



Traditional and complementary medicine practice in Malaysia: A comprehensive review of scientific evidences

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ABSTRACT

Background: In the Malaysian healthcare system, the juxtaposition of mainstream medicine, which is traditional and complementary medicine (TCM), has now become an essential component. Despite the highly prevalent practice of TCM among Malaysians, the limited evidence of TCM modalities for explicit health conditions has given rise to doubt and controversy within the medical line. This study intends to gather extant scientific evidence of TCM practice in Malaysia which would eventually benefit the complementary and conventional medical profession.

Methods: In the pursuit for literature pertaining to the scientific research of TCM in Malaysia, databases that include Science Direct, PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), and Elton B. Stephens Company (EBSCO) host were used to gather the relevant articles comprising all forms of nonexperimental, experimental, and case report data that are limited to the Malaysian population setting.

Results: Eight full-text research articles have achieved the inclusion criteria that comprise the trials involving five types of modalities which are medical herbalism, chiropractic, acupressure, aromatherapy, and acupuncture. The most unexplored aspects of designing intervention studies of TCM are the thoughtful and systematic development of treatment protocols. These results point to some potentials for TCM in Malaysian healthcare management in which there is an urgent need for more rigorous research into the value of such treatments.

Conclusion: The popularity of TCM has created a need for empirical studies to evaluate the scientific evidence of practice as a method of treatment regime. This study gives a broader summary of the existing literature on the efficiency of TCM for various health conditions which may have an implication for patient care.

INTRODUCTION

Traditional and complementary medicine (TCM) is among the practices used to enhance Malaysians well-being which is common especially among the community in rural areas (Kew *et al.*, 2015; Nik Hashim *et al.*, 2019; Siti *et al.*, 2009; Marican *et al.*, 2019). According to the National Policy, TCM is described as a method that involves health-associated activities aimed at preventing, treating, and/or controlling disease, as well as maintaining not only the physical state but also the mental state of individuals. Hence, this includes practices such as Islamic medical practices, traditional Malay, Chinese, or Indian medicines, and homeopathy or complementary therapy but does

not include dental or medical practices by registered dental or medical practitioners (Marican *et al.*, 2016). The TCM division, regulated by the Ministry of Health of Malaysia, is crucial for developing TCM, as well as the safety and quality of their practices and products.

The overall trend in Malaysia shows that 79.4% choose TCM, while 20.5% choose biomedicine for wellness and health maintenance purposes (Othman and Farooqui, 2015). The combined use of biomedicine and TCM is common and therefore it reflects an increasing popularity of TCM in Malaysia. Since these are regularly used by people to enhance health and well-being, it is crucial to investigate the scientific and biomedical spectrum to raise understanding between the public and mainstream clinicians (Mehta and Dhapte, 2015). The Ministry of Health Malaysia plays a role in assessing the evidence based on specific topics referred to complementary therapies remit including looking at the possibility of integrating therapy into the hospital setting and developing appropriate policies to support this.

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It is generally accepted that current treatments are scientifically based and, in most cases, have already been tested in a controlled laboratory environment for their effectiveness and efficacy (Isidora *et al.*, 2016; Pritzker and Hui, 2012). According to the Ministry of Health Malaysia (2011), evidence-based medicine entails a definite use of explicit evidential decisions on treatments involving patients. In this regard, TCM practices may be employed by conventional practitioners if their safety and effectiveness are established through scientific studies (Shakeel *et al.*, 2011). To date, no review has assessed the scientific evidence of TCM focusing on the Malaysian population setting. This review aims to identify the scientific basis behind its working and efficacy of these therapies so that eventually it would be able to improve the present-day scenario of modern medicine.

MATERIALS AND METHODS

Inclusive studies into clinical research were carried out via four major databases of CINAHL, PubMed, EBSCOhost, and Science Direct, which involve the fields of nursing, biomedical, and specialist traditional, complementary, and alternative medicine (TCAM) for determining all clinical trials and reviews on TCM as a therapeutic practice in Malaysia. The relevant articles comprise all forms of nonexperimental, experimental, and case report data; however, the interventions were only subject to TCM practices among Malaysians in treating and managing various health conditions irrespective of the age group. The basic search terms used comprising traditional medicine, complementary medicine, Malaysia, intervention, scientific, clinical trials, experiment, effectiveness, and efficiency. In order to achieve the largest selection of studies, there was no cap on the date of publication; nonetheless, the review only included articles that are written in English as the publication language. The literature search process is shown in Figure 1.

