Utilization and Practice of Traditional/Complementary/Alternative Medicine (T/CAM) in Southeast Asian Nations (ASEAN) Member States

Karl Peltzer1 and Supa Pengpid2

1HAST, Human Sciences Research Council, Pretoria, South Africa and Department of Psychology, University of Limpopo, Turfloop, South Africa and ASEAN Institute for Health Development, Mahidol University, Salaya, Thailand
2ASEAN Institute for Health Development, Mahidol University, Salaya, Thailand and University of Limpopo, Turfloop Campus, South Africa
E-mail: 1<kpeltzer@hsrc.ac.za>, 2<supaprom@yahoo.com>


ABSTRACT The objective of this study was to conduct a systematic review of published and unpublished research investigating the prevalence of Traditional Medicine, Complementary and Alternative Medicine (TCAM) use in the general and clinical population in Association of Southeast Asian Nations (ASEAN). Results found that the use of TCAM was the highest in Malaysia (55.6%), followed by Singapore (among older adults) (42.7%), Philippines (6.3%), Cambodia (5.4%), Vietnam (3.5%), Thailand (2.6%) and Indonesia (2.0%). The prevalence of TCAM use of patients in biomedical health facilities was generally high such as cancer (56%-84.5%), medical patients and/or patients with chronic conditions (22.7%-66.7%), diabetic patients (47.8%-56%), asthmatic patients (27.2%-41%), and HIV patients (31%-78%). TCAM is used by substantial proportions of the general and clinical population, but differences in study design and methodological limitations make it difficult to compare prevalence estimates.

INTRODUCTION

The Association of Southeast Asian Nations (ASEAN) is a collaborative group of 10 countries (Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam) located in South-East Asia (Association of Southeast Asian Nations 2013). It is a populous region with a population of over 604 million and wide variability in socio-economic and development indicators (ASEAN Community in Figures 2013). The ASEAN Declaration aims “To accelerate the economic growth, social progress and cultural development in the region through joint endeavours in the spirit of equality and partnership in order to strengthen the foundation for a prosperous and peaceful community of Southeast Asian Nations” (Association of Southeast Asian Nations 2013:1). The use of traditional medicine in the primary health care system of ASEAN Member States has grown significantly in recent years (Chuthaputti and Boonterm 2010). In 2004, the 7th ASEAN Health Ministers Meeting “welcomed the formulation of an ASEAN+3 Framework of Cooperation on Integrating Traditional Medicine/Complementary and Alternative Medicine into the National Healthcare Systems” (Chuthaputti and Boonterm 2010: 2). In their Roadmap for an ASEAN Community (2009-2015), the ASEAN Member States pledged to facilitate research and cross-country exchange of experience in promoting the integration of safe, effective and quality Traditional Medicine, Complementary and Alternative Medicine into the national health care system, and across other sectors” (Chuthaputti and Boonterm 2010: 2).

Traditional Medicine (TM): “WHO defines traditional medicine as including diverse health practices, approaches, knowledge and beliefs incorporating plant, animal, and/or mineral based medicines, spiritual therapies, manual techniques and exercises applied singularly or in combination to maintain well-being, as well as to treat, diagnose or prevent illness” (WHO 2000: 2).

Complementary and Alternative Medicine (CAM): “The term CAM often refers to a broad set of health-care practices that are not part of a country’s own tradition and are not integrated into the dominant health-care system. Other terms sometimes used to describe these health-care practices include ‘natural medicine’, ‘non-conventional medicine’ and ‘holistic medicine’” (WHO 2000: 3).
“About 80% of the rural population in some Asian and African countries depend on traditional medicine for primary care purposes” (ASEAN Secretariat 2012). The World Health Organization (WHO 2004) developed process indicators, among others, as follows: (1) Estimated prevalence of national Traditional, Complementary and Alternative Medicine (TCAM) use, (2) Estimated prevalence of national herbal medicine use, and (3) Medical determinants of TCAM use. Studies on the utilization of TCAM have been focusing on high income countries, with a use of any CAM between 9.8 to 76 percent (Harris et al. 2012). Although many populations in ASEAN countries are reported as depending heavily on TCAM to help meet their health care needs, precise data are lacking (WHO 2004).

