



## **The level of knowledge and attitude about menopause and hormonal replacement therapy among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah, 2018. Cross-sectional study.**

Mashael Meshal Al-Thagafi<sup>1</sup>, Amin M Al-Mahdi<sup>2</sup>

<sup>1</sup>Family Medicine Specialist, Ministry of Health, Saudi Arabia

<sup>2</sup>Family Medicine Consultant, Ministry of Health, Saudi Arabia

---

### **ABSTRACT**

**BACKGROUND:** Menopause is defined as 12 consecutive months of amenorrhea without any other obvious pathological or physiological cause. HRT is an effective management for menopausal symptoms.

**OBJECTIVES:** To assess the knowledge and attitudes towards menopause and hormonal replacement therapy among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah, 2018.

**SUBJECTS AND METHODS:** Cross-sectional study in three primary health care centres (PHCCs) selected by random clustered sampling technique among a female age group 40- 60 years attending the general clinic of PHCCs in Makkah Al-Mukarramah, KSA. An interviewed questionnaire was utilized for data collection.

**RESULTS:** A total of 269 women participated in the study. More than a half reported pre-menopausal. The mean knowledge about menopause score percentage was  $75.58 \pm 17.75$ . Regarding the knowledge about symptoms of menopause, "Mood Swings" was reported by the majority, followed by "Feeling more tired than usual". On the awareness part the highest agreement was for statements "Menopause occurs when menstruation stops". There was significant difference in the mean knowledge percentage for menopausal status and marital status ( $p = 0.040$ ). The mean attitude score was 2.05 with S.D.  $\pm 0.26$  indicating a neutral attitude towards menopause among these women. There were statistically significant differences in means of the attitude score with menopausal status and educational level ( $p = 0.009$  and  $p = 0.023$  respectively). Assessment of knowledge about HRT showed that only 18.2% of the participants were aware about HRT as a treatment for menopausal symptoms.

**CONCLUSION:** The study revealed low to average knowledge about menopause. There was a neutral attitude towards menopause.

---

## **I. INTRODUCTION**

### **1.1 BACKGROUND**

Normal menopause is defined as 12 consecutive months of amenorrhea without any other obvious pathological or physiological cause. It occurs at 40 to 60 years of age; median age of 51.4 years; in normal

women<sup>(1)</sup>. The hallmark symptom of menopause is the hot flash. Women may experience other several symptoms, including vaginal dryness, sleep disturbances, new-onset depression, increased health risks for cardiovascular disease, osteoporosis which can be treated effectively by hormone replacement therapy (HRT).<sup>(2)</sup>

The aim of HRT is to relieve menopausal symptoms, especially hot flashes (vasomotor symptoms) but not for the prevention of cardiovascular disease, osteoporosis, or dementia.<sup>(3)</sup>

Based on 2010 General Authority for Statistics Kingdom of Saudi Arabia, the percentage of women in Kingdom of Saudi Arabia was (49.9%) of a total population of 27136977<sup>(4)</sup>, Women are expected to live one-third of their lives beyond menopause, which will have implications on the health care system<sup>(5)</sup>. Many types of research have been conducted worldwide regarding the age of menopausal women.<sup>(6,7,8,9)</sup> Among others, many have explored low women's knowledge and attitudes towards menopause and HRT<sup>(10,11,12,13,14)</sup>.

## 1.2 literature review:

Asiri and his colleagues (2014) conducted a cross-sectional study using an electronic questionnaire among 738 women to assess the awareness and perception of Saudi women aged from 30 to 65 years towards menopause and to determine the health needs of women to improve the quality of life of menopausal Saudi women. The results revealed that 130 women were menopause already and 608 were pre-menopausal. The assessment of most common symptoms of menopause among menopausal women reported by (38.5%), (23.1%) and (17.7%) for statements hot flushes, psychological symptoms and vaginal bleeding respectively, while pre-menopausal women reported by (31.9%), (23.5%) and (19.7%) for statements psychological symptoms, hot flushes, and vaginal bleeding respectively. Regarding the assessment if menopause affect the regular activity and relationship with husband the menopausal women had higher agreement reported by (27.7%) and (29.2%) respectively comparing by pre-menopausal women that reported by (5.8%) and (17.6%). Moreover, most participants in both groups didn't hear about HRT.<sup>(15)</sup>

Bakarman M and Abu Ahmed H. (2003) conducted a cross-sectional study about Awareness of HRT among 300 females attending Primary health care centers (PHCCs) in Jeddah, Saudi Arabia. It revealed that only 27% of women were aware of HRT and more than two-thirds were not. Furthermore, it showed that the awareness of HRT increased with the advancing in educational level, the higher awareness was among the college level, and the lowest awareness was among the non-educated females. The prevalence of the use of HRT was only (5%). Also, (46%) of the whole study groups were willing to use HRT.<sup>(16)</sup>

A clinic-based cross-sectional study about women knowledge, attitude and practice toward menopause and HRT among 150 women attending PHCCs in Al-Ain, the United Arab Emirates, (2014) have revealed that the majority of participants (65%) knew about the right age at the menopause, moreover (76%) explored menopause as a natural transition in a women's life and (59%) women knew about menopause being a risk for osteoporosis. Regarding knowledge of menopausal symptoms, the highest knowledgeable symptoms were for both hot flashes and mood swing reported by (58%), then for both irritability and feeling more tired than usual reported by (54%). However, the knowledge score analysis (67%) of women had "poor knowledge" compared to (33%) had "good knowledge" about menopause. Regarding the attitudes towards menopause, the highest agreement was for the statement "menopause means no more worries about pregnancy and contraception" reported by (68%) then statement "menopause is good in a way that there are no more periods" reported by (51%). About attitude score toward menopause revealed that (60%) had a positive attitude, (14%) had a natural attitude, and (26%) had a negative attitude. According to awareness about HRT as a treatment of symptoms of menopause was answered by (15%). Assessment of knowledge of benefits and risk of HRT revealed that (21%) of women answered "HRT prevent osteoporosis", (17%) for the statement "HRT improve the mood" and lowest answered for the statement "HRT protect from the heart disease" reported by (7%). Regarding the attitude score towards HRT, (36%) had a positive attitude, (40%) had a negative attitude while the rest of the participants were unsure. According to women's practice of HTR the use of HRT reported by (7%) only. There were significant

differences in the mean knowledge score and educational level ( $p=0.003$ ) while there was no significant difference in the level of knowledge and menopausal status ( $p= 0.39$ ).<sup>(17)</sup>

In 2009 a cross-sectional study was conducted on 260 women attending PHCCs about Knowledge of Bahraini women about menopause, and hormone therapy. It revealed that the mean knowledge of menopause was 59.86 with S.D. 25.77 and it was significantly different for education level ( $p= 0.025$ ) and employment ( $p= 0.005$ ) while there were no statistically different in the mean knowledge among menopausal status, OCP use, and marital status. According to the percentage of correct answer of participants about knowledge of menopause and HRT, the highest was (75.8%) for the statement “pregnancy cannot occur after menopause”, then the statement “menopause occurs when menstruation stops” answered by (73.5%), while the lowest percentage was (33.8%) for the statement “HT can increase the risk of heart disease” followed by (40.0%) for the statement “risk of cardiovascular disease increase with menopause”. Finally the percentage of use of HRT was reported by (3.1%) only for both past and currently users.<sup>(18)</sup>

