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Holistic horizons: understanding the landscape of traditional and complementary medicines among menopausal women in Kuala Lumpur

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Abstract

Background The use of traditional and complementary medicines (T&CM) among menopausal women has become prevalent due to the concerns on the adverse effects and differing opinions regarding hormone replacement therapy's (HRT) suitability for long-term following the release of Women's Health Initiative (WHI) results in 2002. To date, there have been no studies conducted on knowledge, attitude and practice towards T&CM among menopausal women in Malaysia. In addition, many women seek relief from menopausal symptoms by using T&CM despite questionable safety and efficacy. The objective of this study was to determine the knowledge, attitude and practice of menopausal women towards T&CM and its correlation with sociodemographic data in Kuala Lumpur and to assess the prevalence, types and perceived effectiveness of T&CM used by menopausal women in Kuala Lumpur.

Methods A cross-sectional study was conducted among menopausal women ($n = 390$) in Kuala Lumpur in the form of self-administered questionnaire. Data was collected using convenience sampling. The questionnaire was adopted from previous studies and some literature reviews with modifications. It was composed of 4 sections. Statistical analyses were performed using the IBM SPSS Statistics Version 26. Data obtained was analysed using descriptive and inferential analysis such as independent t test, one way ANOVA and chi square test.

Results The prevalence of T&CM used among menopausal women was found to be 27.2%. Evening primrose oil (53.2%), vitamins and minerals (53.2%) and black cohosh (48%) were most frequently used. Black cohosh and phytoestrogens were perceived as effective in relieving menopausal symptoms by 36.6% and 43.4% of respondents, respectively. Over half of the respondents had poor knowledge (51.3%), negative attitude (56.9%) and poor practice (55.7%) regarding the utilization of T&CM in menopause. There was a significant association between knowledge and attitude (p value < 0.05), as well as between attitude and practice (p value < 0.01). Participants with university level education and high income ($> RM10,1000$) showed higher knowledge and positive attitude.

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Conclusions Menopausal women in Kuala Lumpur were found to have a low prevalence rate of T&CM utilization. Respondents' low understanding and unfavourable views might significantly impact the inadequate usage of T&CM.

Keywords Traditional and complementary medicines, Menopause, Knowledge, Attitude, Practice

Introduction

Menopause is the permanent discontinuation of menstruation which is marked by diminished of ovarian follicular activity and reduced blood estrogen level. A woman's menopause is clinically diagnosed after twelve months without menses provided there is no medical or physiological causes. Thus, the final menstrual period is determined retrospectively [1, 2].

Hormone replacement therapy (HRT) is recommended for the relief of menopausal symptoms, as well as for the prophylaxis of low estrogen levels and their clinical consequences [3, 4]. However, a plethora of large, prospective studies had revealed significant adverse consequences of long-term HRT use, notably increased risk of stroke, thromboembolic events, and breast cancer [3, 5, 6]. This had led to the decline of HRT use and gained popularity of traditional and complementary medicine (T&CM) in menopause [3, 7].

The use of T&CM in menopause has been extensively studied in several countries but there is limited study in Malaysia [7–12]. Based on studies conducted in Bologna, Germany and Canada, 33.5%, 48.2% and 91% of respondents claimed their use of T&CM respectively, showing T&CM are widely practiced in alleviating menopausal symptoms [8, 10, 11]. Research in United Kingdom and Australia revealed that menopause-related T&CM use is prevalent, and most respondents agreed that T&CM is effective in symptomatic menopause [7, 9].

An earlier study on Malaysian adults' attitudes towards general T&CM use revealed that 71.2% of respondents acknowledged the use of T&CM, indicating the great prevalence and acceptance of T&CM among Malaysians [13]. Another research has been done in Ipoh, Perak, Malaysia to evaluate the use of T&CM for menopausal symptoms among three major ethnic groups. The study proposed future research to involve a broader population that includes women with diverse ethnicities throughout Malaysia, with an emphasis on T&CM effectiveness, side effects and pharmacological interactions with prescribed medicines [12].

Although other countries have conducted studies on T&CM usage among menopausal women, but there was only one such research conducted in Malaysia among women of three major ethnics in Ipoh city [12]. To date, there are no studies conducted on KAP towards T&CM among menopausal women in Malaysia. In addition, many women seek relief from menopausal symptoms by using T&CM despite questionable safety and efficacy [10,

11]. Therefore, KAP on T&CM usage in menopause was necessary and warranted.

