



STUDYING THE INFLUENCE OF SCHOOL CULTURE ON HEALTH-RELATED KNOWLEDGE, ATTITUDES AND PRACTICES OF TRADITIONAL CHINESE MEDICINE

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Abstract. With the development of the mobile internet and the intensification of the differentiated behaviour of communication audiences, there are many challenges and difficulties in content dissemination to younger generations about promoting Traditional Chinese Medicine (TCM) and improving health-related behaviour. Current literature lacks information on the association between knowledge, attitude, practice, and campus culture construction. This article investigates the relationship between traditional Chinese medicine (TCM) campus culture construction and health-related knowledge, attitudes, and practices (KAP) among primary campus students in China. It employed structural equation modelling (SEM) to analyze the data. For this study, the data was collected through an online questionnaire from a group of students. Exploratory factor analysis (EFA) and Confirmatory Factor Analysis (CFA) was conducted on data for validation and reliability. The study contributes to the existing literature by providing empirical evidence on the influence of TCM campus culture construction on health-related KAP among primary campus students.

Key words: Structural equation modelling (SEM), knowledge-attitude-practice (KAP), TCM On Campus Campaign (TCMOCC), Campus culture construction

1. Introduction. Traditional Chinese medicine (TCM) culture has a deep heritage, a rich humanistic spirit, and philosophical ideas and is the treasure of traditional culture in China's long history. It is the sum of spiritual and material civilization reflecting the essence and characteristics of TCM in the excellent traditional culture of China [72].

The concept of "diagnosis and treatment" and the cultural connotation of "the harmony of heaven and human" have been positively disseminated worldwide. With the emphasis on holistic and integrated care, TCM's unique clinical efficacy and healthcare philosophy are more readily accepted and sought after by people worldwide. TCM mainly includes acupuncture, herbal medicine, moxibustion, massage and chiropractic [7,10,35].

Since 2016, China has started the "TCM on-campus campaign" (TCMOCC) in different provinces. Some scholars point out that promoting TCM culture on campuses can help enhance the knowledge of TCM culture among adolescents and improve their cultural confidence, a significant event of outstanding merit and benefit for the present generation [77]. Research shows that early exposure of primary and secondary campus students to TCM cultural knowledge is of profound significance in fostering cultural identity, better shaping their worldview and values, and laying the foundation for the cultivation and reserve of talents for the TCM industry [67].

TCMOCCs are mainly distributed in primary and secondary campuses and some colleges and universities. Specific achievements have been made after several years of practice [9,28,76]. Students who have participated in TCMOCC have improved their TCM culture knowledge, positive TCM attitude, and healthy living literacy. They have adopted healthier living behaviours and actively participated in physical exercise [44].

Some studies have shown that the attitude and identification with TCM are closely related to adopting TCM treatment. For example, in mainland China, people have a high level of TCM identity, and their adoption of TCM treatment is 32%, which is much higher than that in Hong Kong [3,6]. Influences on TCM adoption behaviour include self-perceptions of treatment effectiveness, recovery time [39], recommendations from friends [37], the strength of healthy living perceptions [69], and identification with Chinese values and recognition of Confucianism [55].

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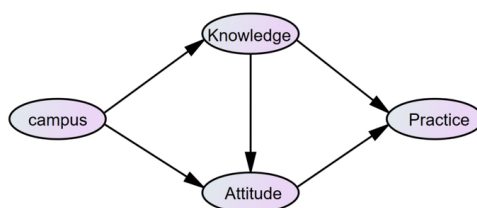


Fig. 2.1: Conceptual Model

Numerous studies in different disciplines have found that knowledge has a positive impact on attitudes and behaviours [45,48,50,55]. Under the knowledge-attitude-practice theory (KAP), health knowledge and information are necessary for belief generation, health attitudes, and health behaviour [13,42].

