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Exploring hormone replacement therapy dynamics among menopausal women in Kuala Lumpur – a community based survey

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Abstract

Background Women may lack awareness of the existence of Hormone Replacement Therapy (HRT), its benefits, and potential drawbacks. Furthermore, they may be uninformed about the treatability of menopausal symptoms. Consequently, there is a need to evaluate the knowledge, attitudes, and practices related to HRT among menopausal women within the Malaysian population. Presently, no studies have reported on the inside, attitudes, and practices regarding HRT among menopausal women in Kuala Lumpur. This study sought to determine the prevalence, knowledge, attitude, and practice (KAP) towards HRT and its association with socio-demographic characteristics of the study population.

Method A cross-sectional study was conducted among menopausal women ($n=404$) living in Kuala Lumpur, Malaysia. Data was collected using convenient sampling. This research consists of 5 major parts which are (A) Socio-demographic characteristics of participants, (B) HRT knowledge among respondents, (C) Attitudes towards HRT, (D) Practice of HRT, and (E) Menopausal symptoms. All appropriate data from the project was analyzed using IBM SPSS Statistics Ver 26.

Results A total of 404 participants were recruited in this survey. Overall, participants had good knowledge ($n=254$, 62.9%) and negative attitude ($n=213$, 52.7%) towards HRT. The majority of them (83.4%) had never taken HRT. The common menopausal symptoms reported were hot flashes (35.4%), irritability/ mood swings (31.9%), and night sweats (29.2%). There was a significant association between knowledge of menopause and HRT and attitude towards HRT use. Participants (68.7%, $n=103$) with poor knowledge of menopause and HRT showed a negative attitude towards HRT ($p<0.01$).

Conclusions Overall, the prevalence of HRT use among the respondents is low. 83.4% of them have never taken HRT before. There was a positive correlation between knowledge and attitude towards HRT use. Healthcare systems should educate the public using various educational tools and social media.

Keywords Knowledge, Attitude, Practice, Hormone replacement therapy, Menopausal women, Kuala Lumpur, Malaysia

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Introduction

Menopause takes place between the ages of 40 to late 50 s. In Malaysia, the mean menopausal age is 50.7 years. The global population aged 60 and above, which was 1 billion in 2019, is projected to rise to 2.1 billion by 2050, with a significant impact expected in developing countries [1]. In other words, there will be a growing population of older women living with menopause and potentially suffering from menopausal symptoms. Therefore, Hormone Replacement Therapy (HRT) may be significantly needed to improve the quality of life of this population. Unfortunately, the knowledge about menopause and HRT does not spark the intention among the women population which could be due to a lack of awareness about the importance of understanding menopause and HRT, especially those who live in rural areas. Women may not be aware that the symptoms they are experiencing are associated with menopause and hence they may not seek medical advice or medical interventions that can help to relieve their discomfort [2].

Menopause is a gradual transition process. Irregular menstruation cycle is the most common early marker seen in menopausal transition [3, 4]. According to National Health Service (NHS), HRT should be started as soon as possible in women experiencing menopausal symptoms [5]. There are several stages of menopausal women such as perimenopause, menopause, post menopause, early menopause and surgically menopause [6, 7]. The term of 'Perimenopause' describes the duration from where the signs and symptoms of menopause are first seen to one year after the last menstruation. The age of onset for perimenopause usually between 45.5 to 47.5 years [6, 8]. In clinical, 'Menopause' is diagnosed after one year without menstruation (amenorrhoea) [7]. 'Post menopause' is describing women who amenorrhoea for more than 12 months [9]. 'Premature menopause' defined as amenorrhoea that happens before the age of 40 years old [10]. "Early menopause' defined as amenorrhoea that takes place between the age of 40- 45 years old. Both premature menopause and early menopause take place before the mean age of menopause, and they are known to be associated with higher morbidity and mortality risks [10].

HRT effectively alleviates menopausal symptoms by replacing low hormones. There are different types, including oestrogen-only and combined HRT (oestrogen and progesterone). Combined HRT is recommended for women with an intact uterus, as progesterone prevents the risk of endometrial hyperplasia, which can lead to endometrial cancer. Different estrogen therapies include estradiol, estriol, and conjugated equine estrogen (CEE) [11, 12]. On the other hand, estrogen alone therapy would be recommended for those women who had undergone surgically removal of uterus (hysterectomy) and do not require of progestogens. There are various dosage forms of HRT which included oral pills, cream, gel, and patch. However, only oral pills and transdermal patch are FDA approved products [11]. According to the previous study of Sullivan et al. (2016), HRT can mimic the normal ovarian hormone production to reduce morbidity risks associated with early menopause. It was recommended that to continue HRT until the normal age of natural menopause which is approximately 50 years old [13].

