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RESEARCH ARTICLE

KNOWLEDGE, ATTITUDE AND PRACTICES TOWARDS MANAGEMENT OF POSTMENOPAUSAL SYMPTOMS IN PRIMARY HEALTH CARE AMONG FAMILY MEDICINE RESIDENTS IN MAKKAH CITY, 2021: A CROSS-SECTIONAL STUDY

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ABSTRACT

Background: Menopausal women are an increasing population that needs more attention and care. Providing counseling and management of menopausal symptoms effectively are one of the roles of primary healthcare (PHC) doctors. Thus, they need to be up to date in menopause management. **Objectives:** To explore the knowledge, attitude, and practices of family medicine residents towards the management of postmenopausal symptoms. **Subjects and methods:** Analytic cross-sectional study was performed among all family medicine residents registered at the joint program of family medicine in Makkah Al-Mukarramah city, 2021. A self-administered online questionnaire including questions about sociodemographic data, knowledge, attitude and practice of menopausal management among the participants was applied for data collection. **Results:** The study included 118 Family Medicine resident physicians. Majority (94.9%) aged <30 years and females represented 51.7% of them. History of ever attending courses or workshops about menopause and its management was mentioned by 18.6% of the respondents. Overall, sufficient knowledge was reported among 44.9% of them. Attending training courses was borderline insignificantly associated with knowledge level, $p=0.050$. Majority of the physicians (97.5%) expressed positive attitude towards menopause and its management, however, only 33.1% had good practice, with no difference between the participants according to sociodemographic characteristics and history of attending training courses. The most frequently reported barriers facing family medicine resident physicians in managing menopausal symptoms were lack of training in the management of menopause (58.5%), lack of knowledge about menopausal management (48.3%), unaware of existing guidelines (42.4%), lack of skills (24.6%) and lack of effective referral system (24.6%). **Conclusion:** Insufficient knowledge and poor practice of menopause management were noticed among family medicine residents. However, positive attitude was expressed by majority of them towards menopause and its management.

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INTRODUCTION

Primary health care doctors are the first line of health service to the community. They treat and manage patients at different ages using a holistic approach. Menopausal women are an increasing population that needs more attention and care^(1, 2).

Providing counseling and management of menopausal symptoms effectively are one of the roles of PHC doctors. They need to be up to date in menopause management⁽³⁾. Menopause is a normal biological process that occurs as a part of aging in women⁽⁴⁾. It is clinically diagnosed after a consecutive 12 months of amenorrhea without any obvious physiologic or pathologic cause⁽⁴⁾.

The natural onset of menopause is between the ages of 45 to 60 years⁽⁵⁾. The median age is 51.4 years in normal women⁽⁶⁾. Menopause includes several physiological changes in response to a decrease in the secretions of gonadocorticoids (Estrogen and progesterone) and a consequent rise of gonadotropins (Follicle-stimulating hormone and luteinizing hormone) which may result in several symptoms⁽⁷⁾. These symptoms vary widely between individuals in severity and duration, some of these symptoms could last up from four to ten years⁽⁸⁾. Menopausal symptoms include Vasomotor symptoms (hot flushes and night sweats) which may cause sleep disturbances^(4, 9). These could be severe enough to affect and impair the quality of life^(10, 11). In addition to urogenital complications (atrophic vaginal irritation, dryness, dyspareunia, and urinary stress incontinences)^(4, 12). Also, Irritability and mood swings, which range from sadness and crying for no reason to withdrawal from social interaction⁽¹³⁾. Currently, the average life expectancy is increased due to declining in mortality rate and improvement in the quality of health services⁽¹⁾. So, a woman now is living a third of her life in the postmenopausal period⁽²⁾. Primary health care doctors are the first line dealing with a patient in the community so they are expected to provide the postmenopausal women with appropriate management and support. To achieve that, we need to enhance their level of knowledge, perceptions, and practice to the optimal level following the latest evidence-based medicine⁽³⁾.