Therefore, this study aimed to estimate the KAP and types of T&CM used by menopausal women in Kuala Lumpur. of T&CM usage and its perceived effectiveness among menopausal women in Kuala Lumpur.

Methods

Study design and sampling method

A descriptive cross-sectional study was conducted among menopausal women in Kuala Lumpur in the form of self-administered questionnaire. Convenience sampling approach was employed in this study. This sampling method was preferred as the subjects were readily accessed and data collection was conducted at low cost and within a short period of time [14].

Sample size

Kuala Lumpur is the capital city of Malaysia. This city located in West Malaysia and is the largest urban area in Malaysia. The area of this city is approximately 94 square miles (243 square km) [15]. The total population of females in the Federal Territory of Kuala Lumpur in 2020 according to the Department of Statistics Malaysia, was approximately 923,206 and approximately 375,000 are between the age of 45–60 years [16, 17].

Online sample size calculator, Raosoft Software®, was used to compute the sample size with 95% confidence interval with $\pm 5\%$ of width and 50% of response distribution. Based on this calculation, the minimum sample size needed was 384. In the end, a total of 390 respondents were recruited in this study.

Inclusion criteria

Women experiencing menopausal symptoms in perimenopause (amenorrhoea > 60 days), early menopause (amenorrhoea at age 40–45), menopause (amenorrhoea for 1 year), postmenopause (amenorrhoea > 1 year) or surgical menopause stage, aged between 40 and 65, live in Kuala Lumpur and able to understand English/Malay/Chinese.

Exclusion criteria

Non-Malaysian.

Premature menopause.

Aged below 40 and above 65 and unable to understand English/Malay/Chinese.

Individuals who are above 65 years old were excluded because their menopausal symptoms could be confused with symptoms related to aging.

Study tool

The questionnaire was adopted from previous validated studies and some literature reviews with modifications [11, 12, 18]. It was composed of 4 sections: Section A which focused on socio-demographic data, section B which assessed participants' health characteristics, section C which evaluated participants' knowledge, attitude and practice concerning menopause and T&CM, and section D which examined the prevalence, types and perceived effectiveness on T&CM usage.

Scoring criteria

In section C, participants were asked 6 questions to assess their understanding of menopause and T&CM. Each correct answer earned one point, while each incorrect answer earned zero point. The mean score was calculated by dividing the total score with six. A score that was higher than the mean indicated a better knowledge of menopause and T&CM. 6 statements on a five-point Likert scale were asked regarding participants' attitude towards T&CM. A score of one was assigned to strongly disagree responses, while a score of five was assigned to strongly agree responses. The maximum score for this section is 30, and the average score was calculated to categorize attitudes as positive (if above average) or negative (if below average). A higher score on this section indicated a more positive attitude towards T&CM use. 6 statements on a five-point Likert scale were presented to participants about their practice on T&CM. Each strongly disagree response earned one point while strongly agree response earned five points except for question 1 to 3 which each strongly disagree response earned 5 points and strongly agree earned one point. A score that was higher than the mean score indicated better T&CM practices [11, 12, 18].

Validation of questionnaire and pilot study

Face validity was conducted in the areas of practicality, legibility, clarity and consistency of the language. Five experienced researchers or experts in the field of research who are either physicians, pharmacists or academicians evaluated the questionnaire for content validity. A small-scale pilot study was conducted with 30 participants for the purpose of assessing the reliability of the questionnaire. Internal consistency of the questionnaire was calculated using Cronbach's alpha coefficient. A value of >0.7 reflected the good reliability of the instrument [19].

Data collection

Participants were recruited from public venue in Kuala Lumpur such as outside shopping malls, bus/train stations, cafés, restaurants and Pasar Malam as well as through online platform. Data was collected via hybrid method by using self-administered questionnaire.

Data analysis

Statistical analyses were performed using the IBM SPSS Statistics Version 26. Data obtained was analysed using descriptive and inferential analysis. In descriptive analysis, statistics were analysed based on a histogram to estimate the frequency and on the distribution of data. The mean, mode and median represent the common values in descriptive analysis, but the range, standard deviation and variance serve to convey the variability of samples. Parametric tests were used in inferential analysis to analyse correlation and association between variables depending on the type and normality of the data. Inferential analysis such as independent t test, one way ANOVA and chi square test helped researchers to draw generalizations about a population based on findings from a sample.