Lobo et al. (2016) reviewed that the benefits of using HRT overweighed its risks among younger healthy women who aged between 50- 60 years. They emphasized that HRT can be prescribed to women who aged 60 and below as primary prevention strategy to reduce coronary heart disease (CHD) and the rate of mortality [14].

This study sought to determine the prevalence, knowledge, attitude, and practice (KAP) towards HRT and its association with the socio-demographic characteristics of the study population.

Methods

Study design and setting

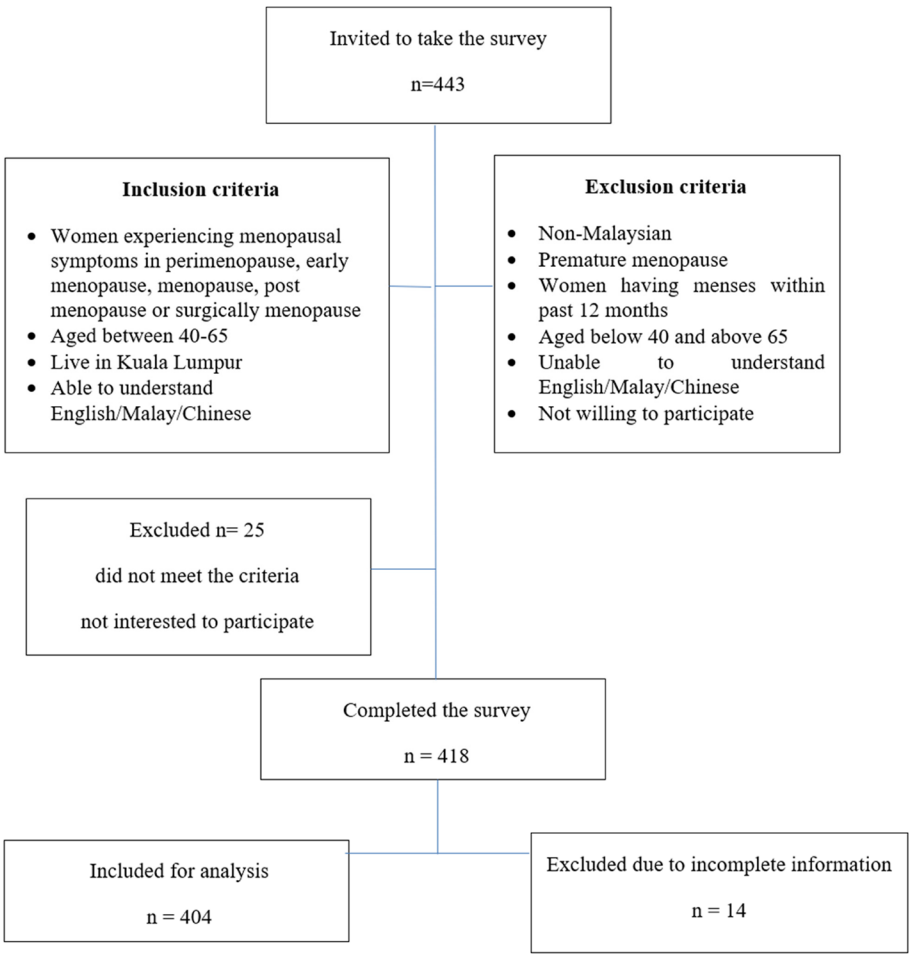
A descriptive cross-sectional study was conducted among menopausal women in Kuala Lumpur in the form of a self-administered questionnaire. Volunteers were recruited to participate in this study using convenience sampling techniques, a type of non-probability sampling technique. Each participant was given 10–15 min to answer the questionnaire.

Sampling method and sampling size

The sample size was calculated by using the online Raosoft Software® (a sample size calculator with a marginal error of 5%, 95% confidence level, and 50% response distribution)

$$n = \frac{Z^2 P(1-P)}{d^2}$$
$$Z = Z - score for\ 95\%\ CI = 1.96$$
$$P(response\ distribution) = 50\% = 0.5$$
$$d(margin\ of\ error) = 5\% = 0.05$$
$$n = \frac{1.96^2 x 0.5(0.5)}{0.05^2}$$
$$n = \frac{0.9604}{0.0025}$$
$$n = 384.16$$

A total of 404 respondents completed the survey.



Premature menopause is excluded due to low prevalence and challenges in collecting data. Individuals who are above 65 years old are excluded because their menopausal symptoms could be confused with symptoms related to aging.

