience social loss, such as deaths of family members and job loss, and their ability to cope with such events might diminish due to decreased physical and cognitive functions. As a result, the effect of social support on general health status becomes greater in elderly populations^{7,8}. Today, following advances in medical sciences, one can expect that postmenopausal women will survive for many more years, and most of them

will live until the age of 80 or older. So, the general health status of women in postmenopause years is as important as before. Postmenopause is taken into account as a significant stage of women's lives. Women also have the right to enjoy their life during this period⁹. Accordingly, focus on postmenopause is vital for the development of health-promoting behaviors¹⁰. In this respect, Hosseini et al. reported a significant correlation between social support and physical, mental, and social health status¹¹. It seems that women experience changes to their body associated with physiological aspects of menopause at the same time, so it is of great importance to account for psychological and social effects of menopause on their lives. In this regard, endocrine status cannot be utilized to predict whether women will experience negative psychological functioning or not; rather psychological morbidity is influenced by many factors and requires a multi-faceted approach to its treatment¹². Recent findings have indicated a strong relationship in which social and emotional support from others can be predictive for general health status¹³. Several studies have also demonstrated that the greater the level of social support, the higher the general health status, and vice versa. From this perspective, general health status is conditional on benefitting from social support¹⁴. In numerous investigations, the role of support and care for postmenopausal women has been emphasized to prevent psychological problems¹⁵. On the other hand, women's problems during menopause not only induce significant tensions and disabilities, but also exert pressure on health care system; unless attempts are made to keep the elderly of the community in good shape and independent of health care institutions. Therefore, any reduction in the prevalence rate of diseases in these women will have a significant

effect on a decline in total health costs(16). Given that researchers, in recent years, have been keen on investigating the phenomenon of social support, especially in the field of health¹⁷ and considering that promoting health and providing a sense of well-being in every single life cycle of a woman can bring her a better quality of life along with numerous benefits to the community, the authors decided to examine this issue in postmenopausal period. Accordingly, this study evaluated severity of menopause symptoms and their relationship with general health status and social support in postmenopausal women.

MATERIALS AND METHODS

Participants: The sample size included a total number of 200 women based on sample size formula in correlational studies with a 95% confidence level. Sampling was of a multi-stage cluster type. To this end, at first, 8 centers were randomly selected out of 20 centers; then, 25 individuals at each center were randomly selected from eligible participants. The inclusion criteria were residence in the city of Sari, at least one year after last menstruation, no mental illnesses, lack of unpleasant experiences during the last 6 months, no drug and alcohol abuse, as well as completion of a consent form for participation in the study. It should be noted that individuals with serious physical and mental illnesses were excluded.

Study Design: This correlational-analytic study was conducted on women living in the city of Sari, Iran, in 2018-2019. Its population encompassed postmenopausal women referring to health care centers affiliated to Mazandaran University of Medical Sciences.

Tasks and Procedure: Totally, 3 research instruments were used for data collection.

Menopause Rating Scale (MRS): The MRS measures health and quality of life and it contains 11 symptoms in its questionnaire including hot flushes and sweating, heart discomfort, sleep problems, depressive mood, irritability, anxiety, physical and mental exhaustion, sexual problems, bladder problems, dryness of vagina, as well as joint and muscular discomfort. The 11 symptoms of menopause are also divided into three subscales: **A) somatic complaints:** hot flushes and sweating, heart discomfort, sleep problems, and joint and muscular discomfort ; **B) psychological complaints:** depression, irritability, anxiety, and physical and mental exhaustion; and **C) urogenital complaints:** sexual problems, bladder problems, and dryness of vagina. Each questionnaire item can be also scored from 0-4, (0=not present), (1=mild), (2=moderate), (3=severe), (4=very severe)¹⁸. It is noteworthy that MRS is a valuable international instrument for assessing menopause symptoms that has been widely used in many clinical and epidemiological studies to determine the frequency and severity of such symptoms in middle-aged women^{19,20}.

Medical Outcomes Study-Social Support Survey (MOS-SS): To measure social support; MOS-SS, developed by Sherborne and Stewart in 1991, was used. This test, measuring the amount of social support received by a subject, contains 19 items and five sub-scales. MOS-SS also consists of emotional/informational support, tangible support, affectionate support, positive social interaction, as

well as additional items. The reliability of this test has been already reported using Cronbach's alpha coefficient ranging from 0.7 to 0.93²¹. Tamanayefar and Mansuri Nik (2014), confirming the formal and content validity of this tool from the point of view of psychologists, also verified its reliability via Cronbach's alpha coefficient of 0.97²².

