

## RESEARCH ARTICLE

# An Empirical Study on Traditional, Complementary and Alternative Medicine Usage among Malaysian Cancer Patients

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## Abstract

Usage of traditional, complementary and alternative medicine (TCAM) has gained popularity over the past few years. However, very little is known about TCAM use among Malaysian cancer patients. This study aimed to identify the determinants of TCAM usage among cancer patients with determination of relationships between demographic factors, patient satisfaction with conventional treatment, knowledge on TCAM and healthcare professional influence. Patient's perceptions towards TCAM were also determined. A simple random convenient sampling method was used to recruit 354 patients from Hospital Kuala Lumpur between February to April 2013. All were directly interviewed with a structured questionnaire. In this study, 172 respondents were TCAM users. There was no significant differences between demographic background of respondents in the usage of TCAM. Minimal correlation was found between patient satisfaction with the conventional treatment and usage of TCAM ( $r=0.091$ ). A poor correlation was found between healthcare professional's influence and TCAM usage ( $r=-0.213$ ) but the results suggested that increase in influence would decrease TCAM usage. Patient TCAM knowledge correlated negatively with the TCAM usage ( $r=-0.555$ ) indicated that cancer patients are less likely to use TCAM when they have more TCAM knowledge. Healthcare professionals should be fully equipped with the necessary TCAM knowledge while maintaining patient satisfaction with the conventional treatment. They should also intervene on patient TCAM usage where a potential drug interaction or a harmful adverse event can occur.

**Keywords:** TCAM - cancer - satisfaction - knowledge - health care professionals - influence - Malaysia

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## Introduction

Traditional, complementary and alternative medicine (TCAM) has gained popularity for cancer treatment over the past few years. The global visibility of TCAM is due to rise of Asian countries such as China and India in 21st century (Alex F Broom and Assa Doron, 2013).

According to World Health Organization (WHO), 7.6 million deaths worldwide in 2008 are caused by cancer, where abnormal cells divide without control and are able to metastasize through the blood or lymph nodes involving malfunctioning genes that control cell growth and division (Cancer Fact and Figures 2012, Latest cancer statistics, 2012). There is noticeable geographical variation in incidence rates of cancer (Umit et al., 2015). Lack of communication between medical provider and patients about diagnosis and treatment procedure may result in misunderstanding and also reduces patient's trust and confidence (Qing et al., 2015). Various TCAM practices and doctors play a critical role in many cancer patients'

disease trajectories (Broom and Doron, 2012). In 2007, 18,219 new cancer cases were diagnosed and registered at the National Cancer Registry (NCR) of Malaysia comprising of 8,123 (44.6%) males and 10,096 (55.4%) females (Zainal and Nor Saleha, 2007).

TCAM has been gaining acknowledgement and recognition globally and has been used to treat both simple ailments and chronic diseases for many years. However, the use of TCAM varies widely between and within countries. It is also important to note that the use of TCAM among patients with chronic, painful, debilitating, or fatal conditions, such as HIV/AIDS and cancer, is far higher, ranging from 50- 90%. TCAM is also used among cancer patients along with the other chronic diseases such as diabetes, arthritis, chronic kidney disease and mental disorders (Maihebuti et al., 2011). For children with cancer, there are many surveys that report the use of TCAM along with conventional therapy for supportive care (Ladas et al., 2014). As yet, major risk factors for cancer are not well understood and specific primary

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prevention strategies are lacking (Ying et al., 2015).

Traditional Chinese medicine, traditional Malay medicine (Jamu), Ayurveda, dietary supplements, meditations and spiritual therapies are examples of TCAM used among Malaysian cancer patients (Farooqui et al., 2012). A nationwide study conducted in 2004 showed that the prevalence of TCAM usage among Malaysians in their lifetime was 55.6% in the last 12-month period of the study (Siti et al., 2009). However, not all TCAM are free from side effects. Pharmacodynamics interactions may occur when active constituents of herbal compounds act in an additive, synergistic or antagonistic manner with a therapeutic agent (Stephen JC and Andrew JM, 2011). Even patients who received acupuncture may experience needle pain, bleeding and syncope although it is infrequent (Ernest and White, 2011).

TCAM has not been well received by the world of western medicine and healthcare providers as most are not taught about TCAM in medical school training. Thus, they are not properly educated in this field to offer these services to the patients who may benefit from them. The lack of TCAM knowledge has caused a disconnection between patients and their healthcare providers (Maha and Shaw, 2007). Thus, it has been hypothesized in the study that there is a significant relationship between the healthcare professionals influence with patient's TCAM use. In addition, it is also reported that the overall degree of satisfaction with conventional medicine was a predictor of TCAM use (Shin et al., 2012).

