www.revhipertension.com ISSN 2610-7996   creative commons

Revista Latinoamericana de Hipertensión. Vol. 16 - Nº 1, 2021

Prevalence of menopausal symptoms and its relationship with socio-demographic factors among women above 45 years in Mosul, Iraq

1

iD Nadia Hazem Saied, Lecturer in the Department of Family and Community Medicine, College of Medicine/ University of Mosul, Mosul, Iraq, Email: nad@uomosul.edu.iq

iD Muna Muneer Ahmmad, Lecturer in the Department of Family and Community Medicine, College of Medicine/ University of Mosul, Mosul, Iraq, Email: munamuneer60@gmail.com

iD Nahla Khalaf Ali, Manager of Research and Knowledge department/ Nineveh Health Directorate, Mosul, Iraq. Email: dr.nahlaali.cm@gmail.com

Abstract

Context: Menopause in an unavoidable event in women lives. Women during menopause experienced several symptoms of variable severity which affect their quality of life. Aim of the study: The aim of this study is to study the distribution of menopausal symptoms among middle age women in Mosul City and their associated factors. Subjects and Methods: The aim of the present study was achieved by using cross sectional descriptive study design. The frequency of menopausal symptoms was assessed from 342 women attending two primary health centres in Mosul City, in Northern Iraq. Direct interview were used for data collection by using predesigned questionnaire form and Menopausal Ratting Scale (MRS) during a period of 2 months. Results: Mean age of participants was 53.95 ± 6.46. The most prevalent somatic menopausal symptoms among middle aged women in Mosul City were Joint and muscular disorder (93.0%) which was more among perimenopausal fallowed by postmenopausal women. Also, hot flushes was more common among perimenopousal fallowed by postmenopausal (88.9%, 77.3% correspond- ingly). On the other hand, 94.7% of postmenopausal women were complaining from physical and mental exhaustion. Likewise, vaginal dryness was significantly more frequent among postmenopausal women. According to MRS somatic and psychological symptoms were more severe among perimenopausal women while urogenital symptoms were more severe among postmenopausal women. Menopausal symptoms were significantly more severe among illiterate women, working, widowed, paros, non-practicing exercise and previously smoker women. Conclusion and recommendations: Menopausal symptoms were severe among perimenopausal and postmenopausal women in Mosul City which was adversely affected their quality of life. Counseling health and social welfare services for postmenopausal women were required to be established. In addition, women empowerment, and encouragement to adopt a healthy life style were essential.

Keywords: menopausal, perimenopausal, postmenopausal women, somatic symptoms, psychological, urogenital symptoms and menopausal rating scale.

Resumen

Contexto: La menopausia en un acontecimiento ineludible en la vida de la mujer. Las mujeres durante la menopausia experimentaron varios síntomas de gravedad variable que afectan su calidad de vida. Objetivo del estudio: El objetivo de este estudio es estudiar la distribución de los síntomas de la menopausia entre las mujeres de mediana edad en la ciudad de Mosul y sus factores asociados. Sujetos y métodos: El objetivo del presente estudio se logró mediante el uso de un diseño de estudio descriptivo transversal. La frecuencia de los síntomas de la menopausia se evaluó en 342 mujeres que asistían a dos centros de salud primarios en la ciudad de Mosul, en el norte de Irak. La entrevista directa se utilizó para la recopilación de datos mediante el uso de un formulario de cuestionario prediseñado y la Escala de Ratting Menopáusico (MRS) durante un período de 2 meses. Resultados: La edad me-