**Objectives of the Study**

The objective of this study was to conduct a systematic review of published and unpublished research investigating the prevalence of TCAM use in the general and clinical population in ASEAN countries.

**METHODOLOGY**

The search strategy included search online for published and unpublished studies in Medline, Embase, Central, Google Scholar, Google, from 1988-2013. Key words for the search included: traditional medicine, complementary medicine, alternative medicine, utilization, health-care seeking, Asia, Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam. To qualify for inclusion, a survey had to address the prevalence of TCAM, that is the percentage of people using it. Surveys of sub-populations, such as patients with a named condition, for example diabetes, were also included.

**RESULTS**

**Estimated Prevalence of National and Local TCAM Use**

In national population-based surveys the measure of TCAM differed in different countries. According to existing results Malaysia had the highest proportion of TCAM use in the past 12 months (55.6%), followed by Singapore (among older adults) (42.7%), Philippines (6.3%), Cambodia (5.4%), Vietnam (3.5%), Thailand (2.6%) and Indonesia (2.0%). In a few countries, specifically the use of TCAM of diabetes and hypertension was assessed, where the prevalence was the highest in Cambodia (15.3% of hypertension and 26.7% of diabetes), followed by Myanmar (13.4% and 17.8%, respectively) and Laos PDR (2.9% and 1.4%, respectively) (see Table 1).

In local population-based surveys high proportions for TCAM use were in some way confirmed from the national surveys in Malaysia (33.9% and 52.1%) and Singapore (25.3% and 76%). On the other hand, compared to national surveys in the local surveys a higher prevalence of TCAM use was found in Thailand (20%, 28.6% and 97.4%), Laos PDR (77%) and Cambodia (34%). This difference may partially be explained by the different reference period (ever used versus past year use) in the different surveys. In addition, it was found that 21.1 percent of hospital visitors in Brunei Darussalam were TCAM users in the past 12 months. The specific TCAM modalities used across the different local studies included vitamins/mineral supplements, herbal medicines, sauna, massage, acupuncture, aromatherapy, yoga, chiropractic medicine, traditional dental treatment (see Table 2).

**TCAM Use of Patients in Biomedical Health Care Facilities**

The prevalence of TCAM use of patients in biomedical health facilities was mainly assessed for various chronic conditions such as cancer, diabetes, hypertension, asthma, HIV and mental illness, and the prevalence of TCAM use was generally high, for example, 25 percent to 86 percent of cancer patients in Malaysia, Singapore and Thailand. The main TCAM types used for cancer included dietary supplements, mind-body practices, Chinese traditional medicine, herbal medicines, and exercises (see Table 3). For medical patients and/or patients with chronic conditions in general a prevalence of more than 60 percent was found in two studies in Malaysia and 22.7 percent in Singapore. Regarding other specific chronic conditions TCAM use for diabetic patients was found to be 47.8 percent in Thailand and 56 percent in Malaysia, for asthmatic patients 41 percent in Malaysia
and 27.2 percent in Singapore, among HIV patients 31 percent to 78 percent in Thailand and in Cambodia 56.7 percent began the treatment of schizophrenia with traditional medicine in Cambodia (see Table 4). For the different chronic conditions other than cancer a range of TCAM types was used, ranging from herbal treatment, Chinese traditional medicine, spiritual treatment, dietary supplements, vegetable diet, ginseng, acupuncture, yoga, homoeopathy, reflexology and massage (see Table 4).