RESULTS

Table 1 provides an overview of TCM practices in Malaysia in terms of evidence-based practices. The searches identified eight clinical studies which have been successful in using a quantitative approach. These studies were executed using a randomized controlled trial study design, which is generally accepted as the gold standard for evaluating the effect of a particular treatment in clinical research. Three studies investigated biological-based therapy (Tualang honey, Ulam Raja, and black cumin); one study focused on acupressure, chiropractic, and aromatherapy, respectively, while the remaining two studies explored the effects of acupuncture.

Research on biological-based therapy

A single-blind randomized controlled trial was carried out by Muhamad *et al.* (2017) to gauge the efficiency of the Tualang honey supplement regime on pulmonary function and the general well-being of individuals and societies, which is also known as the quality of life (QoL). Thirty-four men who were identified to have a chronic obstructive pulmonary disease (COPD) were enrolled and randomized to two groups: intervention and control. The intervention group participants consumed 20 mg/sachet/day of Tualang honey as a supplement for a 6-month interval from the usual COPD treatment. Those in the control group were given regular COPD treatment including the medication and advice for a healthy lifestyle. The life quality and pulmonary function were assessed using St. George's Respiratory Questionnaire (SGRQ) and spirometer, respectively. The findings revealed that the use of Tualang honey greatly increased both the lung function and the patients' QoL.

Cheng *et al.* (2015) conducted an experimental study and found a positive effect of *Cosmos caudatus* (Ulam Raja) involving 101 patients who have type 2 diabetes (recruited and

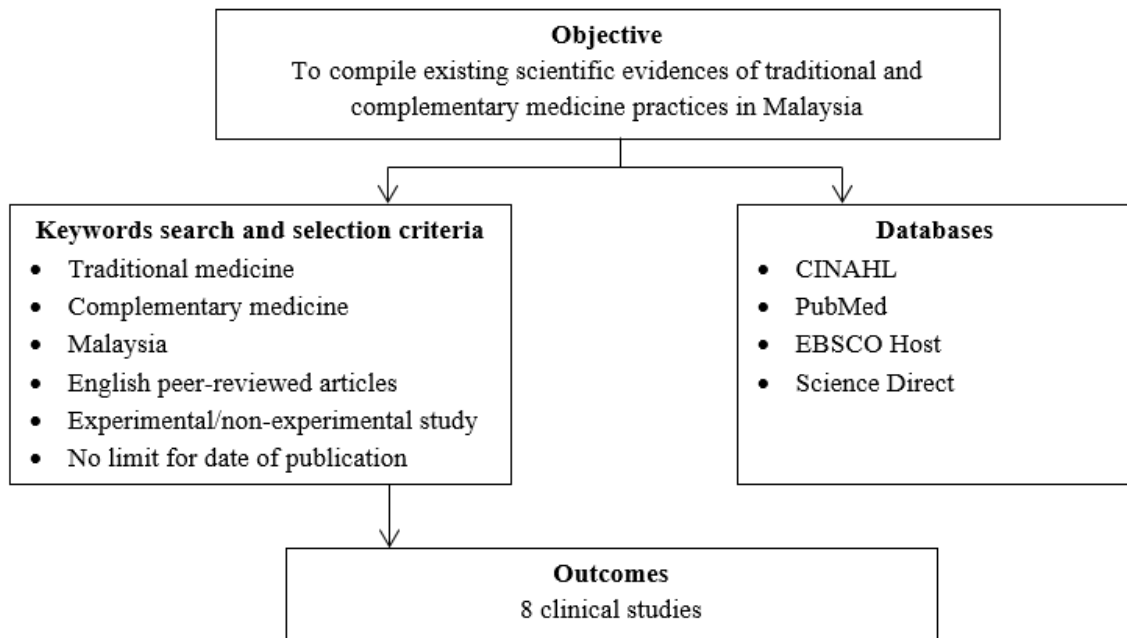


Figure 1. Literature search process.

Table 1. TCM practice in Malaysia in terms of evidence-based practices.