SUBJECTS AND METHODS

Analytic cross-sectional study was performed in Makkah Al-Mukarramah, which is the holy city to all Muslims located in the western area in the kingdom of Saudi Arabia. There are many medical post-graduate training programs in Makkah, in different specialties. One of them is the joint program of family medicine. It is a post-graduate training program conducted by the Ministry of Health, under the supervision of the Saudi Commission for Health Specialties, to graduate a well-trained family medicine physician. It included a simple random sample of family medicine residents registered at the joint program of family medicine in Makkah city, 2021. The total number of the joint program of family medicine Candidates in Makkah, as provided officially by the program administration, is 164 resident doctors. Based on that, the sample size is 116 resident doctors, calculated by using (Raosoft.com) with a margin error of 5%, confidence level of 95% and response distribution of 50%. We added 10 % from participants to overcome the possible number of defaulters and non-responders.

A self-administered online questionnaire forms sent on (WhatsApp) app of the participants was utilized to collect data about sociodemographic information such as age, gender, nationality, level of training, years of clinical practice, and attendance to courses or workshops about menopause and its management, questions to assess knowledge regarding postmenopausal symptoms (15 statements), statements to assess the attitude towards menopause and the fourth part is about practices. It was derived from another published study dealing with the same topic^(13, 14). It was validated by 3 consultants in the field of specialty and tested during the pilot study for reliability. Regarding knowledge, correct response was assigned a score of "1" whereas wrong or missing answers were assigned a score of "0". Total score and each percentage were computed for each participant.

Those scored below 60% were considered having "insufficient knowledge": while those scored 60% and above were considered having "sufficient knowledge". Concerning attitude score, the participants responses were scored in a way that the highest the score, the more positive the attitude towards menopause and its management. Total score and its percentage were computed for each participant. Those scored below 60% were considered having "negative attitude": while those scored 60% and above were considered having "positive attitude". As regards practice, appropriate practice was assigned a score of "1" whereas inappropriate one was assigned a score of "0". Total score and each percentage were computed for each participant. Those scored below 60% were considered having "poor practice": while those scored 60% and above were considered having "good practice". Approvals from the Research Ethics committee, the joint program of family medicine in Makkah and the directorate of health affairs of Holy Capital Primary Health Care as well as informed consent from all participants were obtained. Data were entered into a personal computer and were analyzed using Statistical Package for the Social sciences (SPSS) program version 26.0 Chi-square and Fischer Exact test (in case of small frequencies) were used to investigate for the association between knowledge, attitude and practice of menopausal management from one side and associated factors from the other side. A p-value equal to or less than 0.05 was adopted for statistical significance.

RESULTS

The study included 118 Family Medicine resident physicians. Majority of them (94.9%) aged <30 years. Females represent 51.7% of them. All were Saudi nationals. Those of Residency level 1 represented 30.5% of the respondents and 64.4% had an experience ranged between one and four years. History of ever attending courses or workshops about menopause and its management was mentioned by 18.6% of the respondents. Out of them, 72.7% have attended such courses since more than one year.

Knowledge about menopause and its management: About only one third (32.2%) of the respondents could recognize the proper definition of menopause. Regarding symptoms, majority of them could recognize vaginal dryness (96.6%), vasomotor symptoms (95.8%) and mood disturbance (93.2%), however, only 31.4% and 26.3% could recognize difficulty with memory/concentration and joint pain, respectively. The average age of menopause was known by most of the physicians (76.3%). Variable level of knowledge, ranged between 9.3% and 64.4% was observed regarding management of women with different scenarios. Table 1. Overall, sufficient knowledge was reported among 44.9% of the family medicine residents participated in the study as shown in Figure 1. Almost two-thirds (63.6%) of family medicine physicians who reported attendance of courses or workshops about menopause and its management compared to 40.6% of those who did not attend such courses expressed sufficient level of knowledge. This was borderline insignificant, $p=0.050$. Other studied factors (age, gender, residency level, years of clinical practice and duration since attending courses or workshops about menopause) were not significantly associated with the knowledge level about menopause and its management Table 2.

