

Frequency of Complementary and Alternative Medicine usage among Malaysian Hypertensive Subjects

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Abstract: Hypertension (HPT) is a significant public health problem worldwide. The use of complementary and alternative medicine (CAM) is high among Malaysians particularly with hypertension and diabetes. The objective of this study was to assess prevalence and patterns of CAM used in Klinik kesihatan Salak, a suburban outpatient clinic in Selangor in Malaysia. Face-to-face interview was conducted using a pre-tested structured questionnaire included socio-demographic status, CAM usage, the type, duration and frequency of use, reason and recommendation of CAM, and the expenditure. Of the 300 patient's approached, 294 patients were selected in the study. Overall CAM usage was 62.6% (184) and the most common CAM products ever used were consuming bitter melon (34.4%), followed by garlic (17.0%) and Misai Kucing (14.6%). Multiple logistic regression analysis shows that being Muslim, non blue collar and having higher diastolic blood pressure were found to be significantly associated with CAM use. In conclusion, the usage of CAM was high among hypertensive patients in Klinik kesihatan Salak.

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1. Introduction

Hypertension (HPT) was defined as a mean systolic blood pressure (SBP) ≥ 140 mmHg, mean diastolic blood pressure (DBP) ≥ 90 mmHg. Hypertension is a significant public health problem worldwide and it is a major risk factor for cardiovascular diseases. The total number of people with hypertension is projected to increase from 972 million in 2000 to 1.56 billion in 2025 (Kearney et al., 2005). The prevalence of hypertension is expected to reach global epidemic as population's age, and the greatest increase is expected to be seen in developing countries (Alwan 2011). In Malaysia, prevalence of hypertension among adults 30 years and older was 43.0% (NHMS III 2006), which is 30% increased compared to NHMS II (NHMS II 1996). Whereas, the prevalence of hypertension was as high as 32.7% for ≥ 18 years old, in addition, Men (21.8%) had higher prevalence of hypertension than women (17.8%). Among the three main ethnic races, Malays (34%) had the highest prevalence followed by Chinese (32.3%) and Indians (30.6%) (NHMS IV 2011). Even though, the patients were under the anti-hypertensive medications, most of them were choosing the complementary and alternative medicines in reducing their blood pressure as well as for diabetes particularly among Malaysians (Ching et al., 2013, Mahfudz et al., 2005, Saw et al.,

2006). The increasing prevalence of hypertension will create ways in searching for CAM to aid the management of hypertension. Supporting to this, several studies were shown that CAM is safe and effective in reducing their blood pressure (Brook et al., 2013, Wang et al., 2013a, Wazaiy et al., 2013).

Apart from the usage of conventional Western medicine, CAM known as a group of diverse medical and healthcare systems and traditional practices (Vickers 2000). Even though, CAM has generally divided into five categories; herbal and dietary supplement; acupuncture or Ayurveda, energy therapies, body-based mind-body based therapies, CAM can be further divided into six main subdivisions in Malaysia. They are 'Malay Traditional medicine', 'Chinese Traditional Medicine', 'Indian Traditional Medicine', 'Homeopathy', 'Complementary Medicine' and Islamic medical Practice but excludes medical or dental practices utilized by registered medical or dental practitioners (NPTCM 2007, Siti et al., 2009).

Several studies were shown that CAM had been widely used in controlling the blood pressure (Amira et al., 2007, Osamor et al., 2010, Wang et al., 2013a) and diabetes (Khalaf et al., 2010) in many populations. In Malaysia, CAM has been practiced regularly among hypertensive and diabetic patients (Mahfudz et al., 2005). A study shows that 96% were

using both CAM and conventional therapy concurrently whereas 27% of hypertensive patients in a clinic at Ipoh, Malaysia were on CAM (Mahfudz et al., 2005). Several CAM can be considered as part of an evidence-based approach for hypertension among that herbal based remedies are the common CAM used among hypertensive patients (Nahas 2008, Olisa et al., 2009, Wang et al., 2013b). Herbal medicines are one of the commonest prescribed medicines for the treatment of diabetes and hypertension in Jamaica (Delgoda et al., 2004). However, dark chocolate, coenzyme Q10, Qigong, slow breathing techniques, and meditation are the best evidences for CAM in reducing the blood pressure (Nahas 2008). Practicing CAM remedies in many populations can be an important factor of health self-management, culture, and self-empowerment (Grzywacz et al., 2005).

