

ORIGINAL ARTICLE

Prevalence of Complementary Alternative Medicine Use among Patients With Type II Diabetes in Negeri Sembilan, Malaysia

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ABSTRAK

Penggunaan Perubatan Komplementari dan Alternatif (CAM) dalam kalangan pesakit yang mengidap penyakit kronik adalah semakin popular. Kajian ini merupakan kajian keratan rentas deskriptif yang dilakukan di 45 klinik kesihatan kerajaan di Negeri Sembilan. Responden di klinik diabetes dipilih melalui pensampelan rawak bersistematik dan ditemu ramah menggunakan borang soal selidik yang berstruktur. Penggunaan PKA dibahagikan kepada tiga kumpulan: PKA untuk diabetes (CAM-DM), PKA untuk kesihatan umum (CAM-G) dan Bukan Pengguna. Prevalen penggunaan PKA dalam kalangan pesakit diabetes jenis II di Negeri Sembilan adalah 58.5% (CAM-DM: 40.6% dan CAM-G: 17.9%). Bagi kumpulan CAM-DM, peria (*Momordicacharantia*) merupakan CAM paling popular untuk membantu kawalan diabetes, manakala susu suplemen merupakan pilihan paling popular untuk kumpulan CAM-G. Kesimpulannya, penggunaan CAM dalam kalangan pesakit diabetes jenis II di Negeri Sembilan adalah lazim. Produk semulajadi adalah pilihan utama jenis CAM untuk membantu kawalan diabetes. Kebanyakan pengguna CAM tidak memberitahu anggota kesihatan tentang penggunaan CAM mereka.

Kata kunci: diabetes, perubatan komplementari dan alternatif, penyakit kronik

ABSTRACT

The uses of Complementary and Alternative Medicine (CAM) among patients with chronic diseases are becoming increasingly popular. This was a descriptive cross-sectional study conducted in 45 government health clinics across Negeri Sembilan. Respondents at diabetes clinics were selected via systematic random sampling and

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interviewed using structured questionnaire. CAM usage was divided into three groups; CAM use for diabetes (CAM-DM), CAM use for general health (CAM-G) and Non CAM user. The prevalent use of CAM among type II diabetes mellitus patients in Negeri Sembilan was 58.5% (CAM-DM: 40.6% and CAM-G: 17.9%). For CAM-DM group, bitter melon (*Momordica charantia*) was the most popular CAM consumed to help control diabetes, while supplement milk was the most popular choice for the CAM-G group. In conclusion, the use of CAM among type II diabetes mellitus patients in Negeri Sembilan was common. Natural products are the main choice of CAM modality used to help with the management of diabetes. Majority of CAM users never informed their healthcare providers about their CAM use.

Keywords: diabetes, complementary and alternative medicine, chronic diseases

INTRODUCTION

The scope of Complementary and Alternative Medicine (CAM) is extensive and heterogeneous. CAM encompasses all health systems, modalities, and practices other than those intrinsic to the politically dominant health system of a particular society or culture (Zollman & Vickers 1999). The use of CAM for management of chronic disease is becoming increasingly popular (Furnham 2002; Baer 2007) and its usage can be influenced by health belief system, local culture and tradition, ethnicity, geography and family history. CAM practices may be unique to the locality, although some CAM products or practices are more known and recognized internationally, like acupuncture or the Ayurveda treatment. A survey in Australia showed that the prevalence of lifetime use of CAM was 85% (while the current consumption was 52%) and interest in CAM was evenly divided between urban and rural areas (Robinson et al. 2007). In Malaysia, Hasan et al. (2009) showed that the prevalence of

CAM use among patients with chronic diseases in a hospital setting was also high at 63.9%.