In 2009 another cross-sectional study was conducted on Bahraini women to assess the attitudes towards menopause. It revealed natural to slightly positive attitudes towards the menopause with mean average attitudes score 2.40 and S.D. 0.26. The range of the percentage of positive items was (49.20%). The highest agreement was for the statement “A good thing about menopause is that a woman can quit worrying about getting pregnant” reported by (78.9%) followed by the statement “Going through menopause really does not change a woman in any important way” reported by (52.3%). The range of the percentage of negative items was (53.10%). The highest agreement was for the statement “Women should expect some trouble during menopause” reported by (82.3%) while the lowest agreement was for the statement “Women worry about losing their minds during the menopause”. However, there was a significant differences in the mean of the average attitude score for menopausal status ( $p= 0.011$ ), marital status ( $p= 0.004$ ) and educational level ( $p= 0.024$ ).<sup>(19)</sup>

Mustafa and his colleagues conducted a descriptive cross-sectional study at the four teaching hospitals in Erbil city. The total of participants were 500 menopausal women 420 of them were housewives and 355 were married. The majority of women heard about menopause. According to the perception about menopause, more than two third (85.8%) consider menopause as a natural thing, almost half of them (47%) consider menopause as a positive thing and awareness about HRT reported by (13.6%).<sup>(20)</sup>

In Iran, across-sectional study was conducted to assess the women’s attitudes towards menopause (2010). The total of participants were 378 women (81%) of them were married and (42.3%) were illiterate. Regarding the attitude towards menopause, the highest agreement of positive attitude statements was reported by (83.6%) for the statement “A good thing about menopause is that a woman can quit worrying about getting pregnant” then the statement “After the change of life, a woman gets more interested in community affairs than before” reported by (70.4%). The highest agreement of negative attitude statements was reported by (87.3%) for the statement “A woman should see a doctor at the menopause” then the statement “Women should expect some trouble during menopause” reported by (77%). There was statistically association between the total attitude score and educational level ( $P = 0.04$ ).<sup>(21)</sup>

In 2009, a cross-sectional study was conducted about menopausal knowledge, attitude and practice among Italian women. The total participants were 969 women were selected 720 of them completed survey (response rate 74.3%). According attitudes towards menopause (92%) believed that menopause is a normal part of women’s life, (42%) agreed that menopause is a good experience, while (30%) believed that menopause is a bad experience. However, regarding the knowledge about menopause, the more frequent symptoms reported in relation to menopause are; hot flashes reported by (92%), irritability reported by (41%), sweating reported by (31%) and weight gain reported by (29%). Moreover, depression and irritability have been more frequent by highly educated women. Regarding knowledge about HRT, more than half (68%) of women agreed that HT is a good solution in menopause related symptoms, while (23%) believed that HT should be avoided. Finally, the prevalence of HRT use was (16%).<sup>(22)</sup>

In 2012, a cross-sectional study was conducted to assess knowledge and attitude towards menopause and HRT among Chinese women. The total participants were 3619 women, 1804 of them had university level of education and the majority of them were remarried. According to the knowledge and attitude towards menopause, the hot flashes reported by (94%), then mood swings reported by (68%), while both depression and back/joint pain reported by (63%). An interesting finding that most Chinese women (93.8%) believed that menopause should not be treated. However, women who had knowledge about HRT was reported by (3.5%). The use of HRT was reported by (2.1%).<sup>(23)</sup>

A cross-sectional study was conducted to assess the perception of menopause among Turkish women in 2010. It revealed that the mean age of menopause of the participants was 45.75±4.7. The Turkish women showed more negative attitude towards menopause reported by (57.7%) comparing to those with positive attitudes (42.3%). The main factors for positive attitudes were cited as "taking it as natural" and "no longer having the risk of becoming pregnant", while the factors affecting negative attitudes were cited "changes in the body like skin problem and hot flashes" reported by (96.5%) and "pain, vaginal dryness and obesity" reported by (11.6%). However, there was a significant difference in the attitudes towards menopause and educational level, women's age, and menopausal age.<sup>(24)</sup>

A. O. Adekunle et al. in their study published in the Nigerian Journal of Medicine in 2013 discussed the results of knowledge and perception of HRT on 432 women attending gynecology clinic at the University of Teaching Hospital, Enugu. The prevalence of knowledge about HRT showed that (38.9%) knew about it, (47.2%) didn't, (8.3%) don't know and (5.6%) no comment. The source of information of HRT was highest from friends (8.3%) and newspaper (8.3), lowest from doctors (2.8%), the majority didn't answer (63.9%), while radio, hospital, church, radio/newspaper/hospital/church were (2.8%), (2.8%), (2.8%), (8.3%) respectively.<sup>(25)</sup>

The above-mentioned studies reported locally and internationally demonstrated variation of methods and investigational tools used among them. This may affect the comparability of their findings and results.

Noteworthy there was a general positive acceptance by the Eastern women for menopause as no more pregnancy is expected. Moreover, the common menopausal symptoms were hot flashes, mood swings and feeling more tired followed by other complaints.

However, knowledge level about treatments for these symptoms was average to low and so that for attitudes and utilization of hormone replacement therapy across most of the reviewed studies. These differences in the present study population and study terms need to be considered in later discussions.

### **1.3 Aim of the study**

To estimate the knowledge and attitudes towards menopause and hormonal replacement therapy among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah, 2018.

### **1.4 OBJECTIVES**

(1) To assess/measure the knowledge level about menopause among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah, 2018.

(2) To assess the knowledge level about Hormonal Replacement Therapy among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah, 2018.

(3) To assess the knowledge level about the associated risk factor of Hormonal Replacement Therapy among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah, 2018.

(4) To evaluate the attitudes to menopause among 40- 60 years females attending primary health care at Makkah Al-Mukarramah, 2018.

(5) To evaluate the attitudes to hormonal replacement therapy among 40- 60 years females attending primary health care at Makkah Al-Mukarramah, 2018.

(6) To evaluate the practice of hormonal replacement therapy among 40- 60 years females attending primary health care at Makkah Al-Mukarramah, 2018.

## II. Methodology

### 2.1 Study Design

Cross-sectional.

### 2.2 Study Area

Makkah is the holy city for all Muslims and is located in the Western region. The total population is 1534731 in 2010<sup>(4)</sup>. The city is divided into three inner and four outer sectors of PHCCs and the total PHCCs is 85. There are seven hospitals and medical complexes (King Abdullah Medical City) of ministry of health, one Security Forces Hospital, and seven private hospitals.

### 2.3 Study Population

The total number of females age group 40- 60 years attending the general clinic of PHCCs at Makkah Al-Mukarramah in Al-Zaher, Al-Sharaie Al-Olia and Al-Masflah centers is 1600.

### 2.4 Inclusion Criteria

- Adult female 40- 60 years old.
- Attending the general clinic for any reason.

### 2.5 Exclusion Criteria

- Females attending general clinic less than 40 years and more than 60 years.
- Females attending other clinics.
- Non-Saudis.