Results

This study involved a total of 390 women who experiencing menopausal symptom(s). The respondents in this survey varied in age from 40 to 65 years, with 28.7% ($n=112$) falling within the age group of 45–49. Majority of respondents (35.9%, $n=140$) had finished secondary school education. Malay respondents constituted a majority in the study population with 44.1% ($n=172$) whereas Indian respondents made up 15.4% ($n=60$) of the study population, which is the minority. Majority of respondents (37.4%, $n=146$) had not menstruated in over 12 months, accounting for the highest proportion within the category of last menstruation. Of these individuals, 133 were classed as postmenopausal while the remaining 13 respondents were categorized as early menopause as they experienced menopause before the age of 45. HRT usage was not prevalent among menopausal women with 72.8% ($n=284$) reporting not using it. Among 27.2% ($n=106$) who claimed to use HRT, estrogen pill made up the majority (42.5%, $n=45$) followed by combined estrogen and progesterone pill which accounted for 29.2% ($n=31$). Table 1 showed the details of the scores between sociodemographic relation to knowledge, attitude and practice while Table 2 portrayed the summary of the scores between health characteristics relation to knowledge, attitude and practice. There was significant association between the mean practice score and age. Post hoc analysis showed that difference was larger between age group of 40–44 and 45–49. Mean knowledge and attitude scores were significantly different between education level and

Table 1 Sociodemographic of respondents

| Characteristics | Response | No. of participants (%) |
|-------------------|---------------------|-------------------------|
| Age | 40–44 | 83 (21.3) |
| | 45–49 | 112 (28.7) |
| | 50–54 | 74 (19.0) |
| | 55–59 | 60 (15.4) |
| | 60–65 | 61 (15.6) |
| Education level | No formal education | 37 (9.5) |
| | Primary school | 107 (27.4) |
| | Secondary school | 140 (35.9) |
| | University | 106 (27.2) |
| Ethnicity | Malay | 172 (44.1) |
| | Chinese | 158 (40.5) |
| | Indian | 60 (15.4) |
| Employment status | Employed | 174 (44.6) |
| | Housewife | 130 (33.3) |
| | Retired | 69 (17.7) |
| | Unemployed | 17 (4.4) |
| Marital status | With partner | 292 (74.9) |
| | Without partner | 98 (25.1) |
| Income | < RM1000 | 72 (18.5) |
| | RM1000–RM2500 | 107 (27.4) |
| | RM2500–RM5000 | 135 (34.6) |
| | RM5000–RM10000 | 62 (15.9) |
| | > RM10000 | 14 (3.6) |

monthly household income where participants with university level education and high income (> RM10,1000) showed higher knowledge and positive attitude. The difference in mean knowledge, attitude, and practice scores between the health characteristics is shown in Table 3.

A detailed breakdown of respondents' response to knowledge questions is portrayed in Table 4. 63.3% ($n=63.3$) respondents were not aware that T&CM could be purchased without a prescription, whereas 53.3% ($n=208$) believed that using T&CM did not result in any side effects. 44.6% ($n=174$) of the respondents were aware that T&CM usage is approved in Malaysia while 39.2% ($n=153$) understand that T&CM may interact with conventional medicines. Regarding the specific use of T&CM in menopause, approximately 43.8% ($n=171$) acknowledged the potential of ginseng in improving fatigue and insomnia. Additionally, only 38.7% ($n=151$) agreed that black cohosh may aid in alleviating menstrual cramps.

Table 5 shows the details of respondents' attitudes towards T&CM in menopause. Most of the respondents had a neutral stance towards whether T&CM is more effective and safer than conventional medicines in menopause with 29% ($n=113$) and 26.9% ($n=105$), respectively. 25.6% ($n=100$) disagreed that T&CM provides a permanent cure. Meanwhile, a similar proportion of respondents (31.5%, $n=123$) agreed and strongly agreed with the importance of consulting with healthcare experts before using T&CM.

Table 6 presents further insight into respondents' practice in incorporating T&CM in managing menopausal symptoms. Results indicate that 36.8% ($n=39$) of respondents disagreed with the use of T&CM when menopausal symptoms arose. Conversely, most respondents (30.2% $n=32$) strongly agreed to the utilization of T&CM even before the onset of menopausal symptoms. Moreover, 40.6% ($n=43$) of respondents possessed an agreed view that they turned to T&CM because conventional medicines were too costly, while 10.4% ($n=11$) strongly disagreed with this notion. In addition, 38.7% ($n=41$) agreed to discuss T&CM usage with healthcare providers while 45.3% ($n=48$) agreed to disclose it to them.

