



## Patient satisfaction on the utilization of traditional and complementary medicine services at public hospitals in Malaysia



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### ABSTRACT

**Background:** Traditional and complementary medicine (T&CM) has been integrated into the Malaysian public healthcare system since the establishment of the first T&CM unit at a public hospital in 2007. Assessing patient satisfaction is a vital component of health service evaluation. The main objective of this study is to determine the level of patient satisfaction with the utilization of T&CM services at public hospitals in Malaysia and assess the sociodemographic influence on the overall reporting of satisfaction. This study also aims to analyze the response of the patients towards expansion of T&CM services in the public sector in Malaysia.

**Materials and methods:** A study was conducted to analyze data on the utilization of T&CM services within public hospitals. Secondary data on 822 patients' satisfaction with services offered at 15 T&CM units was analyzed to examine the overall levels of satisfaction with T&CM services in public hospitals in Malaysia.

**Results:** Overall, 99.4% of patients were satisfied with T&CM services and most patients (91.8%) felt that T&CM treatment positively impacted their health. Overall satisfaction was not affected by lower levels of satisfaction with subcategories of service, such as the number of treatment sessions received (90.7% satisfied), date to the next appointment (90.7% satisfied), and the absence of adverse effects of treatment received (87.1% satisfied). There were no significant associations between the socioeconomic status of the respondents and the level of satisfaction reported; however, respondents with a monthly salary of Ringgit Malaysia (RM) 1000 to RM 3000 were more than twice as likely to be strongly satisfied with services received (adjusted odds ratios [AOR]: 2.12, 95% CI: 1.19–3.78).

**Conclusion:** This study revealed a high level of satisfaction among patients who had received T&CM treatment at public hospitals in Malaysia. High satisfaction with T&CM treatment validates the integrative management approach adopted in patient care within the public hospitals in Malaysia.

## 1. Introduction

Advocacy for the integration of traditional medicine (TM) or non-conventional medicine practices, also termed as complementary medicine (CM), into national healthcare systems has been an ongoing strategic effort by the World Health Organization (WHO). The WHO encourages its member states to increase access to safe and effective TM healthcare by improving quality assurance through the regulation of products, practices, and practitioners.<sup>1,2</sup> However, factors such as the lack of experts in the field of TM among national health authorities and control agencies; the lack of systematic education and training of

traditional medicine providers; insufficient research data and financial support for research; and inadequate mechanisms for controlling and regulating advertising, products, and service providers are among the key challenges faced in implementing policies on the integration of this field into national health systems.<sup>2</sup>

TM and CM practices have co-existed among Malaysians for a long time; however, the integration of this field into the mainstream conventional healthcare system is still very much in its infancy. According to the Laws of Malaysia, the practice of traditional and complementary medicine (T&CM) is defined as a form of health-related practice designed to prevent, treat, or manage ailments or illnesses or to preserve

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the mental and physical well-being of an individual.<sup>3</sup> A National Policy for T&CM was developed in 2001 with the objective of enhancing the health and quality of life of all Malaysians by integrating T&CM services with a holistic approach toward patient care.<sup>4</sup> The governance of T&CM in Malaysia has shifted from self-regulation to statutory regulation following the official gazette and enforcement of the T&CM Act [Act 775] in 2016. Under the Act, the T&CM Council was established in January 2017 to regulate T&CM services in Malaysia.<sup>3</sup> During the self-regulation phase, a total of 16,050 T&CM practitioners voluntarily registered with appointed T&CM practitioner bodies in Malaysia.<sup>5</sup>

A recent review revealed that 26.4% of providers in 32 countries used traditional and complementary or alternative medicine.<sup>6</sup> A national survey in Malaysia reported that 29.3% of the population had utilized some form of T&CM services through a T&CM provider in their lifetime and 21.5% had utilized these services within the last twelve months.<sup>7</sup> More Malaysian females reported utilizing T&CM services (23.9%) compared to males (19.3%) and a higher rate of utilization was reported among the urban population (22.6%) compared to the rural population (18.2%). Malaysians primarily sought T&CM services for the maintenance of wellness and the treatment of minor musculoskeletal disorders such as joint and muscle aches.<sup>7</sup> Currently, the provision of T&CM services in Malaysia is dominated by the private sector (primarily sole proprietors) with limited involvement of the public sector.<sup>5</sup> In 2014, Malaysia reported that the total out-of-pocket (OOP) health expenditure for T&CM services amounted to Ringgit Malaysia (RM) 2084 million, or 11.0% of the total OOP expenditure at private health facilities.<sup>8</sup> The median OOP expenditure of an individual for most T&CM services was below RM 60.<sup>7</sup>