### 2.6 Sample Size

The total number of 40- 60 years females attending the general clinic of Al-Zaher, Al-Sharaie Al-Olia and Al-Masflah centers at Makkah Al-Mukarramah during one week is 600, So approximately 1800 in 3-weeks. According to a previous study<sup>(14)</sup>, the prevalence of knowledge of HRT was (27%). By using (95%) confidence level and power (80%), the sample size calculated using Epi-Info calculator version 3.01. was 269 females.

### 2.7 Sampling technique

The PHCCs in Makkah Al-Mukarramah are distributed into seven sectors. Using multistage clustered random sampling where three sectors out of seven chosen randomly as the first stage. The second stage was a clustered random sample from each chosen sector one center selected. The third stage was a random convenience proportional sample of participants per each of three centers.

### 2.8 Data collection tool

An interview questionnaire from the previous regional study<sup>(21)</sup> was distributed to the selected study sample in PHCCs. The questionnaire includes five parts. The first part is concerned with the sociodemographic variables and reproductive characteristics, the second part involves Menopause Knowledge Scale (MKS), the third part involves the Attitude Towards Menopause Scale (ATMS), the fourth part involves knowledge and attitudes towards HRT and the fifth part is about the practice of HRT.

### **2.8.1 Socio-demographic variables and reproductive characteristics**

The socio-demographic data includes questions regarding age, marital status, level of education, occupation, monthly outcome, type of house, chronic diseases (DM, HTN, osteoporosis, ischemic heart disease) and smoking. Reproductive characteristics consist of assessment of menopausal status which is defined as the following: women who had regular menstrual periods in the last 3 months are classified as Premenopausal, women who indicate their periods had become irregular but they had a period in the last 12 months are classified as Perimenopausal and women who indicate they had not had a period in the last 12 months or longer are classified as Postmenopausal, oral contraceptive pills use and perceived general health.

### **2.8.2 Menopause Knowledge**

The second part of the questionnaire involves the MKS that measures women's general knowledge about menopause. We developed a knowledge scale, consisting of 23 questions taken from similar study<sup>(17,18)</sup>. The questions included were: average age at menopause, symptoms of the menopause, menopause as a risk for depression, osteoporosis, or cardiovascular diseases, and other questions about definition and causes of menopause.

### **2.8.3 ATMS**

The third part is Neugarten's ATM taken from Huffman et al<sup>(26)</sup> which includes 34 specific attitudes towards menopause. Responses are constructed in terms of what a woman, in general, thinks about menopause. Participants' answers indicate the degree to which they agree with each item on a 3-point Likert scale ranging from agree to disagreeing. Bowles (1986) reported a reliability coefficient of Cronbach's  $\alpha$  of 0.80 for the AMS total score<sup>(27)</sup>.

### **2.8.4 Knowledge and attitudes towards HRT**

The fourth part of the questionnaire is knowledge and attitudes towards HRT. There are six items regarding HRT knowledge and seven items about attitudes towards HRT, other questions for awareness about the treatment of menopause, source of information, using of HRT, and the importance of treatment.

### **2.8.5 Practice of HRT**

The fifth part of the questionnaire consists of five items regarding the practice of HRT.

## **2.9 Validity and reliability of the questionnaire**

Face and content validity of the Arabic version of the questionnaire was assessed by a panel of experts in the field to evaluate the items readability, language simplicity, and suitability and to evaluate the relationship of each item to the whole scale. The panel composed of three consultants of community and family medicine, OB Gyne. Based on their comments changes were made.

Reliability analysis was carried out on the knowledge part of the questionnaire comprising 83 items. Cronbach's alpha showed the questionnaire to reach acceptable reliability,  $\alpha = 0.915$ . All items appeared to be worthy of retention, resulting in a decrease in the alpha if deleted.

## **2.10 Data Collection technique**

The questionnaires distributed to participants attending a general clinic at Al-Zaher, Al-sharaie Al-Olia, and Al-Masfla centers by the researcher and she will carry on necessary interactions.

## 2.11 Variables

### 2.11.1 Dependent variables

1. The percent of knowledge level about menopause among 40- 60 years females attending primary health care centers.
2. The percent of knowledge about HRT among 40- 60 years females attending primary health care at Makkah Al-Mukarramah.
3. The attitudes level towards menopause among 40- 60 years females attending primary health care centers.
4. The attitudes level towards HRT among 40- 60 years females attending primary health care centers.

### 2.11.2 Independent variables

Age, level of education, occupation, income, comorbidities, source of information, menopausal status, smoking, use of OCP.

## 2.12 Data entry and analysis

The Statistical Package for Social Sciences (SPSS) software version 20.0 was used for data entry and analysis. Descriptive statistics (e.g. number, percentage) and analytic statistics using Chi Square tests ( $\chi^2$ ) to test for the association and/or the difference between two categorical variables were applied. A p-value equal to or less than 0.05 was considered statistically significant.

The MKS consist of a three-point Likert scale (1= no, 2 = don't know, 3 = yes). There are 23 items about MKS. The percentage of the correct answers from each participant to all items was calculated and called knowledge percentage and served as the dependent variable in the study. The same way used to analyze the knowledge about HRT.

The ATM scale consist of three-point Likert scale (1= agree, 2 = don't know, 3 = don't agree). Positive statements were reversely scored so that agreement with positive statements and disagreement with negative statements had the same score. The positive attitudes had a higher score.

A new variable was computed and called (Average Attitude Score) for the average responses of each participant to all ATM and served as the dependent variable in the study. The same way used to analyze the attitude towards HRT.

## 2.13 Pilot study

A pilot study was conducted in Al-Eskan PHCC that was not chosen in the study using the same questionnaire on 27 participants (10% of the sample size). Some modifications to the questionnaire were made. i.e. adding important risk factors like obesity, stroke, and breast cancers. Also, one repeated question about the use of HRT was deleted.

## 2.14 Ethical considerations

- Permission from the Directorate of Health Affairs of the Holy Capital Primary Health Care was obtained.
- Written consent from all participants was obtained.
- The researcher provided a service for participants in the form of lectures and brochures about menopause and HRT.

### 2.15 Relevance & expectations

It is expected to find a low level of knowledge and attitudes towards menopause and hormonal replacement therapy among 40- 60 years females attending primary health care centers at Makkah Al-Mukarramah.

### 2.16 Limitation

- Time limitation.

### 2.17 Budget, Fund or Grant

Self-funded

## III. Result

### 3.1 Characteristics of the study sample.

The total sample of Saudi women who participated in this study was 269 (Response rate=100%). The women were interviewed by the researcher in three PHCC. Their mean age was  $47.7 \pm 6.4$  years. Their socio-demographic data are shown in Table 1.

