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ORIGINAL ARTICLE

Validity and Reliability of an Adapted Questionnaire Measuring Acceptance of Traditional Chinese Medicine among Cancer Patients

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ABSTRAK

Penerimaan rawatan perubatan tradisional cina (TCM) adalah amat penting dalam meningkatkan keberkesanan rawatan, mengurangkan kesan sampingan selepas rawatan kanser, meningkatkan prognosis dan kadar survival pesakit kanser. Namun begitu, instrument kajian yang disahkan untuk menilai penerimaan rawatan TCM di Malaysia masih kurang. Kajian ini bertujuan untuk menilai kesahan dan kebolehpercayaan soal selidik penerimaan rawatan TCM dengan menggunakan teori Tingkah Laku Terancang. Kajian ini dijalankan dalam dua fasa. Fasa pertama melibatkan pengesahan kandungan, soal selidik, adaptasi and kesahan muka daripada panel pakar dengan menggunakan "Survey Validation Rubric for Expert Panel" (VREP). Fasa kedua melibatkan kebolehpercayaan tinjauan dengan menggunakan Alpha Cronbach. Analisis kesahan fasa pertama memenuhi jangkaan dengan mendapat purata markah 3.33 daripada panel pakar. Pada fasa kedua, 78 pesakit kanser telah dimasukkan dalam analisis kebolehpercayaan. Analisis kebolehpercayaan untuk empat konstruk telah mencapai nilai Alpha Cronbach >0.8 yang menunjukkan kebolehpercayaan soal selidik yang baik. Hasil kajian mendapati soal selidik penerimaan TCM ialah instrumen yang boleh diguna pakai untuk menilai penerimaan rawatan TCM dalam kalangan pesakit kanser.

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Kata kunci: *Perubatan traditional cina; kesahan dan kebolehpercayaan; teori tingkah laku terancang; tingkah laku kesihatan*

ABSTRACT

Acceptance of traditional chinese medicine (TCM) treatment is important in cancer patients to improve treatment efficacy, reduce side effects and prolong prognosis and survival rate. However, such studies and validated instruments that assess the acceptance of TCM treatment in Malaysia are limited. This study aimed to evaluate the validity and reliability of the acceptance of the TCM treatment questionnaire based on applying the Theory of Planned Behaviour. The validation study was conducted in two phases. The first phase included content validation, adaptation and face validity using the Survey Validation Rubric for Expert Panel (VREP). The second phase included construct reliability by using Cronbach alpha. The first phase validation of the questionnaire met expectations from the experts' panel with a score of 3.33. In phase two, 78 patients were included in the analysis. All constructs achieved a Cronbach Alpha >0.8, showing good reliability of the questionnaire. This study demonstrated good validity and reliability of the major constructs in the acceptance of the TCM questionnaire. Our results showed that the acceptance of the TCM questionnaire was a reliable instrument that could be applied to evaluate the acceptance of TCM treatment among cancer patients.

Keywords: Health behaviour; traditional chinese medicine; theory of planned behaviour; validity and reliability

INTRODUCTION

Malaysia is a country with a multicultural population and diverse cultures. With the presence of multiracial communities, traditional and complementary medicine has been introduced in the community over the years (Cao et al. 2020). Traditional Chinese Medicine (TCM) was developed and implemented in Malaysian society during the Song and Yuan Dynasty (960-1368AD), as recorded in the publication named 'Description of the Barbarians of the Isles' (Li 2015; Li & Chen 2020). TCM was further classified under the Traditional and Complementary Medicine unit (T&CM), Ministry of Health, Malaysia. The formation of the T&CM unit was started in 1996 and has been further developed with the launching of research centres, national policies for T&CM units, and the establishment of integrated hospitals and T&CM units and offices in different states in Malaysia. To date, 16 Ministry of Health (MOH) hospitals are offering TCM healthcare services in Malaysia (Official Portal of Traditional and Complementary Medicine Division 2022).