TCMOCC is essentially an act of communication. According to communication theory [29], the effectiveness of a campaign should focus on five dimensions: communicator, content, medium, audience, and effect. Combining the characteristics of TCM culture, the content of communication should reflect the core values of TCM culture, such as natural view, life view, disease view, medical ethics view, health view, and elephant thinking; expand the communication media, combining traditional gong Fu methods such as taijiquan to spread, using cultural activities to apply at a high level, making full use of traditional media, social media and self-media, etc.; establish feedback and communication effect evaluation system; for the student's attitude towards the adoption of TCM culture, it is related to their campus's support [33,51]. With the development of the mobile internet and the intensification of the differentiated behaviour of communication audiences, there are many challenges and difficulties in content dissemination to younger generations [1,46,65].

Though there is recent literature to provide behavioural analysis and relationships between KAP of TCM and different human groups [32,48,68], the research gap that can be identified from the literature review is the lack of studies that specifically examine the impact of the TCM on-campus campaign on the knowledge, attitudes, and behaviours of students towards TCM. There is a need for more research to establish a causal relationship between TCMOCC participation and changes in knowledge, attitudes, and behaviours towards TCM. It will help policymakers and stakeholders promote TCM culture to younger generations.

This study's main contribution is evaluating the relationship between Chinese primary campus students' knowledge, attitudes, and practices (KAP) regarding health and traditional Chinese medicine (TCM) campus culture construction. The study examines how the TCMOCC has affected students' health-related behaviour and attitudes towards TCM. To analyze the correlation between the study variables and provide insight into the KAP theoretical model, the study used structural equation modelling (SEM).

The organization of the study is as follows: a literature review related to KAP of TCM and various influencing factors is provided in section 2. It gives a comprehensive guide to derive a hypothesis for finding a relationship between TCM KAP and campus culture construction. Section 3 provides information about the sample collection, measurement instrument and statistical modelling required for this study. Various test methodology results are discussed in section 4. Finally, section 5 provides the conclusion of the study.

2. Literature review and theoretical hypothesis. This study aimed to test a conceptual model of the relationship between TCM knowledge, attitudes, behaviours, and campus culture construction, as shown in Figure 2.1. The model demonstrates the importance of knowledge and attitudes in endorsing practice and the influence of campus culture construction on knowledge and attitudes.

Some health research scholars have found that food hygiene habits can be improved if knowledge is provided to consumers; this will lead to increased food safety awareness when shopping and preparing food at home if positive attitudes are adopted towards food safety, food quality, or food integrity [74]. Although it has been proposed that the model is based only on the assumption that knowledge is the primary precursor to behavioural change and does not take into account cultural, social, and environmental influences [52,53], recent studies have shown its importance in pre-planning as well as in shaping behaviour [4,17,41,74].

2.1. The influence of TCM culture knowledge on TCM attitudes. Knowledge is interpreted as understanding what an individual experiences or knows. In contrast, attitude is interpreted as a belief or feeling about something, which can also be defined as "a mental disposition expressed in terms of how good or bad an entity is" [19]. In this study, TCM behaviours can be understood as the choice of TCM treatment, the acceptance of TCM inspections, and the adoption of health life behaviours [10,40,70].

Regarding knowledge-attitude-behaviour theory, knowledge positively affects attitudes and influences behaviour. Mainland TCM students highly identify with TCM culture [14], and over 20% of pharmacy students in Hong Kong express positive attitudes toward using TCM [30]. Knowledge of TCM may generate favourable perceptions of TCM healing behaviours and promote individual recognition of healthy living behaviours. For example, some scholars have found that knowledge of the effectiveness of acupuncture has a positive impact on attitudes towards acupuncture [66]. However, some studies give the opposite conclusion. Some scholars have found in studying food safety cases that even though a person may know what to do, they may not always be willing to do it [16,18].

Based on the literature provided, the following hypothesis was proposed.