Table 1: Socio-demographic characteristics of the study sample among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Variable	No.(N=169)	%
<b>Marital status</b>		
Single	11	4.1
Married	208	77.3
Divorced	27	10.0
Widowed	23	8.5
<b>Educational level</b>		
University/Postgraduate	142	52.8
Diploma / High school	72	26.7
Elementary / Primary school	49	18.3
Illiterate	6	2.2
<b>Menopausal status</b>		
Pre-menopause	150	55.8
Peri-menopause	45	16.7
Post-menopause	74	27.5
<b>Monthly Income</b>		
Less than 5,000	64	23.8
From 5,000-10,000	112	41.6
More than 10,000	93	34.6
<b>Home type</b>		
Villa / Popular house	80	29.7
Building	62	23.0
Apartment	127	47.3
<b>OCCUPATION</b>		
Housewife	142	52.8



	Student	2	0.7
	Governmental Employee	117	43.5
	Private Employee	8	3.0
OCP use			
	Current use	30	11.1
	Past user	143	53.2
	Never used	96	35.7

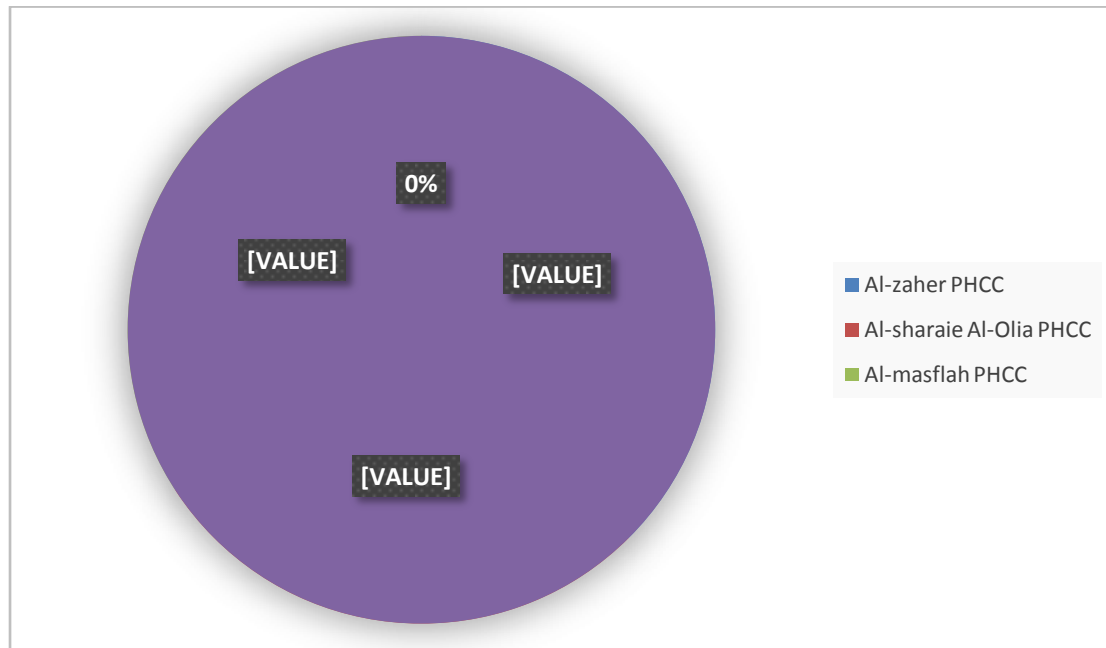


Figure 1 Distribution of participants among PHCCs (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018

More than one third (42.8%) reported a monthly income of 5000-1000 SAR, (34.2%) more than 10000 SAR, and (23.0%) less than 5000 SAR as monthly income.

More than a half (55.8%) reported regular cycle (pre-menopausal), (16.7%) reported irregular cycle (peri-menopausal), and (27.5%) reported menopause. More than half reported using contraception method either now by 30 (11.2%) or before by (53.2%). The majority (81.2%) reported having good and very good health. Regarding past medical history diseases (15.2%) had osteoporosis, (18.6%) had HTN and (17.8%) had DM.

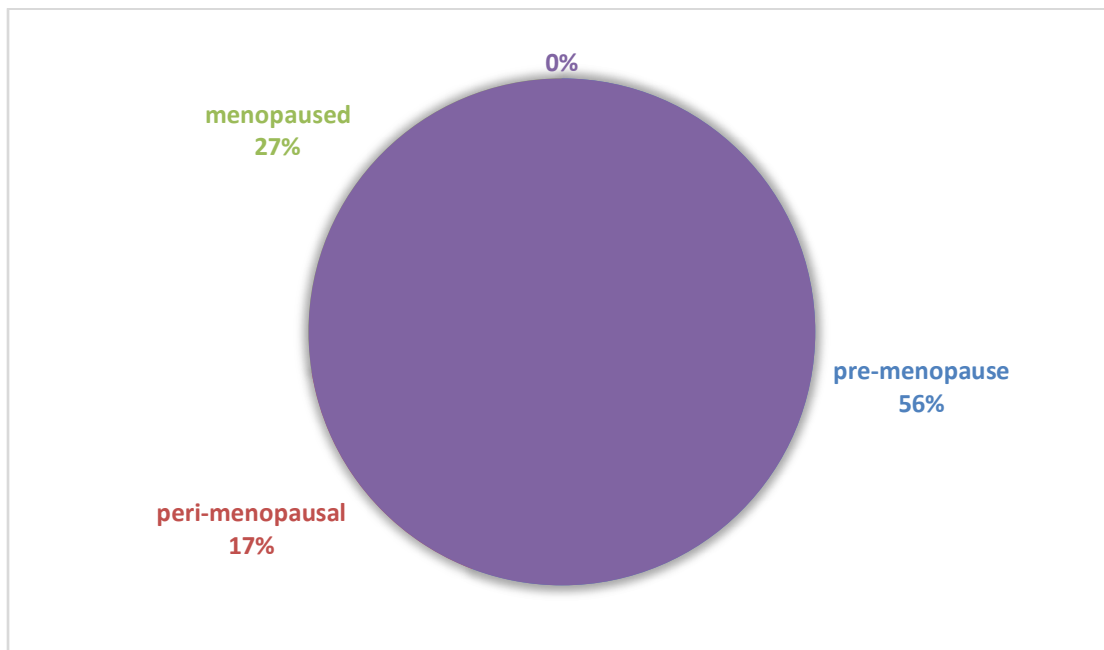


Figure 2 Menopausal satate of paricepants among PHCCs (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018

### 3.2 Knowledge about Menopause.

Table 2 shows that the mean knowledge score percentage for all participants was  $75.58 \pm 17.75$ . Almost all participants (98.1%) knew the right range of age of menopause. The majority (82.5%) stated that menopause is “A natural transition in women's life”. However, regarding the knowledge about symptoms of menopause, the main one was “Mood Swings” reported by (66.2%), followed by “Feeling more tired than usual” reported by (61.7%). Also (53.9%) reported that “Menopause associated with hot flashes” and equal percentage reported “Menopause associated with insomnia”.

The participants were least knowledgeable about “Breast pain” reported by (34.6%), beside (37.5%) who reported “Having difficulty concentration” and (41.3%) reported “Menopause associated with leak of urine”.

On the awareness part the highest agreement was for statements “Menopause occurs when menstruation stops” stated by (76.2%) and equally percentage for the statement “Pregnancy cannot occur after menopause”. The statement “Risk of osteoporosis increases with menopause” agreed upon by (66.2%), but the lowest agreed upon statement was “Menopause can have harmful consequences if not treated” by (38.7%). While the lowest agreement stated by (46.8%) on the statement “Risk of cardiovascular diseases increases with menopause”.