The T&CM Division under Malaysia's Ministry of Health (MOH) was established in 2004. T&CM services in the public sector are partially developed through the establishment of integrative T&CM units in selected public healthcare facilities.<sup>5</sup> The introduction of integrative care into the national health system has resulted in an overall increase in the number of patients treated with T&CM as well as the gradual increase in the number of established T&CM units and the expansion of T&CM treatment modalities offered within these units.<sup>9–14</sup> At present, there are 18 public healthcare facilities in Malaysia that offer integrated T&CM services.<sup>5</sup> T&CM practitioners are contracted by the Malaysian government due to the lack of a public service employment scheme for the permanent employment of T&CM practitioners at public healthcare facilities.<sup>5,15</sup>

Currently, there are seven T&CM service modalities offered at public healthcare facilities in Malaysia. This includes Traditional Malay Medicine, such as Malay massage and Malay postnatal care; Traditional Chinese Medicine, such as acupuncture and herbal therapy; and Traditional Indian Medicine, such as shirodhara, external basti therapy, and varmam therapy. **Box 1** describes the T&CM practices offered in the public hospitals in Malaysia.<sup>16–22</sup> The T&CM treatments offered at these facilities serve primarily as a complement to post-stroke management, the management of conditions such as chronic pain, migraines, insomnia, and anxiety, postnatal care, and also as an adjunct treatment for cancer patients.

Malaysians have developed a sense of entitlement for free or to only pay minimal charges for health services in the public health sector due to the long standing public policy of universal health coverage in Malaysia.<sup>23</sup> High levels of patient satisfaction with services have been reported in studies conducted at public healthcare facilities in Malaysia.<sup>24–27</sup> The T&CM Division conducted a multi-centered patient satisfaction survey to assess and evaluate patient satisfaction with services offered at 15 identified T&CM units. The survey was conducted by clustering the 15 T&CM units: three units in 2015, six units in 2016, and six units in 2017.<sup>28–35</sup> This study reports the results of secondary analysis of the data from the 2015–2017 survey conducted by the T&CM Division in order to assess overall patient satisfaction with T&CM

services provided at public hospitals in Malaysia. The previous reports included only descriptive analysis of the data using one-dimensional tables and graphs to represent data for various components of satisfaction further comprehensive analysis of the data had yet to be performed.<sup>28–35</sup> The main objective of this study is to determine the level of patient satisfaction with the utilization of T&CM services at public hospitals in Malaysia and assess the sociodemographic influence on the overall reporting of satisfaction. This study also aims to analyze the response of the patients towards expansion of T&CM services in the public sector in Malaysia.

## 2. Materials and methods

### 2.1. Study subjects

The T&CM Division had conducted a patient satisfaction survey targeting patients who were undergoing treatment at 15 identified T&CM units at public hospitals in Malaysia. The T&CM modalities investigated in the survey included traditional Malay massage, Malay postnatal care, acupuncture, herbal therapy, and shirodhara. Patients were recruited for the survey using convenience sampling from patient registries from the hospital registration records during the recruitment period of the study. To be eligible for inclusion in the study, a patient must have been (1) receiving treatment at a T&CM unit at one of the 15 identified public hospitals, (2) aged 18 years or older, (3) cognitively sound during the period of study, (4) able to provide consent for enrollment in the study, and (5) a Malaysian citizen. A total of 900 questionnaires were distributed to the 15 identified T&CM units (60–90 copies of the questionnaire per unit). Only patients who met the eligibility criteria and consented to participation in the study were enrolled.

The survey required patients to complete a self-administered questionnaire which was divided into three sections addressing the socio-demographic and clinical profiles of the respondents and their level of satisfaction with services received in the T&CM units. Patient satisfaction levels were measured using a 5-point Likert scale with the following structure: strongly disagree (1), disagree (2), unsure (3), agree (4), and strongly agree (5). The questionnaire used was validated by a pilot study conducted by the T&CM Division in 2014.<sup>21</sup>

### 2.2. Data collection

Primary data was retrieved from the T&CM Division, MOH, Malaysia. No personal information of any respondent from the primary study was made available per the privacy and confidentiality agreement of the primary data source. A total of 841 (93.4%) questionnaires were collected out of the 900 originally distributed. Of the 841 respondents, 19 did not answer a majority of the questions related to levels of satisfaction and were thus excluded from this study. The remaining 822 (97.7%) questionnaires were analyzed for the purpose of this study.