TCM treatments emphasise the concept of holism, which focuses on the body as a whole. It uses symptoms and physical appearance to diagnose and treat patients (Men & Guo 2010). It has been utilised in a wide range of illnesses, including metabolic syndromes, cardiovascular diseases, stroke rehabilitation, gynaecological disorders, and cancers. Wu et al. (2020) illustrated TCM treatments in treating metabolic syndromes based on randomised controlled trials where hyperlipidemia and diabetes demonstrated significant improvement in blood profiles. Acupuncture also improves menstruation disorders by increasing insulin and pituitary gland sensitivity and reducing body weight in polycystic ovarian syndrome patients (Zhang et al. 2021). The combination of Western medicine and TCM treatment is more effective in improving stroke patients' motor function, dependence, and mental health (Zhong et al. 2022). Integrated medicine is also used in cancer treatment (Su et al. 2020), cancer pain management (Deng 2019) with hormone therapy and cancer treatment-induced side effects such as fatigue (Su et al. 2020), radiation xerostomia, anaemia and neutropenia (Deng 2019; Liou et al. 2021; Su et al. 2020; Xiang et al. 2019)

Multiple nations have adopted the combination of TCM and Western medicine for the treatment of cancer to reduce side effects (Liou et al. 2021), strengthen immune systems, improve the quality of life (Liew et al. 2019), and increase the rate of survival in cancer patients in China (Lee et al. 2020). Over 80% of the 4 million cancer patients have been treated with TCM (Peng et al. 2022). The combination of both TCM and Western medicine could effectively prolong the survival rate, improve the quality of life and reduce relapse and metastasis rates (Wang et al. 2020). However, TCM treatment has only been used by nearly 50% of cancer patients in South Peninsular Malaysia to facilitate therapy, minimise adverse effects and post-treatment symptoms, and enhance immune functions (Hamed Abdalla et al. 2020; Razali et al. 2020). On the other hand, non-users believe that TCM would lessen the efficacy of Western treatment, and thus, the effectiveness of integrative therapy is not well-supported in Malaysia (Liew et al. 2019).

Health behaviour theories have been introduced to explain actions and provide new opinions on health interventions. The well-known conceptual models are the Health Belief Model (HBM), the Social Cognitive Theory (SCT) and the Theory of Planned Behaviour (TPB) Model (Conner & Norman 2005). These models have been studied and modified to evaluate different health behaviours and improve health promotion strategies in the community (Conner & Norman 2005). They evaluate the factors that influence a person's behaviour based on individual, social and economic coverage of an action. HBM provides insights into people's perceptions of using early screening and disease prevention to develop new approaches to disease prevention (Rosenstock 1974). HBM consists of six constructs that include demographic

characteristics, perceived susceptibility, perceived severity, perceived benefits, perceived barriers and cues to action, which affect a person's decision to perform health behaviours (Rosenstock 1974). The perceived threat of disease is affected by demographic characteristics, perceived susceptibility (risk of developing disease), perceived severity (perception of the severity of the disease) and cues to action (internal factors such as disease manifestations or environmental influences by the surroundings)(Rosenstock 1974). The perceived threat of disease, perceived benefits (knowing the efficacy of treatment) and perceived barriers (the control of action) influence a person's ability to perform that action (Conner & Norman 2005). SCT focuses on key elements, including self-efficacy, outcome expectations, goals, and perceived socio-structural factors in an individual to implement the behaviour (Conner & Norman 2005). A goal is a target for a person to act on, and it can be influenced by three variables: self-efficacy, outcome expectation, and perceived socio-structural factors. Self-efficacy could come from a person's emotions, self-recognition, and conviction in their surroundings (Conner & Norman 2005). Outcome expectations could be separated into physical (symptoms after actions), social (reactions of closed ones after actions) and self-evaluative (self-satisfaction) expectations (Conner & Norman 2005). Perceived socio-structural factors refer to the limitations of a person's ability to act in terms of healthcare services and systems and their living environment (Conner & Norman 2005). The goal would directly influence the performance of that behaviour by a person (Conner & Norman 2005). However, Cheng & Chu (2014) and Dsouza et al. (2022) recommended TPB constructs have higher predictability compared to other models with higher coverage of 18.2% and 52% variance in behavioural intentions (Cheng & Chu 2014; Dsouza et al. 2022). As a result, TPB is a more effective tool than other models in the use for evaluating health behaviour using a clear and concise construct.