Table 2 Knowledge of Menopause among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Statements	Correct answer (N = 269)	%
What age of menopause usually	264	98.1
Menopause is A natural transition in women's life	222	82.5
Menopause associated with hot flashes	145	53.9
Menopause associated with night sweats	126	46.8
Menopause associated with depression	136	50.6
Menopause associated with mood swings	178	66.2
Menopause associated with insomnia	145	53.9
Menopause associated with feeling more tired than usual	166	61.7
Menopause associated with weight gain	130	48.3
Menopause associated with difficulty concentration	101	37.5
Menopause associated with breast pain	93	34.9
Menopause associated with irritability	143	53.2
Menopause associated with vaginal dryness	162	60.2
Menopause associated with leak of urine	111	41.3
Menopause associated with hair thinning	141	52.4
Menopause is due to decrease of female hormones	161	59.9
Menopause occurs when menstruation stops	204	75.8
Pregnancy cannot occur after menopause	204	75.5
Menopause occurs when ovaries stop functioning	176	65.4
Menopause is accompanied by hot flushes	159	59.1
Risk of cardiovascular diseases increases with menopause	126	46.8
Risk of osteoporosis increases with menopause	178	66.2
Risk of depression increases during menopause period	140	52.0

Table 3 shows that there was a significant difference in the mean knowledge percentage for menopausal status ( $p = 0.00$ ) and marital status ( $p = 0.040$ ) but no statistically significant difference in the mean knowledge percentage for educational level, employment, and oral contraceptive pill use.

Table 3 The Knowledge percentage of menopause by independent variables among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Variable	N	Mean	Std. Deviation	Std. Error	P value
<b>Menopausal status</b>					
Premenopause	150	70.79	19.259	1.573	0.000
Perimenopause	45	80.68	13.879	2.069	
Post menopause	74	82.20	13.271	1.543	
<b>Marital status</b>					
Single	11	64.62	24.130	7.275	0.040
Married	208	75.50	17.282	1.198	
Divorced	27	75.84	20.494	3.944	
Widowed	23	81.34	13.147	2.741	
<b>Educational level</b>					
University Postgraduate	14	85.05	15.578	4.163	0.182
University Undergraduate	128	75.46	17.218	1.522	
High school	70	75.45	17.875	2.136	
Elementary school	32	74.71	19.227	3.399	
Primary school	17	70.86	19.570	4.746	
Illiterate	2	92.31	.000	.000	
Diploma	6	70.26	18.038	7.364	
<b>OCP use</b>					
current use	30	77.49	14.940	2.728	0.133
past user	143	76.74	17.088	1.429	
never used	96	73.27	19.387	1.979	

### 3.3 Attitudes towards menopause

Table 4 shows the results of the attitudes toward menopause. The mean average attitude score was 2.05 with S.D.± 0.26 where the minimum score is 1 for a negative attitude and the maximum is 3 indicating a positive attitude. This indicates a neutral attitude towards menopause among these women.

For positive statements, the range of percentage of agreement was 66.9% – 17.5% with an average 46.3%. The highest positive attitude reported by (66.9%) of the total participants for the statement “A good thing about menopause is that a woman can quit worrying about getting pregnant.”The second positive statement “A woman’s body may change in menopause, but otherwise, she doesn’t change much.” reported by (61.7%). The third highest attitude reported by (59.1%) was for both statements “After the change of life, a woman feels freer to do things for herself.” and “A woman has a broader outlook on life after the Change”. While the lowest attitude reported by (17.5%) for the statement “After the menopause, a woman is more interested in sex than she was before”.

About the negative statements, the range of percentage of agreement was 79.9% - 20.4% with an average 40.7%.

The highest negative attitude reported by (79.9%) for the statement “Menopause is one of the biggest changes that happen in a woman’s life”, followed by (65.8%) for the statement “A woman should see a doctor at the menopause”. The third negative statement chosen by (62.1%) was “Women should expect some trouble

during menopause”, while the lowest chosen by (20.4%) was the statement “Women worry about losing their minds during the menopause” preceded by “After the change of life, women do not consider themselves real women” by (21.9%).

Table 4 Attitude towards the menopause among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Statements	N= 269	%
<b>Positive items</b>		
After the change of life, a woman feels freer to do things for herself.	159	59.1
Women generally feel better after the menopause.	96	35.7
Women are generally calmer and happier after the change of life.	129	48.0
A woman has a broader outlook on life after the Change.	159	59.1
A woman’s body may change in menopause, but otherwise, she doesn’t change much.	166	61.7
Life is more interesting for awoman aftermenopause.	113	42.0
A woman gets more confidence in herself after the change of life.	125	46.5
Going through menopause really does not change a woman in any important way.	119	44.2
The only difference between a woman who has been through menopause and one who has not is that one menstruates and the other doesn’t.	138	51.3
After the change of life, a woman has a better relationship with her husband.	90	33.5
Many women think menopause is the best thing that ever happened to them.	91	33.8
After the change of life, a woman gets more interested in community affairs than before.	133	49.4
Women often get self--centered at the time of the menopause.	124	46.1
After the menopause, a woman is more interested in sex than she was before.	47	17.5
A good thing about menopause is that a woman can quit worrying about getting pregnant.	180	66.9
<b>Negative items</b>		
A woman should see a doctor at the menopause.	177	65.8
Menopause is one of the biggest changes that happens in a woman’s life.	215	79.9
A woman is concerned about how her husband will feel about her after menopause.	158	58.7
Menopause is an unpleasant experience.	129	48.0
Menopause is a disturbing thing that women naturally dread.	117	43.5
Womenshould expect some trouble during menopause.	167	62.1
It is no wonder women feel down in the dumps at the time of menopause.	75	27.9
Changes inside the body that women cannot control cause all trouble at menopause.	126	46.8
Women worry about losing their minds during the menopause.	55	20.4
Women think of menopause as the beginning of the end.	89	33.1

In truth, just about every woman is depressed about menopause.	88	32.7
Women often use the change of life as an excuse for getting attention.	63	23.4
After the change of life, women do not consider themselves real women.	59	21.9
It's not surprising that most women get disagreeable during the menopause.	91	33.8
Women who have trouble with the menopause are usually those who have nothing to do with their time.	101	37.5
Women who have trouble in the menopause are those who are expecting it.	115	42.8
A woman in menopause is apt to do crazy things she herself does not understand.	88	32.7
Menopause is a mysterious thing which most women don't understand.	102	37.9
Unmarried women have a harder time than married women do at the time of the menopause.	66	24.5

Table 5 shows that there were statistically significant differences in means of the average attitude score with menopausal status and educational level ( $p = 0.009$  and  $p = 0.023$  respectively).