Study tools

The instrument used in this study is a validated self-administered questionnaire adapted from previous studies and tailored to fulfill the study's objectives. The questionnaire consists of 5 sections. Section A captured the participants' demographic characteristics. Section B was designed to assess the participant's knowledge, Section C to assess respondent's attitudes about Hormone Replacement Therapy (HRT), Section D to assess the status, type of HRT usage, reasons for using and not using HRT, and Section E to assess symptoms experienced by the participants. The research tool was translated from English to Malay and Mandarin by an accredited translating agency. A registered proofreading company performed the forward and backward translation of the questionnaire.

Scoring criteria

The knowledge section consisted of 19 items. Each item has two choices: "Yes" or "No". The "Yes" answer was scored 1, while the "No" response was scored 0, with a maximum total score of 19. For the attitude section, it consists of 7 statements. They were scored 1 for "agree", -1 for "disagree" and 0 for "don't know". The score ranged between -7 and 7. The mean and SD of the total knowledge and attitude scores were used to determine the midpoint. Scores higher than the midpoint will be classified as "good knowledge" and "positive attitude".

Validation of questionnaire and pilot study

Content validity was done by five experts (physicians, academicians, and pharmacists). A pilot study was first

Table 1 Response of study participants for menopause and HRT knowledge questions

No.	Questions	No. of participants (%)	
		Correct	Incorrect
1	Menopause is due to decrease of female hormones	357 (88.4)	47 (11.6)
2	Menopause occurs when the menstruation stops	365 (90.3)	39 (9.7)
3	Pregnancy cannot occur after menopause	379 (93.8)	25 (6.2)
4	Menopause occurs when ovaries stop functioning	308 (76.2)	96 (23.8)
5	Menopause is accompanied by hot flushes	342 (84.7)	62 (15.3)
6	Risk of cardiovascular diseases increases with menopause	285 (70.5)	119 (29.5)
7	Risk of osteoporosis increases with menopause	305 (75.5)	99 (24.5)
8	Risk of depression increases during menopause period	299 (74)	105 (26)
9	Menopause can have harmful consequences if not treated	266 (65.8)	138 (34.2)
10	There is treatment available for menopausal symptoms	324 (80.2)	80 (19.8)
11	HRT replaces hormones decreasing during menopause	339 (83.9)	65 (16.1)
12	HRT can reduce menopausal symptoms	357 (88.4)	47 (11.6)
13	HRT can increase the risk of heart disease	234 (57.9)	170 (42.1)
14	HRT can decrease the risk of osteoporosis	269 (66.6)	135 (33.4)
15	HRT increases risk of breast cancer	195 (48.3)	209 (51.7)
16	HRT decreases risk of colon cancer	207 (51.2)	197 (48.8)
17	HRT prevent obesity	218 (54)	186 (46)
18	HRT improves hot flashes	338 (83.7)	66 (16.3)
19	There are both benefits and risks of HRT	373 (92.3)	31 (7.7)

Table 2 Response of study participants for HRT attitude questions

No.	Questions	No. of participants (%)		
		Agree	Disagree	Don't know
1	HRT is a good solution, if you have symptoms	280 (69.3)	26 (6.4)	98 (24.3)
2	HRT is appropriate for some women	333 (82.4)	16 (4)	55 (13.6)
3	HRT is to be avoided	106 (26.2)	171 (42.3)	127 (31.4)
4	HRT is good for preventing age-related health problems	271 (67.1)	32 (7.9)	101 (25)
5	HRT has many complications and side effects	133 (32.9)	100 (24.8)	171 (42.3)
6	Natural approaches are better than HRT	249 (61.6)	62 (15.3)	93 (23)
7	Risks of taking HRT outweigh the benefits	113 (28)	114 (28.2)	177 (43.8)

carried out on 30 participants to ensure the face validity and reliability of the questionnaire formulated. The internal consistency was calculated by Cronbach's alpha coefficient. It was calculated by using IBM SPSS Statistics version 26 and showed a Cronbach alpha coefficient of 0.844 in the knowledge section and 0.847 in the attitude section. Both exhibited a high level of internal consistency.

Data collection

Ethical approval was obtained from UCSI University ethics committee. Before answering the questionnaire, a written consent form was distributed to the respondents by attaching to the physical questionnaire. The secrecy of data and information from the respondents was guaranteed. Participants were recruited conveniently from public places in Kuala Lumpur such as outside shopping malls, bus/train stations, cafes and night markets. Data was collected face-to-face by using a self-administered questionnaire.