Patients with chronic diseases are more likely to use CAM in disease management, compared to acute disease (van den Brink-Tuinen & Rijken 2006). Since 1990s, studies on the prevalence of CAM use among patients with diabetes mellitus are growing and the data showed that CAM is a popular choice for diabetes management (Davis et al. 2011). Nonetheless, there are inconsistencies with formal definitions and categories for measuring the prevalence of CAM (Chang et al. 2007). Furthermore, the study designs varied widely, hence, the true picture regarding this issue is not as transparent as it could be. The available evidences suggest that there is a high prevalence of CAM use amongst diabetic patients and their use is complementary to the conventional medicine. However, patients are often less likely to disclose their CAM practice to doctors and health personnel (Willison et al. 2007). A study in Taiwan showed that

the prevalence of CAM use increased tremendously among individuals, before and after being diagnosed with type II diabetes mellitus (Chang et al. 2007). The prevalence of CAM use was 22.7% before the diagnosis and soared to 61.0% following diagnosis. Chang and colleagues found that having diabetes is an independent predicting factor for the use of CAM. Similar finding was also found by another study (Villa-Caballero et al. 2010).

There is lack of local data on the use of CAM amongst diabetic patients in Malaysia. With the rapid rise of CAM usage amongst patients with chronic diseases, more studies are needed to identify the current pattern and trend of CAM use. The objectives of this study were to determine the prevalence of CAM usage and to identify the types of CAM commonly used by patients with type II diabetes in Negeri Sembilan.

MATERIALS AND METHODS

This was a descriptive cross-sectional study conducted in 45 government health clinics across Negeri Sembilan. Respondents at diabetes clinics were selected via systematic random sampling and interviewed using structured questionnaire. A placard with various examples of different categories of CAM was used to remind the respondents about CAM modalities that they might have used in the past 12 months. The inclusion criteria were patients with type II diabetes, aged 18 yrs and above, Malaysians and residents of Negeri Sembilan and registered with the National Diabetes Registry system. The exclusion criteria were patients

with Type I diabetes and those who did not complete the questionnaire. Sample size calculation was based on two proportions cross sectional study formula with 10% non-response rate, making it a total of 856 respondents.

The questionnaire was developed based on literature review and two focus group discussions that were done before the survey. A pilot study was conducted with 30 participants at one health clinic. Face validation and content validation were conducted for the questionnaire.

CAM usage was divided into three groups; CAM use for diabetes (CAM-DM), CAM use for general health (CAM-G) and Non-CAM user. CAM-DM referred to respondents who used at least one CAM modality which he/she believed will help with his/her diabetes, for at least once a month for at least three consecutive months, in the past one year from the interview date. CAM-G referred to respondents who used CAM for general health or other medical illness but not for diabetes, for at least once a month, in the past 12 months from the interview date. Non-CAM user referred to respondents who did not use any CAM modality in the past 12 months from the interview date.

The data collected were analysed for descriptive analysis using Statistical Package for Social Sciences (SPSS) version 19.0.

This study was reviewed and registered with the National Medical Research Register (NMRR-12-884-12515) and also with the Universiti Kebangsaan Malaysia Medical Ethics and Research Committee (FF-330-2012).

RESULTS

A total of 828 respondents were interviewed from seven districts in Negeri Sembilan. The response rate from the sample size determined was 828/856, which was 97%. On the whole, the average age of respondents was 59 yrs. Nearly 60% of them were women and Malay ethnicity was the largest group at 46.5%. The majority of patients did not work but this is maybe due to the fact that the majority of them were housewives (Table 1).

The prevalence of CAM use among respondents in Negeri Sembilan was divided into three main groups (Table 2). In total, the prevalence of any CAM use (CAM-DM: 40.6% and CAM-G: 17.9%) amongst patients with type II diabetes mellitus was 58.5%. Therefore, almost two-thirds of patients with type II diabetes in Negeri Sembilan practiced CAM whether to help diabetes or for other purposes.

The main reason for the use of CAM products or practices in both CAM-DM and CAM-G groups was because that the respondents believed in the effectiveness of CAM (Table 3). Harmful side effects from prescribed conventional medications were the least chosen reason by respondents who used CAM.

