

ORIGINAL ARTICLE

**COMPLEMENTARY MEDICINE PRACTICES FOR PREGNANCY AND POSTPARTUM HEALTH: A STUDY AMONG MALAYSIAN WOMEN WHO GAVE BIRTH IN A TERTIARY CENTRE.**

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**Abstract**

Background: A systematic review reported a high prevalence of complementary and alternative medicine (CAM) practice during pregnancy. Earlier Malaysian studies related to it were based on Malay predominant populations. Objectives: The study objectives were to determine prevalence, types, aims, and associated factors of CAM use during pregnancy and the postnatal period among women who gave birth in a Malaysian tertiary hospital. Methods: A cross sectional study was conducted among women who were admitted to the postnatal wards of “Hospital Raja Permaisuri Bainun, Ipoh, Perak state, Malaysia” using a structured questionnaire, designed to collect data on the participants’ demography, details of CAM practice and their attitude towards its use. Results: The prevalence of CAM use among 134 respondents was 87.3%. The most commonly used method was naturopathy using abdominal hot stone application or massage as reported by 72% respondents. It was rated highly effective in improving circulation or recuperation by 90% of users. Herbal usage was reported by 36% and the commonest type was Indonesian traditional herbal medicine “Jamu”. The use of CAM was significantly low among Chinese respondents ( $P<0.001$ ), respondents with no/primary level education background ( $P<0.05$ ), unskilled workers ( $P<0.05$ ) and low earners ( $P<0.005$ ). Regression analysis indicated the chance of CAM usage was significantly less among Chinese women compared to Malays. (OR = 0.077 95% CI= 0.013-0.458) Conclusion: The prevalence of obstetric CAM use among the study population was high. Further studies are required to critically assess the commonest practice, naturopathy.

**Keywords:** *Complementary therapies, associated factors, pregnancy and postnatal, obstetrics, Malaysia*

## Introduction

The definition of “Complementary and alternative medicine” (CAM) adopted by Cochrane collaboration is “a broad domain of healing resources that encompasses all health systems, modalities, and practices and their accompanying theories and beliefs, other than those intrinsic to the politically dominant health system of a particular society or culture in a given historical period. CAM includes all such practices and ideas self-defined by their users as preventing or treating illness or promoting health and well-being.”<sup>1</sup> Subsequently, an operational definition was developed with 70 different terms or combination of terms to identify therapies used in treating or preventing disease<sup>2</sup>.

High prevalence of systemic CAM use in pregnancy was highlighted in a review<sup>3</sup> and also in a recent Malaysian study<sup>4</sup>. In Malaysia prevalence of herbal use in pregnancy was reported variably 52.4% with high rate of coconut oil ingestion in third trimester<sup>5</sup> and 34.3% with the most frequent intrapartum utilization<sup>6</sup>.

A wide variety of CAM are used during antenatal and postnatal periods. Herbal or other CAM was recommended by 46.1% of physicians as reported in an Iranian study<sup>7</sup>, by 60% of midwives in a Turkish study<sup>8</sup> and by 32.5% of health care professionals in a Scotland survey<sup>9</sup>.

The usage is racially and culturally different. In the United States, non-Hispanic whites are most likely to use a broader variety of CAM while racial/ethnic minorities are the highest users of specific and culturally relevant CAM methods<sup>10</sup>.

A report from a multi-national study (excluding Asians) suggested that herbal use in pregnancy was higher in Russia (69%), Eastern Europe (51.8%) and Australia (43.8%) than other regions and was associated with being non-smokers, folic acid or alcohol consumption in pregnancy, being students and having education other than a high school degree<sup>11</sup>.

Therefore health care providers in Malaysia, a multiracial nation, have to recognize the diversity of CAM practice among their population because

some specific methods are used by individual races.

This study was conducted to explore obstetric CAM practice among mothers who gave birth in a tertiary hospital of Perak state, Malaysia. Study objectives were to investigate prevalence, types and purpose of CAM use during pregnancy and postnatal periods, to explore women’s attitude towards the use and to determine demographic factors associated with the usage.

## Materials and Methods

This cross-sectional descriptive study was conducted as a ‘student special study module research project’ with an approval from the institutional medical ethics committee of the Faculty of medicine, Universiti Kuala Lumpur Royal College of Medicine Perak (UniKL RCMP /MREC/2016/047).