**DISCUSSION**

The data presented about the prevalence of TCAM use in ASEAN countries show a fairly wide variation in its use and lack of data about the TCAM use among the general population. The wide variation in reported prevalence may reflect differences in research or sample design, definitions of TCAM (practitioner and/or self-prescribed treatment), or measurements of TCAM use (for example lifetime use or use over the previous 12 months or 1 month) employed by different research surveys. In special surveys on CAM use high prevalence rates were found in Malaysia and Singapore (55.6% and 42.7%, respectively). However, in general national population health surveys which assessed also in one module recent health care utilization, the prevalence of TCAM use seemed to be low, ranging from 6.3 percent in the Philippines, 5.4 percent in Cambodia, 3.5 percent in Vietnam, 2.6 percent in Thailand and 2.0 percent in Indonesia. Other studies (for example, Peltzer 2009) also found similar low utilization rates of TCAM in population health surveys in South Africa. Cooper et al. (2013) found in a review of 27 national...
surveys in high income countries, among adults a median past 12 months TCAM use of 12.3 percent. The researchers’ findings seem to be in contrast to “About 80 percent of the rural population in some Asian and African countries depend on traditional medicine for primary care purposes.” (ASEAN Secretariat 2012).

<table>
<thead>
<tr>
<th>Country and Author(s)</th>
<th>Sample</th>
<th>Variable</th>
<th>TCAM use (%)</th>
<th>TCAM type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brunei Darussalam</td>
<td>N=568</td>
<td>Visitors to medical wards (randomly approached)</td>
<td>21.1</td>
<td>Traditional remedies (35.8%), vitamins/mineral supplements (19.2%), non-vitamins/non-minerals supplements (30%) and herbal remedies (3.3%)</td>
</tr>
<tr>
<td>Cambodia</td>
<td>N=548</td>
<td>Previous dental attendance</td>
<td>3.4</td>
<td>Traditional dentist</td>
</tr>
<tr>
<td>Laos</td>
<td>N=600</td>
<td>Households stated the ever use of traditional medicine</td>
<td>7.7</td>
<td>Herbal medicines, sauna, massage and acupuncture</td>
</tr>
<tr>
<td>Malaysia</td>
<td>N=1601</td>
<td>Use of herbal medicines in the previous 12 months</td>
<td>33.9</td>
<td>Herbal medicine</td>
</tr>
<tr>
<td>Malaysia</td>
<td>N=380</td>
<td>Experiencing erectile problems街 interception and face-to-face interview in Men</td>
<td>52.1</td>
<td>Traditional Chinese Medicine (88%), Traditional Malay (Jamu) Medicine (8%) and Traditional Indian (Ayurvedic) Medicine (3%); 1.7% aromatherapy, yoga, or chiropractic medicine, etc.</td>
</tr>
<tr>
<td>Singapore</td>
<td>N=2010</td>
<td>Chinese herbal medicine use</td>
<td>25.3</td>
<td>Most CAM users (66%) self-medicated Traditional Chinese Medicine (88%), Traditional Malay (Jamu) Medicine (8%) and Traditional Indian (Ayurvedic) Medicine (3%); 1.7% aromatherapy, yoga, or chiropractic medicine, etc.</td>
</tr>
<tr>
<td>Singapore</td>
<td>N=468</td>
<td>CAM use in past 12 months</td>
<td>76</td>
<td>Local quacks, traditional healers and drug stores</td>
</tr>
<tr>
<td>Thailand</td>
<td>N=268</td>
<td>TCAM use among currently treated hypertensive patients</td>
<td>20</td>
<td>Local quacks, traditional healers and drug stores</td>
</tr>
<tr>
<td>Thailand</td>
<td>N=631</td>
<td>Herbal medicine treatment</td>
<td>28.6</td>
<td>Local quacks, traditional healers and drug stores</td>
</tr>
<tr>
<td>Thailand</td>
<td>N=419</td>
<td>Systematic stratified sampling; People between 60-96 years</td>
<td>97.4</td>
<td>They believed that herbs could reduce expenses (51%), care diseases (41.9%), relieve symptoms (35.4%), and provide good health (33.6%).</td>
</tr>
<tr>
<td>Thailand</td>
<td>N=400</td>
<td>Herbal and dietary supplement use</td>
<td>52.0</td>
<td>Herb use to treat illnesses (58%), dietary supplements to promote well-being (65%)</td>
</tr>
</tbody>
</table>