### 2.3. Statistical analysis

Sociodemographic and clinical data such as age, gender, race, marital status, education, occupation, type of treatment received, and progress of treatment during the study were analyzed using descriptive analysis. Patient satisfaction was assessed for the following categories: service at the counter, triage services, services in the treatment room, awareness of T&CM, facilities available at the T&CM unit, and overall satisfaction with treatment received at the unit.

Each component from the satisfaction questionnaire was analyzed using a chi-square test. A logistic regression model was used to estimate the odds ratio (OR) and 95% confidence interval (CI) for the “strongly agree” response for overall satisfaction. A two-tailed p-value of less

**Box 1**

Definitions and descriptions.

T&CM practices that are offered in the public hospitals in Malaysia at present can be defined and described as the following:

- 1) Malay Massage Malay massage is a form of soft tissue manipulation that applies the techniques of kneading, stroking and pressing as well as application of herbal oils to ease the massage.<sup>16</sup> Various parts of the hands are utilized during therapy such as the thumbs, fingers, palms and knuckles.<sup>17</sup>
- 2) Malay postnatal care Malay postnatal care comprises of three major features such as the use of herbs, heat and Malay postnatal massage during the confinement period. Various types of herbs are used the form of decoction, capsule, grounded, cooked with honey, prepared as a herbal bath, massage oil or herbal paste. Heat can be used in the form of direct exposure such as hot compression using heated river stones, warm herbal bath; or indirect heat exposure by consuming “heaty food” during the confinement period. Malay postnatal massage includes whole body massage, hot compression and body wrapping.<sup>17</sup>
- 3) Acupuncture Acupuncture is a procedure of inserting and manipulating fine filiform needles into acupoints to relieve pain or for therapeutic purposes associated with or without moxibustion.<sup>18</sup>
- 4) Chinese herbs Herbs are used as a complement in traditional Chinese medicine to treat various physical diseases or conditions that are based on the Chinese community beliefs and Chinese Materia Medica.<sup>19</sup>
- 5) Shirodhara therapy Shirodhara is characterized by warm or hot oil dripping on the forehead. Shirodhara is usually indicated to treat stress, anxiety, and insomnia and to relax the nervous system.<sup>20</sup>
- 6) External Basti Therapy External basti treatment comprises of retaining warm medicated oil within a boundary made by dough and is kept for a certain period of time over the lumbar region, cervical region and knee joint.<sup>21</sup>
- 7) Varmam Therapy Varmam therapy is the therapeutic manipulation of varmam points. Stimulation of varmam points can be achieved through massage, tapping or pressing of the points to regulate the flow of energy which is obstructed.<sup>22</sup>

than 0.05 was considered to be statistically significant. Since this is an exploratory study, p-values were not adjusted for multiple comparisons. Statistical Package for the Social Sciences (SPSS) version 24 (IBM SPSS Inc.) was used to analyze the data collected.

2.4. Ethical issues

Approval for this study was obtained from the National Institute of Health, Malaysia and Malaysian Research Ethics Committee (MREC); research registration number: NMRR-18-115-39538(IIR) and MREC approval reference: KKM.NIHSEC.P18-529(5).

3. Results

The sociodemographic characteristics of the respondents, depicted in Table 1, are as follows: 66.4% were female, 28.2% were aged 61 years or older, 84.4% were married, 57.4% were Malays, 39.1% had received education up to secondary school, 32.5% were civil servants, and 34.5% declared an earning capacity between RM 1000 and RM 3000. Table 2 shows that there were no statistically significant associations between the sociodemographic characteristics of the respondents and the overall patient satisfaction with T&CM services provided at the public hospitals. The number of treatment sessions received was also not significantly associated with overall satisfaction with T&CM services (p = 0.471).

Table 3 depicts the characteristics of the respondents based on the types T&CM treatment received. A majority (59.5%) of the respondents were diagnosed with chronic pain, and 50.5% of those respondents were treated with acupuncture, 48.1% with Malay massage, and 1.4% with shirodhara. Ethnicity was not significantly associated with the respondents’ choice of T&CM treatment (p = 0.180).