Majority of patients in the CAM-DM group (28.9%) used 3 CAM products or practices for diabetes and/or for other health problems in the past 12 months (Figure 1). However, few patients also utilised up to 6-8 different modalities of CAM within a year. During the interviews, it appeared that they did not use them all at once, but rather like experimenting with different types

of CAM modalities within a one year period. In contrast, with the CAM-G group, the majority 54.1% used one CAM product or practice only to help with general health or other ailments (Figure 2).

Within the CAM-DM group, bitter gourd (*Momordicacharantia*) was the most popular CAM used to help control diabetes (Table 4). Bitter gourd was used in many forms such as freshly blended, freshly cooked, dried, infused in hot water or bought as commercial products in the form of pills or drinks. In CAM-G group supplement milk was the most popular (Table 5). The most popular supplement milk brands were Anlene® and Omega Plus®.

When asked on whether they informed their healthcare provider about their CAM use, 78.9% of CAM-DM group and 65.5% of CAM-G group never informed the healthcare provider about their CAM use.

DISCUSSION

The use of CAM was popular amongst patients with type II diabetes mellitus in Negeri Sembilan. Patients may utilise CAM products or practices to help with diabetes management, for general health or for other ailments. Natural plant based products such as bitter gourds were the most commonly used CAM by those who wanted to control their diabetes.

There were more female respondents who used CAM and the proportion of male and female among CAM users was similar between the CAM-DM and CAM-G groups. However, among the Non-CAM users, distribution of

Table 1: Sociodemographic distribution of respondents

Variable	CAM-DM n (%) N=336	CAM-G n (%) N=148	Non User n (%) N=344	Total N=828 (%)
Age (Years) mean(sd)	58.60(10.23)	61.50 (9.84)	59.00(10.27)	59.29 (10.22)
Gender				
Male	112 (33.3)	53 (35.8)	169 (49.1)	334 (40.3)
Female	224 (66.7)	95 (64.2)	175 (50.9)	494 (59.7)
Ethnicity				
Malay	187 (55.7)	70 (47.3)	128 (37.2)	385 (46.5)
Chinese	71 (21.1)	41 (27.7)	84 (24.4)	196 (23.7)
Indian	72 (21.4)	35 (23.6)	130 (37.8)	237 (28.6)
Others	6 (1.8)	2 (1.4)	2 (0.6)	10 (1.2)
Marital status				
Married	268 (79.8)	119 (80.4)	267 (77.6)	654 (79.0)
Not married	15 (4.5)	6 (4.1)	15 (4.4)	36 (4.3)
Separated/Divorce	5 (1.5)	2 (1.4)	10 (2.9)	17 (2.1)
Widow/Widower	48 (14.3)	21 (14.2)	52 (15.1)	121 (14.6)
Religion				
Islam	194 (57.7)	74 (50.0)	127 (36.9)	395 (47.7)
Buddha	68 (20.3)	40 (27.0)	77 (22.4)	185 (22.3)
Hindu	65 (19.3)	30 (20.3)	117 (34.0)	212 (25.6)
Christian	9 (2.7)	4 (2.7)	23 (6.7)	36 (4.4)
Education				
No schooling	24 (7.1)	16 (10.8)	32 (9.2)	72 (8.7)
Primary	140 (41.7)	63 (42.6)	153 (44.5)	356 (43.0)
High	143 (42.5)	57 (38.5)	140 (40.7)	340 (41.1)
Diploma	14 (4.2)	7 (4.7)	10 (2.9)	31 (3.7)
Degree	13 (3.9)	5 (3.4)	5 (1.5)	23 (2.8)
Postgraduate	2 (0.6)	0 (0.0)	4 (1.2)	6 (0.7)
Occupational status				
Unemployed	154 (45.8)	57 (38.5)	147 (42.7)	358 (43.2)
Full time job	74 (22.0)	36 (24.3)	95 (27.6)	205 (24.8)
Part time	24 (7.2)	13 (8.8)	13 (3.8)	50 (6.0)
Pensioner	84 (25.0)	42 (28.4)	89 (25.9)	215 (26.0)
Monthly household income				
Less than RM 1999	222 (66.2)	103 (69.6)	235 (68.3)	560 (67.6)
RM 2000 – RM 3999	72 (21.3)	27 (18.2)	79 (23.0)	178 (21.5)
More than RM 4000	42 (12.5)	18 (12.2)	30 (8.7)	90 (10.9)