Table 1. Knowledge about menopause and its management among family medicine residents, Makkah

	Correct answer	
	No.	%
The diagnosis of menopause requires (12months of amenorrhea)	38	32.2
Symptom/s of menopause include: Vasomotor symptoms(hot flashes or night sweats)	113	95.8
Vaginal dryness	114	96.6
Mood disturbance	110	93.2
Fatigue	65	55.1
Difficulty with memory/concentration	37	31.4
Sleep disturbance	83	70.3
Joint pain	31	26.3
The average age of natural menopause worldwide is 51 years	90	76.3
If a 48-year-old woman presents with heavy menstrual bleeding lasting greater than 10 days after 2 months of amenorrhea, you should do: (A pregnancy test, pelvic ultrasound, endometrial biopsy, complete blood cell count (CBC) and thyroid function studies)	56	47.5
A 53-year-old woman presents with severe vasomotor symptoms. All of the following are contraindications to the use of hormone replacement therapy except: (History of hypertension)	41	34.7
First-choice treatment for a recently menopausal woman with severe vasomotor symptoms without medical contraindications: (menopause hormone therapy (MHT))	76	64.4
For a 51-year-old woman with severe vasomotor symptoms who has a uterus and no contraindications to the use of menopause hormone therapy (MHT), which of the following would you recommend? (Systemic estrogen plus a progestogen)	49	41.5
A 58-year-old woman with a uterus presents with severe vaginal dryness and dyspareunia despite the use of lubricants with intercourse and vaginal moisturizers. She has no significant vasomotor symptoms. Which of the following would you recommend? (Low dose vaginal estrogen)	73	61.9
A 39-year-old healthy woman who experienced early menopause (premature ovarian insufficiency), Which of the following would you recommend regarding her use of Hormone replacement therapy? (At least until age 50 years)	11	9.3

Table 2. Factors associated with knowledge of the family medicine residents about menopause and its management

	Knowledge about menopausal management		p-value
	Insufficient N=65 N (%)	Sufficient N=53 N (%)	
Age (years) 20-30 (n=112) 31-40 (n=6)	63 (56.3) 2 (33.3)	49 (43.8) 4 (66.7)	0.248**
Gender Male (n=57) Female (n=61)	31 (54.4) 34 (55.7)	26 (45.6) 27 (44.3)	0.883*
Residency level R1 (n=36) R2 (n=27) R3 (n=22) R4 (n=33)	24 (66.7) 14 (51.9) 9 (40.9) 18 (54.5)	12 (33.3) 13 (48.1) 13 (59.1) 15 (45.5)	0.277*
Years of clinical practice <1 (n=35) 1-4 (n=76) 5-10 (n=7)	19 (54.3) 44 (57.9) 22 (8.6)	16 (45.7) 32 (42.1) 5 (71.4)	0.326
Ever attending courses or workshops about menopause and its management No (n=96) Yes (n=22)	57 (59.4) 8 (36.4)	39 (40.6) 14 (63.6)	0.050*
Time of attending courses or workshops about menopause and its management (n=22) This year (n=6) >one year (n=16)	3 (50.0) 5 (31.3)	3 (50.0) (68.7)	0.369**

*Chi-square test**Fischer Exact test

Table 3: Attitude towards menopause and its management among family medicine residents, Makkah

	Strongly agree N (%)	Agree N (%)	Neither agree nor disagree N (%)	Disagree N (%)	Strongly disagree N (%)
Menopause management is important	71 (60.2)	36 (30.5)	9 (7.6)	2 (1.7)	0 (0.0)
Women should be informed that the benefits of hormone replacement therapy generally outweigh the risks for women with bothersome vasomotor symptoms who are under age 60 and within 10 years of menopause	45 (38.1)	44 (37.3)	26 (22.0)	2 (1.7)	1 (0.8)
Will you accept to prescribe hormone replacement therapy if needed to yourself or to one of your relatives?	27 (22.9)	45 (38.1)	30 (25.4)	12 (10.2)	4 (3.4)
Are you willing to recommend MHT or transfer treatment to climacteric clinics for markedly symptomatic patients?	34 (28.8)	42 (35.6)	36 (30.5)	5 (4.2)	1 (0.8)

Table 4. Practice related to menopause and its management among family medicine residents, Makkah

	Never N (%)	Sometimes N (%)	Always N (%)
Do you ask your patient about menopausal symptoms?	15 (12.7)	75 (63.6)	28 (23.7)
Do you advise your patient about lifestyle changes as part of the management of vasomotor symptoms (to lose weight and do more exercise)?	15 (12.7)	47 (39.8)	56 (47.5)
Do you prescribe hormone replacement therapy to your patient with moderate to severe vasomotor symptoms?	72 (61.0)	27 (22.9)	19 (16.1)
Do you prescribe vaginal estrogen to the patient with urogenital atrophy?	48 (40.7)	42 (35.6)	28 (23.7)