Table 5 Average attitude score by independent variables among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Variable	N	Mean	Std. Deviation	Std. Error	P value
Menopausal status					
Premenopause	150	2.02	.244	.020	0.009
Perimenopause	45	2.04	.269	.040	
Post menopause	74	2.12	.277	.032	
Marital status					
Single	11	1.99	.125	.038	0.863
Married	208	2.06	.267	.018	
Divorced	27	2.09	.256	.049	
Widowed	23	2.03	.262	.055	
Educational level					
University Postgraduate	14	1.87	.308	.082	0.023
University Undergraduate	128	2.02	.253	.022	
High school	70	2.13	.240	.029	
Elementary school	32	2.12	.231	.041	
Primary school	17	2.02	.308	.075	
Illiterate	2	2.16	.478	.338	
Diploma	6	2.06	.220	.090	
OCP use					
Current use	30	2.05	.320	.058	0.324
Past user	143	2.07	.266	.022	
Never used	96	2.02	.230	.023	

### 3.4 Knowledge about HRT

Assessment of women’s knowledge about HRT showed that the mean knowledge percentage was 72.1186±11.71. Table 6 shows the result of knowledge about HRT. Only (18.2%) of the participants were aware of some treatment for menopausal symptoms available. More than twothirds of the latter 33 (70.2%) had indicated “HRT” as treatment, followed by 3 (6.4%) for “Calcium and vitamins”. The rest of them knew treatments like herbal, vitamins or didn’t remember the name of tablets.

Table 6 Knowledge of HRT among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Statements	N= 269	%
HT replaces hormones decreasing during menopause	112	41.6
HT can reduce hot flashes	95	35.3
HT can increase the risk of heart disease	54	20.1
HT can decrease the risk of osteoporosis	74	27.5
HT increases risk of breast cancer	51	19.0
HT decreases risk of colon cancer	34	12.6

However, (47.6%) knew that HRT replaces hormones decreasing during menopause, (36.4%) knew that natural approaches are better than HRT. However, (35.3%) thought that HRT can reduce hot flashes, while only 26 (9.7%) indicated that HRT prevents obesity.

Regarding health effects of HRT (27.5%) of participants knew that HRT can decrease the risk of osteoporosis, (20.1%) knew that HRT can increase the risk for heart disease, (19.0%) knew it increases risk of breast cancer, (12.6%) knew it decreases the risk of colon cancer.

Table 7 shows that there were statistically significant differences in the mean knowledge percentage about HRT (using ANOVA test) and educational level (p= 0.037)

Table 7 The Knowledge percentage of HRT by independent variables among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Variable	N	Mean	Std. Deviation	Std. Error	P value
Menopausal status					
Premenopause	150	72.0370	10.12417	.82664	0.677
Perimenopause	45	74.6914	11.99488	1.78809	
Post menopause	74	70.9459	14.29164	1.66137	
Marital status					
Single	11	74.7475	11.48365	3.46245	0.418
Married	208	71.6880	11.62311	.80592	
Divorced	27	72.8395	10.48824	2.01846	
Widowed	23	74.6377	14.29469	2.98065	
Educational level					
University Postgraduate	14	79.7619	14.55369	3.88964	0.037
University Undergraduate	128	72.3958	11.34772	1.00301	
High school	70	72.7778	11.03638	1.31910	
Elementary school	32	69.2708	13.00862	2.29962	

Primary school	17	66.3399	9.51578	2.30792	
Illiterate	2	80.5556	19.64186	13.88889	
Diploma	6	72.2222	9.93808	4.05720	

### 3.5 Attitudes towards HRT.

The mean average attitude score towards HRT was  $2.04 \pm 0.25$  which indicates a neutral attitude of the participants towards HRT. Table 8 shows the result of attitudes towards HRT. The highest agreement was for the statement "Natural approaches are better than HRT" reported by (36.4%), followed by (36.1%) for the statement "HRT is appropriate for some women". But the lowest agreement was for the statement "HRT is to be avoided" reported by (17.1%).

Table 8 Attitudes towards HRT among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Statements	N= 269	%
HRT is a good solution, if you have symptoms	73	27.1
HRT is appropriate for some women	97	36.1
HRT is to be avoided	46	17.1
HRT is good for preventing age-related health Problems	74	27.5
HRT has many complications and side effects	63	23.4
Natural approaches are better than HRT	98	36.4
Risks of taking HRT outweigh the benefits	54	20.1

There were no statistically significant differences in the means of average attitude score (using ANOVA test) towards HRT for educational level  $p$ -value= 0.267, menopausal status.  $p$ -value = 0.071, marital status.  $p$ -value = 0.677 and OCP use.  $p$ -value = 0.399.

### 3.6 Practice of HRT

Assessment of women's practice of HRT showed that only (4.8%) used HRT. However, (61.5%) of those users got it from gynecologist but almost half (53.8%) of them got the benefits and risks of HRT explained by doctors; as shown in table 9.

Table 9 Practice of HRT among the study sample among 40- 60 years females attending primary health care centers (Al-Zaher, Al-Sharaie Al-Olia, and Al-Masflah) at Makkah Al-Mukarramah, 2018.

Variable	No	%
Use of HRT		
Yes	13	4.8
No	256	95.2
Who Prescribed it?		
OB/GYN doctor	8	61.5
General Physician	5	38.5
Where it is Prescribed?		
Government Hospital	7	33.8
Private Hospital	6	46.2
Doctor Explained Risks		
Yes	7	53.8
No	6	46.2



#### IV. DISCUSSION

Although, up to the researcher's knowledge this study is the first of its kind in Primary Health Care Centres in Makkah city in the Kingdom of Saudi Arabia that adds to local and national studies about the issue. This study included women in pre, peri, and post-menopausal stages. The comparability of this study to others that were done in this part of the world and others is limited according to several factors including the culture of participants, methods, and tools used.

The mean knowledge score of menopause for this study sample group was  $75.58 \pm 17.75$  on MKS (Range= 34 - 100). This result is comparable to that found by Hamid S et al in UAE.<sup>(17)</sup> Although, the score of previous national study<sup>(15)</sup>, Bahraini<sup>(18)</sup>, Italian<sup>(22)</sup>, and Turkish women<sup>(24)</sup> were lower than this study sample but a Chinese woman<sup>(23)</sup> demonstrated a higher knowledge about menopause. The differences are related to different methods, tools, and sampling variations.

Concerning a verbal definition of menopause as the statement "natural transition in women's life" several studies found a similar result.<sup>(17, 20, 22, 24, 28)</sup>

The majority of participants could state the age of menopause correctly. However, knowledge about common symptoms among women in menopause showed a higher percentage of having mood swings and more tiredness more than having hot flashes; 3rd in order; that was universally reported by others.<sup>(6, 7, 8, 9, 16, 22)</sup> But it is supported by the results found by others.<sup>(20, 23)</sup> These predominant symptoms are similar to those found by Hamid et al<sup>(17)</sup> that showed hot flashes, mood swings, and feeling more tired in descending order among the study groups. Generally, hot flashes were reported by another national study as the commonest by the menopausal women only; who constitute around one fourth in the current study; while the psychological symptoms were more prominent among the majority of women.<sup>(15)</sup>

However, the participants were least knowledgeable about breast pain and having physical difficulty in concentration. These symptoms were not common to be comparable to others. There was a positive association of knowledge level with marital status ( $p=0.04$ ) and with menopause status ( $p=0.0001$ ) that was supported by others.<sup>(17, 18, 19, 24, 28)</sup> On the contrary to others<sup>(18, 19)</sup>, education status had no significant statistical association with the level of knowledge among the population of this study. Not to mention it deserves further evaluation if the limitations of this study were not present. The women's knowledge about risk factors of menopause showed an increased risk of osteoporosis by 66.2%, of depression by 52.0% and of cardiovascular diseases by 46.8% which is supported by Jassim G A<sup>(18, 29, 30)</sup>.