Table 4 shows a high percentage of positive satisfaction responses regarding the various service categories that were studied. On average, more than 90% of the respondents were satisfied, i.e., they responded either “strongly agree” or “agree” on the questionnaire, with the counter services, treatment room, facilities within the T&CM units, and their treatment progress. Only 3.5% respondents reported experiencing adverse effects from the treatment received. On average, 94.6% of respondents agreed that promotion and education related to T&CM

**Table 1**  
Socio-demographic characteristics of the respondents (N = 822).

Characteristics	Male n (%)	Female n (%)	Total N (%)
Total	276 (100)	546 (100)	822 (100)
Age			
18 – 30 years	12 (4.3)	55 (10.1)	67 (8.2)
31 – 40 years	37 (13.4)	122 (22.3)	159 (19.3)
41 – 50 years	47 (17.0)	89 (16.3)	136 (16.5)
51 – 60 years	74 (26.8)	154 (28.2)	228 (27.7)
61 years and above	106 (38.4)	126 (23.1)	232 (28.2)
Race			
Malay	167 (60.5)	305 (55.9)	472 (57.4)
Chinese	68 (24.6)	149 (27.3)	217 (26.4)
Indian	16 (5.8)	33 (6.0)	49 (6.0)
Others <sup>a</sup>	25 (9.1)	59 (10.8)	84 (10.2)
Marital status			
Married	246 (89.1)	451 (82.6)	697 (84.8)
Single	27 (9.8)	53 (9.7)	80 (9.7)
Widow	3 (1.1)	42 (7.7)	45 (5.5)
Education background			
No formal education	8 (2.9)	27 (4.9)	35 (4.3)
Primary school	33 (12.0)	53 (9.7)	86 (10.5)
Secondary school	124 (44.9)	197 (36.1)	321 (39.1)
Certificate/ Diploma	59 (21.4)	160 (29.3)	219 (26.6)
Degree/ Masters/ PhD	52 (18.8)	109 (20.0)	161 (19.6)
Occupation			
Unemployed	45 (16.3)	63 (11.5)	108 (13.1)
Housewife	0 (0.0)	128 (23.4)	128 (15.6)
Retired	69 (25.0)	72 (13.2)	141 (17.2)
Civil servant	74 (26.8)	193 (35.3)	267 (32.5)
Private sector	35 (12.7)	61 (11.2)	96 (11.7)
Self-employed	53 (19.2)	29 (5.3)	82 (10.0)
Monthly salary			
No monthly income	53 (19.2)	163 (29.9)	216 (26.3)
RM 1000 – RM 3000	112 (40.6)	172 (31.5)	284 (34.5)
RM 3001 – RM 5000	54 (19.6)	110 (20.1)	164 (20.0)
< RM 1000	39 (14.1)	57 (10.4)	96 (11.7)
> RM 5000 and above	18 (6.5)	44 (8.1)	62 (7.5)

<sup>a</sup> Indigenous, other sub-ethnic groups in Malaysia.

should be increased, and 95.9% of respondents agreed that promotion and publicity of the field of T&CM should be expanded, 93.8% felt that more study is needed to assess the effectiveness of T&CM treatment,

**Table 2**  
Associations between patients' socio-demographic characteristics and the overall patient satisfaction (N = 822).