Table 5. Barriers facing family medicine residents when managing patient with postmenopausal symptoms

	Frequency	Percentage
Unaware of existing guidelines.	50	42.4
Lack of time.	26	22.0
Lack of an effective referral system.	29	24.6
Lack of knowledge.	57	48.3
Lack of skills.	29	24.6
Negative attitude.	9	7.6
Lack of training in the management of menopause	69	58.5
Others	7	5.9

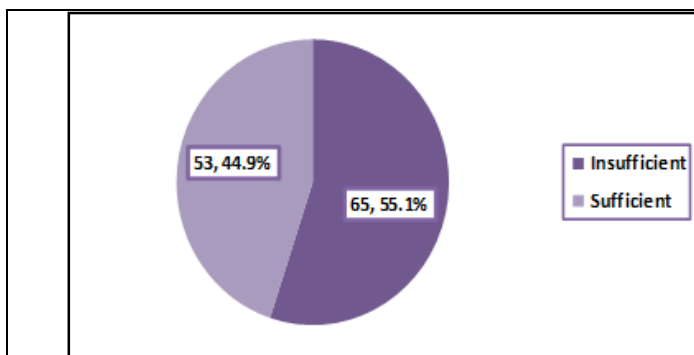


Figure 1. Overall knowledge level about menopause and its management among family medicine residents, Makkah

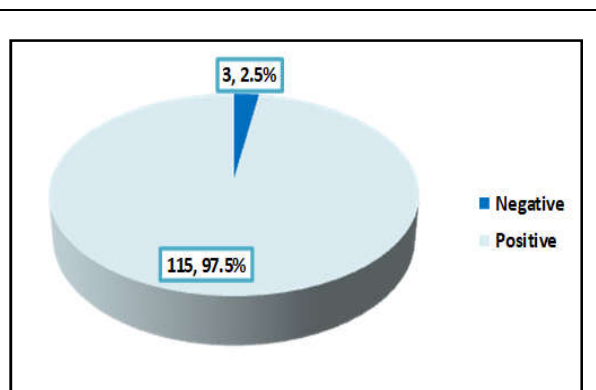


Figure 2. Overall attitude towards menopause and its management among family medicine residents, Makkah

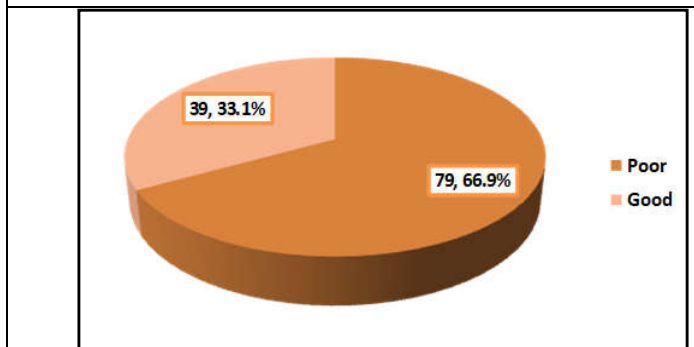


Figure 3. Overall level of practice related to menopause and its management among family medicine residents, Makkah



Figure 4. Level of the participants' confidence in menopause management

Attitude towards menopause and its management: Majority of the family medicine residents (90.7%) either strongly agreed or agreed that menopausal management is an important issue. Almost three-quarters of them (75.4%) either strongly agreed or agreed that women with bothersome vasomotor symptoms who are under age 60 and within 10 years of menopause should be informed that the benefits of hormone replacement therapy generally outweigh the risks. On the other hand, 61% of them either strongly agreed or agreed to accept prescribing hormone replacement therapy if needed to themselves or to one of their relatives Table 3. Overall, positive attitude towards menopause and its management was observed among 97.5% of the family medicine residents participated in the study as seen in Figure 2.

None of the studied factors (age, gender, residency level, years of clinical practice, attending courses or workshops about menopause and duration since attending such courses) was significantly associated with the attitude towards menopause and its management.