More than two thirds of the sample community had good and very good levels of awareness about menopause which is higher than others.<sup>(3, 8)</sup> Possibly due to sample composition and may need further study. On the side of awareness's items, the highest agreement was for the statement "Menopause occurs when menstruation stops" that was found in Bahrain study.<sup>(18)</sup>

The mean attitude score was on the range of neutral attitude towards menopause. That is a little higher than what found in UAE<sup>(17)</sup>, Bahrain<sup>(19)</sup>, and Turkey<sup>(24)</sup> but comparable to what was found by Ghaderi E et al.<sup>(21)</sup>

Comparing items of the attitude's scale with a similar application in other countries revealed that these results are agreeable to a large extent with the results of Iranian study.<sup>(21)</sup> Another comparison to an USA study of Afro-American women showed a close similarity noticed especially for the high ranked items i.e. "A woman should see a doctor at the menopause", "A woman is concerned about how her husband will feel about her after menopause", and "After the change of life women feel free to do things for herself". This similarity expected to reflect the variation of women's attitude towards menopause among people in different countries and cultures. These women gave items on the negative side of attitude in our scale the first options. While the positive items here ranked lower by the Afro-American women. The characteristics of the Afro-American group including those who had surgical hysterectomy operations could explain this difference. Noteworthy is the statement "Menopause is one of the biggest changes in a woman's life" that had approximately an equal high preference among women in this study and others. Also, the statement "A woman should expect some trouble during

menopause” was agreed upon a high percentage of Bahraini women than Saudis or Afro-Americans. <sup>(18, 28)</sup> Socio demographic characteristics may explain the difference.

Moreover, the first item among the positives was "After the change of life, woman feels free to do things for herself" which was comparable to others. <sup>(18, 28)</sup> Noticeably, statements reflecting positive attitude like "A woman gets more confidence in herself after the change of life", another statement "Going through menopause really doesn't change a woman in any important way", and "The only difference between a woman who has been through menopause and one who has not is that one menstruates and the other does not" were answered by around 50% of participants. In Table (10), a comparison between 22 items similar to Jassim et al. study and Huffman et al. <sup>(18,28)</sup> According to the statement “A woman should see a doctor at the menopause” our result reported by (65.8%) of agreement. It is different from result of Jassim et al study and Huffman et al study that showed (80%, 95.96%) respectively but still majority of women had seen menopause as a disease should be treated. So that reflects a negative attitude to menopause. Moreover, a similar percentage of agreement for the statement “Menopause is one of the biggest changes that happen in a woman’s life” reported by up to (80%) in other compared studies that also reflects negative attitude for most women. While another similarity of percentage among compared studies was for the statements “A woman gets more confidence in herself after the change of life”, “Going through menopause really does not change a woman in any important way” and “The only difference between a woman who has been through menopause and one who has not is that one menstruates and the other doesn’t”. All those statements reflect a positive attitude and all were answered by around (50%) or less.

Table 10 shows a comparison between current study, Jassim et al. and Huffman et al. studies regarding the percentage of agreement on the ATM scale.

Statements	% of agreement		
	Our study	Jassim study	Huffman study
A woman should see a doctor at the menopause	65.8	80.0	95.96
Menopause is one of the biggest changes that happens in a woman’s life	79.9	82.3	80.63
A woman is concerned about how her husband will feel about her after menopause	58.7	66.9	70.78
Menopause is an unpleasant experience	48.0	64.2	69.96
After the change of life, a woman feels freer to do things for herself	59.1	44.6	67.44
Women generally feel better after the menopause	35.7	37.7	64.90
Women are generally calmer and happier after the change of life	48.0	34.6	64.15
A woman has a broader outlook on life after the change	59.1	43.5	61.10
Menopause is a disturbing thing that women naturally dread	43.5	71.5	60.00

Women should expect some trouble during menopause	62.1	83.1	58.48
A woman's body may change in menopause, but otherwise, she doesn't change much	61.7	29.6	58.45
It is no wonder women feel down in the dumps at the time of menopause	27.9	72.3	57.34
Life is more interesting for a woman after menopause	42.0	42.3	55.56
Changes inside the body that women cannot control cause all trouble at menopause	46.8	69.6	54.80
A woman gets more confidence in herself after the change of life	46.5	43.1	51.85
Going through menopause really does not change a woman in any important way	44.2	52.3	50.23
Women worry about losing their minds during the menopause	20.4	30.0	48.64
Women think of menopause as the beginning of the end	33.1	43.5	46.19
The only difference between a woman who has been through menopause and one who has not is that one menstruates and the other doesn't	51.3	50.8	45.41
In truth, just about every woman is depressed about menopause	32.7	43.1	36.81
Women often use the change of life as an excuse for getting attention	23.4	36.5	27.15
After the change of life, women do not consider themselves real women	21.9	42.3	25.24

Study reviews on the relationship between culture and attitudes across the world showed that cultural, societal aspects and geographical locations had a pronounced effect on the meanings and experience of menopause period in women's opinions. (18, 31, 32)

The relation between the educational state and the attitude was previously found by other studies. (18, 19) Noteworthy, some researchers (19) concluded that the researcher should include an analysis of differences among racial and ethnic groups as menopausal symptoms and attitudes are culturally determined.

Among limitations of this study that it didn't look in detail of symptoms associated with menopause or aspects of marital status like the number of pregnancies, number of children, and sexual activity.

HRT as a treatment option for the study sample was stated only by 12.3% of them. Asiri et al (15) and Bakarman and Abu Ahmad (16) found a higher awareness about HRT among Saudi women but the unwillingness to use them because of not knowing them by 56% of participants. Ghufraan A and Al-Shboul (19) found that awareness was 26.7% among Bahraini women describing it low again. In another study in UAE HAMID S et al (17) found poor knowledge about HRT in 73% of Emirati residents. Similarly, the Chinese study (23) showed 3.5% of women who were aware of HRT. On the other hand, Nigerian women had a higher percentage of those knowledgeable about HRT but described by the researchers as low. (25) Our results are not different from previous ones with a low knowledge description.

However, all items agreed upon by less than 50% of participants including that HRT replaces hormones decreasing during menopause by 47%, reducing hot flashes by 35%, decreasing risk of colon cancer by 12.6%. These findings were supported by others. <sup>(16,21)</sup>

Association of statistical significance was found with educational level in contradiction to what was found by others. <sup>(23)</sup>

Generally, a similar low women's practice of HRT (4.8%) while none currently was supported by most of previous national, regional and international studies. <sup>(15,16,17,22,23,25)</sup> Similarly, the educational status affected their use <sup>(17,22,)</sup> but no significant effect of marital, menopausal, or working status as found among Chinese women. <sup>(23)</sup>

Sources of information were doctors mainly as supported by others <sup>(17,23,25)</sup> and they explained the benefits more than the risks.