TPB was developed from the Theory of Reasoned Action (TRA), and it has been applied in a lot of research to study the behavioural intentions of a specific action (Ajzen 1991). TRA was initially equipped with two main variables, attitude and subjective norm, which influence the intention of one's behaviour (Ajzen 1991). It was further suggested in 1985 with the proposed new variable, perceived behavioural control, which acts as an additional variable that could affect intentions and behaviour (Ajzen 1991). Perceived behavioural control could also be a crucial factor, where a person with adequate essential resources, such as accessible health services or financial capability, could intend to perform specific health behaviours (Ajzen 1991; Davis et al. 2002).

TPB explains the combination of the person's judgement on the action (attitude), the social aspects, including the normative belief and towards the particular action (subjective norm), and the difficulty level of action with the involvement of past incidents (perceived behavioural control) to

predict the successful behavioural endeavour (Ajzen 1991). As the theory mentioned, behavioural intention contributes directly to a person's behavioural outcome, while the three elements that could impact the intention are a person's "attitude", the social environment pressure on a person's "subjective norm," and the self-control on implementing the behaviour named "perceived behavioural control" (González et al. 2012).

An abundance of research was using TPB to assess healthcare-related behaviour in understanding and promoting effective prevention and treatment of diseases. During the COVID-19 period, TPB was used as a tool to determine the factors linked to society's acceptance of TCM to treat COVID-19 in China and contribute innovative plans to promote TCM in COVID recovery (Xia et al. 2021). In Malaysia, TPB has foreseen the intention of health behaviours, which was proven in Chin & Mansori (2019) study where breast screening intention is affected by the perceived risk, advantages, limitations and understanding on breast cancer. It shows how suitable approaches, such as community activities, could enhance society's familiarity with breast cancer screening risks, advantages, and fallacies. One study conducted in Selangor and Perak studied the expenditure desires of traditional, complementary, and alternative medicine in Selangor and Perak (Koh & Goh 2019). Citizens strongly believe in the efficiency and preventive approaches of traditional, complementary, and alternative medicine (Koh & Goh 2019). This has resulted in positive attitudes towards spending on traditional, complementary, and alternative medicine (Koh & Goh 2019). The recognition of using traditional, complementary, and alternative medicine through close connections of a person also affects the subjective norm in paying for traditional, complementary, and alternative medicine (Koh & Goh 2019).

Validation of TPB on health behaviour was done in different ways in various countries. El Khoury et al. (2019) separate the validation of the questionnaire into three stages including elicitation interviews, content validity and reliability test to assess health supplement utilisation in college students. The contents of elicitation interviews were summarised into statements in the questionnaire and amended according to experts' feedback. Reliability and regression tests was applied to further analyse the questionnaire's consistency and association of constructs. A three-level model consisting of TPB, social capital theory, cervical cancer knowledge (CCK), and demographic factors were formed by Zhang et al. (2019) to validate cervical cancer screening intentions among the community in Jiangsu province. A reliability test and path analysis were done to build up the connections of the three-level hypothesis.

Acceptance of TCM treatment is crucial in cancer patients to increase the use of TCM treatment. This benefits cancer patients with better

treatment efficiency, recovery, and quality of life. By assessing predictors and factors associated with cancer patients' intention to use TCM treatment in cancer, we can overcome the barriers of health promotion strategies in enhancing their intentions to seek TCM treatment throughout their cancer journey. However, there is a lack of studies and an absence of properly validated instruments to assess the acceptance of TCM treatment in Malaysia. Hence, this study aimed to assess the preliminary validation of the acceptance TCM (ATCM) Questionnaire among cancer patients.

MATERIALS AND METHODS

The validation of the acceptance of TCM instrument consisted of two phases. The first phase was the content validation, adaptation and face validation by a panel of experts using the Survey Validation Rubric for Expert Panel (VREP) (Simon & White 2016). The second validation phase included the instrument's construct reliability by using Cronbach Alpha.

Phase I: Content Validation, Adaptation and Face Validation

A panel of Health Communication, TCM and Public Health experts assessed the content validation. The panel of experts developed the conceptual framework for the ATCM Questionnaire based on the TPB constructs. The constructs and item structures were adapted by two validated questionnaires as references (Davis et al. 2002; Jalalian et al. 2010). Jalalian et al. (2010) attempted to develop a questionnaire to resolve the scarcity of blood donors and a more comprehensive plan for promoting blood donations among the younger generations. Davis et al. (2002) concentrated on the impact of outcome and perceived control on school dropouts. These two articles complemented each other by providing a broader source and reasoning for constructing questions appropriate for each domain. The questions were developed and modified into a new version with direct measures that fulfilled the requirements to determine the acceptance of TCM treatment in cancer patients.