Author (year)	TCM modalities	Aims/purposes	Sample/setting	Design/intervention	Outcome measures	Timing of follow-up	Relevant results
Muhamad <i>et al.</i> (2017)	Biological-based therapy	To examine the effectiveness of honey supplementation for 6 months in promoting QoL among patients with COPD	Patients with obstructive pulmonary disease <i>n</i> = 34 % male = 100 Median age = 68 Two chest clinics: Hospital Universiti Sains Malaysia and Hospital Perempuan Zainab II, Kelantan	Single-blind randomized controlled trial: Intervention group: 20 mg/sachet/day Tualang honey at for 6 months + standard care Control group: standard care	QoL (SGRQ) Pulmonary function (spirometry)	6 months	Sociodemographic and QoL score was not significantly differ between the intervention and control groups Mean score of QoL in the honey group was significantly lower compared to the standard group at 4 months
Hmwe <i>et al.</i> (2015)	Acupressure	To investigate the effects of acupressure on the level of depression, anxiety, stress, and general psychological distress among hemodialysis patients	Patients with hemodialysis <i>n</i> = 108 % male:female = 62:49 Age range (mean) = 58.06 Three hemodialysis centers located in Selangor	Open-label randomized controlled trial: Intervention group: routine hemodialysis treatment + acupressure (15 minutes; 3 times a week; 4 weeks) Control: only routine hemodialysis treatment	DASS-21 General psychological distress [General Health Questionnaire (GHQ-28)]	N/A	The intervention group recorded lower DASS and General Health Questionnaire (GHQ) scores than the control group
Win <i>et al.</i> (2015)	Chiropractice	To examine the extent of a relationship between SMT of the upper against the lower cervical spines and autonomic response in pain-free subjects as well as patients with acute mechanical neck pain	Asymptomatic normotensive patients <i>n</i> = 25 % male:female = 11:9 Age range (mean) = 21	Cross-over randomized controlled study: Upper cervical SMT (C1 or C2) Lower cervical SMT (C6 or C7)	Heart rate Blood pressure Intensity of pain (Numeric pain Scale)	N/A	Upper cervical SMT enhanced the parasympathetic dominance and lower cervical SMT enhanced the sympathetic dominance activity in young volunteer group
Cheng <i>et al.</i> (2015)	Medical herbalism	To examine the efficacy of <i>Cosmos caudatus</i> on glycemic status among patients with type 2 diabetes	Type 2 diabetes patients <i>n</i> = 101 % male:female = 43:34 Age range (mean) = 48.4 General Medical Clinic and Endocrine Clinic of Hospital Serdang	Single-center, randomized, two-arm parallel controlled clinical trial: Diabetic-Ulam group: standard lifestyle intervention + consumed 15 g of fresh <i>C. caudatus</i> per day for 8 weeks Diabetic control group: standard lifestyle intervention only	Serum insulin HOMA-IR QUICKI	N/A	<i>C. caudatus</i> supplement showed a significant improvement in insulin resistance and insulin sensitivity in type-2 diabetes patients <i>C. caudatus</i> is safe to consume
Lua, Salihah, and Mazlan (2015)	Aromatherapy	To examine the effectiveness of ginger aromatherapy inhalation on nausea, vomiting, and health-related QoL (HRQoL) in patients with chemotherapy breast cancer	Breast cancer patients <i>n</i> = 145 % female = 60 Age range (mean) = 47.3 Two oncology clinics on the east coast of Peninsular Malaysia	Single-blind, controlled, randomized cross-over study: Group 1: ginger fragrance oil (placebo) was provided during the first chemotherapy treatment and ginger essential oil during the next treatment Group 2: ginger essential oil was provided during the first chemotherapy treatment and ginger fragrance oil (placebo) for the next chemotherapy course	VAS nausea score Frequency of vomiting HRQoL	N/A	VAS nausea score significantly reduced after inhaling ginger essential oil in comparison with placebo Aromatherapy does not significantly affect vomiting Significant changes in baseline in terms of global health status after inhaling ginger essential oil
Lee <i>et al.</i> (2014)	Acupuncture	To investigate the possibility of acupuncture in improving the immune system among patients with chronic prostatitis/chronic pelvic pain syndrome	Patient with chronic prostatitis/chronic pelvic pain syndrome <i>n</i> = 12 % male = 12 Age range (mean) = 42.9	Randomized controlled clinical trial: Acupuncture group Sham acupuncture (control)	10-point Likert scale to evaluate the mood	N/A	The acupuncture group gained an average increase in the NK cell level by 5% as opposed to sham acupuncture
Ibrahim <i>et al.</i> (2014)	Medical herbalism	To investigate how the <i>Nigella Sativa</i> seed powder affects serum cholesterol, HDL-cholesterol, LDL-cholesterol, and TG among menopausal women	Menopausal women <i>n</i> = 37 % female = 37 Age range (mean) = 53.22 Universiti Putra Malaysia Health Centre	Randomized trial: Intervention group: received capsulated <i>N. sativa</i> powder for 2 months Placebo group: received the placebo capsules for 2 months	Total cholesterol (TC) LDL TG HDL	After the subjects completed 2-month treatment	<i>N. sativa</i> showed a significant improvement in the menopausal women's lipid profiles with a reduction in TC, LDL cholesterol, and TG, and an upsurge in HDL cholesterol as opposed to the placebo treatment
Lua and Talib (2013)	Acupuncture	To make a comparison between the clinical outcomes of the sole MMT and MMT plus AA (MMT+AA) relative to the daily dose of methadone, number of cigarettes smoked per week, relapse rates, and the symptoms of withdrawal	Individuals recruited in the three MMTs <i>n</i> = 97 % male = 97 Age range (mean) = 37.7 Three MMT centers in Terengganu	Prospective, longitudinal, open-labeled randomized design: Intervention group: MMT + auricular acupuncture Control group: MMT only	Malay WHOQOL-BREF	N/A	Both groups have significantly reduced the number of cigarettes smoked and reduced methadone dose