Table 2: Prevalence of TCAM use in local population-based surveys
Generally, population-based and health facility-based surveys seem to indicate that TCAM use still plays an important role in health care delivery in ASEAN countries, in particular for chronic conditions such as cancer, diabetes, hypertension, asthma, HIV and mental illness. The study found eight studies on the TCAM use in cancer patients, with a range of TCAM use prevalence of 56 percent to 84.5 percent. Ernst and Cassileth (1998) found in a systematic review that the prevalence of CAM use in cancer, adult populations ranged from 7 percent to 64 percent, with an average prevalence across all adult studies of 31.4 percent. In one study in Malaysia a high prevalence of TCAM use among paediatric cancer patients was found (84.5%). Bishop et al. (2010) found in a systematic review that the prevalence of any CAM use (since cancer diagnosis) in paediatric cancer patients ranged from 6 percent to 91 percent. Pan et al. (2015) found in a systematic review that “the current evidence demonstrates that yoga practice could be effective in enhancing health and managing some treatment-related side effects for patients recovering from breast cancer.”

Two studies on the TCAM use in diabetic patients found a prevalence of over 47 percent, which seem in the middle of 17 percent to 73

<table>
<thead>
<tr>
<th>Country and Author(s)</th>
<th>Sample</th>
<th>Variable</th>
<th>TCAM use (%)</th>
<th>TCAM type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaysia (Hamidah et al. 2009)</td>
<td>N=97 Parents of children with cancer; Paediatric oncology center</td>
<td>Use of complementary and alternative medicine by children with cancer</td>
<td>84.5</td>
<td>Water therapy (78%), spirulina (33%), vitamin C (27%), multivitamin (23%), traditional healers (22%), sea cucumber (Stichopus horrens) (15%), Chinese traditional medicine (12%).</td>
</tr>
<tr>
<td>Malaysia (Shaharudin et al. 2011)</td>
<td>N=116 Breast cancer survivors Aged 21 to 67 years who were 2 years post diagnosis</td>
<td>Use of complementary and alternative medicine</td>
<td>64</td>
<td>Dietary supplements (multivitamins, spirulina, vitamin C, evening primrose oil, herbal products), prayer and Malay traditional medicine</td>
</tr>
<tr>
<td>Malaysia (Chui et al. 2014)</td>
<td>N=546 Breast cancer patients during chemotherapy</td>
<td>CAM use</td>
<td>70.7</td>
<td>Mind-body practices (88.6%), natural products (77.5%) and traditional medicine (33.4%)</td>
</tr>
<tr>
<td>Malaysia (Dhanaa et al. 2014)</td>
<td>N=274 Orthopaedic oncology patients</td>
<td>CAM use</td>
<td>61.3</td>
<td>Biological-based therapies (90.5%), mind-body techniques (40.5%)</td>
</tr>
<tr>
<td>Malaysia (Knight et al. 2015)</td>
<td>N=100 Breast cancer patients</td>
<td>CAM use</td>
<td>25</td>
<td>Nutrition supplements (16%), herbal products (8%), traditional healer (4%), homeopathy (1%)</td>
</tr>
<tr>
<td>Singapore (Shih et al. 2009)</td>
<td>N=403 Adult cancer patients treated at the Ambulatory Treatment Unit</td>
<td>Use of complementary and alternative medicine</td>
<td>56</td>
<td>Traditional Chinese Medicine, bird’s nest and special diet.</td>
</tr>
<tr>
<td>Singapore (Wong et al. 2010)</td>
<td>N=65 Patients in oncology department</td>
<td>Use of complementary and alternative (TCM) medicine</td>
<td>86</td>
<td>Spiritual practices (48%) and traditional Chinese medicine (37%)</td>
</tr>
<tr>
<td>Thailand (Puataweepong et al. 2009)</td>
<td>N=248 Cancer patients attending outpatient radiotherapy unit N=100, 50 admitted and 50 walk-in gynecologic cancer patients 1 month after diagnosis</td>
<td>Use of complementary and alternative medicine</td>
<td>60.9</td>
<td>Dietary/vitamin supplements</td>
</tr>
<tr>
<td>Thailand (Supoken et al. 2009)</td>
<td></td>
<td>Use of complementary and alternative medicine</td>
<td>67</td>
<td>Buddhist praying (62/67, 92.5%)Herbal medicines (27/67, 40.3%)Exercises (25/67, 37.3%).</td>
</tr>
</tbody>
</table>
percent, as found in a systematic review of the prevalence of CAM use among people living with diabetes (Chang et al. 2007). In a study in Sri Lanka 76 percent of diabetic patients admitted to the use of a CAM to reduce blood glucose and the incidence of hypoglycaemia in CAM users was 21 percent compared to 16.6 percent in non-users (Medagama et al. 2014), while the ingestion of one of the CAM (Crepe ginger) was associated with higher incidence of hypoglycaemia (Medagama et al. 2014). Some of the most common therapies listed for diabetes were herbal therapy, homoeopathy, reflexology and Yoga/exercise, while Chang et al. (2007) found