dia de los participantes fue 53,95 ± 6,46. Los síntomas de la menopausia somática más prevalentes entre las mujeres de mediana edad en la ciudad de Mosul fueron los trastornos musculares y de las articulaciones (93,0%), que fueron más frecuentes entre las mujeres posmenopáusicas en período perimenopáusico. Además, los sofocos fueron más comunes entre perimenopáusicas en barbecho y posmenopáusicas (88,9%, 77,3% correspondientemente). Por otro lado, el 94,7% de las mujeres posmenopáusicas se quejaban de agotamiento físico y mental. Asimismo, la sequedad vaginal fue significativamente más frecuente entre las mujeres posmenopáusicas. Según MRS, los síntomas somáticos y psicológicos eran más graves entre las mujeres perimenopáusicas, mientras que los síntomas urogenitales eran más graves entre las mujeres posmenopáusicas. Los síntomas de la menopausia fueron significativamente más severos entre las mujeres analfabetas, trabajadoras, viudas, paros, no practicantes de ejercicio y mujeres previamente fumadoras. Conclusión y recomendaciones: Los síntomas de la menopausia fueron graves entre las mujeres perimenopáusicas y posmenopáusicas en la ciudad de Mosul, lo que afectó negativamente su calidad de vida. Era necesario establecer servicios de asesoramiento en materia de salud y bienestar social para mujeres posmenopáusicas. Además, el empoderamiento de la mujer y el estímulo para adoptar un estilo de vida saludable eran fundamentales.

Palabras Clave: mujeres menopáusicas, perimenopáusicas, posmenopáusicas, síntomas somáticos, síntomas psicológicos, urogenitales y escala de calificación de la menopausia.

Introduction

Menopause is a normal physiological process; according to World Health Organization (WHO) definition 'is the permanent cessation of menstruation as a result of the loss of ovarian activity'[1]. Accordingly, women became menopause when her menstrual cycle was permanently stopped for 12 successive months or more due to cessation of ovarian hormone production[2]. Menopausal women complained from numerous symptoms during this period due to hormonal level fluctuations, some of these symptoms were severe enough to affect the quality of life and the wellbeing of middle aged women[3,4]. These symptoms may be in the form of hot flushes, sleep and mood disturbance, lack of sexual desire, dryness of vagina and locomotors complaints[4]. Multiple geographic, socioeconomic, cultural, environmental factors and the biological variations linked to the changed ovarian hormonal status or deficiency affect the occurrence and severity of menopausal symptoms[5,6]. In fact menopausal symptoms were a common problem as an unavoidable part of every woman's life; about three quarters of women suffer from some problems during menopause[7]. It was found that majority of women spend about one third of their life complaining from menopausal symptoms by various degree[8,9]. Women are suffering without proper counseling and management due to lack of health programs that deal with such health problem[10]. Yet, various degrees of suffering and distress can be alleviated by suitable recognition, counselling and treatment[9].

The aim of the present study is to identify the prevalence of menopausal symptoms that experience by middle aged women in Mosul City with their associated socio- demographic factors.

Methods

At the beginning of the study scientific and ethical approval from College of Medicine/ University of Mosul, and Directorate of Nineveh Health was obtained. The aim of the current study was accomplished by implementing a cross-sectional descriptive study design. The target study population was any women aged 45 and above. While, any women on hormonal replacement therapy or undergo medical or surgical induction of menopause were excluded from the study population. The data was collected from women how visiting two primary health care centres in Mosul City during study period. Convenient random sample of 342 women were approached over a period of two months from 3 Sept 2020 to-3 November 2020. Data was collected by direct face to face interview by using a predesigned questionnaire form after explanation of the study objectives and obtaining verbal consent. The form consists of two parts; the first part was concerned with the socio-demographic features, physical exercise practicing, body mass index estimation and menstrual history of the participants. The second part was confined to identify the frequency and severity of menopausal symptoms by using menopausal rating scale (MRS)[11,12]. MRS was a standardized form designed to estimate the severity of menopausal symptoms and categorized them into: somatic symptoms include (hot flushes, heart discomfort, sleep disturbance, joint and muscular disorder) psychological symptoms (depressive mood, irritability, anxiety, physical and mental exhaustion) and urogenital symptoms (sexual problems, bladder problems, vaginal dryness). Menopausal symptoms in this scale was assessed by scoring each symptom according to the severity from score 0 (none) to score 4 (very sever). The total MRS scores were calculated by summation of scores in three components of somatic, psychological and urogenital symptoms. According to MRS if the total mean scores (0-4) reflect little or no symptoms, (4-8) mild, and (9-16) moderate while above 16 is sever.