General Health Questionnaire (GHQ): The 28-item GHQ is made of four sub-scales of 7 items including somatic signs, anxiety, social dysfunction, and depression. It also assesses mental health status based on four dimensions corresponding with these four sub-scales. Accordingly, a patient is asked to assess changes in one's mood, feelings, and behaviors during the past four weeks on the basis of items of 4-point Likert-type response scale. The GHQ has been widely used on pregnant women in Iranian populations and is characterized by its high reliability and validity²³.

In terms of data collection procedure; individuals willing to participate in the present study were recruited upon the completion of a consent form after obtaining an ethics code from Shahrood University of Medical Sciences. The required data were collected through questionnaires and then analyzed using the SPSS version 21.

To analyze the data; descriptive indexes of frequency, percentage, mean, and standard deviation (SD) were used. To examine the relationship between the study variables; first, data distribution was completed using Kolmogorov-Smirnov test. As well, Spearman's rank-order correlation and robust regression were employed. Finally, the communication model was evaluated in the software environment Smart PLS.

RESULTS

The study included a total number of 200 postmenopausal women aged 45-60 years with a mean age of 53.77 (SD=3.44) years. Table 1 shows the demographic characteristics of study population. The mean age of menopause was by 47.91 years.

In the domain of physical symptoms, the most common complaint was muscular discomfort(89.5%), followed by hot flashes and night sweating (85.5%), sleep problems(79%), and heart discomfort(19%). In the psychological domain, the most common symptom was physical and mental exhaustion(82%), then irritability(80%), anxiety(75.5%), and depressive mood(70%). Most frequently reported symptoms by postmenopausal women in the domain of urogenital complaints were bladder problems (80.5%), dryness of vagina (69.5%), and sexual problems (44.5%). Additional information was given in Table 2. Considering general health status, most of the problems were related to physical symptoms, social dysfunction, anxiety, sleep disorders, and depression (Table 3). Examining the total score of social support also showed that the average score was 73.73, which was 11.00% at the average level, with a maximum of 89%. Scores of its dimensions are presented in Table 4.

The results of Kolmogorov-Smirnov test revealed that the normal distribution of the values was rejected, so non-parametric methods were used to examine the relationships and to predict the model. Accordingly, the results revealed a significant relationship between social

support and its dimensions and severity of menopause symptoms and its dimensions, which was negative in this case. At the error level of 0.01, all the relationships were significant and the correlation coefficient between social support and total score of menopause symptoms was -0.694. The results also suggested a significant relationship between general health status and its dimensions and severity of menopause symptoms and its dimensions which were positive for this case and at the error level of 0.01, so all the relationships were significant. The correlation coefficient between general health status and total score of menopause symptoms was 0.755. Examining the predictive role of social support dimensions in severity of menopause symptoms using robust regression, at the error level of 0.05, based on the Wald Chi-squared test, revealed that the relationship between social support dimensions and severity of menopause symptoms was significant only in two dimensions of emotional-informational support and then tangible support ($p < 0.05$). The percent variance explained for severity of menopause symptoms and social support dimensions was 40.6%. The t-test results also indicated that emotional-informational support and tangible support coefficients had remained in the model, but the affectionate and social interactions in the model were not significant. With regard to the predictive role of general health status dimensions in severity of menopause symptoms, using robust regression; the results at the error level of 0.05, via the Wald Chi-squared test, showed that the relationship between general health status dimensions and severity of menopause symptoms was significant only in two dimensions of somatic symptoms and anxiety ($p < 0.05$). As well, the percent variance explained for severity of menopause symptoms and general health status dimensions was 48.4%. The t-test results similarly revealed that the coefficients of physical dimension and anxiety had remained in the model. The results also showed that the correlation between general health status and social support and severity of menopause symptoms was significant at the error level of 0.05 using the Wald Chi-squared test ($p < 0.05$).

Furthermore, the percent variance explained for the severity of menopause symptoms of with general health status and social support was 74.1. The t-test results indicated that social support and general health coefficients had remained in the model (Table 5). In the final model presented, all path coefficients were significant, and there was also a direct relationship between social support and severity of menopause symptoms through the mediating role of general health status. Besides, the goodness of fit test value was by 0.613, suggesting the relevance of the model (Table 6).