Socio-demographic characteristics	Strongly agree n (%)	Agree n (%)	Others n (%)	p-value*
Sex				0.950
Male	191 (69.2)	84 (30.4)	1 (0.4)	
Female	382 (70.0)	160 (29.3)	4 (0.7)	
Age				0.604
18 – 30 years	45 (67.2)	22 (32.8)	0 (0.0)	
31 – 40 years	111 (69.8)	48 (30.2)	0 (0.0)	
41 – 50 years	95 (69.9)	40 (29.4)	1 (0.7)	
51 – 60 years	152 (66.7)	73 (32.0)	3 (1.3)	
61 years and above	170 (73.3)	61 (26.3)	1 (0.4)	
Education background				0.500
No formal education	26 (74.3)	9 (25.7)	0 (0.0)	
Primary school	67 (77.9)	19 (22.1)	0 (0.0)	
Secondary school	211 (65.7)	108 (33.6)	2 (0.6)	
Certificate/ Diploma	155 (70.8)	63 (28.8)	1 (0.5)	
Degree/ Masters/ PhD	114 (70.8)	45 (28.0)	2 (1.2)	
Occupation				0.306
Unemployed	69 (63.9)	39 (36.1)	0 (0.0)	
Housewife	85 (66.4)	42 (32.8)	1 (0.8)	
Retired	99 (70.2)	40 (28.4)	2 (1.4)	
Civil servant	186 (69.7)	80 (30.0)	1 (0.4)	
Private sector	70 (72.9)	26 (27.1)	0 (0.0)	
Self-employed	64 (78.0)	17 (20.7)	1 (1.2)	
Monthly salary				0.620
No monthly income	140 (64.8)	75 (34.7)	1 (0.5)	
< RM 1,000	74 (77.1)	22 (22.9)	0 (0.0)	
RM 1,000 – RM 3,000	197 (69.4)	84 (29.6)	3 (1.1)	
RM 3,001 – RM 5,000	115 (70.1)	48 (29.3)	1 (0.6)	
> RM 5,000 and above	47 (75.8)	15 (24.2)	0 (0.0)	
Number of treatment sessions				0.471
First session	58 (69.0)	26 (31.0)	0 (0.0)	
2–5 sessions	225 (68.4)	103(31.3)	1 (0.3)	
6–10 sessions	135 (72.6)	51 (27.4)	0 (0.0)	
> 10 sessions	155 (69.5)	64 (28.7)	4 (1.7)	

\* Chi square test (or Fisher's exact test when a cell count was smaller than five) was use.

**Table 3**  
Characteristics of types of treatment received at T&CM units (N = 822).

Characteristics	Types of treatment received at T&CM units within the public hospitals						Total N (%)	p-value
	Malay massage	Malay postnatal care	Acupuncture	Herbal therapy	Acupuncture and Herbal therapy	Shirodhara		
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)		
Sex								
Male	127 (46.0)	0 (0.0)	126 (45.7)	12 (4.3)	9 (3.3)	2 (0.7)	276 (33.6)	< 0.001
Female	208 (38.1)	77 (14.1)	206 (37.7)	34 (6.2)	14 (2.6)	7 (1.3)	546 (66.4)	
Race								
Malay	211 (44.7)	63 (13.3)	193 (40.9)	2 (0.4)	2 (0.4)	1 (0.2)	472 (57.4)	0.180
Chinese	76 (35.0)	8 (3.7)	73 (33.6)	41 (18.9)	18 (8.3)	1 (0.5)	217 (26.4)	
Indian	13 (26.5)	2 (4.1)	22 (44.9)	3 (6.1)	2 (4.1)	7 (14.3)	49 (6.0)	
Others <sup>a</sup>	35 (41.7)	4 (4.8)	44 (52.4)	0 (0.0)	1 (1.2)	0 (0.0)	84 (10.2)	
Age								
18 – 30 years	23 (34.3)	28 (41.8)	14 (20.9)	1 (1.5)	1 (1.5)	0 (0.0)	67 (8.2)	< 0.001
31 – 40 years	51 (32.1)	49 (30.8)	52 (32.7)	4 (2.5)	3 (1.9)	0 (0.0)	159 (19.3)	
41 – 50 years	51 (37.5)	0 (0.0)	67 (49.3)	9 (6.6)	7 (5.1)	2 (1.5)	136 (16.5)	
51 – 60 years	100 (43.9)	0 (0.0)	105 (46.1)	17 (7.5)	5 (2.2)	1 (0.4)	228 (27.7)	
61 years and above	110 (47.4)	0 (0.0)	94 (40.5)	15 (6.5)	7 (3.0)	6 (2.6)	232 (28.2)	
Diagnosis								
Chronic Pain	235 (48.1)	0 (0.0) <sup>c</sup>	247 (50.5)	0 (0.0) <sup>c</sup>	0 (0.0) <sup>c</sup>	7 (1.4)	489 (59.5)	< 0.001
Cancer	0 (0.0)	0 (0.0) <sup>c</sup>	1 (2.0)	46 (92.0)	3 (6.0)	0 (0.0) <sup>c</sup>	50 (6.1)	
Post-stroke	89 (53.3)	0 (0.0) <sup>c</sup>	78 (46.7)	0 (0.0) <sup>c</sup>	0 (0.0)	0 (0.0) <sup>c</sup>	167 (20.3)	
Postnatal care	0 (0.0) <sup>c</sup>	77 (100)	0 (0.0) <sup>c</sup>	0 (0.0) <sup>c</sup>	0 (0.0) <sup>c</sup>	0 (0.0) <sup>c</sup>	77 (9.4)	
Cancer and chronic pain	7 (25.0)	0 (0.0) <sup>c</sup>	1 (3.6)	0 (0.0)	20 (71.4)	0 (0.0)	28 (3.4)	
Others <sup>b</sup>	4 (36.4)	0 (0.0) <sup>c</sup>	5 (45.5)	0 (0.0) <sup>c</sup>	0 (0.0) <sup>c</sup>	2 (18.2)	11 (1.3)	

<sup>a</sup> Indigenous, other sub-ethnic groups in Malaysia.