randomized to the intervention or control groups). Participants in the intervention group took 15 g of fresh *C. caudatus* every day for 8 weeks with a standard lifestyle and were encouraged to follow physical activity recommendations and medical nutrition therapy. However, the participants in the control group were required to avoid consuming *C. caudatus* apart from receiving the same lifestyle interventions as the intervention group. After 8 weeks of *C. caudatus* supplementation, the intervention group recorded a substantial drop in serum insulin and Homeostatic Model Assessment (HOMA)-Insulin Resistance (IR) but a rise in Quantitative Insulin-Sensitivity Check Index (QUICKI) as opposed to the control group.

A randomized controlled trial by Ibrahim *et al.* (2014) recorded that *Nigella sativa* or black cumin significantly induced hypolipidemic effects involving menopausal women. This trial includes 37 menopausal women, who were randomized to either the treatment or placebo groups and consumed either *N. sativa* or placebo for 2 months. At the initial treatment stage, blood samples were drawn at a 1-month interval to a month after the trial ended. Based on the results, compared to the placebo treatment, *N. sativa* has positive impacts on the lipid profiles of menopausal women, such as a drop in the total amount of cholesterol with low-density lipoprotein (LDL) and triglyceride (TG), as well as increased high-density lipoprotein (HDL).

Research on acupressure

Hmwe *et al.* (2015) carried out an open-label randomized controlled trial to examine how acupressure affects depression, anxiety, and stress involving 108 patients with hemodialysis. There were two groups, in which the participants in the acupressure group were given routine hemodialysis treatment and a 15-minute-acupressure thrice a week over the course of 4 weeks, while the control group only received routine care including hemodialysis treatment. Furthermore, the Depression, Anxiety, and Stress Scale-21 Item (DASS-21) was employed to determine the levels of depression and anxiety, as well as stress at pre- and postintervention. Overall, results show that the level of depression, anxiety, and stress of participants in the acupressure group is significantly improved as opposed to the control group.

Research on chiropractic

A cross-over randomized controlled trial by Win *et al.* (2015) was carried out to investigate the relationship between spinal manipulative therapy (SMT) of the upper cervical spine against the lower cervical spine including autonomic response involving pain-free subjects, as well as the patients with acute mechanical neck pain. Twenty-five asymptomatic normotensive patients were recruited and given an upper cervical SMT (C1 or C2) in the 2nd week or a lower cervical SMT (C6 or C7). Blood pressure, heart rate, and pain scores in both groups were taken after the upper cervical SMT and the lower cervical SMT. Overall, the findings indicated that upper cervical SMT enhanced the parasympathetic dominance and lower cervical SMT enhanced the sympathetic dominance activity in the group comprising young volunteers.