Data analysis

Statistical analyses were performed by using the IBM SPSS Statistics Version 26. Data was analyzed by using descriptive and inferential analysis. For descriptive analysis, percentage, mean, and standard deviation were used

Table 3 Reasons given by respondents for taking hormone replacement therapy

No.	Statements	No. of participants (%)	
		Currently taking HRT ($n=31$)	Took HRT in the past ($n=36$)
1	General benefits	13 (41.9)	16 (44.4)
2	Hot flushes	12 (38.7)	17 (47.2)
3	Night sweats	11 (35.5)	14 (38.9)
4	Mood swings	8 (25.8)	14 (38.9)
5	Irritability	6 (19.4)	6 (16.7)
6	Vaginal dryness	5 (16.1)	5 (13.9)
7	Protection from osteoporosis	10 (32.3)	6 (16.7)
8	Protection from Alzheimer's disease	7 (22.6)	3 (8.3)
9	Protection from heart disease	6 (19.4)	3 (8.3)

Table 4 Reasons given by respondents for not being on hormone replacement therapy

No.	Statements	No. of participants (%)
		Never taken HRT ($n=337$)
1	Do not need	160 (47.5)
2	Never recommended by doctors	117 (34.7)
3	Doctors give advice not to use	13 (3.9)
4	Worry about side-effects	94 (27.9)
5	I am on another form of treatment	26 (7.7)
6	Husband does not allow	15 (4.5)
7	Against my religious belief	13 (3.9)
8	Do not know where to get it	60 (17.8)
9	Medication is too expensive	57 (16.9)
10	Not allowed by my culture	9 (2.7)

to report demographic characteristics, frequency of type of HRT usage, and knowledge, attitude and practice scores. To assess the mean difference in knowledge and attitude scores, one-way ANOVA was employed. The Chi-square test was applied to examine associations involving categorical variables.

Results

A total of 404 respondents participated in this study. Most participants were from the age group of 55–59. The majority of the participants were Chinese (60.1%, $n=243$). The mean ± SD of knowledge and attitude scores were 14.26 ± 3.614 and 1.62 ± 2.854 respectively. More than half (62.9%, $n=254$) of participants were classified as possessing "Good knowledge" regarding menopause and Hormone Replacement Therapy (HRT). Most (93.8%, $n=379$) understood that pregnancy cannot occur after menopause. Furthermore, 75.5% ($n=305$) of them believed that the risk of getting cardiovascular diseases increases with menopause. Table 1 displays study participants' responses to questions related to menopause and HRT.

For the attitude section, more than half of the participants (52.7%, $n=213$) reported a negative attitude towards HRT. Among 404 respondents, 61.6% ($n=249$) of participants agreed that natural approaches are better than HRT for treating menopausal symptoms. On the other hand, 32.9% ($n=133$) of participants believed that HRT has many complications and side effects which outweighed the number of participants who firmly disagreed with this statement (24.8%, $n=100$). Table 2 shows the details of the attitude of the participants towards HRT use.

This study found that among 404 participants, 83.4% of participants had never taken HRT. Also, 7.7% and 8.9% of participants were currently taking HRT and took HRT in the past respectively. Among 31 current HRT users, 13 of them (41.9%) indicated that "general benefits" as the one of the reasons of taking HRT. Among 36 past HRT users, 17 of them (47.2%) claimed that they used to take HRT for the treatment of hot flushes. Table 3 below shows the detailed results on reasons for taking HRT by current and past HRT users. Among those never taken HRT, the majority stated that they were not needed to use HRT (47.5%, $n=160$). Table 4 below presents the detailed reasons for not being on HRT among those non-HRT users.

There was a highly significant difference between mean knowledge scores and level of education ($p<0.001$). Post-hoc analysis showed that the most significant difference was seen between no formal education and college where those with college qualifications have higher knowledge on menopause and HRT. The mean attitude scores showed significant difference between different levels of education ($p<0.001$). The highest mean attitude score was seen in university category while the lowest mean attitude score was seen in those with no formal education.