The menopausal state of participants was classified according to World Health Organization[1] classification into: premenopausal for any women experienced regular menstrual cycles for the last 12 months; perimenopausal for women who had irregular menses within the last 12 months or the discontinuing of menstrual bleeding for more than 3 months but less than 12 months, and postmenopausal women; referred to women who had amenorrhea for the last 12 months or more.

Physical activity was evaluated by asking participants about their performance of any physical activity as domestic activities or walking for duration of (20-30) minuets. Accordingly physical activity was classified into: Non when women's activity less than 3 times/week, irregular for (3-5) times/week and regular for more than 5 times/week.

The height and weight of the participants were measured for participants by using stadiometer and digital weighing scale in the two study settings. Body mass index was calculated by using the equation (BMI= W$_{in\ kg}$/ H$^2_{in\ meter}$).

The obtained results were demonstrated into suitable tables designed for the study purpose. Data were managed by using software program of SPSS version 25. The result revealed in the form of frequency, percentage, mean, standard deviation and stranded error. The differences and association relationship was counted by using Chi-square goodness of fit test, Chi-square test, Fisher Exact test, one-way ANOVA & Post-Hoc and unpaired t-test. The p- value of equal or less than 0.05 was considered significant.

Results

Table 1 show that the mean age of participants was 53.95 ± 6.46. There was large proportion of the sample (72.2%) were in postmenopausal state. More than one third (36.8%) had primary education and the majority were housewives (82.2%). About three forth of participants were currently married (74.3%) and most of them were parous (95.8%). Only 3.8% of the surveyed women were practicing regular exercises. In this study more than half of the sample (54.7%) was never smoked and 62% of the participants had history of chronic illnesses also about two thirds (65.8%) with BMI ≥ 30.

Table 2 reveals that joint and muscular disorder highly prevalent somatic symptoms (93.0%) and mainly among perimenopausal fallowed by postmenopausal women. Also about three forth of participant (74.6%) complaining hot flushes and it was significantly more common among perimenapousal fallowed by postmenopausal (88.9%, 77.3% correspondingly) p-value=0.011. On other hand, physical and mental exhaustion were prevalent among 93.9% of study population particularly among postmenopausal women. Regarding sexual and bladder problems were more prevailing among postmenopausal women (44.5% and 60.7% correspondingly) than premenopausal and perimenopausal women with no significant difference. Also, it is found that vaginal dryness was more frequent among postmenopausal women (38.5%) with highly significant difference (p-value=0.000).

Table 1. General features of the study population				
Characteristics (n=342)	Mean	SD		
Age (years)	53.95	6.46		
Menopausal state	No.	%		P-value
Premenopausal	77	22.5		
Perimenopausal	18	5.3		0.000
Postmenopausal	247	72.2		
Education				
Illiterate	104	30.4		
Primary school	126	36.8		
Secondary school	59	17.3		0.000
Higher education (university)	53	15.5		
Occupation				
House wife	281	82.2		
Working	47	13.7		0.000
Retired	14	4.1		
Marital state				
Currently married	254	74.3		
Widowed	72	21.1		
Divorced	4	1.2		0.000
Single	12	3.5		
Parity (n=330)				
Nulliparous	14	4.2		
Para	316	95.8		0.000
Practicing physical exercise				
Non	136	39.8		
Irregular	193	56.4		0.000
Regular	13	3.8		
Smoking				
Never smoked	187	54.7		
Previously smoker	2	0.6		
Currently smoker	18	5.3		0.000
Passive smoker	135	39.5		
Chronic disease				
Yes	212	62.0		
No	130	38.0		0.000
BMI				
18.5 – 25.0	33	9.6		
25.0 – 30.0	84	24.6		0.000
≥ 30	225	65.8		

*Chi-square Goodness of Fit test was used.