Table 1: Distribution of the demographic characteristics of the study participants

Demographic characteristics	Frequency
Level of education	
Primary school	36(18)
Middle School	52(26)
High school	81(40)
University degree	31(15.5)
Number of children	
1	45(22.5)
2	101(50.5)
3	48(24)
4 or more	6(3)
Income	
Insufficient	10(5)
Sufficient	184(92)
Abundant	6(3)
Occupation	
Employed	26(13)
Retired	26(13)
Housewife	148(74)
Exercise	
No	83(41.5)
Irregular	79(39.5)
3 times a week	38(19)
Body mass index (BMI)	
Underweight	7(3.5)
Normal weight	73(36.5)
Overweight	69(34.5)
Obese	51(25.5)

Figure 1: Estimation of path coefficients in the communication model for general health status and social support and severity of menopause symptoms

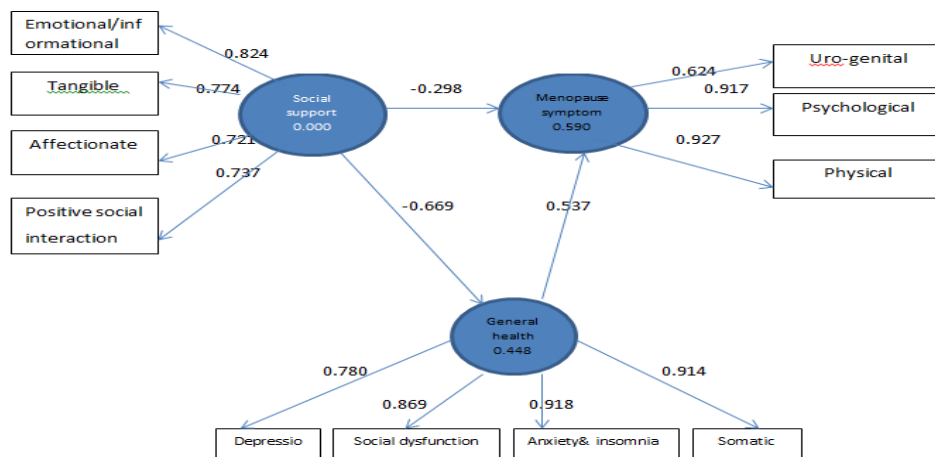


Table 2: Severity of menopause symptoms according to MRS

	No. (%) Symptom	Mild(%)	Moderate(%)	Severe (%)	Mean	SD
Total score	6	14	65	15	12.29	4.201
Physical symptoms	12	29.5	58	5	4.76	1.792
Psychological symptoms	8	17	65.5	12.5	4.57	1.861
Urogenital symptoms	2.5	17	45.5	35	2.94	1.422

Table 3: General health status and its dimensions

	No. (%) symptom	Mild(%)	Moderate(%)	Severe (%)	Mean	SD
Total score	48	39.5	12.5	0.0	24.02	9.98
Somatic symptoms	31.5	50	18	0.5	8.33	3.38
Anxiety and insomnia	61	34	5	0.0	6.18	2.54
Social dysfunction	45	45	10	0.0	7.18	2.90
Depression	95.5	4.5	0.0	0.0	2.34	2.11

Table 4: Social support status and its dimensions

	Low	Moderate	High	Mean	SD
Total score	0.0	11	89	73.3	12.65
Emotional/informational support	4	34	62	24.27	7.19
Tangible support	2	11.5	86.5	16.45	3.46
Affectionate support	0	31.5	68.5	12.41	1.94
Positive social interaction	3	3.5	93.5	12.72	2.6

Table 5: Investigating predictive roles of general health status and social support on menopause symptoms using robust regression

	Relative squared error	R-squared	Wald Chi-squared test			Estimation of parameter		T-test		
			statistic	df	p-value	Model Coefficient	SD	T	df	p-value
Fixed amount	1.08	0.741	-	-	-	16.83	1.72	9.74	197	0.000
General health status			52.35	1	0.000	0.265	0.023	11.41	197	0.000
Social support			46.72	1	0.000	-0.144	0.018	-7.84	197	0.000