Table 2: Prevalence of CAM user by groups

Groups	n (%)
CAM-DM	336 (40.6)
CAM-G	148 (17.9)
Non user	344 (41.5)
Total	828 (100.0)

Table 3: Main reasons for using CAM among patients with type II diabetes

Reasons (respondents may chose more than one options)	CAM-DM n (%) N=336	CAM-G n (%) N=148	Total n (%) N=484
1. I believe with the effectiveness of CAM products / practices	208 (61.9)	93 (62.8)	301 (62.2)
2. I need additional treatment to help manage my diabetes / other ailments / general health	155 (46.1)	60 (40.5)	215 (44.4)
3. Someone I know also uses / practice this CAM	112 (33.3)	39 (26.4)	151 (31.2)
4. This practice is according to my culture and tradition	92 (27.4)	12 (8.1)	104 (21.5)
5. CAM products / practices are easily available	32 (9.5)	15 (10.1)	47 (9.7)
6. CAM products / practices are affordable	19 (5.7)	3 (2.0)	22 (4.5)
7. Diabetes medications from the clinic are not as effective as I hoped for	4 (1.2)	0 (0)	4 (0.8)
8. I get harmful side effects from the diabetes medications	4 (1.2)	0 (0)	4 (0.8)

Table 4: Five most popular CAM products used to help manage type II diabetes

No	CAM type	n = 336 (%)
1	<i>Momordicacharantia</i> (Peria)	183 (54.5)
2	<i>Ortosiphonstaming</i> (MisaiKucing)	69 (20.5)
3	<i>Andrographispaniculata</i> (HempeduBumi)	41 (12.2)
4	<i>Azadirachtaindica</i> (DaunSemambu)	35 (10.4)
5	<i>Morindacitrifolia</i> (Mengkudu)	21 (6.2)

Table 5: Cam type used by CAM-G group.

CAM type	n = 148 (%)
1 Milk supplement	82 (55.4)
2 Various health supplements	52 (35.1)
3 Vitamins and minerals	51 (34.5)

gender was almost equal. There are several suggestions that might explain why there are more female CAM users. Parkman (2005) stipulated that women

are more prone towards holistic approach towards health, including the use of CAM. Additionally, women were also more likely to take active role in

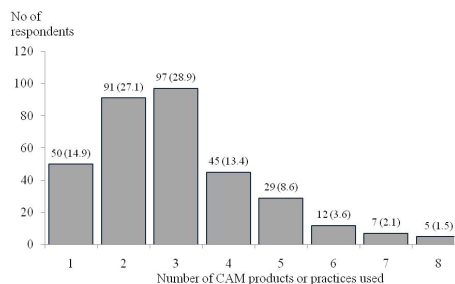


Figure 1: Number of CAM products or practices used by the CAM-DM group in the past 12 months

personal health management (Wu et al. 2007).

The high prevalence of CAM usage found in this study is similar to other studies done in Malaysia. A cross-sectional study in an outpatient clinic in Ipoh found that 56% of patients with diabetes using CAM (Remli & Chan 2003). Likewise, Ching et al. (2013a) found that the prevalence of CAM use among diabetic patients at a health clinic in Sepang was 62.5%. However, the prevalence in our study was slightly higher compared to the National Health and Morbidity Survey in Malaysia conducted in 2006 (NHMS III), in which the prevalence of CAM used in the past one year was 55.6% (Siti et al. 2009).

The high prevalence of CAM use amongst patients with type II diabetes in Negeri Sembilan was also consistent with the prevalence shown by other chronic disease patients in Malaysia. It was found that CAM use amongst patients with hypertension was 62.6% (Ching et al. 2013b). Amongst patients with asthma, the prevalence was 61.1% (Alshagga et al. 2013), while Hasan et al. (2009) showed that 63.9% of patients attending chronic diseases outpatient clinic used CAM in their health self-management.