Despite the increased used and acceptance of CAM practices as well as practitioners by patients, to our knowledge, there is relatively little information regarding the frequency of CAM, reasons, efficacy and cost of CAM usage among hypertensive patients in Malaysia. Thus, this study was initiated to determine the frequency in the usage of CAM among hypertensive patients attending Klinik Kesihatan Salak, Sepang and also to determine their socio-demographic factors especially on the types, reasons, and expenditure for patients who craving CAM may suggest areas of inadequacies or failings of the present healthcare system and the patient's health seeking behavior.

2. Material and Methods

The current research is part of a cross sectional study conducted in Klinik kesihatan Salak, a suburban outpatient clinic in Selangor, Malaysia (Ching et al., 2013). Ethical approval was obtained from the Ethics Committee of National Malaysia Research Registry (NMRR-12-430-11052). The inclusion criteria were diagnosed hypertensive patients and attendance at the clinic for at least three months. The patients were selected by using systematic random sampling. The sample size was calculated by using Epi Info 6.0, based on the prevalence in Asia studies, which was 27-29 percent (Mahfudz et al., 2005, Lee et al., 2009). The estimated sample size was 227 with 90 percent power, 95 percent confidence interval (CI), and statistical significant level (α) at 5 percent.

The total number of respondents needed was 294, after taking into account a non-respondent rate of 30 percent. Patients were selected using a random sampling method. The estimated numbers of hypertensive patients that visit the clinic per day and in three weeks' time were 40 patients and 600 patients. Since the number of required test subjects

was 294, the sampling interval of two was used as the constant difference between subjects. The first starting number of 2 was picked randomly from the registration counter. Two hundred and ninety four verbally consenting patients with hypertension were recruited by conducting face-to-face interview using a pre-tested structured questionnaire. The content of questionnaire included socio-demographic status, in the first part, followed by second part on CAM usage, the type, duration and frequency of use, reason and recommendation of CAM, and the expenditure on CAM. The usage of CAM was defined as use of any therapy classifiable as either a complementary or alternative therapy in reducing the blood pressure. In addition, the latest blood pressure measurement was obtained from the medical records. The doctors and staffs in charge of Klinik Kesihatan Salak were briefly explained the objectives of the study to the patients. In other words, a pilot study was done before the actual data collection was done. The aim of doing the pilot study before the actual data collection was to improve and evaluate the quality of the questionnaire. In addition, the pilot study also was done to run the actual data collection procedures smoothly and efficiently.

Statistical Analysis

Statistical Package for the Social Sciences (SPSS) software version 19.0 (Chicago, IL, USA) was used for data analysis. The data obtained were analyzed using descriptive statistics by cross tabulation. Numerical data are expressed as mean values \pm standard deviation (SD) In order to determine the relationship between the socio-demographic status and CAM usage Chi square test was conducted. Statistical significance was assumed at a p value < 0.05 . Multiple logistic regression was used to determine the predictors of CAM usage among patients with hypertension.

3. Results

Out of 300 approached, a total of 294 hypertensive patients were recruited in this study. Among them, 184 (62.6%) patients had experience in using some form of CAM. When compared to Male (38.4%) females (61.6%) were high consumers of CAM. The socio-demographic characteristics of all the study subjects are presented in Table 1. The mean age was 56.3 ± 10.0 years, while the mean duration of hypertension was 6.1 ± 6.3 years. Among the three main ethnic races, Malays (63.9%) were the highest consumers of CAM for blood pressure control when compared to Chinese (10.9%) and Indians (23.8%).

Table 1: Demographic characteristics of studied population (N=294)

Variables	N	Percentage (%)
Gender		
Male	113	38.4
Female	181	61.6
Race		
Malays	188	63.9
Chinese	32	10.9
Indians	70	23.8
Others	4	1.4
Religion		
Muslim	192	65.3
Buddhist	32	10.9
Hindu	62	21.1
Christian	6	2
Others	2	0.7
Educational Level		
No Education	41	13.9
Primary	119	40.5
Secondary	123	41.8
Tertiary	11	3.7
Occupational Status		
Blue Collar	125	42.5
Non-blue Collar	169	57.5
Household income status per month		
≤1000	77	26.2
>1000 and ≤3000	181	61.6
>3000	36	12.2

Most of the patients with hypertension were using herbal products. A significant number of patients (34.4%) were consuming bitter gourd. Usages of other herbal products were garlic (17.0%), Misai Kucing (14.6%), ular hempedu (8.5%). The other types of CAM used by the patients were alternative medical systems, energy therapies, mind body interventions, manipulative and body based systems as listed in Table 2.