## Study population

All eligible women admitted to the postnatal wards of ‘Hospital Raja Permaisuri Bainun, Ipoh, Perak state, Malaysia’ within a period between 22nd August and 7th October 2016 were included. Eligibility criteria included mothers who were postpartum and available in the postnatal wards during the study period, who were willing to participate, who were mentally and physically fit to answer the questions and who were able to communicate in Malay (official language of Malaysia) or English Language. Sample size was calculated as 194 based of the Obstetric CAM prevalence of 85.2% from a previous Malaysian study<sup>4</sup> using Open source calculator of open epi version 3. All women who satisfied the eligibility criteria were selected. Out of 177 eligible persons, 134 agreed to participate and all of them completed the questionnaire during the interview. Therefore, the response rate was 75.7%.

The purpose and nature of the study were verbally explained to eligible women by the interviewers. The participant information leaflet which was prepared in question and answer format was also distributed to the selected women. A written informed consent was taken after assuring confidentiality of their personal information. The participants were informed that the participation is voluntary and they can withdraw from the study at any time.

### Data collection

Two trained medical students collected data via face to face interview using the questionnaire written in English. Malay or English language was primarily used during the interview. To collect the data on types of CAM, common categories as stated in working definition<sup>2</sup> were listed in the questionnaire. The users had to answer further on details of their use. The respondents could volunteer information of “other method” they used to prevent any illness or to promote their wellbeing even if it is not in the list. Content validity of the questionnaire was assessed by the subject experts and face validity was observed in a pilot study.

### Statistical analysis

Analysis was performed to determine association between user’s demographics and use of alternative medication by using Chi Square test and logistic regression analysis.

### Results

The responses of 134 women were computed into our statistical analysis.

### Socio-demographic and health characteristics

The Majority (69%) of respondents were Malays and 73% were Muslims. The mean age was 28.99 years (+/-5.39 2SD) with the youngest being 15 and the oldest 43 years. The mean parity was 2.41

(+/-1.595 2SD) with the highest parity ten. More than half of participants had secondary or lower level education and were housewives. The largest group had a monthly income between 1000 and 3000 Malaysian Ringgit. (Table 1)

### Descriptive analysis of the use of alternative medications

Among our study population, the prevalence of CAM use during pregnancy and postnatal period was 87.3%. Highest proportion (59%) used CAM during the postpartum period, 31% used during pregnancy and 10% used in both periods.

Massage or abdominal hot stone application (naturopathy) was reported by 72% of the respondents and herbal medicine was used by 36%. The commonest reason given by both groups was to improve circulation and to enhance their recuperation after delivery. “Jamu” and ginger were commonly used as reported by 41% and 11% of respondents respectively. Other products reported were black pepper, herbal tea, Bilimbi (*Averrhoa bilimbi*), Pandan leaves (*Pandanus amaryllifolius*), Guava (*Psidium guajava*) leaves, Senna (*Senna alexandrina*) leaves, ginseng, Kacip Fatimah (*Labisia pumila*), lemon grass, rice water turmeric, lime and Galangal (*Alpinia galena*).

Dietary supplements were used by 32% of the study population and 39.5% used it for improvement of health and energy. Commonly used supplements reported by the users were vitamin, virgin coconut oil and milk, and rarely used products are dates, black seed oil, fish essence, sea cucumber and pomegranate essence. Ayurveda was used by 6% mainly for relieving pain and warming of the blood. No other mind and body practices were reported except Yoga (1%). The majority for users rated their methods highly effective. (Table 2)

More than half of users spent between Malaysian Ringgit (RM) 100 and 300 for CAM in their current pregnancy, 25% used more than RM 300 and 22% used less than 100.

The major source of information related to CAM was their parents. They also received advice from friends, relatives and parents in law. Traditional midwives and other health care professionals

rarely recommended those medications or methods. (Figure 1)

### **Analysis on association between demographic and health variables, and the use of CAM**

As shown in Table 3, age and parity were not significantly associated with the use ( $p > 0.05$ ). The prevalence among Chinese respondents and respondents from other ethnic groups was significantly lower than that of Malay and Indian respondents ( $p < 0.001$ ). Among our participants, women with no education and primary level education were less likely to use it. ( $p < 0.05$ ).