Practice of menopause management: Almost two-thirds (63.6%) of family medicine residents sometimes asked their patients about menopausal symptoms and about half (47.5%) always advised them about lifestyle changes as part of the management of vasomotor symptoms. On the other hand, 61% never prescribed hormone replacement therapy to their patient with moderate to severe vasomotor symptoms and 40.7% never prescribed vaginal estrogen to the patient with urogenital

atrophy Table 4. Overall, good practice related to menopause and its management was observed among 33.1% of the family medicine residents participated in the study as clear from Figure 3. None of the studied factors (age, gender, residency level, years of clinical practice, attending courses or workshops about menopause and duration since attending such courses) was significantly associated with the practice related to menopause and its management. There was no significant association between practice related to menopause and its management from one side and knowledge and attitude towards menopause from the other side. More than one-third (38.2%) of the participants reported very good self reported level of confidence in menopausal management whereas 12.7% reported an excellent level Figure 4.

Barriers in menopausal management: The most frequently reported barriers facing family medicine resident physicians in managing menopausal symptoms were lack of training in the management of menopause (58.5%), lack of knowledge about menopausal management (48.3%), unaware of existing guidelines (42.4%), lack of skills (24.6%) and lack of effective referral system (24.6%) Table 5.

DISCUSSION

Recognition of the level of knowledge of resident physicians' about menopausal symptoms' management as well as their attitude and menopausal management related practice should be clear in order to offer them an evidence-based recommendation guideline for management of menopausal symptoms⁽¹³⁾. Although guidelines are existing in this study, 42.4% of the physicians were not aware about this. Also, knowledge of the family medicine residents concerning non-hormonal management of menopausal symptoms, among women with contraindications to use hormonal therapy is not well known⁽¹³⁾. Limited training also has been documented to add to the knowledge gap in menopausal management among those physicians⁽¹⁵⁾. Therefore, the present study was implemented to explore the knowledge, attitude, and practices of family medicine residents enrolled in Makkah residency program, 2021 towards the management of postmenopausal symptoms. Menopausal management is defined as an integrated operation, including comprehensive lifestyle management, health guidance, and therapeutic management⁽¹⁴⁾. In the present study, variable level of knowledge, ranged between 9.3% and 64.4% was observed regarding management of women with different scenarios. Evidence has shown that women in the early menopausal stage would benefit from hormonal therapy^(16, 17), 64.4% of participants in this study agreed with that. Lower figure was observed in a study carried out in USA ((34.4%)⁽¹³⁾. In another Saudi study, only 18% of the primary care physicians were aware of hormonal therapy as a treatment for menopausal symptoms⁽¹⁸⁾. In this study, only one-third of family medicine residents could recognize the proper definition of menopause. Regarding symptoms, majority of them could recognize vaginal dryness (96.6%), vasomotor symptoms (95.8%) and mood disturbance (93.2%), however, only 31.4% and 26.3% could recognize difficulty with memory/concentration and joint pain, respectively and the overall sufficient knowledge was reported among 44.9% of them. In a study carried out in Kuwait⁽¹⁹⁾, 82.4% of primary healthcare physicians had moderate level of knowledge about menopausal symptoms. In agreement with others in China^(14, 20), Australia⁽²¹⁾, and USA⁽¹³⁾, more than 90% of family medicine residents in the current study agreed that menopausal

management is an extremely important issue. In the current study, almost two-thirds of family medicine residents sometimes asked their patients about menopausal symptoms and about half always advised them about lifestyle changes as part of the management of vasomotor symptoms; which is a quite acceptable practice, however, needs to be improved. On the other hand, although 75.4% agreed that women with bothersome vasomotor symptoms who are under age 60 and within 10 years of menopause should be informed that the benefits of hormone replacement therapy generally outweigh the risks and 61% of them accepted prescribing hormone replacement therapy if needed to themselves or to one of their relatives, more than 60% never prescribed hormone replacement therapy to their patient with moderate to severe vasomotor symptoms and 40.7% never prescribed vaginal estrogen to the patient with urogenital atrophy and the overall good practice related to menopause and its management was observed among only 33.1% of them. In this context, the safety of hormonal therapy has been discussed in the North American Menopause Society (NAMS) position statement (2017)⁽¹⁷⁾, guidelines of the Endocrine Society clinical practice⁽²²⁾ and "the American College of Obstetricians and Gynecologists committee" opinion⁽²³⁾; with evidence concerning the favorable balance of its risks and benefits for managing women in early menopause presented with moderate or severe symptoms. Also, a gap between knowledge and practice has been observed in USA among resident physicians where 59.9% of them did not recommend adequate hormonal therapy for a prematurely menopausal woman, and even recommended against it⁽¹³⁾.

