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

Prevalencia de síntomas menopáusicos y su relación con factores sociodemográficos entre mujeres mayores de 45 años en Mosul, Irak

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ABSTRACT:

Context: Menopause is an unavoidable event in women's 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 was used for data collection by using predesigned questionnaire form and Menopausal Rating 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 followed by postmenopausal women. Also, hot flushes were more common among perimenopausal followed by postmenopausal (88.9%, 77.3% correspondingly). 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, parous, 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 es 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 Rating Menopáusico (MRS) durante un período de 2 meses. Resultados: La edad media de los participantes fue $53,95 \pm 6,46$. 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.

INTRODUCTIONS

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 production². 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 complaints⁴. 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 menopause⁷. 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 problem¹⁰. Yet, various degrees of suffering and distress can be alleviated by suitable recognition, counselling and treatment⁹.

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.

SUBJECTS AND 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 severe). 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 severe.

The menopausal state of participants was classified according to World Health Organization¹ 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) minutes. 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 ($BMI = W_{in} \text{ kg} / H^2 \text{ in meter}$).

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 standard 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 fourth 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 $BMI \geq 30$.

TABLE 1

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

* Chisquare Goodness of Fit test was used

Table 2 reveals that joint and muscular disorder highly prevalent somatic symptoms (93.0%) and mainly among perimenopausal followed by postmenopausal women. Also about three fourth of participant (74.6%) complaining hot flushes and it was significantly more common among perimenopausal followed 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 2
Frequency of menopausal symptoms among study population (n=342).

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Menopausal symptoms	Premenopausal (n=77)	Perimenopausal (n=18)	Postmenopausal (n=247)	P-value*	Total (n=342)
	No. (%)	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)

reveals that joint and muscular disorder highly prevalent somatic symptoms (93.0%) and mainly among perimenopausal followed by postmenopausal women. Also about three forth of participant (74.6%) complaining hot flushes and it was significantly more common among perimenapousal followed 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).

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

Table 3. Severity of menopausal symptoms among study population according to menopausal rating scale (MRS) (n=342).				
Menopausal symptoms	Premenopausal MRS(n = 77)	Perimenopausal MRS(n = 18)	Postmenopausal MRS (n = 247)	P-value*
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	
Somatic symptoms	5.91 $\pm$ 0.31	8.11 $\pm$ 0.70	6.82 $\pm$ 0.20	0.008
Psychological symptoms	6.71 $\pm$ 0.38	6.89 $\pm$ 0.87	6.41 $\pm$ 0.20	0.663
Urogenital symptoms	2.36 $\pm$ 0.22	2.22 $\pm$ 0.51	3.09 $\pm$ 0.16	0.033
Total	14.99 $\pm$ 0.70	17.22 $\pm$ 1.45	16.32 $\pm$ 0.46	0.259

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, all over menopausal symptoms were more severe among perimenopausal (mean=17.22) but with a non significant difference (P-value=0.259).

* Oneway ANOVA & PostHoc test was used

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

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	0.000
Primary school	4.56	0.48	
Secondary school	3.72	0.51	
Higher education (university)	5.47	0.69	
Occupation			
House wife	5.72	0.35	0.000
Working	11.93	0.97	
Retired	3.47	0.44	
Marital state			
Currently married	4.91	0.33	0.000
Widowed	8.67	0.72	
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	0.014
Irregular	4.99	0.38	
Regular	4.23	1.22	
Smoking			
Never smoked	5.41	0.43	0.021
Previously smoker	15.00	0.00	
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	0.329
25.0 - 30.0	5.82	0.66	
≥ 30	5.42	0.37	

* Oneway ANOVA & PostHoc test was used **Unpaired ttest 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 followed by postmenopausal women. This result consistent with Al-Musa H M, et al study in Saudi Arabia and Khatoon F et al study in Northern India¹³. 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 disorders¹⁵. 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 women⁵. 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 perimenopausal followed by postmenopausal (88.9%, 77.3% correspondingly). Similar results were found in Hunter M et al study in Britten¹⁶, Al-Musa H M et al study in Saudi Arabia⁷, and Abedzadeh-Kalahroudi M et al study in Iran¹⁷. Likewise, North American Menopause Society (NAMS) reported higher prevalence of current vasomotor symptoms (79%) was among perimenopausal followed by 65% among postmenopausal women¹⁸. While, Yisma E et al study in Ethiopia⁹ reported a comparable prevalence of hot flushes and sweating but it was more severe among postmenopausal than perimenopausal. However, lower proportions were reported in Du L et al study in China¹⁵, Leena AJ and Varghese AP study⁹, Patil SD and Deshmukh JS study¹⁴, and Khatoon F et al study in India¹³. 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 Iran¹⁷. Also, 83.7% of women were complaining of physical and mental exhaustion in Nisar N et al study in Pakistan²². While, in an Egyptian study, physical and mental exhaustion was prevalent among 69.6% of postmenopausal women²³. 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 irritability¹⁰. 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 women¹⁹. Likewise, El Hajj A et al study in Lebanon reported elevated proportion of urogenital symptoms among postmenopausal women²⁴. In contrast, lower proportion bladder problems, vaginal problems and sexual problems were found in Patil SD et al study¹⁴, Khatoon F et study¹³, Nisar N et al study²², Shrestha NS study²⁵, and Sussman M et al study²⁶. Probably, dryness of vagina exaggerated with longer period of oestrogen deficiency as founded in various studies that urogenital symptoms especially vaginal dryness was 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 was 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 al²⁴ 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 al⁷ 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 al²⁸ study showed more severe symptoms

among postmenopausal women. Besides, menopausal symptoms were reported a highly severe among postmenopausal women in Yisma E et al study¹⁹. According to Woods and Mitchell²⁷, 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 al⁷ found more severe symptoms were prevalent among married women, paros, those with lower education level, lack of exercise and chronic disease. Whereas, Abedzadeh-Kalahroudi M et al¹⁷ 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 al²⁹ 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 al¹³ reported that severity of menopausal symptoms inversely proportional to educational level. On other hand, Metintas S et al³⁰ study in Turkey depicted more severe symptoms were among women with chronic illnesses. While, in El Hajj A et al²⁴ study, lesser severe symptoms were found among women who were physically more active. According to Lalo R et al²⁰ 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.

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