In table 3 it was found that severity of somatic symptoms according to MRS were more among perimenopausal women (mean= 8.11) with a highly significant difference (P-value=0.008). Also, psychological symptom was more rigorous among perimenopausal (mean=6.89) but with a non-significant difference. While, urogenital symptoms were more severe among postmenopausal women mean (3.09) with just significant difference (P-value=0.033). On other hand, allover menopausal symptoms were more severe among perimenopausal (mean=17.22) but with anon significant difference (P- value=0.259).

Table 4 reveals that menopausal symptoms were mostly severe among illiterate women, working and widowed with a very high significance (P- value=0.000 for all). While paros women, non-practicing exercise and previously smoker women experienced more symptoms with a just significant difference (P-value= 0.04, 0.014 and 0.021 consequently). On the other hand, chronic illnesses and BMI have no significant effect on the severity of menopausal symptoms.

Table 2. Frequency of menopausal symptoms among study population (n=342).

Menopausal symptoms	Premenopausal (n=77)	Perimenopausal (n=18)		P-value*	Total (n=342)
	No. (%)	No. (%)			No. (%)
Somatic symptoms					
hot flushes	48 (62.3)	16 (88.9)	191 (77.3)	0.011	255(74.6)
heart discomfort	50 (64.9)	10 (55.6)	156 (63.2)	0.759	216(63.2)
sleep disturbance	50 (64.9)	12 (66.7)	163 (66.0)	0.982	225(65.8)
joint and muscular disorder	69 (89.6)	18 (100.0)	231 (93.5)	0.245	318(93.0)
Psychological symptoms					
depressive mood	61 (79.2)	12 (66.7)	186 (75.3)	0.512	259(75.3)
Irritability	53 (68.8)	10 (55.6)	143 (57.9)	0.212	206(60.2)
Anxiety	56 (72.7)	12 (66.7)	179 (72.5)	0.863	247(72.2)
physical and mental exhaustion	71 (92.2)	16 (88.9)	234 (94.7)	0.480	321(93.9)
Urogenital symptoms					
sexual problems	34 (44.2)	6 (33.3)	110 (44.5)	0.651	150(43.9)
bladder problems	37 (48.1)	10 (55.6)	150 (60.7)	0.143	197(57.6)
vaginal dryness	12 (15.6)	2 (11.1)	95 (38.5)	0.000	109(31.9)

*Chi-square test was used

Table 3. Severity of menopausal symptoms among study population according to menopausal rating scale (MRS) (n=342).

Menopausal symptoms	Premenopausal MRS(n = 77) Mean ± SD	Perimenopausal MRS(n = 18) Mean ± SD	Postmenopausal MRS (n = 247) Mean ± SD	P-value*
Somatic symptoms	5.91± 0.31	8.11 ± 0.70	6.82 ± 0.20	0.008
Psychological symptoms	6.71 ± 0.38	6.89 ± 0.87	6.41 ± 0.20	0.663
Urogenital symptoms	2.36 ± 0.22	2.22 ±0.51	3.09 ± 0.16	0.033
Total	14.99 ± 0.70	17.22 ± 1.45	16.32 ± 0.46	0.259

* One-way ANOVA & Post-Hoc test was used.

Table 4. Association between the severities of menopausal symptoms among participants with socio-demographic characteristics depending on menopausal rating scale (MRS).