The questionnaire was further proceeded with face and content validation using the Survey Validation Rubric for Expert Panel. Three panels were involved in the VREP of this questionnaire. The inclusion criteria of panels included: (i) have at least five years of teaching experience in their expertise; (ii) have at least 30 publications in their expertise. Panels with conflict of interest will be excluded in the face validation. The three panels included were experts in Health Communication, Family medicine and Allied Health Sciences fields and experienced in developing and validating health-related questionnaires. The questionnaire was sent to the panels to evaluate using the VREP criteria. Each panel rated the questionnaire based on 10 criteria: clarity, wordiness, negative wording, overlapping responses, balance, use of jargon, appropriateness

of listed responses, use of technical language, application to practice, and relationship to the problem. The rating of each criteria and final grading of the questionnaire used the same scale as follows: (i) Not acceptable, needs major improvement; (ii) Below expectations with some modifications needed; (iii) Meet expectations with no modifications needed but could be improved with minor changes; and (iv) Exceeds expectations with no modifications needed. Each criterion was rated by the three panels and the total mean score was calculated as the final result of VREP. Corrections suggested by the panels were revised and sought approval from the panels.

Phase II: Construct Reliability
(i) Sample size

The sample size of this study followed the rule of thumb using the sample-to-variable ratio of 10:1 (Wilson Van Voorhis & Morgan 2007). After accounting for a 30% dropout rate and 20% non-response rate, the minimum required sample size was 71 patients. A total of 78 cancer patients were recruited, which met the sample size criterion. They were recruited in Tung Shin Hospital and Breast Cancer Welfare Association Malaysia (BCWA) from February 2020 to April 2022.

(ii) Procedure

All patients (aged 20 -90) were invited to complete a structural questionnaire to collect their demographic information and other relevant information, including cancer type, cancer stage, cancer treatment and their acceptance of TCM treatment. The questionnaires were administered using interviews by a research assistant at the outpatient waiting room of the Tung Shin Hospital and the interview room in BCWA. Informed consent was obtained from the 78 patients.

(iii) Instruments

The questionnaire consisted of two sections with demographic characteristics (such as age, gender, ethnicity, occupation comorbidity, etc.) and the ATCM questionnaire, which included behavioural intention, attitude, subjective norm and perceived behavioural control. The modified 18 items in the ATCM questionnaire were adopted from Jalalian et al. (2010) and Davis et al. (2002). 5 items were used to measure the behavioural intention to seek TCM treatment, 4 items were used to evaluate the attitude towards TCM treatments, 4 items were used to measure the social influences on TCM treatment, and 5 items were used to assess perceived behavioural control of accepting TCM treatment which included their confidence and financial factor on accepting TCM treatment. All items were measured on a 7-point Likert scale ranging from 1(strongly disagree) to 7 (strongly agree). The complete ATCM questionnaire was shown in Table 1.

Intention

"Intend", "determined", "Try to", and "expect" were used to know the range of a person's intention in using TCM

TABLE 1: The final ATCM treatment questionnaire

Please tick ( ) in the box that best describes your opinion for the statements below based on the scale (1-7) given