Table 2: Type of CAM utilized by patients for various indications (n=184)

Types of CAM	No. of patients (n= 184)	Percentage (%)
1. Herbal products		
Bitter Gourd	101	34.4
Garlic	50	17.0
Misai Kucing	43	14.6
Ular Hempedu	25	8.5
Basil leaf	5	1.7
Ginseng	2	0.7
2. Alternative medical systems		
Ayurveda	12	4.1
Acupuncture	2	0.7
3. Energy therapies		
Qi Gong / Reiki	5	1.7
4. Manipulative and body-based systems		
Massage Bed	24	8.2
Reflexology	34	11.6
5. Mind-body interventions		
Yoga	6	2.0
6. Others	51	17.3

By using univariate logistic regression, the religion and ethnicity (<0.001) were found to be significantly associated with CAM use. Similarly, the female gender group (0.017), occupation (0.013) and diastolic blood (0.003) pressure were also significantly associated with CAM use. The association and correlation between the demographic variables and CAM use in this study were shown in Table 3. A multivariate logistic regression analysis with backward selection of variables revealed that being Muslim was the only independent predictors of CAM use in this study.

Table 3: Use of CAM by demographic characteristics of the study population (N = 294)

Characteristics	Overall (%)	CAM user (n=184)	Non CAM user (n=110)	P
Mean age (SD)	56.3±10.0	55.8±10.1	57.2±9.8	0.243
Female gender, n (%)	113(38.4)	61(33.2)	52(47.3)	0.017*
Malay ethnic, n (%)	188(63.9)	143(77.7)	45(40.9)	<0.001
<tertiary education level, n (%)	283(96.3)	176(95.7)	107(97.3)	0.483
Non blue collar, n (%)	169 (57.5)	116(63.0)	53 (48.2)	0.013*
Muslim religion, n (%)	192(65.3)	146(79.3)	46 (41.8)	<0.001
Mean Monthly income(SD)	1844±1622	1923 ±1674	1698 ±1520	0.308
Systolic blood pressure(SD)	140.9±19.4	142.3±20.	138.7±18.2	0.090
Diastolic blood pressure(SD)	82.8±12.7	84.4±13.0	80.2±11.8	0.003*
Mean blood pressure duration in years(SD)	6.1 ±6.3	6.4 ±6.9	5.8±5.2	0.425

* p value is significant (p < 0.05).

Muslim was more than five time odds more like than those whom were non-Muslim in using CAM (Table 4).

Table 4: Multiple logistic regression for the CAM usage among hypertensive population in Klinik Kesihatan Sepang (N = 294)

Variable	OR	95%CI	P
Muslim	4.836	2.978-7.855	0.001
Non blue collar	1.638	1.016-2.642	0.043
Diastolic Blood pressure	1.029	1.008-1.050	0.006

Majority of the respondents (37.1%) reported that they want to try a new alternative treatment to improve their blood pressure control and overall well being as the reason to consume CAM. Some of them (11.2%) started to use CAM when they heard the good examples from others who claimed that their health status had been improved after consuming the particular products. Friends were the most important source (30.6%) of influence on hypertensive patients to use CAM. This was followed by family (15.3%), advertisement (13.9%) and health professionals (1.4%). The average expense for CAM use was RM 50 per month, only one of the respondents spent RM 3000 per month for the CAM use (Table 5).

4. Discussions

This study found that 184 out 294 hypertensive patients had been on CAM. When compared to the other populations, the present study shows as one of the higher percentage of CAM (62.6%) use was found among Malaysian hypertensive subjects (Table

6). The findings of the current study are consistent with those of Shafiq et al (2003) and Bell et al (2006) where the reported prevalence of CAM use was ranged from 63.9 to 69.5 percent. In contrast, the prevalence was double compared to another local study (Mahfudz et al., 2005). The possible explanation could be due to different location involved in these two studies. Study by Mahfudz et al was done in an urban area versus current study involved a suburban population where the patient might have difficulty in getting the medical facilities compared to CAM.