## V. CONCLUSION

Based on the findings of the researcher study, the following can be concluded:

- The majority of participant women believed that they had good and very good awareness regarding menopause, although they revealed low to average knowledge.
- The highest participants' responses regarding menopause symptoms were related to "Mood Swings", "Feeling more tired than usual" and "having vaginal dryness".
- The mean average attitude score indicated a neutral attitude towards menopause among these women.
- Almost half of them had a negative attitude towards HRT and revealed a low level of knowledge about it and even a very low level about its risk factors.
- Less than 5% used hormone-replacement therapy with similar results in regional studies.
- Very few women discussed with their doctor the risk associated with using hormone-replacement therapy.

## RECOMMENDATIONS

- Family medicine specialists are requested to encourage the women around their fifties of age to talk about menopause, risk factors, and possible therapies in particular with those who have symptoms and facilitating the referral to specialized services.
- Primary health care providers; Family medicine in particular; (OB/GYN doctors if approached in hospitals) are requested to provide health education about menopause and HRT for women aged 40- 60 years through their clinic's visit.
- Health education campaigns to community members about menopause and replacement hormone therapy held by concerned governmental administrations should cover the main points of knowledge, positive attitude, and practice about menopause.
- The PHC administration in MOH should try to organize and conduct initiatives for health education programs about menopause and HRT in a familiar language among the community by mass media to raise public awareness and knowledge.
- Further local and national studies on assessment of women's knowledge and attitude regarding menopause and HRT to be conducted in larger sample sizes and regions other than Makkah Al-Mukarramah.

## REFERENCES

- [1] Casper RF. Clinical manifestations and diagnosis of menopause. InUpToDate 2009 Sep.
- [2] Woods NF, Mitchell ES. Symptoms during the perimenopause: prevalence, severity, trajectory, and significance in women's lives. *The American journal of medicine*. 2005 Dec 19;118(12):14-24.
- [3] artin K, Barbieri R, Crowley Jr WF. Treatment of menopausal symptoms with hormone therapy. UpToDate, Crowley, WF (Ed), UpToDate, Waltham, MA (Accessed April 27, 2016). 2017.
- [4] General Authority for Statistics Kingdom of Saudi Arabia <https://www.stats.gov.sa/ar/13>
- [5] Lee JY, Suh CS. The attitudes of postmenopausal women towards hormone replacement therapy (HRT) and effects of HRT on lipid profiles. InProceedings of the first consensus meeting on menopause in East Asian region, May 1997 (Vol. 26, p. 30).
- [6] Ahuja M. Age of menopause and determinants of menopause age: A PAN India survey by IMS. *Journal of mid-life health*. 2016 Jul;7(3):126.
- [7] Shobeiri F, Nazari M. Age at menopause and its main predictors among Iranian women. *International journal of fertility & sterility*. 2014 Oct;8(3):267.
- [8] Costanian C, McCague H, Tamim H. Age at natural menopause and its associated factors in Canada: cross-sectional analyses from the Canadian Longitudinal Study on Aging. *Menopause*. 2017 Oct 30.
- [9] Pirincci E, Oguzoncul AF, Tasdemir R. Age at the onset of menopause and its influencing factors in Turkish women in a rural area. *Journal of women & aging*. 2016 May 3;28(3):238-46.
- [10] Malik HS. Knowledge and attitude towards menopause and hormone replacement therapy (HRT) among postmenopausal women. *therapy*. 2008 Apr;11:12.
- [11] Appling SE, Allen JK, Zandt SV, Olsen S, Brager R, Hallerdin J. Knowledge of menopause and hormone replacement therapy use in low-income urban women. *Journal of women's health & gender-based medicine*. 2000 Jan 1;9(1):57-64.
- [12] Memon FR, Jonker L, Qazi RA. Knowledge, attitudes and perceptions towards menopause among highly educated Asian women in their midlife. *Post reproductive health*. 2014 Dec;20(4):138-42.
- [13] Chaopotong P, Titapant V, Boriboonthirunsarn D. Menopausal symptoms and knowledge towards daily life and hormone replacement therapy among menopausal women in Bangkok. *JOURNAL-MEDICAL ASSOCIATION OF THAILAND*. 2005 Dec 1;88(12):1768.
- [14] Rachoń D, Zdrojewski T, Suchecka-Rachoń K, Szpakowski P, Bandosz P, Manikowski A, Wyrzykowski B. Knowledge and use of hormone replacement therapy among Polish women: estimates from a nationally representative study—HORTPOL 2002. *Maturitas*. 2004 Jan 20;47(1):31-7.
- [15] Asiri M, Shahrani M, Alamer H, Alkhursan S, Alhashem H, Alshashaa E, Alamri M, Alshehri F. Awareness and Perceptions Towards Menopause Among Saudi Women. *International Journal of Scientific & Engineering Research*.2018.
- [16] Bakarman MA, Ahmed HA. Awareness of hormonal replacement therapy among females attending primary health care centers in Western Saudi Arabia. *Saudi medical journal*. 2003 May 1;24(5):488-92.
- [17] Hamid S, Al-Ghufli FR, Raeesi HA, Al-Dhufairi KM, Al-Dhaheri NS, Al-Maskari F, Blair I, Shah SM. Women's knowledge, attitude and practice towards menopause and hormone replacement therapy: a

- facility based study in Al-Ain, United Arab Emirates. *Journal of Ayub Medical College Abbottabad*. 2014 Dec 1;26(4):448-54.
- [18] Jassim GA, Al-Shboul QM. Knowledge of Bahraini women about the menopause and hormone therapy: implications for health-care policy. *Climacteric*. 2009 Jan 1;12(1):38-48.
- [19] JASSIM, Ghufuran Ahmed; AL-SHBOUL, Qasim. Attitudes of Bahraini women towards the menopause: implications for health care policy. *Maturitas*, 2008, 59.4: 358-372.
- [20] MUSTAFA, GazangNajmaddin; SABIR, Jwan Muhamad. Perception and experience regarding menopause among menopausal women attending teaching hospitals in Erbil City. *Global journal of health science*, 2012, 4.3: 170.
- [21] GHADERI, Ebrahim; GHAZANFARPOUR, Masumeh; KAVIANI, Masumeh. Evaluation of menopausal women's attitudes towards menopause in Shiraz. *Pakistan Journal of Medical Sciences*, 2010, 26.3.
- [22] DONATI, Serena, et al. Menopause: knowledge, attitude and practice among Italian women. *Maturitas*, 2009, 63.3: 246-252.
- [23] JIN, Feng, et al. Knowledge and attitude towards menopause and hormone replacement therapy in Chinese women. *Gynecologic and obstetric investigation*, 2015, 79.1: 40-45.
- [24] YANGIN, HaticeBalci; KUKULU, Kamile; SÖZER, GülşenAk. The perception of menopause among Turkish women. *Journal of women & aging*, 2010, 22.4: 290-305.
- [25] Okeke TC, Akogu SP, Ekwuazi KE, Ezenyeaku CC, Ikeako LC. A survey of women's knowledge and perception of hormone replacement therapy (hrt) in Enugu, South East Nigeria. *Nigerian journal of medicine: journal of the National Association of Resident Doctors of Nigeria*. 2013;22(4):332-5.
- [26] Neugarten BI, Wood V, Kraines RJ, Loomis B. (1963). Women's attitudes toward the menopause. *Vita Hum*, 6, 140-51
- [27] Bowles C. Measures of attitude toward menopause using the semantic differential model (1986). *Nurs Res*, 35, 81-5.