In addition, there was a highly significant difference between mean knowledge scores and monthly household income ($p<0.001$). The results of post-hoc analysis shown that those who have monthly household income > RM8000 had the highest mean knowledge score while those who have monthly household income < RM1000 had the lowest mean knowledge score. At the same time, the mean attitude scores also significantly difference between monthly household income ($p<0.001$). According to the post-hoc analysis, the greatest difference was observed between those with monthly household income > RM8000 and those who < RM1000. The higher the income, the more the positive attitude. Table 5 presented the summary of

Table 5 Scores between-demographic differences in knowledge and attitudes

Variable	Subgroup	Mean score ± SD	
		Knowledge	Attitude
Age group (years)	40–44	14.89 ± 3.439	1.55 ± 2.904
	45–49	14.68 ± 3.454	2.05 ± 3.013
	50–54	14.10 ± 3.710	1.65 ± 2.675
	55–59	14.23 ± 3.549	1.69 ± 2.863
	60–65	13.04 ± 3.823	1.06 ± 2.892
	***p*-value**	0.043 [b**]	0.463 [b]
Ethnicity	Malay	14.82 ± 3.325	1.93 ± 3.044
	Chinese	13.76 ± 3.666	1.20 ± 2.594
	Indian	15.30 ± 3.545	2.79 ± 3.153
	***p*-value**	0.002 [b**]	< 0.001 [b**]
Religion	Christian	14.63 ± 4.011	1.39 ± 3.123
	Muslim	14.82 ± 3.325	1.93 ± 3.044
	Buddhist	13.63 ± 3.534	1.24 ± 2.447
	Hinduism	15.19 ± 3.680	2.75 ± 3.316
	***p*-value**	0.006 [b**]	0.003 [b**]
Marital status	Married	14.49 ± 3.469	1.75 ± 2.786
	Widow/divorcee	13.13 ± 4.213	1.35 ± 3.060
	Single	13.75 ± 3.836	1.08 ± 3.078
	***p*-value**	0.045 [b**]	0.245 [b]
Level of education	No formal education	9.63 ± 3.804	-1.05 ± 2.527
	Primary school	11.18 ± 3.538	0.56 ± 2.426
	Secondary school	13.98 ± 3.505	1.71 ± 2.515
	College / Vocational School	15.77 ± 2.991	2.05 ± 3.404
	University	15.67 ± 2.469	2.07 ± 2.811
	***p*-value**	< 0.001 [b**]	< 0.001 [b**]
Occupation	Housewife	13.96 ± 3.692	1.32 ± 2.617
	General worker	14.01 ± 3.685	1.93 ± 3.008
	Blue-collar	14.95 ± 4.410	1.14 ± 3.554
	Professional	15.36 ± 2.711	2.00 ± 2.887
	***p*-value**	0.030 [b**]	0.150 [b]
Household income (monthly)	< RM 1000	12.26 ± 3.876	0.79 ± 2.149
	RM 1000–3000	13.03 ± 3.742	0.78 ± 2.578
	RM 3001–5000	15.15 ± 2.953	2.22 ± 2.916
	RM 5001–8000	15.65 ± 3.186	2.43 ± 3.001
	> RM 8000	15.92 ± 2.597	2.35 ± 3.190
	***p*-value**	< 0.001 [b**]	< 0.001 [b**]

[**] indicates $p < 0.05$ is significant

[a] = independent t-test

[b] = one-way ANOVA

scores between-demographic differences in knowledge and attitudes. The household income per month was calculated based on the total of the couple's income.

There was a significant association observed between level of education and HRT usage ($p = 0.008$). 89.5% of the participants with no formal education were non-HRT users. In contrast, those HRT users usually possess college qualifications. In addition, there was also a significant association observed between monthly household income and HRT usage ($p = 0.007$). 92.2% of the participants with monthly household income between RM 1000–3000 were non-HRT users. Those