1. **Hypothesis 1 (H1):** Knowledge of TCM positively correlates with attitudes. The influence of TCM cultural knowledge on TCM treatment and Health Life behaviour adoption. The health life behaviours referred to in this study are expressions of what individuals consider desirable and what they think they should or should not do; they belong to the category of individual values [54]. Specifically, health life behaviour refers to the adoption of TCM concepts of disease prevention, treatment, adoption of a healthy lifestyle, and adherence to physical exercise as guiding ideas for daily life. It adopts thinking patterns and behaviours shaped by individual psychological behaviours and influenced by specific cultures [54]. Related studies have pointed out that TCM is not only a resource for disease management but also the incorporation of TCM into the health practices of individuals who can express their cultural identity and transmit their cultural heritage [36]. Various studies have concluded that health literacy may have a positive impact on health behaviours, such as behaviour change in preparation for pregnancy, better oral care, and diabetes management [23,26,59]. In hygienic food handling studies, knowledge is a significant predictor of engaging adolescents in hygiene procedures [47]. There are gender differences [56]; females with higher levels of knowledge exhibit better food safety practices [15,62]. For the influence of TCM knowledge, studies have found that those who have participated in education or training are more motivated to recommend TCM to their peers [9,31]. Younger people with more knowledge of TCM use TCM more frequently than older people [61]; patients' knowledge of TCM can also influence their decision to use TCM [24]. These studies have shown that respondents' high levels of health knowledge can lead them to consider changes in their health behaviours. In this study, the hypothesis that knowledge of TCM culture has a direct impact on self-reported TCM treatment adoption and health and wellness practices was assessed. Therefore, the following hypothesis was formulated.
2. **Hypothesis 2 (H2): knowledge of TCM is positively associated with the adoption of TCM treatment as well as health life practices Influence of attitudes toward TCM on TCM treatment adoption and health life behaviours** In recent research on attitudes toward smoking and behaviour change, mothers decided to raise their infants in smoke-free homes out of worry for their infant's health and the impacts of secondhand smoke inhalation [2]. A study in food health research [58] has shown that consumers with positive attitudes can positively influence their hygiene and cooking habits. A similar study by [64] revealed that consumers who have a positive attitude toward food safety when purchasing food can maintain hygienic behaviour when preparing ingredients for cooking. This practice lowers the risk of disease caused by contaminated food. Another study in the domain of personal health and safety presented by [13] demonstrated that healthy sexual attitudes can influence teenagers' safe sexual activities. According to studies, shared attitudes, values, and beliefs developed via continual learning are crucial for sanitary behaviour [25]. Similarly, attitudes toward TCM are critical in adopting healthy life behaviours. The study found that people with positive attitudes toward herbal medicine had more chance of using TCM [57]. Older adults are far more familiar with and dependent on TCM than adolescents [8]. The elderly group believes that TCM is

more effective than Western medicine. They have a stronger sense of superiority and pride in adopting TCM treatment [55]. Although TCM relies mainly on the accumulation of experience to form the logic of cure, it emphasizes the enhancement of individual immunity and aims to cure the root cause. While Western medicine over-emphasizes the treatment or is known as a cure for the symptoms, and Western medicine may be harmful to the body [63], it is one of the key factors being identified with TCM by older people. Therefore, the following hypothesis was formulated in this study.