1 Strongly Disagree	2 Disagree	3 Somewhat Disagree	4 Undecided	5 Somewhat Agree	6 Agree	7 Strongly Agree

No	Item	1	2	3	4	5	6	7
	Behavioural Intention (5 questions)							
1	I expect to use traditional Chinese medicine for my cancer treatment in the coming six months.							
2	I intend to use traditional Chinese medicine for my cancer treatment in the coming six months.							
3	I will try to use traditional Chinese medicine for my cancer treatment in the coming six months.							
4	I am determined to use traditional Chinese medicine for my cancer treatment in the coming six months.							
5	I might not use traditional Chinese medicine for my cancer treatment in the coming six months. (N)							
	Attitude (4 questions)							
1	Overall, I think traditional Chinese medicine is a good treatment option for cancer treatment.							
2	Overall, I think traditional Chinese medicine is the hope for cancer patients.							
3	Overall, I think getting traditional Chinese medicine for cancer treatment is the wrong thing to do. (N)							
4	Overall, I think getting traditional Chinese medicine for cancer treatment is useless. (N)							
	Subjective Norm (4 questions)							
1	People who are important to me want me to use traditional Chinese medicine for my cancer treatment.							
2	I feel under social pressure to use traditional Chinese medicine for my cancer treatment.							
3	I am expected to use traditional Chinese medicine for my cancer treatment.							
4	People who are important to me think that I should NOT use traditional Chinese medicine for my cancer treatment (N)							
	Perceived Behavioural Control (5 Questions)							
1	I am confident that I can accept traditional Chinese medicine for my cancer treatment if I am asked to do so.							
2	I think I am too weak to accept traditional Chinese medicine for my cancer treatment. (N)							
3	For me, it is easy to use traditional Chinese medicine for my cancer treatment							
4	I think I do not have enough money to use traditional Chinese medicine for my cancer treatment. (N)							
5	The decision to use traditional Chinese medicine for my cancer treatment is entirely up to me.							

treatment. These questions reflected cancer patients' current and future thoughts on the acceptance of TCM treatment during their cancer treatment. 4 out of 5 questions examined the extent of positive intentions of using TCM treatment, and 1 negative statement was added to provide an opposite view of the patient's intention of not using TCM treatment at all.

Attitude

The word "overall" had been placed at the beginning of the sentence to conclude both components of behavioural belief and outcome evaluation of having TCM treatment. Based on the items in attitude, two items that mentioned "good treatment option" and "hope" for cancer patient measured the positive attitude towards treatment. Two items used, "wrong thing to do "and "useless", reflected a negative attitude and could refer to the efficacy of TCM treatment. Some might perceive that TCM treatment does not benefit cancer treatment or be worried about the contradictions of the combination of Western and Chinese medicine treatment.

Subjective Norm

Social influences included family, friends, and the environment. In this construct, the term "important people" was used as a general term to comprehend the sources of social influence. The two items stated, "social pressure" and "expected to use TCM treatment," referred to the patient's motivation to comply, whereas if there was an abundance of people around the patient who taught that TCM treatment was suitable for cancer treatment, it could encourage the patient to be inclined to have TCM treatment.

Perceived Behavioural Control

Two positive statements used in this scale with the words "confident" and "easy" reflected the patient's confidence in accepting TCM treatment and whether the presence of the current TCM clinic or hospital was reachable for patients to seek treatment. Two negative items reflected on the low confidence of cancer patients where they might feel their bodies were too weak to accept TCM treatment after having surgery or adjuvant therapy, or they were having financial difficulties, which could act as a factor that influences the cancer patient to inhibit their thought of accepting TCM treatment. The last statement regarding perceived behavioural control assessed the patient's control over whether to accept TCM treatment.

Analysis

The data were coded and analysed using the Statistical Package for the Social Sciences (SPSS) version 22.0 (Chicago, IL, USA). The reliability of the questionnaire was tested. Cronbach's alpha was used to examine the reliability of each domain of the questionnaire. The panel of experts (n = 3) rated the survey items using the VREP approach. The mean score was calculated from three experts.

Ethical Statement

The study was conducted according to the Declaration of the UTAR Research Ethics and Code of Conduct guidelines, Code of Practice for Research Involving Humans, and approved by the UTAR Scientific and Ethical Review Committee (SERC) (U/SERC/36/2022).

RESULTS

Phase I
Expert Validation

The final mean score for the validation of the questionnaire was 3.33 points, which met the validation expectations. All 18 questions remained in the questionnaire. No items were removed in the questionnaire. A few corrections were suggested by the panels to improve the wording and understanding of the questionnaire. In attitude construct, item 2 mentioned: "Overall, I think traditional Chinese medicine ***"gives hope***" for breast cancer patients" advised to be replaced by ***"is the hope"*** of breast cancer patients to give a direct perspective of TCM treatment in breast cancer patients. The sentence of item 5 in perceived behavioural control was restructured to improve the clarity of the sentence. The corrections were revised and obtained the panels' approval. Final approval of the revised questionnaire was obtained by the panels after minor corrections were made. The corrections of questions referred to Table 2.