Table 6 Association between-demographic characteristics and HRT Usage

Variable	Subgroup	Status of HRT Usage			*p*-value
		Currently taking HRT	Took HRT in the past	Never taken HRT	
Age group (years)	40–44	16 (18.0)	1 (1.1)	72 (80.9)	< 0.001**
	45–49	11 (17.5)	5 (7.9)	47 (74.6)	
	50–54	3 (3.1)	6 (6.1)	89 (90.8)	
	55–59	0 (0.0)	17 (16.8)	84 (83.2)	
	60–65	1 (1.9)	7 (13.2)	45 (84.9)	
Ethnicity	Malay	6 (6.1)	5 (5.1)	87 (88.8)	0.035**
	Chinese	23 (9.5)	20 (8.2)	200 (82.3)	
	Indian	2 (3.2)	11 (17.5)	50 (79.4)	
Religion	Christian	6 (11.1)	2 (3.7)	46 (85.2)	0.056
	Muslim	6 (6.1)	5 (5.1)	87 (88.8)	
	Buddhist	17 (8.5)	19 (9.5)	163 (81.9)	
	Hinduism	2 (3.8)	10 (18.9)	41 (77.4)	
Marital status	Married	26 (8.3)	29 (9.3)	258 (82.4)	0.728
	Widow/divorcee	3 (7.5)	4 (10.0)	33 (82.5)	
	Single	2 (3.9)	3 (5.9)	46 (90.2)	
Level of education	No formal education	0 (0.0)	2 (10.50)	17 (89.5)	0.008**
	Primary school	2 (5.1)	2 (5.1)	35 (89.7)	
	Secondary school	7 (4.1)	13 (7.6)	151 (88.3)	
	College / Vocational School	13 (16.5)	12 (15.2)	54 (68.4)	
	University	9 (9.4)	7 (7.3)	80 (83.3)	
Occupation	Housewife	13 (7.0)	20 (10.8)	152 (82.2)	0.801
	General worker	10 (7.6)	8 (6.1)	113 (86.3)	
	Blue-collar	2 (9.5)	1 (4.8)	18 (85.7)	
	Professional	6 (9.0)	7 (10.4)	54 (80.6)	
Household income (monthly)	< RM 1000	3 (5.6)	4 (7.4)	47 (87.0)	0.007**
	RM 1000–3000	3 (2.3)	7 (5.5)	118 (92.2)	
	RM 3001–5000	8 (7.3)	11 (10.0)	91 (82.7)	
	RM 5001–8000	12 (16.0)	8 (10.7)	55 (73.3)	
	> RM 8000	5 (13.5)	6 (16.2)	26 (70.3)	

** indicates $p < 0.05$ is significant; Chi-Square Test

Table 7 Scores between-HRT usage differences in knowledge and attitude

Variable	Subgroup	Mean score ± SD	
		Knowledge	Attitude
Status of HRT Usage	**Currently taking HRT**	17.10 ± 2.103	3.61 ± 3.242
	Took HRT in the past	14.92 ± 3.767	2.92 ± 3.166
	Never taken HRT	13.93 ± 3.590	1.30 ± 2.672
	***p*-value**	< 0.001**	< 0.001**

** indicates $p < 0.05$ is significant, one-way ANOVA

with monthly household income RM 5001– 8000 were reported to have the highest prevalence of HRT use. Table 6 shows the details of the association between the demographic characteristics and HRT Usage.

Using One-way Anova, a significant difference was reported in the mean knowledge score between current HRT users and non-HRT users ($p < 0.001$). In this research, current HRT users tend to have good knowledge on menopause and HRT compared to those non-HRT users. In addition, there was also a significant difference in mean attitude score between current HRT users and non-HRT users ($p < 0.001$). Currently HRT users tend to have more positive attitude towards HRT than those non-HRT users. Table 7 demonstrated the scores between HRT usage differences in knowledge and attitude. However, Participants (68.7%, $n = 103$) with

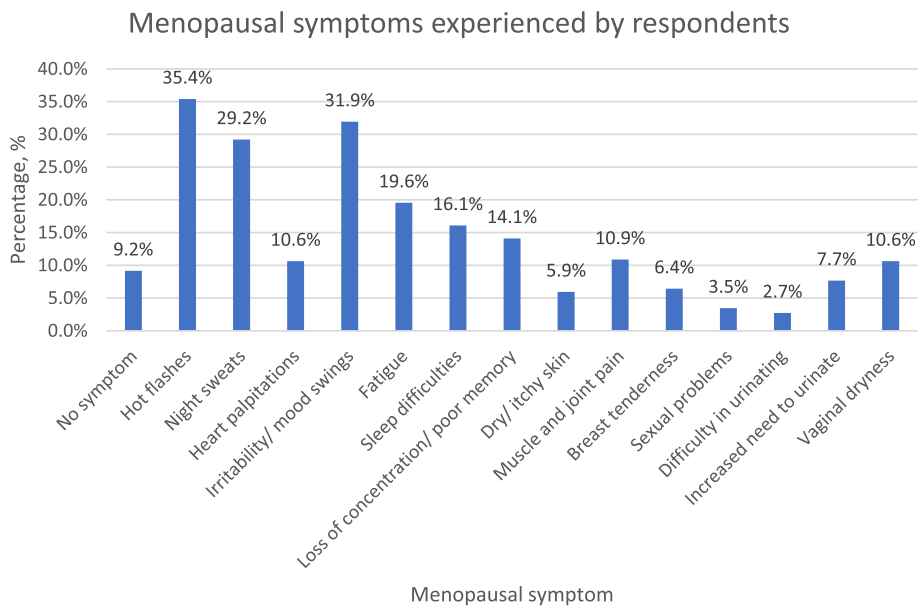


Fig. 1 Menopausal symptoms experienced by respondents

poor knowledge of menopause and HRT showed a negative attitude towards HRT ($p < 0.01$).