Based on Table 7, Among the T&CM users surveyed, majority of menopausal women had a preference towards EPO and vitamins and minerals. This accounted for the use of 53.2% ($n=101$) of respondents. The second most widely used option was black cohosh with 48.9% ($n=93$) of individuals reporting its usage. Following this, ginseng and green tea were the next popular choice, with 44.2% ($n=84$) and 43.7% ($n=83$) of respondents, respectively. The least favoured T&CM were St John's wort and wild yam, with only 25.8% ($n=49$) and 23.7% ($n=45$) individuals preferring them.

Table 8 shows a detailed association between knowledge and attitude components. The result showed a significant association between knowledge of T&CM and attitude towards T&CM usage in menopause, as indicated by a p-value of 0.008. 63.5% ($n=127$) of respondents with poor knowledge had a negative perspective on the application of T&CM in treating menopausal symptoms. Respondents with good knowledge were evenly split in the positive and negative attitude categories.

The result showed a significant association between attitude and practice of T&CM usage in menopause, as evidenced by a p-value of <0.001. 70.5% ($n=43$) of respondents who held a negative attitude had a poor practice of T&CM during menopause whereas 64.4% ($n=29$) with positive attitude practiced T&CM wisely. Table 9 shows a detailed association between attitude and practice components.

Based on the Tables 2 and 107.2% ($n=106$) opted for T&CM usage during menopause. T&CM was not used currently by 72.8% of respondents, which totals 284 out of 390 respondents. Non-T&CM users were further classified into those who had never taken T&CM previously and those who had taken T&CM in the past, with 51.3% ($n=200$) and 21.5% ($n=84$), respectively.

Discussion

Researchers from different countries such as Australia, Canada, Germany, Italy, Turkey and UK have published studies about T&CM utilization in menopause [6–11, 20]. Despite the publications of several researchers on

Table 2 Scores between sociodemographic relation to knowledge, attitude and practice

| Variable | Subgroup | Mean score \pm SD | | |
|-------------------|---------------------|------------------------|------------------------|----------------------|
| | | Knowledge | Attitude | Practice |
| Age | 40–44 | 2.51 \pm 1.451 | 19.06 \pm 3.759 | 21.00 \pm 3.317 |
| | 45–49 | 2.31 \pm 1.343 | 17.73 \pm 4.036 | 17.59 \pm 2.598 |
| | 50–54 | 2.55 \pm 1.34 | 18.66 \pm 3.669 | 18.70 \pm 3.851 |
| | 55–59 | 2.67 \pm 1.434 | 18.37 \pm 3.395 | 18.06 \pm 4.946 |
| | 60–65 | 2.59 \pm 1.321 | 17.79 \pm 2.745 | 18.47 \pm 4.291 |
| | p-value | 0.504 ^b | 0.082 ^b | 0.041 ^{b**} |
| Education level | No formal education | 2.24 \pm 1.140 | 17.41 \pm 4.166 | 18.50 \pm 4.637 |
| | Primary school | 2.20 \pm 1.306 | 17.61 \pm 3.804 | 18.69 \pm 3.905 |
| | Secondary school | 2.58 \pm 1.347 | 18.44 \pm 3.700 | 18.39 \pm 3.741 |
| | University | 2.78 \pm 1.493 | 19.12 \pm 3.048 | 19.22 \pm 3.872 |
| | p-value | 0.009 ^{b**} | 0.008 ^{b**} | 0.876 ^b |
| Ethnicity | Malay | 2.44 \pm 1.303 | 17.91 \pm 3.978 | 18.31 \pm 4.033 |
| | Chinese | 2.53 \pm 1.444 | 18.93 \pm 3.095 | 19.92 \pm 3.692 |
| | Indian | 2.567 \pm 1.407 | 17.75 \pm 3.847 | 17.46 \pm 3.203 |
| | p-value | 0.768 ^b | 0.017 ^{b**} | 0.033 ^{b**} |
| Employment status | Employed | 2.65 \pm 1.409 | 18.34 \pm 3.773 | 18.98 \pm 3.663 |
| | Housewife | 2.34 \pm 1.406 | 18.49 \pm 3.806 | 18.64 \pm 3.480 |
| | Retired | 2.55 \pm 1.231 | 18.32 \pm 3.165 | 18.06 \pm 5.093 |
| | Unemployed | 1.94 \pm 1.144 | 16.29 \pm 2.568 | 18.00 \pm 3.674 |
| | p-value | 0.080 ^b | 0.138 ^b | 0.824 ^b |
| Marital status | With partner | 2.51 \pm 1.408 | 18.32 \pm 3.719 | 18.64 \pm 3.869 |
| | Without partner | 2.46 \pm 1.2 | 18.225 \pm 3.469 | 18.83 \pm 3.774 |
| | p-value | 0.751 ^a | 0.820 ^a | 0.837 ^a |
| Income | < RM1000 | 2.63 \pm 1.378 | 18.38 \pm 3.920 | 17.74 \pm 4.593 |
| | RM1000–2500 | 1.94 \pm 1.235 | 17.03 \pm 3.578 | 17.85 \pm 3.745 |
| | RM2500–5000 | 2.74 \pm 1.382 | 18.85 \pm 3.820 | 19.39 \pm 2.777 |
| | RM5000–RM10000 | 2.69 \pm 1.362 | 18.76 \pm 2.672 | 20.67 \pm 4.519 |
| | > RM10000 | 2.86 \pm 1.351 | 20.21 \pm 2.392 | 19.60 \pm 3.911 |
| | p-value | < 0.001 ^{b**} | < 0.001 ^{b**} | 0.106 ^b |