Research on aromatherapy

In Lua *et al.*'s (2015) study, a cross-over randomized controlled study design was adopted. One hundred and forty-five

chemotherapy breast cancer patients were recruited and assigned randomly to two study groups. Group 1 patients were given ginger fragrance oil (placebo) throughout the first chemotherapy treatment, followed by ginger essential oil during the subsequent treatment. Meanwhile, Group 2 patients were initially given ginger essential oil during the initial chemotherapy treatment and placebo (ginger fragrance oil) during the subsequent treatment. Using a 100 mm Visual Analog Scale (VAS), the nausea score reduced subsequently to the inhalation of ginger essential oil as opposed to that of the placebo group throughout the acute phase; however, this was not sustained for the overall effect of treatments. Additionally, significant changes were observed in health quality as a result of nausea and vomiting, constipation, role functioning, the state of global health, loss of appetite, pain, and fatigue.

Research on acupuncture

Lee *et al.* (2014) examined how acupuncture affects the immune function of 12 patients with chronic prostatitis or pelvic pain syndrome using the prospective randomized clinical trial research design. There were two study groups, acupuncture and sham acupuncture, which were administered bilaterally at four acupuncture points: CV1-Huiyin; CV4-GuanYuan; SP6-Sanyinjiao; and SP9-Yinlingquan. The administration excluded needle stimulation inserted to a depth from 40 to 60 mm. For sham acupuncture, the arm received shallow needling that is 0.5 cm apart from the acupuncture points, whereas each placement of needle lasted about 30 minutes, twice a week over the course of 10 weeks. Briefly, the study reported that the level of the natural killer (NK) cells in the acupuncture group, on average, cumulated by 5% in comparison with the sham group.

Lua and Talib (2013) conducted the longitudinal open-labeled randomized study to examine how auricular acupuncture potentially manages drug addiction based on a comparison between the clinical results of the sole methadone maintenance treatment (MMT) and MMT plus auricular acupuncture. The Malay version of the World Health Organization's Quality of Life Questionnaire (WHOQOL-BREF) was employed to measure the QoL of 97 males who were enrolled in the three MMTs. Findings implied that both groups have significantly reduced the number of cigarettes smoked and reduced methadone dose with auricular acupuncture in controlling addiction, which provides additional benefits as an adjunct to MMT.

DISCUSSION

TCAMs address a huge pool of ailments and provide a medium, which plays a paramount role in human health and welfare (Mehta and Dhapte, 2015). TCAM is widely used in various countries around the world, particularly among chronic patients or those with long-term illnesses (Chitindingu *et al.*, 2014), including managing the stress and depression (Manshile *et al.*, 2019). Based on the National Health and Morbidity Survey 2015 as reported by the Ministry of Health Malaysia, Malaysians use TCM for many purposes such as for treatments involving diseases and medical conditions, for example, musculoskeletal pain. However, the safety and effectiveness of TCM remain a primary concern among the scientific community regarding its acceptance (Ng *et al.*, 2016).

Many surveys have been monitoring the prevalence and determinants of TCM use with less focus on methodology

and clinical effects. Due to numerous flaws and problems, the information provided is less reliable. Anecdotal claims are also increasing for TCM involving how conditions such as arthritis, migraine, and multiple sclerosis are treated; however, there is scarce clinical evidence in this context. Hence, the medical community does not approve the TCM practitioners' claims because the efficacy assessments based on evidence of scientific study either are not available or have not been carried out by many of these practices (Ng *et al.*, 2016). As these practices are commonly used in the community to enhance health status, it is essential to explore their scientific evidence and biomedical scope (Mehta and Dhapte, 2015).

CONCLUSION

Evidence-based TCM is still very much lacking, especially in the Malaysian setting. More researches are needed to prove the accuracy of TCM practices and also to avoid any misleading claim. As such, it is important to evaluate research evidence on the effectiveness of a therapy in order to ensure that the practices are carried out on the basis of scientific knowledge than belief.

CONFLICT OF INTEREST

All authors have declared that they do not have any conflict of interest.

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