In this study, among 67 HRT users (included current and past users), the most common type of HRT used by them is oral pill. Among all the respondents, the common menopausal symptoms reported were hot flashes (35.4%), irritability/ mood swings (31.9%), and night sweats (29.2%). The least menopausal symptom reported by the respondents was "difficulty in urinating", only 11 of them (2.7%) complained about it. The details of menopausal symptoms reported by respondents were tabulated in Fig. 1.

Discussion

According to Department of Statistics, Malaysia (DOSM) reported in the year of 2021, the life expectancy of a woman in Malaysia was 78.3 years. Since the average menopausal age is 50.7 years, it can be said that a woman is going to spend more than one-third of her life in the postmenopausal stage. In other words, many women tend to subject to various vasomotor symptoms, health problems and even long-term morbidities [15].

Looking at the components of questionnaires assessing the respondent's attitude towards Hormone Replacement Therapy (HRT). In our study, 32.9% ($n = 133$) of participants believed that HRT has many complications and side effects which overweighed the number of participants who firmly disagreed on this statement (24.8%, $n = 100$). This finding is consistent with Albaqami's contention. In the study of Albaqami et al. (2023), the number of participants who agreed (19.1%) on "HRT has many complications and side effects" more than the number of participants who disagreed (9.1%) on this statement [16]. Besides, in our study, more than half of the participants (61.6%, $n = 249$) agreed that natural approaches are better than HRT for treating menopausal symptoms.

In this study, one of the major findings revealed that the level of education can significantly influence the respondent's knowledge on menopause and HRT ($p < 0.001$). The similar trend was seen in the previous studies conducted by Hamid et al. (2014) in Al-Ain, United Arab Emirates and Bakthavatchalam et al. (2021) in Hospital Teluk Intan, Malaysia [17, 18]. Both studies are showed significantly direct proportional relationship between education level and knowledge on menopause and HRT ($p = 0.003$ and < 0.001, respectively). With higher educational level, respondents tend to have higher knowledge level as well. This in lines with the result of the current study which demonstrated that highest mean knowledge score was seen in those with college qualification while lowest mean knowledge score was seen in those with no formal education. In Malaysia, sexual and reproductive health (SRH) education was incorporated into the physical and health education (PE) syllabus as reported in the article published by Malay Mail [19]. In other words, those with formal education could gain knowledge from the syllabus to improve their understandings on women health-related.

Moreover, it was found that there was a significant difference between different ethnicities and their knowledge level on menopause and HRT ($p = 0.002$).

This finding is consistent with studies of Bakthavatchalam et al. (2021) [18]. Both the current study and the study of Bakthavatchalam et al. (2021) shown that Indian population has the highest knowledge score compared with other major ethnicities in Malaysia, Malay and Chinese. Additionally, in our studies, Indian population showed the highest attitude score towards HRT as well. Indian population is said to be having more positive attitude towards the use of HRT. Even though they possessed of good knowledge and positive attitude towards HRT, these were not reflected their practices. Only 2 out of 31 current users and 11 out of 36 past users were Indians.

According to the previous research conducted by Alwi et al. (2010), there is a significance difference in attitude towards HRT among respondents with different occupation. Those with better occupation have more positive attitude towards the HRT usage [20]. Unlike this previous finding, in our study, even there was difference in mean attitude scores among women with different occupation, this difference was not statistically important ($p=0.150$). Professional and general worker were found to have more positive attitude towards HRT use than housewife. This might be explained by those professionals and general workers have more opportunities to explore about HRT from their colleagues or social networking. However, since this finding is not statistically significant, more investigation should be considered for supporting this result.

In our finding, there was a significant difference between mean knowledge scores among participants with different monthly household income ($p<0.001$). There was a linear trend in mean knowledge scores with the increase of monthly household income. This result can reinforce the findings of previous study done by Lawlor et al. (2004) [21]. In Lawlor's studies, women with lower socio-economic status have insufficient knowledge on menopause, hence they were having difficulty in defining menopause accurately. In our study, post-hoc analyses were performed by applying a significance level of 0.05. The greatest mean difference was observed between monthly household income of < RM 1000 and > RM 8000 (-3.660, $p<0.001$).