<table>
<thead>
<tr>
<th>Country and Author(s)</th>
<th>Sample</th>
<th>Variable</th>
<th>TCAM use (%)</th>
<th>TCAM type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia Coton et al. (2008)</td>
<td>N=104 Schizophrenic patients and their caregivers who consulted for the first time in psychiatric departments</td>
<td>Health seeking behaviour for schizophrenic episode</td>
<td>76.9</td>
<td>56.7% began with traditional medicine 20.2% began with religious medicine</td>
</tr>
<tr>
<td>Malaysia (Remli and Chan 2003)</td>
<td>N=43 Diabetic patients</td>
<td>CAM use</td>
<td>56</td>
<td>Herbal therapy, homoeopathy and reflexology</td>
</tr>
<tr>
<td>Malaysia (Mahfudz and Chan 2005)</td>
<td>N=120 Hypertensive patients</td>
<td>TCAM use</td>
<td>27</td>
<td>Mostly herbal medicine</td>
</tr>
<tr>
<td>Malaysia (Mokhtar and Chan 2006)</td>
<td>N=88 Asthmatic patients</td>
<td>CAM use</td>
<td>41</td>
<td>Nutritional supplements, herbs, yoga, homoeopathy, reflexology and massage.</td>
</tr>
<tr>
<td>Malaysia (Saw et al. 2006)</td>
<td>N=250 Medical patients</td>
<td>Herbal use</td>
<td>67.9</td>
<td></td>
</tr>
<tr>
<td>Malaysia (Hasan et al. 2009)</td>
<td>N=321 Patients with chronic diseases</td>
<td>TCAM use</td>
<td>63.9</td>
<td>Vitamin supplements (48.2%), herbal medicines (26.4%), ginseng (4.7%) and traditional Chinese medicine (4.0%)</td>
</tr>
<tr>
<td>Malaysia (Lua 2011)</td>
<td>N=39 Hospice-based palliative patients</td>
<td>TCAM use</td>
<td>38.5</td>
<td>Dried medicinal roots, herbs and sea cucumber products (53.3%)</td>
</tr>
<tr>
<td>Philippines (Cagayan and Oras 2010)</td>
<td>N=52 Women with gestational trophoblastic diseases</td>
<td>CAM use</td>
<td>96.0</td>
<td>Most commonly mental healing, vegetable diet, and multivitamins</td>
</tr>
<tr>
<td>Singapore (Ng et al. 2003)</td>
<td>N=802 Adult patients with asthma Primary care clinic</td>
<td>CAM use</td>
<td>27.2</td>
<td>Animal food products (12.3%), herbs (10.3%), herbal-based proprietary medicines (3.2%), and acupuncture or reflexology (1%).</td>
</tr>
<tr>
<td>Singapore (Lee et al. 2004)</td>
<td>N=488 Adult patients with chronic diseases</td>
<td>12 months CAM use</td>
<td>22.7</td>
<td></td>
</tr>
<tr>
<td>Singapore (Tan et al. 2006)</td>
<td>N=159 Patients with Parkinson's disease</td>
<td>CAM use</td>
<td>61</td>
<td>Traditional medicine, acupuncture, and vitamins/health supplements</td>
</tr>
<tr>
<td>Thailand (Wiwanitkit 2003)</td>
<td>N=160 HIV-seropositive patients</td>
<td>CAM use</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Thailand (Vanlandingham et al. 2006)</td>
<td>N=412 Persons living with HIV and AIDS</td>
<td>Ever herbal treatment CAM use</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Thailand (Moolasarn et al. 2005)</td>
<td>N=159 Diabetes patients</td>
<td>CAM use</td>
<td>47.8</td>
<td>Yoga/exercise (32.8%), unchanged form of herbal medicine (29.9%), and changed form herbal medicine (17.8%).</td>
</tr>
</tbody>
</table>
in their review that nutritional supplements, herbal medicines, nutritional advice, spiritual healing, and relaxation techniques are the most widely consumed CAM therapies among diabetic populations.