Characteristics	MRS (Mean)	MRS(SE)	P-value*
Education			
Illiterate	8.22	0.64	
Primary school	4.56	0.48	0.000
Secondary school	3.72	0.51	
Higher education (university)	5.47	0.69	
Occupation			
House wife	5.72	0.35	
Working	11.93	0.97	0.000
Retired	3.47	0.44	
Marital state			
Currently married	4.91	0.33	
Widowed	8.67	0.72	0.000
Divorced	0.50	0.28	
Single	5.50	1.99	
Parity (n=330)			
Nulliparous	2.61	0.84	0.040**
Para	5.81	0.32	
Practicing physical exercise			
Non	6.76	0.54	
Irregular	4.99	0.38	0.014
Regular	4.23	1.22	
Smoking			
Never smoked	5.41	0.43	
Previously smoker	15.00	0.00	0.021
Currently smoker	8.33	1.31	
Passive smoker	5.54	0.47	
Chronic disease			
Yes	5.96	0.38	0.244**
No	5.19	0.52	
BMI			
18.5 – 25.0	6.99	1.12	
25.0 – 30.0	5.82	0.66	0.329
≥ 30	5.42	0.37	

*One-way ANOVA & Post-Hoc test was used. **Unpaired t-test was used.

Discussion

The present study was conducted in Mosul City which located in Northern of Iraq to estimate the occurrence of menopausal symptoms and explore factors affects its severity among women above 45 years old.

Regarding somatic symptoms in the present study, joint and muscular disorders were the most highly prevalent symptoms (93.0%) and mainly among perimenopausal fallowed by postmenopausal women. This result consistent with Al-Musa H M, et al study in Saudi Arabia[7] and Khatoon F et al study in Northen India[13]. Also, in another Indian study joint and muscular disorders most common somatic symptom but with lesser proportion (77.77%)[14]. In comparison to a study in China 34.43%, of postmenopausal women were complaining from joint and muscular disorders[15]. On another hand, according to a systematic review study about prevalence of menopausal symptoms in Asian midlife women, the prevalence of joint and muscle pain among perimenopausal women was between 28.8% and 91.4%, and fluctuated from 15.8% to 90.2% among postmenopausal women[5]. The high prevalence of joint and muscular disorders that reported in the current study may be related to lifestyle pattern of participants in current study setting and slight exposure to sunlight.

In the current study hot flushes was significantly more common among perimenopousal fallowed by postmenopausal (88.9%, 77.3% correspondingly). Similar results were found in Hunter M et al study in Britten[16], Al-Musa H M et al study in Saudi Arabia[7], and Abedzadeh-Kalahroudi M et al study in Iran[17]. Likewise, North American Menopause Society (NAMS) reported higher prevalence of current vasomotor symptoms (79%) was among perimenopausal fallowed by 65% among postmenopausal women[18]. While, Yisma E et al study in Ethiopia[19] reported a comparable prevalence of hot flushes and sweeting but it was more sever among postmenopausal than perimenopausal. However, lower proportions were reported in Du L et al study in China[15], Leena AJ and Varghese AP study, [9] Patil SD and Deshmukh JS study[14] and Khatoon F et al study in India[13] The differences in the prevalence of hot flushes and sweating may be due to different regional variation between western and East Asian countries or dietary factors as phytoestrogens reduce the frequency of hot flushes among Asians[20,21].

Concerning psychological symptoms in the present study physical and mental exhaustion were experienced among 93.9% of study population particularly among postmenopausal women. Similarly, high proportion of women (92.7%) were feeling a lack of energy' according to Abedzadeh-Kalahroudi M et al study in Iran[17]. Also, 83.7% of women were complaining of physical and mental exhaustion in Nisar N et al study in Pakistan[22]. While, in an Egyptian study, physical and mental exhaustion was prevalent among 69.6% of postmenopausal women[23]. In

contrast lower proportion was reported in Saudi and an Indian study by (60%), (64.7%) respectively[2,14].