Notes: ** indicates $p < 0.05$ is significant; a = independent t-test; b = one-way ANOVA

prevalence, knowledge, attitude and practices of T&CM utilization, there was no study conducted on the knowledge, attitude and practice of T&CM in menopause in Malaysia till now.

This study found that 27.2% respondents utilized T&CM during menopause in this study while 72.8% did not. The prevalence of T&CM among menopausal women in this study was much lower compared to the study conducted in Ipoh city (41.4%). The lower prevalence of T&CM use in Kuala Lumpur compared to Ipoh may be due to Kuala Lumpur's status as a modern capital city, where residents might prefer conventional medicine, unlike Ipoh where traditional practices are more favored [12]. Globally, T&CM usage in menopause varied from 33.5 to 91% including Bologna, Germany, Sydney, Egypt, Turkey and Canada [6, 8–11, 21].

Based on the findings, it showed that ethnicity had a noteworthy impact on the use of T&CM, with Indians using T&CM more prevalent than Chinese and Malays. This was consistent with another study carried out among menopausal women in Ipoh city which Indians

displayed a higher likelihood of utilizing T&CM among the three major ethnics. The plausible justification for this high usage among Indians could be attributed to a majority of them being vegetarians who frequently consume soy and herbal products [12].

Of those T&CM users surveyed in this study, EPO, vitamins and minerals were appeared to be the most widely used. Previous research conducted in Ipoh city and South East Queensland similarly found that over half of the women reported using EPO among various T&CM [12, 22]. The popularity of EPO utilization could be attributed to its effectiveness in decreasing the occurrence and intensity of night sweats [23]. Additionally, menopausal women frequently turned to vitamins and minerals as a mean to ease their symptoms, preserve strong bones and lowering mortality [3].

This survey also discovered that there was a clear association between knowledge and education level, with respondents who had higher levels of education demonstrating a higher degree of knowledge. This finding mirrors a similar study conducted in Sungai Petani, Malaysia

Table 3 Scores between health characteristics relation to knowledge, attitude and practice