Phase II
(i) Demographic Characteristics

A total of 78 patients took part in this study, with a 100% response rate. Table 3 summarised the distribution of the patient's demographic characteristics. According to the data, females scored 65.4% and the age distribution mainly falls between 60-89 years old with 52.6%, followed by 40-59 years old with 44.9%. The mean age of the cancer patients was 60.15 (SD:10.5). Majority of the patients were Chinese (79.5%) and Buddhism (56.4%). 82.1% of cancer patients were married with secondary and tertiary education levels.

(ii) Reliability test

The reliability of domains in this questionnaire was measured using Cronbach's alpha with a total of 78 patients. The summary of the reliability test was shown in Table 4. The overall Cronbach alpha for this questionnaire was 0.931. The internal consistency of all the constructs (behavioural intention, attitudes, subjective norms and perceived behavioural control) was relatively high, with coefficients of 0.972, 0.961, 0.813 and 0.877.

DISCUSSION

This study aimed to evaluate the validity and reliability of the ATCM questionnaire conducted among cancer patients. The ATCM questionnaire was constructed based on TPB variables (attitude, subjective norm, and perceived behavioural control) with references based on the studies done by Jalalian et al. (2010) and Davis et al. (2002) that

Table 2: Amendment of ATCM questionnaire according to experts comments

Item	Before Amendment	After Amendment
	Behavioural Intention	
1	I expect to use traditional Chinese medicine for my cancer treatment in the coming six months.	I expect to use traditional Chinese medicine for my cancer treatment in the coming six months.
2	I intend to use traditional Chinese medicine for my cancer treatment in the coming six months.	I intend to use traditional Chinese medicine for my cancer treatment in the coming six months.
3	I will try to use traditional Chinese medicine for my cancer treatment in the coming six months.	I will try to use traditional Chinese medicine for my cancer treatment in the coming six months.
4	I am determined to use traditional Chinese medicine for my cancer treatment in the coming six months.	I am determined to use traditional Chinese medicine for my cancer treatment in the coming six months.
5	I might not use traditional Chinese medicine for my cancer treatment in the coming six months. (N).	I might not use traditional Chinese medicine for my cancer treatment in the coming six months. (N).
	Attitude	
6	Overall, I think traditional Chinese medicine is a good treatment option for cancer treatment.	Overall, I think traditional Chinese medicine is a good treatment option for cancer treatment.
7*	Overall, I think traditional Chinese medicine gives hope for cancer patients.	Overall, I think traditional Chinese medicine is the hope for cancer patients.
8	Overall, I think getting traditional Chinese medicine for cancer treatment is the wrong thing to do. (N)	Overall, I think getting traditional Chinese medicine for cancer treatment is the wrong thing to do. (N)
9	Overall, I think getting traditional Chinese medicine for cancer treatment is useless. (N).	Overall, I think getting traditional Chinese medicine for cancer treatment is useless. (N).
	Subjective Norm	
10	People who are important to me want me to use traditional Chinese medicine for my cancer treatment.	People who are important to me want me to use traditional Chinese medicine for my cancer treatment.
11	I feel under social pressure to use traditional Chinese medicine for my cancer treatment.	I feel under social pressure to use traditional Chinese medicine for my cancer treatment.
12	I am expected to use traditional Chinese medicine for my cancer treatment.	I am expected to use traditional Chinese medicine for my cancer treatment.
13	People who are important to me think that I should NOT use traditional Chinese medicine for my cancer treatment.	People who are important to me think that I should NOT use traditional Chinese medicine for my cancer treatment.
	Perceived Behavioural Control	
14	I am confident that I can accept traditional Chinese medicine for my cancer treatment if I am asked to do so.	I am confident that I can accept traditional Chinese medicine for my cancer treatment if I am asked to do so.
15	I think I am too weak to accept traditional Chinese medicine for my cancer treatment. (N)	I think I am too weak to accept traditional Chinese medicine for my cancer treatment. (N)
16	For me, it is easy to use traditional Chinese medicine for my cancer treatment.	For me, it is easy to use traditional Chinese medicine for my cancer treatment.
17	I think I do not have enough money to use traditional Chinese medicine for my cancer treatment. (N)	I think I do not have enough money to use traditional Chinese medicine for my cancer treatment. (N)
18*	It will be entirely up to me whether or not to use traditional Chinese medicine for my cancer treatment.	The decision to use traditional Chinese medicine for my cancer treatment is entirely up to me.