3. **Hypothesis 3 (H3):** The attitudes toward TCM are positively related to the adoption of TCM treatment as well as health life practices. The influence of campus culture construction on knowledge and attitude towards TCM culture. Campus culture construction refers to a TCM cultural atmosphere, which can be in the form of guiding individuals to receive TCM education, reading TCM books, conducting TCM cultural forums, TCM lectures, and practising TCM. Campuses are the primary place for cultural education; campus culture is the result of the joint creation of all teachers and students, covering three aspects: material, spiritual and institutional culture; campus culture is one of the main influencing factors of campus identity [71,73,79,80]. It has been pointed out that there are two essential functions in campus culture, value orientation and educational communication, which can influence students' value judgment, behaviour and mindset [71]. The TCMOCC is a vital push to fully form the cultural support of campuses. Therefore, it can be inferred that campus education for primary and secondary campus students with TCM culture courses, TCM culture practices, organization of club activities, and TCM culture lectures. Campus culture construction positively impacts the knowledge, attitudes, and cultural identity construction of TCM culture among adolescents. Therefore, the following hypotheses were formulated in this study.
4. **Hypothesis 4 (H4): Campus culture construction is positively related to knowledge of TCM culture**
5. **Hypothesis 5 (H5): Campus culture construction is positively correlated with attitude of TCM culture** The literature suggests that cultural transmission's effectiveness in TCM represents a niche field with limited correlation between campus culture construction and TCM Knowledge, Attitudes and practices. Various hypotheses from the literature survey validate the conceptual model shown in Figure 2.1. This study not only evaluates educational outcomes regarding knowledge, attitudes, and behaviours but also introduces the dimension of campus cultural support, which enhances the verification of the impact of TCM cultural activities in educational institutions. These activities have only recently been extensively promoted in various provinces in China over the past two to three years. Therefore, it is crucial to ascertain their actual effects by applying appropriate models. This study presents suitable evaluation methods at a reasonable time..

3. Methods. This section details the sample and data collection method, information about measurement instruments and the process of statistical analysis used in this study.

3.1. Sample and data collection. A quantitative survey method was adopted to address the research question. An online-based questionnaire using convenience sampling, using a professional survey provider WenJuanXing (<https://www.wjx.cn/>), was distributed to Students from participating camps in the TCM on Campus Campaign. The respondents completed the questionnaire in approximately 8–10 min by mobile or desktop computer. The survey was conducted between March 2022 to May 2022, and 329 respondents completed the survey. Data screening and cleaning yielded 309 valid responses and 93.9% reasonable responses. No financial incentives were given after the completion of the questionnaire.

3.2. Sample Selection. The study employed a quantitative survey method, utilizing convenience sampling for participant selection. This non-probability approach was based on the availability and willingness of students to participate, focusing on those enrolled in campuses engaged in the Traditional Chinese Medicine (TCM) on Campus Campaign. The survey, conducted via WenJuanXing, an online platform, facilitated the distribution and collection of responses, highlighting the study's modern data-gathering approach. Inclusion in the study was primarily contingent upon a student at a campus participating in the TCM program without explicit exclusion criteria outlined. However, it can be inferred that non-participants in the TCM program or those unable to consent were likely excluded. The survey garnered responses from 329 students initially, even-

tually narrowing down to 309 valid responses, marking a substantial response rate of 93.9%. The demographic makeup of the respondents, including a mix of male and female students, was noted, although specific details like age range or grade were not provided.

The data collection involved a thorough screening and cleaning phase to ensure response validity, a critical step in maintaining data integrity. Notably, the study did not provide financial incentives for survey participation, a factor that could potentially influence response behaviour. While the pasted text did not explicitly detail ethical considerations, standard practices in research involving minors, such as obtaining informed consent from parents or guardians and ensuring participant confidentiality, are typically expected in such studies. This approach underscores the study's commitment to ethical research practices, which is especially relevant given the involvement of a younger demographic.

3.3. Questionnaire Design. The online questionnaire design for the Traditional Chinese Medicine (TCM) campus culture study was carefully crafted to measure the health-related Knowledge, Attitudes, and Practices (KAP) among primary campus students. The questionnaire was structured into five sections, each targeting a different aspect of the study's focus.

Firstly, the questionnaire included items to measure students' knowledge about TCM. These questions were developed to assess the extent of students' understanding and awareness of TCM concepts and practices. The items for this section were adapted from existing scales in the literature, ensuring they were grounded in prior research and theoretically sound. The second section of the questionnaire focused on students' attitudes towards TCM. This part aimed to capture students' perceptions, beliefs, and feelings about TCM, including its relevance and importance in their lives. The attitude items were also adapted from relevant studies, ensuring they were appropriate for the target age group and educational context. The third section dealt with students' practices related to TCM. This included questions about students' engagement with TCM activities, such as using TCM methods for health and wellness, participation in TCM-related campus programs, and other health-related behaviours influenced by TCM teachings.