Some studies reveal that patient perceptions on the benefits of treatment are an important component of quality of life (Arthur et al., 2012). However, there were no studies reporting possible predictors of TCAM usage such as patient's TCAM knowledge in cancer treatment. Cancer patients mainly obtain their knowledge about TCAM through family and friends, other cancer patients and Internet websites. Other sources included electronic media and printed materials (Wong et al., 2010). Only a few cancer patients are able to obtain some TCAM knowledge through healthcare professionals (Molassiotis, 2005). Hence, a significant relationship between patient's TCAM knowledge and usage of TCAM was hypothesized.

Further, patients with cancer generally face a situation that is subjectively more frightening and less controllable compared to other chronic or life-threatening diseases. Thus, it is important for the medical community to understand the factors motivating them to use TCAM (Paltiel et al., 2001). Besides that, very little is known about TCAM utilization among Malaysians who are diagnosed with cancer. There are numerous studies available on the prevalence of TCAM use among cancer patients. However, most are conducted outside the country of Malaysia and the availability of these studies conducted within Malaysia is limited. Based on the above background information the following research objectives, research questions and research hypothesis were framed

*The purpose of this study is to*

*i) Determine the prevalence of TCAM use among Malaysian cancer patients, ii) Find out the relationship between the cancer patient's satisfaction with the*

*conventional treatment and usage of TCAM, ii) Study the relationship between the patient's knowledge of TCAM and usage of TCAM; iii) Investigate the relationship between healthcare professional's influence with patient's usage of TCAM; iv) Examine cancer patients' reasons and beliefs on usage of TCAM.*

*Based on the research objectives, the research questions are*

*i) What is the prevalence of TCAM use among cancer patients?; ii) Is there a significant relationship between cancer patient's satisfaction with the conventional treatment and TCAM usage?; iii) Is there a significant relationship between the patients' knowledge of TCAM and TCAM usage?; iv) Is there a significant relationship between healthcare professional's influence on cancer patients and cancer patient's TCAM usage?; v) What are the cancer patients' reasons and beliefs on usage of TCAM*

*Based on the research questions, this study hypothesizes as*

*H1: There is a significant relationship between gender and the use of TCAM among cancer patients; H0: There is no significant relationship between gender and the use of TCAM among cancer patients; H2: There is a significant relationship between age and the use of TCAM among cancer patients; H0: There is no significant relationship between age and the use of TCAM among cancer patients; H3: There is a significant relationship between education level and the use of TCAM among cancer patients; H0: There is no significant relationship between education level and the use of TCAM among cancer patients; H4: There is a significant relationship between patient's satisfaction with conventional treatment and TCAM usage for cancer treatment; H0: There is no relationship between patient's satisfaction and TCAM usage for cancer treatment; H5: There is a significant relationship between patients' knowledge on the use of TCAM use among cancer patients; H0: There is no relationship between patients' knowledge on the use of TCAM use among cancer patients; H6: There is a significant relationship between healthcare professionals' influences and TCAM use for cancer treatment; H0: There is no relationship between healthcare professionals' influences and TCAM use for cancer treatment.*

## **Materials and Methods**

In this study, a simple random and convenient sampling method was used to select 354 cancer patients from the outpatient Department of Radiotherapy and Oncology in Hospital Kuala Lumpur between February to April 2013. An approval was obtained by National institutes of health approval for conducting research in the Ministry of Health, Malaysia (Registration ID -NMRR-16-13-14630) before administering the questionnaire to respondents. All patients were directly interviewed with a structured questionnaire. All participants taking part in this study gave full informed consent. Patients completed the questionnaire while they were waiting at the outpatient clinic to be seen by their physician. On completion, patients handed the questionnaire to the

researcher. The inclusion criteria for this study are cancer patients are above 18 years old and are suffering from any type of cancer and stages with or without co-morbidities. The exclusion criteria are cancer patients who are below 18 years old; patients who did not give their consent for this study and subjects who have life-threatening or any condition that compromise their ability to give informed consent are excluded. Statistical analysis was performed using SPSS version 18.0 software. Differences of TCAM use within patient categories of selected demographic and clinical variables were assessed by  $\chi^2$  test. The factors predicting TCAM use was analyzed by Univariate analysis and then multiple logistic regression analysis was performed using all significant predictor variables. Statistical significance was set at  $P < 0.05$ .

## Results

In this study, 354 respondents were interviewed whereby 171 (48.3%) were males and 183 (51.7%) were females. Most of the respondents were between ages 40 to 65 are suffering from cancer. Among the female respondents, 102 (55.7%) were found to be suffering from breast cancer. More than 90% of the cancer patients are currently receiving or have received treatment for their disease. Nearly half of the total respondents (48.6%) in this study are using TCAM to treat cancer.