DISCUSSION AND CONCLUSION

Menopause is an important stage in women's lives whose symptoms experienced by such individuals may affect their quality of life. Therefore, main purpose of this study was to evaluate the relationship between general health status and social support and severity of menopause symptoms in postmenopausal women. Based on the results of the present study, menopause had occurred at the mean age of 47.91 years. The menopause age in other studies in Iran had been also reported by 47.35²⁴, 47.8²⁵, 49.6²⁶, and 48.85²⁷ years. Moreover, the mean age of menopause in Minia (Egypt) was 48.9 years⁽²⁸⁾, and it had been reported by 51.4²⁹ and 48.5³⁰ in the United States and Pakistan; respectively. The differences observed in various studies were likely to be related to racial differences, social factors, or influenced by factors such as smoking, contraceptive hormones, etc. In this respect; Palacios et al., in a systematic review, mentioned that the average age of menopause in Europe and the United States was more and less than that in Asia; respectively³¹. As well, age of menopause appears to be more sensitive to intrinsic parameters such as reproductive history of individuals³². In the present study, the mostly cited complaint of postmenopausal women was joint and muscular discomfort, then hot flashes and night sweating, which was similar to that reported by Santhi et al¹⁹, Masjoudi et al²⁷, Askari et Al³³, and Rahman et al³⁴. But, in an investigation in Pakistan, the most commonly reported symptoms were hot flushes and sleep disturbances³⁰. In a study by Asadi et al., the most common symptoms experienced by

menopausal women were hot flushes and mood swings²⁴. The mean score of MRS in the present study was 12.29 compared with the values of 13.04³⁵, 12³⁰, and 8.52²⁷ in other studies. The difference in the mean MRS and that in the prevalence of symptoms of menopause could be due to cultural differences, lifestyles, as well as genetic factors, race, geographical areas, and so on. For example, the higher the prevalence rate of joint and muscular problems compared with hot flushing and sweating in the present study might be related to the characteristics of regional climates. Joint and muscular pains in this area could be associated with air humidity and women's high weight, considering that over 60% of women in this study were overweight or obese. The general health status score in the present study was 24.02 compared with the value of 24.09 in elder people in the investigation by Nabavi et al³⁶. This score was also 24.83 in postmenopausal women in the survey by Sharifi et al³⁷. In the present study, the total social support score was 73.73. According to Tamanayefar, MOS-SS score in students was 65.92²². In the investigation by Sherbourne, this score was reported by 70.1 in patients²¹. The results of the present study showed a significant relationship between social support and its dimensions and severity of menopause symptoms. On the other hand, the relationship between general health status and its dimensions, and severity of menopause symptoms were also significant. Besides, the results demonstrated a direct relationship between social support and severity of menopause symptoms through the mediating role of general health status. The results of the study by Shariat

Moghani also indicated that social support was reversely and significantly correlated with women's menopausal experiences as well as psychological, physical, and emotional complications. It was concluded that increasing social support from different sources, it could be possible to reduce physical and emotional problems of these women³⁸; so social support could influence their quality of life³⁹. Hogan et al. similarly mentioned in their review study that presence of support had been repeatedly linked to good long-term health outcomes based on demonstrations of better immune function, lower blood pressure, and reduced mortality rates⁴⁰. It should be noted that, social support affects people's health status in several ways. For example, individuals with higher levels of social support may have a sense of belonging and self-esteem higher than those who do not have such an advantage. This situation leads to a positive and optimistic perspective that can be beneficial for health regardless of the amount of stress experienced by individuals; for example, by enhancing their resistance to infections. Furthermore, some studies had reported that high levels of social support could encourage individuals to perform health behaviors and adopt a healthy lifestyle. For example, individuals benefiting from more social support may feel that others need them; therefore, they must exercise, have proper nutrition, and visit doctors in case of physical or psychological problems^{41,42}. A cohort study of women in Massachusetts also revealed that poor health status was related to depression during menopause⁴³. Anxiety and stress are also common reactions to everyday life. The menopause is not necessarily a stressful event but it occurs during midlife when women may be dealing with other life challenges, such as parents' ill-health or bereavement, adolescent children, children leaving home (or not leaving home), or work demands. Having hot flashes and night sweating can be also stressful, and being anxious and stressed can make hot flashes more difficult to deal with⁴⁴. In this regard, health-promoting behaviors also help women develop practical ways of managing problems and provide new coping skills and useful strategies. Therefore, health-promoting interventions can reduce the symptoms of menopause. On the other hand, it is possible to provide social support via educating people who are in close contact with postmenopausal women. So, enhancing social support through increased general health status can reduce menopause symptoms.