<sup>b</sup> Other diagnosis including headache, migraine and insomnia.

<sup>c</sup> Treatment modality is not offered for the diagnosis specified.

91.4% expressed interest in trying other forms of T&CM treatment, and 97.7% of respondents would recommend these services to their family and friends. More than 90% of the respondents agreed that T&CM units should be expanded from hospitals to health clinics, more T&CM modalities should be offered, and patients should be given the opportunity to receive T&CM treatment at home.

Table 5 depicts the unadjusted and adjusted OR and 95% CI of factors associated with a “strongly agree” response to the question of overall satisfaction with T&CM services. Analysis was adjusted for confounding factors such as sex, age, education, occupation, monthly salary, number of treatment sessions, and treatment modalities. After adjusting for these factors, there were no statistical differences in the number of “strongly agree” responses between the majority of categories except for the respondents with a monthly salary of RM 1000 to RM 3000.<sup>23</sup> These respondents were more than twice as likely to be strongly satisfied with the T&CM services they received (adjusted odds ratio [AOR]: 2.12, 95% CI: 1.19–3.78).

#### 4. Discussion

To the best of our knowledge, this is the first paper to analyze the overall patient satisfaction of T&CM services at public hospitals in Malaysia. There was no report summarizing the results of the survey conducted from 2015 to 2017; neither was there profound analysis of the data using a multivariate logistic model. The existence of T&CM within the framework of the Malaysian national healthcare system is a realization of the T&CM National Policy's goal of enhancing the health and quality of life of Malaysians.<sup>4</sup> The increasing utilization of the various types of services offered within the T&CM units reflects a positive response toward the integration of T&CM and an acceptance of T &CM practices by the diverse, multiethnic population of Malaysia.<sup>9–14</sup>

Overall, 99.4% of the respondents receiving T&CM treatment during the study period were satisfied with the services offered at the T&CM units within the public hospitals in Malaysia and 91.8% reported a positive effect of T&CM treatment on their health. The findings from this study are consistent with several studies conducted on patient

**Table 4**  
Levels of satisfaction towards services provided at the T&CM units in public hospitals in Malaysia (N = 822).