| Variable | Subgroup | Mean score \pm SD | | |
|--|-------------------------------------|----------------------|----------------------|--------------------|
| | | Knowledge | Attitude | Practice |
| Last menstruation | 2–11 months | 2.61 \pm 1.481 | 18.88 \pm 4.104 | 19.15 \pm 4.417 |
| | 12 months | 2.20 \pm 1.128 | 17.38 \pm 3.218 | 18.31 \pm 3.577 |
| | > 12 months | 2.56 \pm 1.424 | 18.46 \pm 3.541 | 18.54 \pm 2.625 |
| | Surgical menopause | 2.52 \pm 1.214 | 17.59 \pm 2.584 | 18.71 \pm 3.498 |
| | p-value | 0.166 ^b | 0.016 ^{b**} | 0.849 ^b |
| Menopausal status | Perimenopause | 2.61 \pm 1.481 | 18.88 \pm 4.104 | 19.15 \pm 4.417 |
| | Early menopause | 2.23 \pm 1.411 | 17.84 \pm 3.625 | 17.83 \pm 4.218 |
| | Menopause | 2.38 \pm 1.061 | 17.56 \pm 3.306 | 18.05 \pm 3.229 |
| | Postmenopause | 2.54 \pm 1.401 | 18.33 \pm 3.466 | 18.94 \pm 3.601 |
| | Surgical menopause | 2.52 \pm 1.214 | 17.59 \pm 2.585 | 18.71 \pm 3.498 |
| HRT use | p-value | 0.468 ^b | 0.119 ^b | 0.773 ^b |
| | Yes | 2.264 \pm 1.289 | 17.88 \pm 3.572 | 18.23 \pm 3.048 |
| | No | 2.599 \pm 1.394 | 18.45 \pm 3.677 | 18.86 \pm 4.104 |
| | p-value | 0.017 ^{a**} | 0.166 ^a | 0.454 ^a |
| Please specify the name/ type of HRT you are taking. | Combined estrogen progesterone pill | 2.52 \pm 1.363 | 17.26 \pm 3.577 | 19.38 \pm 3.204 |
| | Estrogen cream | 2.55 \pm 1.050 | 18.95 \pm 2.395 | 18.80 \pm 3.701 |
| | Estrogen pill | 2.02 \pm 1.270 | 18.36 \pm 3.844 | 18.23 \pm 2.587 |
| | Progesterone only pill | 1.60 \pm 1.350 | 15.50 \pm 3.240 | 15.25 \pm 2.217 |
| | p-value | 0.024 ^{b**} | 0.048 ^{b**} | 0.438 ^b |

Notes: ** indicates $p < 0.05$ is significant; a = independent t-test; b = one-way ANOVA

Table 4 Respondents' knowledge towards questions about T&CM in menopause

| Questions | No. of participants (%) | |
|---|-------------------------|------------|
| | Correct | Incorrect |
| T&CM can be purchased without prescription. | 143 (36.7) | 247 (63.3) |
| Use of T&CM do not cause any side effects. | 182 (46.7) | 208 (53.3) |
| Use of T&CM is approved in Malaysia. | 174 (44.6) | 216 (55.4) |
| T&CM interacts with conventional medicines. | 153 (39.2) | 237 (60.8) |
| Ginseng can improve fatigue and insomnia. | 171 (43.8) | 219 (56.2) |
| Black cohosh can be used to relieve menstrual cramps. | 151 (38.7) | 239 (61.3) |

and San Francisco which found that education level and knowledge level were directly proportional [24, 25]. It was concluded that individuals with better literacy levels had more knowledge regarding T&CM compared to those with lower literacy.

Besides that, it was observed that the respondent's level of income significantly influenced their level of understanding towards T&CM. In addition, research conducted in San Francisco and Turkey also found out that people belonging to the lower income bracket tended to have a lesser amount of knowledge regarding T&CM [25, 26]. This suggested that there could be a correlation between one's financial status and access to resources and information related to T&CM.

Interestingly, this study found out a relationship between education background with individual's perspective towards T&CM. A study conducted in Sungai Petani also found a notable link between education level

and attitude, with higher education level being linked to a more positive attitude [24]. This study showed that respondents with a university degree had the most favourable attitude towards T&CM.

Furthermore, this study found that respondent's income had a significant impact on their attitude towards the use of T&CM. Specifically in this study, those who earned between RM2500–RM5000 had a positive attitude towards T&CM usage. This was backed up with another study which indicated that women from middle-class backgrounds were the primary consumers of T&CM and more likely to use them [7].

It is worth noting that this research also found out that ethnic differences and their practice pattern was shown in this study. This study identified that Indian populations had better practice compared to Malay and Chinese. This was supported by another study in Malaysia where Indians were found to have the best T&CM practices among all ethnicities in Sungai Petani. Chinese and Malay population were found to have comparatively moderate practice and weaker association between ethnic groups [24].

These findings also indicated that there was a correlation between the time of last menstrual cycle and their attitude towards T&CM. Women who had their menses prior 2–11 months ago tend to have more positive attitude towards the utilization of T&CM. Additionally, individuals who use HRT tend to more informed and knowledgeable about T&CM practices.