All participants from the group of “intellectuals, professionals, executives, managers and entrepreneurs” used CAM. The user proportion was significantly higher among housewives and skilled staff compared to un-skilled workers ( $p < 0.05$ ). The participants from the low-income group (income  $< 1000$ /month) were less likely to use CAM compared to the higher income group ( $P < 0.005$ ).

Binomial regression analysis demonstrated that Chinese women had lower odds for CAM use (Chinese: OR = 0.077, 95% CI = 0.013-0.458) but all other independent variables showed insignificant odds. (Table 4)

### **Participants’ attitude towards CAM use**

The majority of the users responded positively towards all attitude related questions. Most of the participants responded that they have plan to use CAM in future pregnancies and would recommend CAM to others. (Table 5)

### **Discussion**

Prevalence of CAM use among our respondents was much higher than previous findings ranging from 5.8% to 74.2%<sup>3</sup> but comparable to that reported by a Malaysian study<sup>4</sup> and an Iranian study<sup>12</sup>.

Our finding of high prevalence of naturopathy might be due to inclusion of postnatal use of CAM. With regards to pre-natal usage, herbal use was always the highest (although the rate widely

varied between 22.3 to 82.3%), increasing in trend<sup>13</sup> and was associated with increasing age<sup>14</sup>.

Naturopathy (post-natal hot stone massage), is not an uncommon practice in southeast Asian countries e.g. Cambodia, Malaysia and Myanmar<sup>15-17</sup>. Some Cambodian communities believe that sitting on a heated rock during the postpartum period prevents uterine prolapse and applying fire-warmed rock abdominally improves uterine involution and abdominal muscle tone<sup>15</sup>. In spite of its great use, no research output literature was available on technique, benefits or side effects related to these methods. In western medicine, uterine massage is recommended after placental delivery just by hand rubbing to improve uterine involution in order to reduce the postpartum hemorrhage. However the results of two randomized controlled trial did not show any significant benefit of uterine massage<sup>18</sup>. A small study found that abdominal heat application during labor increased uterine activity significantly<sup>19</sup>. This effect may be replicated postnatally but no data is available to support its use either in labor or after delivery.

In the middle-east, herbal products are more diverse<sup>13</sup> than in USA<sup>14</sup>, however, use of some products like ginger, green tea, peppermint, chamomile are common internationally. Interestingly Indonesian herbal beverage “Jamu” was the most popular product among our respondents. There are ten types of Jamu prepared by mixing of various herbs and spices, for specific health benefits. However, almost all preparations were stated to be beneficial for pregnancy and lactation<sup>20</sup>.

The rate of supplement use among our respondents was similar to that of an Iranian study<sup>12</sup> but much lesser than previous findings reported (47% to 91%)<sup>3</sup>. The reason of this discrepancy might be due to the variation in definition of “supplements”.

In our study, Ayurveda was used by Indians and other racial groups. A review reported that homeopathy prevalence varied from less than 5% to more than 50%<sup>3</sup> but none of our respondents use it. Similarly, the use of acupuncture or acupressure, aromatherapy, mind body practices and manipulation and body based practices were

not reported by our participants despite the prevalence of 24.7% body based practices and 22.9% spiritual methods in other Muslim population<sup>12</sup>. An American survey also showed that mind body practices were the most popular methods<sup>21</sup>.

In our study, the majority of users were satisfied with their methods for improving their health although the effectiveness can only be measured subjectively. An Australian study reported that herbal medicine was used in pregnancy as a holistic approach and a preventative measure with some concerns about evidence of clinical efficacy of these products<sup>22</sup>. Clinical trials have demonstrated the promising effect of ginger in improving pregnancy related nausea and vomiting but very few studies were undertaken for other herbal remedies<sup>23</sup> and no reliable data accessible to support use of other methods.

The spending on CAM use among our population cannot be considered high although comparison is not possible due to lack of data. Hot stone massage can be performed by family members therefore cost would not be a factor.

The majority of our participants followed their family advice with regards to CAM use which differs from the findings of an international study<sup>7</sup>. This can be explained by the fact that Malaysians live in close community where people still rely on the family members for their consultation rather than online sources. Only 2% of our respondents received information from health care providers whose view on CAM use may be skeptical as reported by a qualitative study<sup>2</sup>.

A US nationwide survey reported that increased maternal age, primigravida, being US born and having college education were associated with CAM use in pregnancy<sup>25</sup>.