Markers	Strongly Agree (n, %)	Agree (n, %)	Others <sup>a</sup> (n, %)	Standard deviation
<b>Counter services</b>				
Explanations given by the staff is clear and easy to understand	529 (64.4)	281 (34.2)	12 (1.5)	0.537
The waiting time for treatment is appropriate	499 (60.7)	301 (36.6)	22 (2.7)	0.557
The date and duration of appointment for next treatment is appropriate	486 (59.1)	312 (38.0)	24 (2.9)	0.585
<b>Treatment room</b>				
The treatment room is comfortable	515 (62.7)	278 (33.8)	29 (3.5)	0.588
The practitioner provides good service and is friendly	568 (69.1)	247 (30.0)	7 (0.9)	0.497
The practitioner has good knowledge and is skilled in providing the treatment	549 (66.8)	259 (31.5)	14 (1.7)	0.529
The practitioner provides clear explanation regarding the treatment procedure	533 (64.8)	269 (32.7)	20 (2.4)	0.549
The practitioner adheres to ethics and maintains patient confidentiality	549 (66.8)	260 (31.6)	13 (1.6)	0.521
Duration of treatment is appropriate for each session	477 (58.0)	298 (36.3)	47 (5.7)	0.645
The equipment used is adequate and functioning	475 (57.8)	314 (38.2)	33 (4.0)	0.599
<b>Facilities in T&amp;CM units</b>				
The T&CM units are easily accessible by patients	405 (49.3)	362 (44.0)	55 (6.7)	0.660
The waiting area is adequate and comfortable	500 (60.8)	284 (34.5)	38 (4.6)	0.622
<b>Progress of treatment</b>				
The treatment received showed a positive effect	413 (50.2)	342 (41.6)	67 (8.2)	0.662
The treatment received showed no untoward effects	389 (47.3)	327 (39.8)	106 (12.9)	0.842
Feel satisfied with the treatment received after each session	481 (58.5)	295 (35.9)	46 (5.6)	0.625
Patient can express his/her opinion regarding the treatment received	415 (50.5)	352 (42.8)	55 (6.7)	0.634
The number of treatment sessions received is appropriate	408 (49.6)	338 (41.1)	76 (9.2)	0.706
The appointment date for the next treatment session is appropriate	431 (52.4)	315 (38.3)	76 (9.2)	0.703
I will continue the recommended treatment session although I have gradually improved	483 (58.8)	287 (34.9)	52 (6.3)	0.639
<b>Promotion and education related to T&amp;CM</b>				
Promotion and publicity in T&CM must be extended	485 (59.0)	303 (36.9)	34 (4.1)	0.600
More study needs to be undertaken to assess the effectiveness of T&CM treatment	442 (53.8)	329 (40.0)	51 (6.2)	0.657
I want to try other T&CM services offered	451 (54.9)	300 (36.5)	71 (8.6)	3.374
I would recommend the T&CM services to my family and friends	529 (64.4)	274 (33.3)	19 (2.3)	0.568
<b>Recommendations</b>				
T&CM units should be expanded in health clinics	561 (68.2)	238 (29.0)	23 (2.8)	0.602
More T&CM modalities should be offered in T&CM units	528 (64.2)	263 (32.0)	31 (3.8)	0.588
Patients are given the opportunity to receive T&CM service at home	480 (58.4)	262 (31.9)	80 (9.7)	0.765
<b>Overall satisfaction</b>				
As a whole, I am satisfied with the services provided in the T&CM unit	573 (69.7)	244 (29.7)	5 (0.6)	0.481

<sup>a</sup> Respondents that were unsure, disagreed and strongly disagreed with the markers investigated.

satisfaction with T&CM services in other countries. Countries such as Australia, Denmark, Slovenia, Spain, Switzerland, Taiwan, and the United States of America have reported more than 80.0% satisfaction with traditional and complementary or alternative medicine services.<sup>5</sup>

Similar to a previously conducted study, the findings from this study revealed no significant association between socioeconomic background and the reported level of satisfaction.<sup>24</sup> One previous study reported a higher level of satisfaction among patients with a lower household income of less than RM 1000 per month.<sup>25</sup> This study contradicts those findings, as respondents in this study who earned RM 1000 to RM 3000 per month were more than twice as likely to report high satisfaction with T&CM treatment compared to those without an income or with an income lesser than RM 1000 (AOR: 2.12, 95% CI: 1.19–3.78). The T&CM services in Malaysia is largely a privately driven industry at present. Patients with the ability to pay more frequently choose services offered in the rapidly growing private health sector in Malaysia as compared to the public sector.<sup>23</sup> Often dissatisfaction with services has led to patients seeking for a second opinion due to unmet expectations.<sup>39</sup>

The overall satisfaction of the respondents was not associated with variable levels of reported satisfaction with other aspects of service, and the vast majority of respondents were highly satisfied with most aspects of service assessed in this study. These findings were comparable to another previously conducted local study.<sup>38</sup> Possible reasons for the high overall level of satisfaction among patients receiving treatment at T&CM units at Malaysian public hospitals are the holistic approach to treatment and the positive perception of the overall progress of their treatment as it relates to their disease.<sup>6</sup>

There were several limitations of this study. First, the method of convenience sampling used for recruitment of respondents has a high risk of sampling bias. There is also a risk of response bias in this study; for example, a patient may report a high level of satisfaction due to concern for possible repercussions.<sup>38</sup> Second, this study did not objectively assess the patients' clinical progress in order to compare the levels of reported satisfaction against the effectiveness of the treatment received. Finally, the study did not assess the patients' perception of or preference for receiving T&CM treatment, nor did it assess the patients' rationale for choosing T&CM treatment. These factors could have a significant impact on patients' satisfaction scoring.<sup>5</sup>

The development and integration of policy for the promotion and regulation of T&CM services in Malaysia are aligned with the initiatives outlined by the WHO for promoting safety and rational use of T&CM within MOH facilities.<sup>2</sup> The findings of this study could be considered when developing future health policies on T&CM integration into the national healthcare system in order to strengthen the delivery of safe, high quality T&CM services within the public sector of Malaysian healthcare. Additionally, this study could be a stepping stone for conducting more systematic and explorative studies to gain more information on the success and acceptance of integrative care in the Malaysian healthcare system.