Association testing has been measured between the patient's satisfactions with the conventional treatment, patient's TCAM knowledge and healthcare professional's influence with the usage of TCAM using Chi-square test. A Chi-square test was performed and a significant relationship was found between patient's satisfaction with the conventional treatment and usage of TCAM.  $\chi^2$  (27, N=354)=41.220,  $p=0.039$ . The variables patient's TCAM knowledge and usage of TCAM have a significant relationship,  $\chi^2$  (24, N=354)=143.774,  $p=0.000$ . The Chi-Square test also showed that there was a significant relationship between healthcare professional's influence and usage of TCAM  $\chi^2$  (15, N=354)=40.462,  $p=0.000$ .

A Pearson correlation coefficient was computed to assess the correlation between patient satisfaction with the conventional treatment and usage of TCAM. There was a minimal positive correlation between the two variables,  $r=0.091$ ,  $n=354$ ,  $p=0.088$ . Increases in patient satisfaction were correlated with increases in usage of TCAM. Hence, the alternate hypothesis (H4) on patient's satisfaction with the conventional treatment and usage of TCAM is accepted. However, patient TCAM knowledge had a strong correlation with the usage of TCAM for cancer treatment  $r=-0.555$ ,  $n=354$ ,  $p=0.000$ . Increases in cancer patient's TCAM knowledge was correlated are less likely to use TCAM for their cancer treatment. Thus, the null hypothesis (H0) on patient's TCAM knowledge and usage of TCAM is rejected. The Pearson correlation coefficient showed that there was a poor negative correlation between healthcare professional's influence and usage of TCAM,  $r=-0.213$ ,  $n=354$ ,  $p=0.000$ . Increases in patient satisfaction were correlated with decreases in usage of TCAM. Hence, the alternate hypothesis (H6) on healthcare professional's influence and usage of TCAM was accepted.

The R of independent variables (patient's satisfaction, patient's TCAM knowledge and healthcare professional's influence) on the dependent variable (usage of TCAM for cancer treatment) is 0.563 showed that cancer patients had positive and strong relationship with the three independent variables. The  $R^2$  is 0.319 suggesting that there is 31.9% relationship between the usage of TCAM for cancer treatment and the 3 variables. The equation for the patient's usage of TCAM for cancer treatment was expressed in the following equation: Usage of TCAM=2.114 (Constant) - 0.005 (Healthcare professional's influence) + 0.123 (Patient's satisfaction) - 0.386 (Patient's TCAM knowledge).

An independent group t-test revealed a non-significant difference between the mean for females ( $M=1.52$ ,  $SD=0.501$ ) and mean for males ( $M=1.58$ ,  $SD=0.501$ ), with the usage of TCAM for cancer treatment. This shows that there is no difference in opinion between genders with the usage of TCAM,  $t(352)=0.018$ ,  $p=0.986$ . A one way analysis of variance (ANOVA) revealed that the demographic and clinical background were non-significant ( $p > 0.05$ ).

Most of the TCAM users agreed and strongly agreed that they used TCAM to cure cancer, suppress the progression of cancer, prevent cancer from reoccurring, improve physical and emotional well-being, counter symptoms from cancer, reduce side-effects from medical treatment and complement the effects of the present medication. On the other hand, majority of the respondents who did not use TCAM agreed and strongly agreed that

**Table 1. Clinical Background of the Respondents**

Parameters	Frequency	Percent (%)
Cancer diagnosis		
Less than 1 year	84	23.7
Between 1 to 5 years	177	50
Between 5 to 10 years	73	20.6
More than 10 years	20	5.6
Total	354	100
Type of cancer		
Breast	102	28.8
Gastrointestinal	85	24
Respiratory	54	15.3
Genitourinary	75	21.2
Hematologic	6	1.7
Skin	3	0.8
Bone	8	2.3
Others	21	5.9
Total	354	100
Cancer Treatment		
Received/ Receiving	331	93.5
Not receiving	23	6.5
Total	354	100
Satisfaction with conventional treatment		
Satisfied	302	85.3
Unsatisfied	52	14.7
Total	354	100
TCAM usage		
Yes	172	48.6
No	182	51.4
Total	354	100

**Table 2. Type of Conventional Treatments Received by the Respondents**

Parameter	Frequency	Percent (%)
Type of treatment received		
Surgery	26	7.9
Chemotherapy	33	10
Hormonal therapy	3	0.9
Radiation	2	0.6
Surgery & chemotherapy	104	31.5
Surgery & hormonal therapy	15	4.5
Surgery & radiation	21	6.3
Chemotherapy & hormonal therapy	2	0.6
Chemotherapy & radiation	31	9.3
Hormonal therapy & radiation	1	0.3
Surgery, chemotherapy & hormonal therapy	9	2.7
Surgery, chemotherapy & radiation	73	22.1
Surgery, chemotherapy & palliative care	1	0.3
Surgery, hormonal therapy & radiation	1	0.3
Surgery, chemotherapy, hormonal therapy, radiation	9	2.7
Total	331	100

they did not use TCAM because they were satisfied with the conventional treatment, never thought of using TCAM; do not believe in TCAM efficacy, discouragement from family, friends and doctors, as well as lack of information about TCAM.