Sexual and bladder problems in the present study were more prevailing among postmenopausal women (44.5% and 60.7% correspondingly) than premenopausal and perimenopausal women with no significant difference. While, vaginal dryness was found significantly more frequent among postmenopausal women (38.5%). Correspondingly, Patel M et al reported 36.9% of women complaining from bladder problems and irritability[10]. While Leena AJ et al reported a proportion of 50% women had vaginal dryness and irritation[9]. Higher proportion was reported by Yisma E et al study in in which vaginal dryness was found among 64.0% of postmenopausal women[19]. Likewise, El Hajj A et al study in Lebanon reported elevated proportion of urogenital symptoms among postmenopausal women[24]. In contrast, lower proportion bladder problems, vaginal problems and sexual problems were found in Patil SD et al study[14], Khatoon F et study[13], Nisar N et al study[22], Shrestha NS study[25], and Sussman M et al study[26]. Probably, dryness of vagina exaggerated with longer period of oestrogen deficiency as founded in various studies that urogenital symptoms especially vaginal dryness were more prevalent among postmenopausal than premenopausal or perimenopausal women[10,24,27].

Somatic symptoms in the current study were highly significant more severe among perimenopausal women (mean= 8.11) according to MRS. Also, psychological symptom were more rigorous among perimenopausal (mean= 6.89). While, urogenital symptoms were significantly more severe among postmenopausal women mean (3.09). On another hand overall MRS in our study was severe in both perimenopausal women (mean= 17.22) and postmenopausal (mean= 16.32). Correspondingly, El Hajj A et al[24] reported that perimenopausal women were highly suffer from climacteric symptoms while postmenopausal women suffer from failure of their sexual life. In contrast, in Al-Musa H M et al[7] study the higher menopausal score (17.95) was for postmenopausal women for the three domain somatic symptoms, psychological symptoms and urogenital symptoms. Likewise, Rathnayake N et al[28] study showed more severe symptoms among postmenopausal women. Besides, menopausal symptoms were reported a highly severe among postmenopausal women in Yisma E et al study[19]. According to Woods and Mitchell[27], the severity of symptoms increase from late menopausal transition to the postmenopausal stage which is consistent with results of the current study.

Regarding the relationship of various factors with severity of menopausal symptoms in existing study it was found that menopausal symptoms were significantly more severe among illiterate women, working, widowed, paros, non-practicing exercise and previously smoker women. Various factors were reported to be associated with the severity of menopausal symptoms in different studies. For instance, Al-Musa H M et al[7] found more severe symptoms were prevalent among marred women, paros, those with

5

lower education level, lack of exercise and chronic disease. Whereas, Abedzadeh-Kalahroudi M et al[17] found lesser severe symptoms were among employed women, highly educated, practicing regular exercise and those with more than 5 years menopause. Likewise, Capistrano EJM et al[29] study reported higher severe symptoms among Brazilian women who were smokers, unemployed or housewives, and less severe symptoms among women with more than 10 years since menopause. Also, Khatoon F et al[13] reported that severity of menopausal symptoms inversely proportional to educational level. On other hand, Metintas S et al[30] study in Turkey depicted more severe symptoms were among women with chronic illnesses. While, in El Hajj A et al[24] study, lesser severe symptoms were found among women who were physically more active. According to Lalo R et al[20] there were significant diversity in the frequency and severity of physical, psychological, and urogenital symptoms related to ethnic differences, cultural and the way by which women adapted to copy with the symptoms.

In conclusion; this study revealed that the most prevalent somatic menopausal symptoms among middle aged women in Mosul City were joint and muscular disorder, hot flushes. While physical and mental exhaustion was the most common psychological symptoms. On other hand, sexual and bladder problems were more prevailing among postmenopausal women. According to MRS somatic and psychological symptoms were more severe among perimenopausal women while urogenital symptoms were more severe among postmenopausal women. On other hand, overall menopausal symptoms were severe in both perimenopausal and postmenopausal women. Menopausal symptoms were significantly more severe among illiterate women, working, widowed, paros, non-practicing exercise and previously smoker women.

It is recommended to establish a counseling health and social welfare centers to provide management and health educational services to promote healthy lifestyle to middle aged women. As well as enhancement of women empowerment and their collaboration in improving their health through counseling and effective interaction with health care provider.

References

1. World Health Organization. Research on the menopause in the 1990's. Report of a WHO Scientific Group. World Health Organ Tech Rep Ser. 1996; 866, 12–14.