This clear gap between attitude from one side and knowledge and practice from the other side should be addressed through proper training and guidance of this group of physicians. The most frequently reported barriers facing family medicine resident physicians in managing menopausal symptoms were lack of training in the management of menopause, lack of knowledge about menopausal management, unaware of existing guidelines, lack of skills and lack of effective referral system (24.6%). Some other studies reported that one of the main obstacles facing primary care physicians in managing menopause was feeling inadequately prepared through their training programs^(13, 24, 25). Moreover, this is supported in the present study by observing that the attendance of training courses in menopause and its management was not associated with significant better knowledge, positive attitude or good practice. Therefore, such training courses should be reformulated to be of more benefits to young physicians. In the present study, almost half of the family medicine residents reported very good/excellent level of confidence in managing menopausal symptoms. In previous studies carried out in Kuwait⁽¹⁹⁾ and Romania⁽²⁶⁾, physicians were less confident in managing menopausal symptoms; particularly regarding hormonal therapy as they considered it a specialized form of therapy that needs some investigations. Two main limitations of this study should be mentioned. It has been carried out in one city and one residency program, therefore generalizability of findings over other cities and programs is questionable. Using a self-administered tool to assess knowledge, attitude and practice is subjected to bias. Despite those two limitations, the study is unique in its nature in our city and its results could be of importance for high authorities to improve the family medicine training program curriculum. In conclusion, sufficient knowledge about menopause and its management was observed among less than half of family medicine

residents. However, majority of them expressed positive attitude while only one-third had good practice of menopause management. Attending courses or workshops about menopause and its management was reported by minority of the family medicine residents and it was borderline related to their knowledge; however not related to their attitude and practice related to menopause. The most frequently reported barriers facing family medicine resident physicians in managing menopausal symptoms were lack of training in the management of menopause, lack of knowledge about menopausal management, unaware of existing guidelines, lack of skills and lack of effective referral system.

According to the current study's results, we recommended the following:

- Organizing educational activities for family medicine residents regarding menopause and its management; particularly regarding hormonal therapy and its indications.
- Practical training of the resident physicians under close supervision is highly recommended during residency period.
- Increase awareness of the resident physicians regarding the existed evidence-based guideline concerning management of different cases of menopause.
- There should be an effective referral system of cases with menopausal system.
- Further study including family medicine residents from other programs in the Kingdom of Saudi Arabia is needed to have a clearer image of the situation.