In line with their reasons to use TCAM, it was found that TCAM users believe that TCAM are able to cure cancer, suppress the progression of cancer, and prevent cancer from reoccurring. Improvement of physical and emotional with TCAM usage was also a belief among TCAM users. Many of the respondents also believed that using TCAM may help in reducing side-effects from medical treatment besides complementing the effect of the present medication.

## Discussion

The prevalence of TCAM use was surveyed and the determinants of TCAM use by cancer patients were investigated in this study. Among 354 respondents, 171 (48.3%) were males and 183 (51.7%) were female cancer patients. Most of them are in the age range of 40 to 65 years. This is mostly due to the fact that they have been exposed to more carcinogens compared to the younger respondents thus increasing the chance of DNA mutation in their cells causing cancer (Cohen and Arnold, 2011). Out of 183 (55.7%) female respondents, 102 were suffering from breast cancer and it was the most common. More than 90% of the cancer patients are currently receiving or have received treatment for their disease.

It is important to note that nearly half of the total respondents (48.6%) are using TCAM to treat cancer. This reflects a high rate of TCAM use and shows that TCAM has become more acceptable among cancer patients. This can be explained by the fact that cancer is more frightening and less controllable compared to other chronic or life-threatening diseases (Shin et al., 2012).

A relationship was found between patient's TCAM knowledge and TCAM usage whereby a patient who is more knowledgeable about TCAM is less likely to utilize it as their cancer treatment. However, this result cannot

be compared as there are no previous literatures that analyzed this predictor. It was also interesting to note that there was no relationship between patient's satisfaction and TCAM usage, which is consistent with the previous studies (Astin, 1998; Paltiel et al., 2001). In addition, study found that there was no relationship between TCAM usage and healthcare professional's influence. However, previous studies conducted only determined the responses by healthcare professionals regarding patient's usage of TCAM (Putipun et al., 2012).

The characteristics of a CAM user found in this study were different from that reported in other studies. In the previous literatures, CAM use among cancer patients has revealed a common trend that TCAM users tend to be female (Hyodo et al., 2005; Molassiotis et al., 2005; Chang et al., 2011), younger, higher earners (Chang et al., 2011), and better educated (Hyodo et al., 2005; Molassiotis et al., 2005; Chang et al., 2011). However, a breast cancer survivors study reports that there were no significant differences in socio-demographic background and cancer clinical treatment history between CAM users (Soraya et al., 2011). Studies reveal that education regarding lifestyle modifications, including smoking and alcohol use are also place an important role in cancer prevention (Jaeyong Shin, 2015). A study conducted in Thailand also showed there were no significant among CAM users by gender, age, and education level or cancer type (Putipun et al., 2012). This study revealed that there is only a significant difference in opinion between patients who are satisfied and unsatisfied with their conventional treatment. This may be due to the fact that the previous research were conducted in other countries thus, the demographics and culture of the patients may differ which leads to different results.

Cancer patient's decision to whether to use TCAM or not as cancer treatment was also analyzed. Similar to other studies, nearly half of the total respondents in this study used TCAM to cure, suppress the progression and prevent the cancer from reoccurring (Soraya et al., 2011). Majority of TCAM users also agreed that TCAM is able to improve emotional and physical well-being, similar

to previous studies (Molassiotis et al., 2005). Previous literatures have also supported the fact that reasons for TCAM usage is to counter symptoms of cancer and reduce side effects from the medical treatment besides complementing the effects of the present medication (Shih et al., 2009; Putipun et al., 2012).

Considering there is a high prevalence of TCAM use among Malaysian cancer patients, issues related to TCAM must be urgently addressed and should not be ignored or avoided. In addition there is a necessity to improve the understanding and collaborative work of registered and licensed TCAM practitioners and conventional healthcare providers in educating the patient on TCAM usage. This study also recommends that there is a need of easily accessible and useful educational materials for both patients and healthcare professionals. In addition to that, it should be ensured that this kind of information is accurate, updated and reliable. Future studies should focus on specific groups of patients with a particular cancer type and also should be conducted in rural areas for better understanding of TCAM usage.

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