2. AlDughaither A, AlMutairy H, AlAteeq M. Menopausal symptoms and quality of life among Saudi women visiting primary care clinics in Riyadh, Saudi Arabia. International Journal of Women's Health. 2015; 7:645-653

3. Santoro N, Epperson CN, and Mathews SM. Menopausal Symptoms and Their Management. Endocrinol Metab Clin North Am. 2015; 44(3):497–515.

4. Melby M K, Lock M, and Kaufert P. Culture and symptom reporting at menopause. Human Reproduction Update. 2005; 11(5):495–512.

5. Rakibul Islam M., Gartoulla P, Bell R J, Fradkin P and Davis SR. Prevalence of menopausal symptoms in Asian midlife women: a systematic review. CLIMACTERIC 2014; 17:1–20.

6. Nisar N, Ahmed S N. Severity of Menopausal symptoms and the quality of life at different status of menopause: a community based survey from rural Sindh, Pakistan. International Journal of Collaborative Research on Internal Medicine & Public Health. 2010; 2(5):118-130

7. Al-Musa HM, Ahmed RA, Alsamghan AS, Abadi S, Al-Saleem MA, Alsabaani AA, bharti RK, Alqahtani K, Alahmari S, Alshahrani H, Aboalam A, and Alqahtani HA. The prevalence of symptoms experienced during menopause, influence of socio-demographic variables on symptoms and quality of life among women at Abha, Saudi Arabia. Biomedical Research 2017; 28(6):2587-2595.

8. Gaikwad M, Gupta SA, Sharma M, Verma N, Shalini S. A cross-sectional study to assess the prevalence of menopausal symptoms among middle aged female teachers in schools of Raipur city. Int J Community Med Public Health 2020; 7:1560-4.

9. Leena AJ, Varghese AP. Prevalence of menopausal symptoms and perceptions about menopause among postmenopausal women attending Gynaecology OPD at GMC Idukki, India. Int J Reprod Contracept Obstet Gynecol 2017;6:413-6.

10. Patel M, Shah V, Kamani H, Sonaliya K. Current scenario of menopause-related symptoms using menopause rating scale among middle-aged women of Western India: A cross-sectional study. Int J Med Sci Public Health 2018; 7(1):48-52.

11. Heinemann LAJ, DoMinh T, Strelow F, Gerbsch S, Schnitker J, Schneider PG. The Menopause Rating Scale (MRS) as outcome measure for hormone treatment? A validation study Health and Quality of Life Outcomes 2004; 2:67.30. https://doi.org/10.1186/1477-7525-2-67.

12. Heinemann K, Ruebig A, Potthoff P, Schneider HP, Strelow F, Heinemann LAJ and Thia DM. The Menopause Rating Scale (MRS) scale: a methodological review. Health Qual Life Outcomes 2004; 2:45. doi:10.1186/1477-7525-2-45.

13. Khatoon F, Sinha P, Shahid S, Gupta U. Assessment of menopausal symptoms using modified menopause rating scale (MRS) in women of Northern India. Int J Reprod Contracept Obstet Gynecol 2018; 7:947-51.

14. Patil SD, Deshmukh JS. Prevalence and pattern of menopausal symptoms among menopausal women in central India: a community based cross sectional study. Galore International Journal of Health Sciences & Research. 2019; 4(3): 60-65.

15. Du L, Xu B, Huang C, Zhu L and He N. Menopausal Symptoms and Perimenopausal Healthcare-Seeking Behavior in Women Aged 40–60 Years: A Community-Based Cross-Sectional Survey in Shanghai, China. International Journal of Environmental Research and Public Health (Int. J. Environ. Res. Public Health) 2020;17, 2640 2 of 12.

16. Hunter M, Gentry-Maharaj A, Ryan A, Burnell M, Lanceley A, Fraser L, Jacobs I, Menon U. Prevalence, frequency and problem rating of hot flushes persist in older postmenopausal women: impact of age, body mass index, hysterectomy, hormone therapy use, lifestyle and mood in a cross-sectional cohort study of 10 418 British women aged 54–65. BJOG 2012; 119:40–50.