To sum up, the respondents exhibited poor knowledge, negative attitude and poor practices when it came to the usage of T&CM in menopause. These results were

Table 5 Respondents' attitude towards questions about T&CM in menopause

| Question | Response | No. of participants (%) |
|--|-------------------|-------------------------|
| T&CM is effective than conventional medicines in menopause. | Strongly disagree | 52 (13.3) |
| | Disagree | 95 (24.4) |
| | Neutral | 113(29.0) |
| | Agree | 90 (23.1) |
| | Strongly agree | 40 (10.3) |
| T&CM is safer than conventional medicines in menopause. | Strongly disagree | 92 (23.6) |
| | Disagree | 87 (22.3) |
| | Neutral | 105 (26.9) |
| | Agree | 80 (20.5) |
| | Strongly agree | 26 (6.7) |
| T&CM provides permanent cure. | Strongly disagree | 67 (17.2) |
| | Disagree | 100 (25.6) |
| | Neutral | 99 (25.4) |
| | Agree | 85 (21.8) |
| | Strongly agree | 39 (10.0) |
| People use T&CM because they are easily available. | Strongly disagree | 44 (11.3) |
| | Disagree | 80 (20.5) |
| | Neutral | 73 (18.7) |
| | Agree | 148 (37.9) |
| | Strongly agree | 45 (11.5) |
| It is important to consult any healthcare professionals before T&CM use. | Strongly disagree | 27 (6.9) |
| | Disagree | 57 (14.6) |
| | Neutral | 60 (15.4) |
| | Agree | 123 (31.5) |
| | Strongly agree | 123 (31.5) |
| I would like to recommend T&CM to others. | Strongly disagree | 36 (9.2) |
| | Disagree | 96 (24.6) |
| | Neutral | 110 (28.2) |
| | Agree | 101 (25.9) |
| | Strongly agree | 47 (12.1) |

consistent with a previous study in Kuantan, Malaysia which revealed that the respondents generally had poor understanding, attitude and perception about T&CM [27]. Additionally, these findings demonstrated that there was an association between knowledge and attitude towards T&CM with higher level of knowledge associated with a tendency towards a more positive attitude towards T&CM in menopause. This corresponded with the previous study which suggested education background was directly proportional to their perception towards T&CM [27]. Furthermore, the data indicated that the respondents' attitude about T&CM in menopause were strongly related to the practice of T&CM during menopause with a significant p-value of < 0.001 .

The current study findings would provide valuable insights into the level of knowledge, attitude and practice of menopausal women towards the use of T&CM. Besides that, this study able to shed light on the prevalence and types of T&CM therapies used during menopause. The findings of this study can greatly benefit healthcare professionals as they can use this information to better educate menopausal women about the various T&CM

options available to them and their potential benefits. In this case, healthcare professionals can provide more personalized care that meets the unique needs of each individual while menopausal women will be assisted in making informed decisions about their healthcare which can improve their quality of care. Furthermore, gaps in the knowledge and attitudes towards T&CM can be identified among menopausal women. By this, targeted educational interventions can be developed to benefit menopausal women and lead to better health outcomes. This study is significant to Malaysian health policymakers as it highlights the need for improved education and regulation of Traditional and Complementary Medicines (T&CM) among menopausal women to ensure safety and efficacy. Future recommendations include integrating T&CM into mainstream healthcare and conducting further research on its effectiveness.

Limitations

The respondents might have answered questions based on what they think is right instead of what they have been practicing in their daily lives. Data was collected by

Table 6 Respondents' answers towards questions about the practice of T&CM in menopause

| Question | Response | No. of participants (%) |
|--|-------------------|-------------------------|
| I always take T&CM when I experience menopausal symptoms. | Strongly disagree | 15 (14.2) |
| | Disagree | 39 (36.8) |
| | Neutral | 8 (7.6) |
| | Agree | 34 (32.1) |
| | Strongly agree | 10 (9.4) |
| I use T&CM even before I experienced menopausal symptoms. | Strongly disagree | 3 (2.8) |
| | Disagree | 27 (25.5) |
| | Neutral | 15 (14.2) |
| | Agree | 29 (27.4) |
| | Strongly agree | 32 (30.2) |
| I use T&CM because conventional medicines are more expensive. | Strongly disagree | 11 (10.4) |
| | Disagree | 29 (27.4) |
| | Neutral | 7 (6.6) |
| | Agree | 43 (40.6) |
| | Strongly agree | 16 (15.1) |
| I consult healthcare professionals before I use any T&CM. | Strongly disagree | 10 (9.4) |
| | Disagree | 16 (15.1) |
| | Neutral | 6 (5.7) |
| | Agree | 41 (38.7) |
| | Strongly agree | 33 (31.1) |
| I disclose the use of T&CM to healthcare professionals. | Strongly disagree | 8 (7.5) |
| | Disagree | 19 (17.9) |
| | Neutral | 5 (4.7) |
| | Agree | 48 (45.3) |
| | Strongly agree | 26 (24.5) |
| Combination of T&CM and conventional medicines provide better menopausal symptoms control. | Strongly disagree | 13 (12.3) |
| | Disagree | 35 (33.0) |
| | Neutral | 10 (9.4) |
| | Agree | 30 (28.3) |
| | Strongly agree | 18 (17.0) |