In population surveys in several ASEAN countries the use of TCAM for hypertension ranged from 1.9 percent in Laos to 13.4 percent in Myanmar and 15.3 percent in Cambodia and 20 percent in a village survey in Thailand as well as in a clinical hypertension sample in Malaysia 27 percent (Mahfudz and Chan 2005). Similarly, Tsai et al. (2014) found from a large sample of primary hypertensive patients in the National Health Insurance Research Database in Taiwan that 12.1 percent had used TCAM for the treatment of hypertension. A study in India also found a high prevalence of CAM use in hypertensive patients, of a tertiary care centre (Shafiq et al. 2003). In a review, Xiong et al. (2015) found that specific traditional Chinese patient medicine may have a beneficial effect on essential hypertension.

Two studies in Malaysia and Singapore reported the prevalence of CAM use in asthma patients between 27.2 percent and 41 percent. In a systematic review Slader et al. (2006) reported the level of CAM use in asthma patients for adults ranged from 4 percent to 79 percent, and for children from 33 percent to 89 percent. Also in a more recent study analysing beneficiaries from the National Health Insurance Research Database in Taiwan a high proportion (85.7%) of asthma patients had used TCAM (Wang et al. 2014). Despite the high TCAM use for asthma, only a few patents on herbal medicine for asthma have been evaluated and therapeutic efficacy is not yet sufficiently documented (Hon et al. 2015). The most common forms of CAM use for asthma patients in Malaysia and Singapore included nutritional supplements, herbs, yoga, homoeopathy, reflexology, massage and animal food products, while in the review by Slader et al. (2006), the most commonly used CAMs included breathing techniques, herbal products, homoeopathy and acupuncture.

Further, this review found two studies on CAM use in HIV patients in Thailand, with a prevalence of its use ranging from 31 percent to 78 percent. Littlewood and Vanable (2008) confirm from a systematic review that a high proportion of HIV-positive individuals report CAM use (M=60%). In a community survey in Cambodia a high rate of use of traditional dentists was found. Durward et al. (1994: 111) found in a survey of the training, practice and dental health knowledge of traditional dentists practising in Phnom Penh, Cambodia, that “the majority had been trained as an apprentice of either their father or a relative. The most frequently undertaken treatment procedures were tooth coloured fillings, and cast, preformed metal or acrylic crowns and bridges. Knowledge of dental pathology was poor.” One study in Singapore (Tan et al. 2006) found high CAM use in patients with Parkinson’s disease. In a review, Bega and Zadikoff (2014) found that mind-body interventions are generally effective forms of physical activity that are likely to foster good adherence and may reduce disability associated with Parkinson’s disease.

CONCLUSION

TCAM is used by substantial proportions of the general and clinical population. The investigations included in the review differed markedly in their methodologies, origins and results. Some surveys were aimed at determining lifetime prevalence of TCAM use, while other investigators used one-year, six months, or one month prevalence data. The utilization of the different types of TCAM were in a number of studies not elicited. Not enough is known about the circumstances in which TCAM is used by people in ASEAN.

RECOMMENDATIONS

Future surveys should include the utilization of different types of TCAM therapies rather than TCAM in general, be based on samples representative of general populations, assess point and one-year prevalence, and be based on adequate response rates. Periodic surveys of general populations are important to monitor changing patterns in TCAM use. Research into differences regarding ASEAN citizens’ attitudes and needs towards TCAM should also be investigated and addressed in the future TCAM research.

REFERENCES


Utilization of Complementary Medicine