Our multivariate analysis indicated that being a Chinese, the chance of CAM use is significantly less compared to Malays. Although nonspecific CAM use was high among Chinese women (86%)<sup>26</sup>. Prevalence of traditional Chinese medicine (TCM) use in pregnancy was relatively low<sup>27, 28</sup>. Therefore it will be of interest to look at whether pregnancy is an exception for TCM use among Chinese population. Likewise, very little is presented in the scientific literature related to

obstetric CAM use in India or among Indian women living abroad.

Our results also indicated that high earners, professionals or entrepreneurs have 100% user rate. Likewise, women with no employment is associated with high CAM usage. Similar to our findings, it was positively associated with no occupation and high income, rural residence, perceived healthy status and ever use of contraception among Iraqi women<sup>29</sup>. However, a study based on Malay predominant population did not prove any association between CAM usage and sociodemographic features<sup>5</sup>.

Our respondents expressed their positive attitude on safety antenatal and postnatal use of CAM while it was reported that herbal medicines users had concern about evidence of clinical efficacy and women who practiced aromatherapy and homoeopathy were concerned more about their own personal experience of the efficacy<sup>22</sup>.

Our study participants also demonstrated optimistic view as higher majority answered positively to attitude questions statements on plan for future CAM use and recommending CAM to others.

Lapi F et al reported that habitual user of CAM were at higher risk of taking CAM during pregnancy (adjusted odds ratio = 10.8; 95% confidence interval: 4.7–25.0).<sup>30</sup> It is understandable that women recommend their method that they think beneficial and safe to their relatives and friends as indicated by previous study that revealed most pregnant women used herbs based on advice from family and friends<sup>31, 32</sup>.

**Limitation:** The main limitation of this study which carried out as a medical student research project, was time constraint that resulted small sample size. However, the ethnic distribution corresponded well to the ethnic proportion of Malaysian population.

## Conclusion

Our findings suggested that the prevalence of CAM use in pregnancy and postnatal period is considerably high. Naturopathy using massage or hot stone application is the most popular method

followed by herbal medicine. Most users rated their methods as 'quite effective'. Factors that are negatively associated with the use are Chinese ethnicity, no education or primary level education, low skill occupation and low income. Logistic regression analysis indicated that being a Chinese woman, the chance of CAM usage was significantly less compared to Malays. Therefore future research should focus on use of abdominal hot stone application, traditional herbal medicine "Jamu" and Chinese and Indian women's perception towards use of their customary methods like acupuncture, acupressure TCM or homeopathy.

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## RESULTS

**Table 1.** Socio demographic distributions of the study population

<b>VARIABLES</b>	<b>GROUPS</b>	<b>FREQUENCY (%)</b>
<b>ETHNICITY</b>	Malay	93 (69.4)
	Chinese	16 (11.9)
	Indian	12 (9.0)
	Others	13 (9.7)
<b>RELIGION</b>	Muslim	98 (73.1)
	Hindu	10 (7.5)
	Buddhist	14 (10.4)
	Christian	3 (2.2)
	Others	9 (6.7)
<b>EDUCATIONAL LEVEL</b>	No school education	4 (3.0)
	Primary level	11 (8.2)
	Secondary level	76 (56.7)
	Diploma	23 (17.2)
	Professional Degree	20 (14.9)
<b>OCCUPATION</b>	Housewife/unemployed	78 (58.2)
	Staff with no special qualifications	11 (8.2)
	Staff with special skills/technical skills	27 (20.1)
	Intellectual professionals, executives, manager, entrepreneur, business woman	18 (13.4)
<b>MONTHLY INCOME</b>	< RM1000	23 (17.2)
	RM1000-<RM3000	86 (64.2)
	RM3000-<RM5000	17 (12.7)
	>RM5000	8 (6.0)

**Table 2.** Prevalence, purpose and user effective rating of CAM modalities used by respondents

Modalities	Prev	Commonly used methods	The common reasons reported for the use	Effectiveness rating* frequency (%)		
				3	4	5
Naturopathy	72%	Massage, Hot stone	Improve circulation, recuperate after delivery	5 (5.2)	57 (58.8)	35 (36.1)
Herbal medicine	36%	“Jamu” Traditional herbal medicine	Improve circulation, recuperate after delivery	4 (6.5)	43 (69.4)	14 (22.6)
Dietary supplement †	32%	Vitamin Virgin coconut oil	Improve health and energy	7 (16.3)	27 (62.8)	8 (18.6)
Ayurveda	6%		Relieving pain, Warming the blood	0	5 (62.5)	3 (37.5)
Yoga	0.75 %		Relax the body	0	1 (100)	0

\*Effectiveness Rating was given by the users in the Likert scale of 0 to 5 where 0 is not effective and 5 is very effective

† Only 1 pregnant mother who used dietary supplement rated 2.