* questions amended according to Experts Comment

TABLE 3: Demographic characteristics of patients

Variables		**n(%)**
Gender	Male	27(34.6)
	Female	51(65.4)
Age	18-39	2(2.6)
	40-59	35(44.9)
	60-89	41(52.6)
Ethnicity	Chinese	62(79.5)
	Non- Chinese	16(20.5)
Religion	Islam	6(7.7)
	Christianity	12(15.4)
	Hinduism	7(9.0)
	Buddhism	44(56.4)
	Taoism	4(5.1)
	Atheism	5(6.4)
Marital Status	Single	11(14.1)
	Married	64(82.1)
	Widowed	3(3.8)
Education	Primary	8(10.3)
	Secondary	35(44.9)
	Tertiary	35(44.9)
Smoking	Everyday	1(1.3)
	Occassionally	1(1.3)
	Used to smoke but stopped	8(10.3)
	Never	68(87.2)
Alcohol	Twice a week	1(1.3)
	Once a month	1(1.3)
	Rarely	14(17.9)
	Used to drink but stopped	12(15.4)
	Never	50(64.1)
Comorbidity	Yes	41(52.6)
	No	37(47.4)
Occupation	Self employed	7(9.0)
	Full time	17(21.8)
	Part time	4(5.1)
	Unemployed	5(6.4)
	Homemaker	19(24.4)
Cancer Type	Breast Cancer	41(52.6%)
	Colon Cancer	10(12.8)
	Lung cancer	4(5.1)
	Prostate Cancer	6(7.7)
	Thyroid	1(1.3)
	Nasopharyngeal	8(10.3)
	Tongue	1(1.3)
	Pancreatic	1(1.3)
	Lymphoma	1(1.3)
	Gastrointestinal	1(1.3)
	Appendix	1(1.3)
	Throat	1(1.3)
	Parotid	1(1.3)
	Oesophagus	1(1.3)

Stage	I	12(15.4)
	II	33(42.3)
	III	18(23.1)
	IV	15(19.2)
Treatment	Surgery	38(48.7)
	Chemotherapy	58(74.4)
	Radiotherapy	50(64.1)
	Hormone Therapy	26(33.3)

influenced cancer patients' intentions towards acceptance of TCM treatment. The questionnaire covered only the direct measures of constructs with 18 questions, while experts' validation and reliability tests were done to assess the face validity and internal consistency in this study.

According to the results obtained, the reliability coefficient ranged from 0.81 to 0.98 for all constructs, which was higher than the previous validation done by Ng et al. (2022) and Rochelle et al. (2015), which ranged from 0.60 to 0.93. A few new constructs were added in the study by Ng et al. (2022). However, only the TPB constructs and satisfaction construct significantly influenced the intention of TCM usage (Ng et al. 2022). Attitude construct in TPB was the strongest predictor as a factor that influences the intention of a behaviour. The study by Mirzaei et al. (2019) in Iranian adults assessed the internal consistency and intraclass correlation using TPB domains and reported good internal consistency of 0.72-0.87 and a satisfactory intraclass correlation coefficient of 0.64-0.82. Similar constructs applied to United States healthcare commissioners by Guo et al. (2016) also revealed good internal consistency of 0.74-0.93. The strong consistency of all constructs in this study could accurately measure the response of cancer patients' acceptance of TCM treatment. Contrary to the current results, the reliability of the Gupchup et al. (2006) study on Hispanic and non-Hispanic ethnicity comparison showed a low reliability coefficient of 0.47 of perceived behavioural control in non-Hispanic ethnicity.