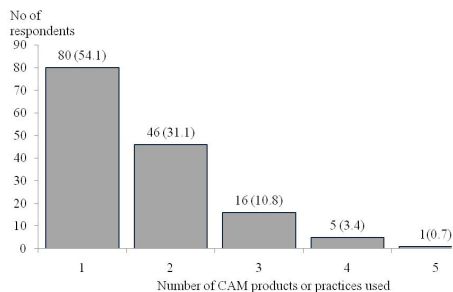


Figure 2: Number of CAM products or practices used by the CAM-G group in the past 12 months

CAM use is also evidently popular among diabetic patients in several countries in South East Asia. For example, the prevalence in Thailand is 47.8% (Moolasarn et al. 2005). In the Philippines, more rural patients using CAM (68.4%) compared with patients in the city (51.5%) (Dahilig & Salenga 2012). The prevalence of CAM use is lower among diabetic patients in Singapore, with the prevalence of 43.4% (Fan et al. 2013).

Nearly a third of CAM-DM group used 3 types of CAM products while more than half of CAM-G group used only one CAM product or practice. In another survey done at a hospital in Malaysia, 64.4% of the CA users were found to be using only one type of CAM while 35.6% were using two types of CAM (Huri et al. 2009).

The most popular choice for the CAM-DM group was natural plant based products such as bitter melon. A systematic review has demonstrated that the uses of natural products are often the primary choice of CAM practice (Birdee & Yeh 2010). More than half of the respondents in the CAM-DM use bitter melon or *Momordica charantia* to help control diabetes. A similar rate was shown by another study at a health

clinic in Sepang (Ching et al. 2013a). In Sri Lanka, Medagama et al. (2014) found 62.8% of patients with diabetes mellitus used bitter melon as supplements with the intention to help controlling the blood glucose level. A study on two local types of bitter melon (*peria katak* and *peria kambas*) in Malaysia found that they both had hypoglycaemic effects through inhibition of α -amylase and α -glucosidase activities (Ee Shian et al. 2015).

There are many factors why natural CAM products are the main choice for many diabetic patients. Besides being easily available, cultural factor plays an important role, as well. The use of herbal and traditional medicine is already a norm for many patients in Malaysia. Siti et al. (2009) found that there was no significant difference across the three major ethnicity groups in the usage of biological-based therapies for health issues. According to Lee et al. (2004), a strong belief in traditional way of health management is a predictive factor for CAM use amongst diabetics in Asia. In Malaysia, this was substantiated by Aziz and Tey (2009) who found that respondents with positive personal attributes and opinions towards natural remedies influence their likelihood of using herbal medicines such as bitter melon.

A high proportion of CAM users believe in the effectiveness of CAM and this is because they feel that CAM use is more holistic for health (Robinson et al. 2007). Although, the medical efficacy of CAM in controlling diabetes is mostly unproven (Tackett & Jones 2009), patients still believe that CAM could still contribute to the management of their

diabetes. However, the majority of CAM users never informed the healthcare provider about their CAM use. The fear of healthcare providers rejecting their choice of health management might be the reason for informing about their CAM use. A study by Ismail & Chan (2004) showed that few doctors discourage CAM as they believe that CAM is not beneficial for health management and it may cause harm towards the users. Healthcare providers should realise that many of their diabetic patients are complementing their clinical diabetes care with other supplementary products or practices and both parties should incorporate the discussion about CAM use when formalising patients' diabetes care.

There are several limitations to this study. Many CAM products come with multiple health benefit claims and patients may use them to alleviate not just one illness. This study required respondents to recall CAM in the past one year and this may lead to recall bias. Having the interview done in clinic setting may also provoke Hawthorne effect on the respondents as they might feel CAM practice is not acceptable by the dominant health system.

CONCLUSION

The utilisation of CAM among patients with type II diabetes in Negeri Sembilan is common. Natural plant based products such as bitter melons were the most commonly used CAM by those who wanted to control their diabetes. Majority of CAM users never informed the healthcare providers about their CAM use.

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