Assessment of women's practice of HRT in term of HRT usage, it was found that among 404 participants, 83.4% of them have never taken HRT. Also, 7.7% and 8.9% of participants were currently taking HRT and took HRT in the past respectively. It was found that monthly household income has a significant association with the prevalence of HRT use ($p=0.007$). The prevalence of HRT use was higher among those with higher monthly household income. This result matched well with the previous result conducted by Lawlor et al. (2004) [21]. In this previous study, researchers found that there was a strong correlation between the socio-economic status of participants and HRT use, with Spearman rank correlation coefficient = 0.95. In our study, among 67 HRT users (current and past users), 20 of them was having monthly household income RM 5001–8000. This phenomenon can be attributed to those with higher monthly household income could afford the cost of medication.

Furthermore, the result of current study revealed that there was a significant association between level of education and HRT usage ($p=0.008$). 22 out of 31 current HRT users and 19 out of 36 past HRT users were tertiary education holders. This result agreed well with the previous findings of Alwi et al. (2010) [20]. In Alwi's studies, 55.2% of HRT users were tertiary education level with $p=0.013$, which was statistically significant. As mentioned earlier, in our study, tertiary educational qualification holders tend to have good knowledge and positive attitude towards HRT. This finding was getting clearer now as it was reflected on respondent's practices as well.

From the aspect of menstruation status, there was a significant association between menstruation status and status of HRT use with p-value < 0.001. 20 out of 31 respondents (64.5%) who claimed currently taking HRT were perimenopausal women while 23 out of 36 respondents (63.9%) who took HRT in the past were postmenopausal women. According to Clinical Practice Guideline (CPG) Malaysia, the best timing for initiation of HRT is associated with the proximity to menopause. The best timing to start falls between 50–59 years old, or it should be started within 10 years of the menopause. It is not encouraged to start HRT after 60 years old unless there is a compelling indication [22].

The good knowledge (14.92 ± 3.767) and positive attitude (2.92 ± 3.166) of past HRT users were reflected on their practices. Among 36 past HRT users, 17 of them (47.2%) claimed that they used to take HRT for the treatment of hot flushes.

The negative attitude towards HRT among the participants in this study was reflected on their practices. 89.2% ($n=190$) of participants who having negative attitude towards HRT did not use HRT. Majority stated that they were not needed to use HRT (47.5%, $n=160$) followed by 34.7% ($n=117$) claimed that never recommended by doctors. Even though "Against my religious belief" and "Not allowed by my culture" were less reported as one of the reasons that causing respondents not being on HRT in this study, however, these aspects should not be neglected as Malaysia is a multi-ethnic society [9].

In our survey, 90.8% of respondents claimed that they experienced at least one menopausal symptom. 'Hot flashes' was the most reported (35.4%, $n=143$), followed by irritability or mood swings (31.9%, $n=129$), and then

night sweats (29.2%, $n=118$). According to the study of Hamid et al. (2014), "hot flashes" was reported as the most frequent menopausal symptoms (63%) among participants as well [17].

Limitations

This study involves a hybrid mode of data collection where questionnaires will be distributed to the participants either through online platforms such as Facebook, Instagram, Messenger, WhatsApp or through face to face. For online questionnaire, it can help to save cost and time. However, it has its cons side such as participants may have difficulties in understanding the questions. Questions may be answered by participants randomly. For face-to-face questionnaire, it allows us to clarify the questions if requested by participants. However, it is much costly and limited by potential interviewer bias. To improve the validity of the questionnaire, a pilot study was conducted. Also, the use of contrast questions to detect those random answers [23].

Conclusion

Overall, the prevalence of Hormone Replacement Therapy (HRT) use among the respondents is low as 83.4% of them have never taken HRT before. Recommendation of this study is that healthcare providers should explain the pros and cons of HRT use to the menopausal women. Physicians and public healthcare systems should educate the public by using various educational tools and even through social media, TV programme, and radio. So even those women with no formal education and those housewives have more opportunities to get access to the information about menopause and HRT. In future, cost-effectiveness analysis on HRT use should be done to help government in the decision of cost-effectiveness threshold.

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Authors' contributions

MHG and MJF conceptualized the study and performed the analysis and interpretation of the data. MHG collected data and wrote the original manuscript. GSP helped in creating our methodology and assisted in manuscript writing. OF assisted in the literature review. SAK and LCM reviewed the manuscript and assisted in the discussion section. All authors have made an intellectual contribution to the work and have approved the final version of the manuscript for submission.

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Availability of data and materials

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Data availability

Data will be available upon request.

Declarations

Ethics approval and consent to participate

Written informed consent was given to the respondents prior to filling up the questionnaire. Data and information collected from respondents were treated confidentially. Ethical approval was granted from UCSI University ethics committee. (Ref. no. IEC-2023-FPS-0001) Public safety will be ensured and no harm should be caused to the public when gathering data.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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