There were several limitations in this study. In terms of data collection, women were asked to recall past information; therefore, recall bias was unavoidable. The fact that the participants provided accurate responses to the questionnaires was also beyond the researchers' control. Considering the results of this study on postmenopausal women with poor social support, it was concluded that interventions can be implemented to improve social support, leading to improved mental health status and reduced menopause symptoms. It is hoped that the results can provide grounds to pay much more attention to the general health status of postmenopausal women.

Conflict of Interest: The authors declared no conflict of interest.

Ethical Considerations: This research project was approved by the local Ethics Committee of Shahroud

University of Medical Sciences (ethics code no.: IR.SHMU.REC.1396.127) and written informed consent was also obtained from all the participants.

Financial Support: The study was funded by Shahroud University of Medical Sciences.

Acknowledgments: The authors would like to appreciate the midwives working in the health care centers in the city of Sari.

REFERENCES

1. Clinical manifestations and diagnosis of menopause. [Internet]. 2019 [cited 2019]. Available from: <https://www.uptodate.com>.
2. Berek JS, editor. Novak's Gynecology. 15 ed. Philadelphia: lippincott Williams &Wilkins; 2012.
3. Memarian R. Application of Nursing Concepts and Theories. 1 ed. tehran Research Center for Tarbiat Modarres University; 1999.
4. Goldberg DP. Manual of the General Health Questionnaire Windsor NFER; 1978 [cited 2019].
5. stress: Concepts, Cognition, Emotion, and Behavior. In: Fink G, editor. 1 ed 2016. p. 502.
6. Taking Charge of Your Health & Wellbeing: university of minnesota; [cited 2019]. Available from: <https://www.takingcharge.csh.umn.edu/social-support>
7. Blazer DG. Social support and mortality in an elderly community population. American journal of epidemiology. 1982;115(5):684-94
8. Bruce ML. Psychosocial risk factors for depressive disorders in late life. Biological psychiatry. 2002;52(3):175-84.
9. Soules MR, Sherman S, Parrott E, Rebar R, Santoro N, Utian W, et al. Executive summary: Stages of Reproductive Aging Workshop (STRAW) Park City, Utah, July, 2001. Menopause (New York, NY). 2001;8(6):402-7.
10. Ghorbani M, Azhari S, Esmali H, Ghanbari Hashemabadi B. The relationship between life style with vasomotor symptoms in postmenopausal women referred to women's training health centers in Mashhad in 2011. The Iranian Journal of Obstetrics, Gynecology and Infertility. 2013;15(39):23-30.
11. Hosseini zare SM, Movahed E, Pourreza A, Rahimi Foroshani A. The effect of social support on the health of the elderly in Tehran. JHOSP 2015;13(4):115-21.
12. Deeks AA. Psychological aspects of menopause management. Best Practice & Research Clinical Endocrinology & Metabolism. 2003;17(1):17-31.
13. Reblin M, Uchino BN. Social and emotional support and its implication for health. Current opinion in psychiatry. 2008;21(2):201.
14. Ghodsi AM. Sociological study of the relationship between social support and depression: Tarbiat Modarres University; 2003.
15. Alavi SG, Kordie M, Bahri N. Women's Health in Menopause. 1 ed. mashhad: Eighth sun; 2002.
16. Shojaeian Zahra AZ, Mokhber Nagmeh. The Effect of Substitution Therapy on Depression in Postmenopausal Women: Mashhad University of Medical Sciences; 2003.
17. Berkman LF, Glass T, Brissette I, Seeman TE. From social integration to health: Durkheim in the new millennium. Social science & medicine (1982). 2000;51(6):843-57.
18. Heinemann LA, Potthoff P, Schneider HP. International versions of the Menopause Rating Scale (MRS). Health and quality of life outcomes. 2003;1:28.
19. Santhi Vadugu VL. The Menopause Rating Scale (MRS) in Indian Women. Journal of Evidence based Medicine and Healthcare. 2015;2(54):8789-91.
20. Makvandi S, Zargar Shushtari S, Yazdizadeh H, Zaker Hoseini V, Bastami A. Frequency and severity of menopausal symptoms and its relationship with demographic factors in