REFERENCES

1. Aging Nio. Global aging into the 21st century. 1996.
2. Cavadas LF, Nunes A, Pinheiro M, Silva PT. Management of menopause in primary health care. *Acta medica portuguesa*. 2010;23(2):227-36.
3. Health Nio. National Institutes of Health State-of-the-Science Conference statement: management of menopause-related symptoms. *Annals of Internal Medicine*. 2005;142(12):1003.
4. Chan S, Gomes A, Singh RS. Is menopause still evolving? Evidence from a longitudinal study of multiethnic populations and its relevance to women's health. *BMC Women's Health*. 2020;20:1-15.
5. Casper RF. Clinical manifestations and diagnosis of menopause. *UpToDate*2009.
6. Obstetricians ACo, Gynecologists. ACOG Practice Bulletin No. 141: management of menopausal symptoms. *Obstet Gynecol*. 2014;123(1):202-16.
7. Politi MC, Schleinitz MD, Col NF. Revisiting the duration of vasomotor symptoms of menopause: a meta-analysis. *Journal of general internal medicine*. 2008;23(9):1507-13.
8. Erlik Y, Tataryn IV, Meldrum DR, Lomax P, Bajorek JG, Judd HL. Association of waking episodes with menopausal hot flashes. *Jama*. 1981;245(17):1741-4.
9. Souza Guerra GE, Prates Caldeira A, Piana Santos Lima de Oliveira F, Santos Figueiredo Brito MF, de Oliveira Silva Gerra KD, Mendes D'Angelis CE, et al. Quality of life in climacteric women assisted by primary health care. *PloS one*. 2019;14(2):e0211617.
10. Bluemel JE, Chedraui P, Baron G, Belzares E, Bencosme A, Calle A, et al. A large multinational study of vasomotor symptom prevalence, duration, and impact on quality of life in middle-aged women. *Menopause*. 2011;18(7):778-85.
11. Castelo-Branco C, Cancelo MJ, Villero J, Nohales F, Juliá MD. Management of post-menopausal vaginal atrophy and atrophic vaginitis. *Maturitas*. 2005;52:46-52.
12. Bromberger JT, Kravitz HM. Mood and menopause: findings from the Study of Women's Health Across the Nation (SWAN) over 10 years. *Obstetrics and Gynecology Clinics*. 2011;38(3):609-25.
13. Kling JM, MacLaughlin KL, Schnatz PF, Crandall CJ, Skinner LJ, Stuenkel CA, et al.. Menopause management knowledge in postgraduate family medicine, internal medicine, and obstetrics and gynecology residents: a cross-sectional survey. *Mayo Clinic Proceedings*. 2019 Feb;94(2):242-253. doi: 10.1016/j.mayocp.2018.08.033.
14. Lin L, Feng P, Yu Q. Attitude and knowledge for menopause management among health professionals in mainland China. *Climacteric*. 2020 Dec;23(6):614-621. doi: 10.1080/13697137.2020.1775809
15. Manson JE, Kaunitz AM. Menopause management-getting clinical care back on track. *N Engl J Med*. 2016;374(9):803-806.
16. de Villiers TJ, Hall JE, Pinkerton JV, Pérez SC, Rees M, Yang C, et al. Revised global consensus statement on menopausal hormone therapy. *Maturitas*2016; 91:153–5. doi: 10.1016/j.maturitas.2016.06.001.
17. NAMS 2017 Hormone Therapy Position Statement Advisory Panel. The 2017 hormone therapy position statement of The North American Menopause Society. *Menopause*. 2017;24(7):728-753.
18. Al-Thagafi MM, Al-Mahdi AM. 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. *IJMSDR* 2019;2(6):1-22
19. Al-Eassa AA, Al-Fadel AM, Al-Ajmi MA, Al-Najjar AA, Makboul GM, Elshazly M. Knowledge and attitude of primary care doctors towards management of postmenopausal symptoms. *Alexandria Journal of Medicine*. 2012;48(2):167-173. doi:10.1016/j.ajme.2011.07.009
20. Wang Y, Yang X, Li X, He X, Zhao Y. Knowledge and personal use of menopausal hormone therapy among Chinese obstetrician-gynecologists: results of a survey. *Menopause* 2014; 21:1190-6. doi: 10.1097/ GME.000000000000233.
21. Yeganeh L, Boyle J, Teede H, Vincent A. Knowledge and attitudes of health professionals regarding menopausal hormone therapies. *Climacteric* 2017;20:348–55. doi: 10.1080/13697137.2017.1304906.
22. Stuenkel CA, Davis SR, Gompel A, Lumsden M, Murad M, Pinkerton J, et al. Treatment of symptoms of the menopause: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab*. 2015;100(11):3975-4011. DOI:10.1210/jc.2015-2236
23. American College of Obstetricians and Gynecologists. ACOG Practice Bulletin No. 141: Management of

- menopausal symptoms. *Obstet Gynecol.* 2014;123(1):202-216.
24. Hsieh E, Nunez-Smith M, Henrich JB. Needs and priorities in women's health training: perspectives from an internal medicine residency program. *J Womens Health (Larchmt)*. 2012; 22(8): 667-672.
25. Christianson MS, Washington CI, Stewart KI, Shen W. Effectiveness of a 2-year menopause medicine curriculum for obstetrics and gynecology residents. *Menopause*. 2015; 23(3):275-279.
26. Elaine CH. Improving health care providers' knowledge, attitudes, and practices in reproductive health in rural Romania. *Project Concern International/Romania* 2004:5-37.