**Table 3.** Association between socio-demographic factors and obstetric CAM use

Variables	Groups	User Frequency (%)	Non-user Frequency (%)	P- value
<b>Age group (years)</b>	<25	20(80)	5(20)	0.151
	25-<35	83(91.2)	8(8.8)	
	35 and above	14 (77.8)	4 (22.2)	
<b>Parity</b>	Primipara (P1)	34 (79.1)	9(20.9)	0.080
	Multipara(P2-4)	74(92.5)	6 (7.5)	
	Grand multipara (P5 and above)	9(81.8)	2 (18.2)	
<b>Ethnicity</b>	Malay	89 (95.7)	4 (4.3)	<b>0.000</b>
	Chinese	10 (62.5)	6 (37.5)	
	Indian	10 (83.3)	2 (16.7)	
	Others	8 (61.5)	5 (38.5)	
<b>Educational level</b>	No school education	2 (50)	2 (50)	<b>0.034</b>
	Primary level	8 (72.7)	3 (27.3)	
	Secondary level	66 (86.8)	10 (13.2)	
	Diploma	21 (91.3)	2 (8.7)	
	Professional degree	20 (100)	0	
<b>Occupation</b>	Housewife/unemployed	67 (85.9)	11 (14.1)	<b>0.027</b>
	Staff with no special skill	7 (63.6)	4 (36.4)	
	Staff with special skill/technical skill	25 (92.6)	2 (7.4)	
	Intellectual/professional/Executives/manager/ entrepreneurs	18(100)	0	
<b>Monthly income</b>	<RM1000	15 (65.2)	8 (34.8)	<b>0.004</b>
	RM1000-<RM3000	80 (93)	6 (7)	
	RM3000-<RM5000	14 (82.4)	3 (17.6)	
	=/>RM5000	8 (100)	0	

P-values were calculated using Chi square test. P-value< 0.05 were presented in bold text.

**Table 4.** Regression analysis for association between obstetric CAM use and independent variables

Variables	Groups	Odds Ratio	95% confidence interval	
			Lower	upper
<b>Ethnicity</b>	Malay (reference group)			
	<b>Chinese</b>	<b>.077</b>	<b>.013</b>	<b>.458</b>
	Indian	.184	.024	1.384
	Others	.217	.027	1.725
<b>Educational level</b>	No school education (reference group)			
	Primary level	2.472	.199	30.747
	Secondary level	.949	.076	11.845
	Diploma	1.154	.045	29.894
	<i>Professional degree</i>	<i>1.697E7</i>	<i>.000</i>	<i>.</i>
<b>Occupation</b>	Housewife (reference group)			
	Staff with no special skill	.974	.157	6.058
	Staff with special skill /technical skill	1.633	.260	10.269
	<i>Intellectual/professional executives/manager/entrepreneurs</i>	<i>3.714E7</i>	<i>.000</i>	<i>.</i>
<b>Monthly income</b>	<RM 1000 (reference group)			
	RM 1000-<3000	6.380	.998	40.805
	RM 3000-<5000	2.423	.225	26.059
	<i>=/&gt;5000</i>	<i>6.566E8</i>	<i>.000</i>	<i>.</i>

Binomial regression analysis was used to predict the odds of CAM use. Significant odds ratio was presented in bold text. The user rate was 100% in the groups presented in *italic*.

**Table 5.** Response to individual attitude question

Attitude question	Yes Number (%)	No Number (%)
Do you think that CAM that you used is safe for you and your baby? ( <i>Among users</i> )	116(99.14)	1(0.86)
Do you have any concern regarding unwanted effects of CAM on you baby? If yes please specify ( <i>Among users</i> )	12(10.26) jaundice specified by 10	105 (89.74)
Do you plan to use CAM in future pregnancy? ( <i>All participants</i> )	115 (85.8)	19(14.1)
Would you recommend alternative medication or complementary method you use during pregnancy and postpartum period to others? ( <i>All participants</i> )	115 (85.8)	19(14.1)



Figure 1. Source of information for CAM

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