In conclusion, this study showed a growing appreciation of the integration of T&CM into the Malaysian healthcare system. The high levels of patient satisfaction with T&CM treatment received at public hospitals in Malaysia validates the integrative management approach adopted for patient care.

**Table 5**  
Odds ratio (OR) and 95% confidence interval (CI) of strongly agree for the question of overall satisfaction (N = 822).

Characteristics		Strongly agree (%)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)
Sex				
Female	546	70.0	1 (Reference)	1 (Reference)
Male	276	69.2	0.97 (0.71 – 1.32)	0.98 (0.70 – 1.36)
Age				
61 years and above	232	73.3	1 (Reference)	1 (Reference)
51– 60 years	228	66.7	0.73 (0.49 – 1.09)	0.72 (0.47 – 1.09)
41 – 50 years	136	69.9	0.85 (0.53 – 1.35)	0.78 (0.46 – 1.30)
31 – 40 years	159	69.8	0.84 (0.54 – 1.32)	0.70 (0.41 – 1.18)
18 – 30 years	67	67.2	0.75 (0.42 – 1.34)	0.66 (0.34 – 1.29)
Education background				
No formal education	35	74.3	1 (Reference)	1 (Reference)
Primary school	86	77.9	1.22 (0.49 – 3.04)	1.30 (0.51 – 3.29)
Secondary school	321	65.7	0.66 (0.30 – 1.47)	0.67 (0.29 – 1.54)
Certificate/ Diploma	219	70.8	0.84 (0.37 – 1.89)	0.75 (0.31 – 1.80)
Degree/ Masters/ PhD	161	70.8	0.84 (0.37 – 1.93)	0.63 (0.25 – 1.64)
Occupation				
Unemployed	108	63.9	1 (Reference)	1 (Reference)
Housewife	128	66.4	1.12 (0.65 – 1.91)	1.08 (0.61 – 1.90)
Retired	141	70.2	1.33 (0.78 – 2.27)	1.28 (0.70 – 2.33)
Civil servant	267	69.7	1.30 (0.81 – 2.08)	1.35 (0.70 – 2.63)
Private sector	96	72.9	1.52 (0.84 – 2.77)	1.57 (0.77 – 3.19)
Self-employed	82	78.0	2.01 (1.05 – 3.87)	1.94 (0.94 – 3.98)
Monthly salary				
No monthly income	216	64.8	1 (Reference)	1 (Reference)
< RM 1,000	96	77.1	1.27 (0.82 – 1.97)	1.54 (0.86 – 2.75)
RM 1,000 – RM 3,000	284	69.4	1.83 (1.05 – 3.17)	2.12 (1.19 – 3.78)
RM 3,001 – RM 5,000	164	70.1	1.23 (0.84 – 1.79)	1.42 (0.90 – 2.22)
> RM 5,000 and above	62	75.8	1.70 (0.89 – 3.24)	2.10 (0.92 – 4.82)
Number of treatment sessions				
> 10 sessions	223	69.5	1 (Reference)	1 (Reference)
6-10 sessions	186	72.6	1.16 (0.76 – 1.79)	1.17 (0.75 – 1.82)
2-5 sessions	329	68.4	0.95 (0.66 – 1.37)	1.03 (0.71 – 1.51)
First session	84	69.0	0.98 (0.57 – 1.69)	1.07 (0.61 – 1.90)
Treatment modality				
Malay massage	335	69.9	1 (Reference)	1 (Reference)
Malay postnatal care	77	75.3	1.32 (0.75 – 2.33)	1.63 (0.72 – 3.72)
Acupuncture	332	65.4	0.81 (0.59 – 1.13)	0.81 (0.58 – 1.12)
Herbal therapy	46	73.9	1.22 (0.61 – 2.46)	1.25 (0.57 – 2.76)
Acupuncture and herbal therapy	23	95.7	3.45(1.26 – 71.41)	2.80 (0.34 – 23.34)
mShirodhara	9	88.9	3.45 (0.43 – 27.97)	8.97 (0.97 – 82.72)

**Conflict of interest**

The authors declare that they have no conflicts of interest.

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