Table 7 Types of T&CM used

| Question | Response | No. of participants (%) | |
|-------------------|-------------------------------|-------------------------|------------|
| | | Yes | No |
| Type of T&CM used | Black Cohosh | 93 (48.9) | 97 (51.1) |
| | Red Clover | 71 (37.4) | 119 (62.6) |
| | Dong Quai | 63 (33.2) | 127 (66.8) |
| | Ginseng | 84 (44.2) | 106 (55.8) |
| | Ginkgo | 69 (36.3) | 121 (63.7) |
| | Evening Primrose Oil | 101 (53.2) | 89 (46.8) |
| | St John's Wort | 49 (25.8) | 141 (74.2) |
| | Phytoestrogens (Soybean diet) | 60 (31.6) | 130 (68.4) |
| | Green Tea | 83 (43.7) | 107 (56.3) |
| | Wild Yam | 45 (23.7) | 145 (76.3) |
| | Vitamins and Minerals | 101 (53.2) | 89 (46.8) |
| | Yoga | 59 (31.1) | 131 (68.9) |
| | Acupuncture | 50 (26.3) | 140 (73.7) |
| | Homeopathy | 62 (32.6) | 128 (67.4) |

Table 8 Association between knowledge and attitude component

| Item | | Attitude | | p-value |
|-----------|------|------------|-----------|---------|
| | | Negative | Positive | |
| Knowledge | Poor | 127 (63.5) | 73 (36.5) | 0.008** |
| | Good | 95 (50.0) | 95 (50.0) | |

Notes: ** indicates $p < 0.05$ is significant**Table 9** Association between attitude and practice component

| Item | | Practice | | p-value |
|----------|----------|-----------|-----------|-----------|
| | | Poor | Good | |
| Attitude | Negative | 43 (70.5) | 18 (29.5) | < 0.001** |
| | Positive | 16 (35.6) | 29 (64.4) | |

Notes: ** indicates $p < 0.05$ is significant**Table 10** Prevalence of T&CM usage

| Question | Response | Subgroup | No. of participants (%) |
|----------------------|----------|-----------------------|-------------------------|
| Status of T&CM usage | Yes | Currently taking T&CM | 106 (27.2) |
| | | Took T&CM in the past | 84 (21.5) |
| | | Never taken T&CM | 200 (51.3) |

convenient sampling, which is non-probabilistic nature of the sampling strategy, which is vulnerable to selection bias.

Conclusion

In overall, the respondents in this study showed a low level of knowledge, negative attitudes and poor practice regarding the use of T&CM in menopause. The prevalence at which T&CM was used by menopausal women in Kuala Lumpur was moderately low. This could be attributed to the respondent's inclination towards conventional medicine for treating menopausal symptoms. Evening primrose oil and vitamins and minerals were the most prevalent T&CM products used. Thus, it would be beneficial to consider examining the impact of dosage and duration of T&CM in future studies use as these may affect the perceived benefits of such treatments. However, lack of dosing guideline or standardization for T&CM therapies may likely pose a challenge in future research [11].

Abbreviations

| | |
|------|--|
| T&CM | Traditional and Complementary Medicine |
| HRT | Hormone replacement therapy |
| KAP | Knowledge, attitude and practice |
| WHI | Women's Health Initiative |
| EPO | Evening primrose oil |

Supplementary Information

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Supplementary Material 1

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Author contributions

MJF and FK conceptualized the study and performed the analysis and interpretation of the data. EL collected data and wrote the original manuscript. GSP helped in creating our methodology and assisted in manuscript writing. DLR assisted in the literature review. AKS 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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Data availability

Data will be available from the corresponding author 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-0002) 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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