In Malaysia, different instruments were used to evaluate the community's acceptance of complementary and alternative medicine. The knowledge, attitude, and practice (KAP) model used by Mohiuddin et al. (2020) is comprised of three constructs to evaluate the population's knowledge,

TABLE 4: Reliability statistics of ATCM treatment questionnaire

Construct	Number of items	Mean	Standard deviation	Cronbach alpha
Behavioural Intention	5	17.6795	10.2862	0.972
Attitude	4	19.4872	6.3955	0.961
Subjective Norm	4	14.5513	6.0852	0.813
Perceived Behavioural Control	5	27.4615	6.2037	0.877

attitude, and practice on a certain topic (Mohiuddin et al. 2020). The constructs in the Mohiuddin et al. (2020) study were linked to population socio-demographics. Populations that have a better understanding of complementary and alternative medicine include females, Malay ethnicity and young adults. Chinese had a better attitude towards TCM usage as they were more familiar with TCM (Mohiuddin et al. 2020).

The TPB had been applied and validated in various areas to understand the perceptions of individuals about different behaviours in Malaysia. A study in Malaysia surveyed the intention of students to work in the retail industry (Mokhlis et al. 2022). Knowledge was included as a variable impacting individuals' intention to work in the retail sector. People who acquired a greater understanding of retail tend to contemplate it as a potential profession. The TPB model, with the addition of knowledge construct, showed an acceptable fit to the data, with good factor loading (>0.50) and good reliability (Cronbach's alpha >0.70). All variables except perceived behavioural control were found to significantly influence career intention. The confounding factor that influenced the negative result of perceived behavioural control could be due to economic instability during the COVID-19 pandemic period (Mokhlis et al. 2022). Besides that, a study focused on finding the causes of college students driving without using seatbelts (Ibrahim et al. 2021). A habit construct was added, and the questionnaire was adapted from four authors (Ali et al. 2011; Borhan et al. 2019; Simşekoğlu & Lajunen 2008a, 2008b). Young drivers who made wearing seatbelts a habit were more likely to wear them without any prompt before driving. Pilot tests were done to further improve the questions. The questionnaire was well-validated with construct reliability, convergent validity, and discriminant validity. All constructs achieved Cronbach alpha >0.70, with statistically significant loading items and an acceptable average variance extracted value (AVE>0.50). Further, the Institute for Health Behavioural Research (Institute for Health Behavioural Research. 2020) in Malaysia also utilised the TPB to provide strategies for successfully implementing Movement Control Order (MCO) to stop the spread of the COVID-19 virus. Over 95% of 12,251 subjects had positive attitudes, subjective norms, perceived behavioural control and the intention to comply with the instructions and advice given by the Ministry of Health during the MCO period (Institute for Health Behavioural Research 2020). These studies indicated that the application of TPB could cover a wide coverage in reflecting individual's or population's intentions on certain topics and providing reference to intervention strategies for specific target populations.

Validation of a questionnaire is critical to ensuring that the questions designed fit each construct well and provide standardised responses and outcomes for future research. With the current pilot study in cancer patients, the ATCM questionnaire demonstrated

significant reliability. The face validity assessments by experts had also achieved a satisfactory grade according to the ten criteria fixed. The ATCM questionnaire could be used as a tool to better understand why people accept or refuse TCM treatment and to promote the use of TCM treatment with accurate strategies to increase the rate of TCM use in Malaysia.

There were a few limitations in this study. Firstly, most of the patients recruited in Tung Shin Hospital and BCWA were Chinese; hence, their acceptance of TCM treatment could be higher compared to other ethnicities (Yan et al. 2021). Besides, the location of this pilot study was Kuala Lumpur, which was considered an urban area in Malaysia. This could contribute to significant disparities in individual and cultural beliefs regarding surrounding conditions in various locations. Thus, further research based on varied locations is required to find out more about Malaysians' TCM treatment. Furthermore, due to the limitations of sample size, larger samples are needed in future studies for the discriminant and convergent validity of the questionnaire.

CONCLUSION

The ATCM questionnaire is a reliable instrument. It uses simple and accurate constructs provided by the TPB framework to identify the acceptance of TCM treatment among cancer patients. This study demonstrated good validity and reliability for the major constructs in the questionnaire. More studies are required in different locations and populations to further enhance the validity of the instrument. Besides, further study should focus on exploring the connections between constructs, including attitude, subjective norm, and perceived behavioural control that could influence their intentions and acceptance of TCM treatment in order to promote or intervene cancer patients' acceptance of TCM treatment.

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