17. Abedzadeh-Kalahroudi M, Taebi M , Sadat Z, Saberi F, Karimian Z. Prevalence and severity of menopausal symptoms and related factors among women 40-60 years in Kashan, Iran. Nurs Midwifery Stud.2012:1(2); 88-93. DOI: 10.5812/nms.8358

18. Williams RE, DiBenedetti DB, Zhou X, Fehnel SE, Clark RV. The Menopause Epidemiology (MEPI) Study: Vasomotor Symptom Results from

www.revhipertension.com ISSN 2610-7996 (cc) creative commons

Revista Latinoamericana de Hipertensión. Vol. 16 - N° 1, 2021

a Large Population-based Study. North American Menopause Society (NAMS), Annual Meeting, 11–14 October 2006, Nashville, TN, USA.

19. Yisma E, Eshetu N, Ly S and Dessalegn B. Prevalence and severity of menopause symptoms among perimenopausal and postmenopausal women aged 30-49 years in Gulele sub-city of Addis Ababa, Ethiopia. BMC Women's Health. 2017;17:124 DOI 10.1186/s12905-017-0484-x

20. Lalo R, Kamberi F and Peto E. Menopausal symptoms and women's quality of life outcomes: Literature Review". EC Gynaecology. 2017; 6(5):167-172.

21. Bairy L, Adiga S, Bhat P and Bhat R. Prevalence of menopausal symptoms and quality of life after menopause in women from South India. Australian and New Zealand Journal of Obstetrics and Gynaecology 2009; 49:106–109.

22. Nisar N, Sohoo NA, Sikandar R. Age and symptoms at natural menopause: A cross-sectional survey of rural women in Sindh Pakistan. J Ayub Med Coll Abbottabad. 2012; 24(2).

23. Nashwa N. Kamal 1 and Amany E. Seedhom. WHO EMRO | Quality of life among postmenopausal women in rural Minia, Egypt. Eastern Mediterranean Health Journal. 2017; 23(8).

24. El Hajj A, Wardy N, Haidar S, Bourgi D, Haddad ME, Chammas DE, et al. Menopausal symptoms, physical activity level and quality of life of women living in the Mediterranean region. PLoS ONE. 2020; 15(3):e0230515. https://doi. org/10.1371/journal.pone.0230515

25. Shrestha NS, Pandey A. A study of menopausal symptoms and its impact on lives of Nepalese perimenopausal and postmenopausal women. Journal of Kathmandu Medical College. 2017; 6(1):19.

26. Sussman M, Trocio J, Best C, Mirkin S, Bushmakin AG, Yood R, Friedman M, Menzin J and Louie M. Prevalence of menopausal symptoms among mid-life women: findings from electronic medical records. BMC Women's Health. 2015; 15(58).

27. Woods NF, Mitchell ES. Symptoms during the perimenopause: prevalence, severity, trajectory, and significance in women's lives. The American Journal of Medicine. 2005; 118 (12B):14S–24S.

28. Rathnayake N, Lenora J, Alwis A, and Lekamwasam S. Prevalence and Severity of Menopausal Symptoms and the Quality of Life in Middle-aged Women: A Study from Sri Lanka. Nursing research and practice. 2019; Research Article | Open Access. ID 2081507 | 9 pages | https://doi.org/10.1155/2019/2081507

29. Capistrano EJM, Dombek K, Carioca da Costa AC, and Marinheiro LPF. Factors associated with the severity of menopausal symptoms in postmenopausal Brazilian women. R E P ROD C LIM. 2015; 30(2):70–76 (Reprodução & Climatério J)

30. Metintas S, Arýkan I, Kalyoncu C, Ozalp S. Menopause Rating Scale as a screening tool in rural Turkey. Rural and Remote Health 2010; 10: 1230. Available: www.rrh.org.au/journal/article/1230

7