- pre-and postmenopausal women of Ahvaz, Iran. *The Iranian Journal of Obstetrics, Gynecology and Infertility*. 2013;16(49.50):7-15.
21. Sherbourne CD, Stewart AL. The MOS social support survey. *Social science & medicine*. 1991;32(6):705-14.
 22. Tamanyefar M, Mansouri Nik A. Relationship between personality characteristics, social support and life satisfaction with academic performance of students. *Quarterly Journal of Research and Planning in Higher Education*. 2014;71:149-66.
 23. EBRAHIMI AE, MOULAVI H, MOUSAVI SG, BornaManesh A, YAGHOUBI M. Psychometric properties and factor structure of General Health Questionnaire 28 (GHQ-28) in Iranian psychiatric patients. 2007.
 24. Asadi M, Jouyandeh Z, Nayebzadeh F. Prevalence of menopause symptoms among Iranian women. *Journal of Family and Reproductive Health*. 2012:1-3.
 25. Kazerooni T, Talei A, Sadeghi-Hassanabadi A, Arasteh M, Saalabian J. Reproductive behaviour in women in Shiraz, Islamic Republic of Iran. *EMHJ-Eastern Mediterranean Health Journal*, 6 (2-3), 517-521, 2000. 2000.
 26. Mohammad K, Hashemi SMS, Farahani FKA. Age at natural menopause in Iran. *Maturitas*. 2004;49(4):321-6.
 27. 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.
 28. Kamal NN, Seedhom AE. Quality of life among postmenopausal women in rural Minia, Egypt. *Eastern Mediterranean Health Journal*. 2017;23(8).
 29. Gold EB, Bromberger J, Crawford S, Samuels S, Greendale GA, Harlow SD, et al. Factors associated with age at natural menopause in a multiethnic sample of midlife women. *American journal of epidemiology*. 2001;153(9):865-74.
 30. Mazhar SB, Rasheed S. Menopause Rating Scale (MRS), A simple tool for assessment of climacteric symptoms in Pakistani women. *Ann Pak Inst Med Sci*. 2009;5(3):158-61.
 31. Palacios S, Henderson V, Siseles N, Tan D, Villaseca P. Age of menopause and impact of climacteric symptoms by geographical region. *Climacteric*. 2010;13(5):419-28.
 32. Thomas F, Renaud F, Benefice E, De Meeus T, Guegan J-F. International variability of ages at menarche and menopause: patterns and main determinants. *Human biology*. 2001;73(2):271-90.
 33. 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.
 34. Rahman SASA, Zainudin SR, Mun VLK. Assessment of menopausal symptoms using modified Menopause Rating Scale (MRS) among middle age women in Kuching, Sarawak, Malaysia. *Asia Pacific family medicine*. 2010;9(1):5.
 35. Ziaghani S, Sayhi M, Azimi N, Akbari M, Dehkordi ND, 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).
 36. Nabavi SH, Alipour F, Hejazi A, Rabbani E, Vahid R. The Relationship between Social Support and Mental Health in the elderly. *Medical Journal of Mashhad University of Medical Sciences*. 2014;57(7):841-6.
 37. Sharifi N, Jalili L, Najari S, Yazdizadeh H, Haghighizadeh MH. Survey of general health and related factors in menopausal women in Ahvaz city, 2012. *Razi Journal of Medical Sciences*. 2015;21(128):59-65.
 38. Shariat Moghani S, Simbar M, Dolatian M, Nasiri M. The relationship between perceived social support and women experiences in menopause. *Scientific and Research Journal of Nursing and Midwifery Faculty*. 2015;25(90):55-64.
 39. Shin JK, Kim KW, Park JH, Lee JJ, Huh Y, Lee SB, et al. Impacts of poor social support on general health status in community-dwelling Korean elderly: the results from the Korean longitudinal study on health and aging. *Psychiatry investigation*. 2008;5(3):155.
 40. Hogan BE, Linden W, Najarian B. Social support interventions: Do they work? *Clinical psychology review*. 2002;22(3):381-440.
 41. Esmail Riahi M, Ali Verdinia A, Pourhossein SZ. The Relationship between Social Support and Mental Health. *Social welfare*. 2007;10(39):85-121.
 42. Sarafino EP. *Health Psychology*. Third ed. New York: John Wiley & Sons; 1998.
 43. McKinlay JB, McKinlay SM, Brambilla D. The Relative Contributions of Endocrine Changes and Social Circumstances to Depression in Mid- Aged Women." *Journal of Health and Social Behavior* 1987;28(4):345-63.
 44. Hunter M, Smith M, . Managing hot flushes and night sweats: a cognitive behavioural approach to menopause 2014. Available from: <https://www.routledge.com/products/9780415625159>