Table 5: Reasons for using CAM among Hypertensive Subjects

Reasons	n	%
Just want to try	109	37.1
Have good example from the other user of CAM	33	11.2
Others	30	10.2
Usage for other co-morbidity treatment	7	2.4
Dissatisfied with conventional medicines	3	1
Believed current medicine gives more adverse effects	1	0.3
Source of information		
Friends	90	30.6
Family	45	15.3
Advertisement	41	13.9
Doctor	4	1.4
Others	4	1.4
Expenditure (per month)		
0 – 350	215	96.8
351 – 700	6	2.7
>700	1	0.5

Table 6: Characteristics of studies among hypertensive subjects in various Populations

References Author (Year)	Number of Samples	Population	Mode of data collection	CAM Usage	Prevalence (%)
Amira et al., 2007	225	Nigeria	Semi- structured face-to-face interview	Herbs, dietary supplements; energy therapy and manipulation, whole medical systems, mind-body therapies, touch therapy	39.1
Gohar et al., 2008	153	United Kingdom	Self administered survey	whole medical systems, dietary supplements, herbs; mind-body therapies; energy therapy and manipulation and touch therapy	37.9
Lee et al., 2009	1182	Korea	Structured face-to-face interviews	Dietary supplements	28.7
Shafiq et al., 2003	521	India	Structured face-to-face interviews	Ayurvedic medicine, herbal medicine, homeopathy, spiritual healing, diet therapy and acupuncture	63.9
Bell et al., 2006	5821	United States of America	Self administered survey	Homeopathic treatment, healing ritual and diet-based therapies	69.5
Osamor et al., 2010	440	Nigeria	Semi-structured survey	Herbal medicine	29
Mahfudz et al., 2005	120	Malaysia	Semi-structured face-to-face interview	Acupuncture, aromatherapy, ayurveda, diet/food therapy, herbal medicine, homeopathy, reflexology, yoga	27
Present Study	294	Malaysia	Pre-tested structured questionnaire	Herbal products, energy therapy and manipulation, Alternative medical systems and mind-body therapies	62.6

On top of this, the majority of the studied population are Malays and Muslim. Due to the cultural mismatch, they are more prone to use the natural product in healing the chronic disease like hypertension, further more all the herbs are part of their daily product (Hasan et al., 2009). Thus, this explains the finding of this study of being Muslim is one of the predictors of using CAM. This finding is similar to another study that showed that Malays were using CAM the most when compared to other ethnic group (Mahfudz et al., 2005). There was a significant association between CAM usage and occupation in this study. Similarly another local study also reported that white collar occupations were more likely to have used CAM compared to blue collar (Hasan et al., 2009). This could be due to the fact that those patient come from white collar are more educated which lead them to be self empowered. Most of them were satisfied in spending money for their health status. This was supported by another study which reported patients with higher income level had a greater tendency to use CAM (Hasan et al., 2009). The main types of CAM used by patients recruited in this study were bitter gourd, garlic, Misai Kucing and others. The main reason resulted in high frequency of CAM use was patients just wanted to try CAM. Friends were the main source of influence towards CAM usage among patients with hypertension in this study.

Study Limitations

The results of this study were based only on the hypertensive patients attending Klinik Kesihatan Salak in Sepang. Our limitations was the assessment of adherence to the medication and types of antihypertensive medication were not done in this study, however due to the time constraint and this is not the main objective of the initial study, these factors may be able to be carry out in the future study. Hypertensive patients from the rest of the district hospitals have to be recruited for a larger number of samples is strongly recommended to know the various usage of CAM. Apart from hypertension and studies on other non-communicable diseases are also much needed.

Conclusion

In conclusion, this present study reported a high percentage of CAM use (62.6%) among patients with hypertension in Klinik Kesihatan Salak in Sepang. There was a significant relationship between CAM usage and patients' religion, occupation, and reading on diastolic blood pressure. There was no significant relationship between CAM usage and patients' age group, education level, systolic blood pressure and duration of hypertension. Apart from

conventional medicine, CAM was considered by majority of hypertensive patients for their blood pressure control. Usage of CAM will drive out the misapprehension about CAM and assist clinicians to critically evaluate the practice of CAM, the underlying principle of health-seeking behavior, enquiring about the usage of CAM.

Authors' contributions

CSM contributed to the conceptualizing of the paper, data entry and writing of the manuscript while RV contributed in drafting and writing of the manuscript. ZAZ and FP has contributed in data analysis and sample collection. All the authors read and approved the final manuscript.

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