Additionally, the questionnaire covered aspects of campus culture construction related to TCM. This part aimed to understand the campus environment and the extent to which it supports and promotes TCM culture, including the availability of TCM resources and activities on the campus. Finally, demographic data, including age, gender, educational attainment, and personal media usage habits, were collected to provide context for the responses and to allow for demographic-based analysis.

For validation, the questionnaire items underwent a rigorous process. This likely included pilot testing with a small group of students to ensure the clarity and relevance of the questions. Feedback from the pilot test would have been used to refine the questions, ensuring they were understandable and appropriate for the age group. Moreover, the reliability and validity of the questionnaire were assessed using statistical methods such as calculating Cronbach's alpha coefficient, which indicated good internal consistency among the variables. This thorough design and validation process ensured that the questionnaire was a reliable and effective for measuring health-related KAP in the context of TCM campus culture.

3.4. Measurement instrument. The questionnaire consisted of five sections to collect the data regarding knowledge (4 items), attitude (4 items), practice (4 items), campus culture construction (4 items) and demographics. The questions for each of the four constructs were appropriately adapted to the scales available in the literature [33,42,48,51,66]. The survey also included additional modules on satisfaction, the Influence of fellow students and partners, and the Influence of family and social environment, which are not reported here. The demographic data, such as age, gender, highest educational attainment, and personal media usage habits, were collected in the first part of the questionnaire.

The knowledge construct, with four items, was adopted from the study of Wang [66], for the attitude construct with four items was adopted from the study of Jian [33], in the practice construct, with four items was adopted from the study of Wang [67], in campus culture construction with four items was adopted from the study of Jian and Pan [33,51]. The measurement of knowledge, attitude, practice, and campus culture construction used the five-point Likert scale (1 = strongly disagree to 5 = strongly agree.). The Cronbach's alpha coefficient showed fair construct reliability for TCM cultural knowledge ($\alpha = 0.75$) and TCM practices ($\alpha = 0.786$), showed good reliability for TCM cultural attitude ($\alpha = 0.863$) and Campus culture construction ($\alpha = 0.863$), suggesting good internal consistency among these variables.

3.5. Statistical analysis. To examine the conceptual framework in this study, Structural equation modeling (SEM) was adopted. SEM is a multivariate analysis technique that incorporates standard methods and extends them. These methods include regression techniques, factor analysis, correlation analysis and path coefficients. The internal consistency and convergent validity were examined to evaluate the reliability and validity of this study. In addition, the path coefficients were assessed in a structural model.

This study used SPSS 22 for descriptive statistics and IBM Amos 21.0 for SEM analysis. ANOVA compared each item among the different age groups. A t-test was used to determine whether there was a gender difference in each measurement item. A chi-square test was used to determine whether there was a difference in gender and some items.

3.6. Exploratory Factor Analysis. EFA was performed to reveal the underlying structure of the data set. It can provide factor loadings, variance explained by each construct, total variance explained, Kaiser-Meyer-Olkin (KMO) coefficient and Bartlett's test of sphericity, as well as the reliability of the data set.

3.7. Confirmative Factor Analysis. Confirmative Factor Analysis (CFA) was performed to assess the correlations between investigated variables and confirm the factor structure extracted in EFA.

4. Result.

4.1. Descriptive Analysis of Data. The study on Traditional Chinese Medicine (TCM) among students provides a detailed insight into their demographics, learning preferences, and attitudes towards TCM. The survey sample consisted of 309 participants, fairly distributed between males and females, with a higher representation of sixth graders. A dual approach was observed regarding learning preferences: traditional media sources for 'knowledge learning' and experiential methods like tasting medicinal cuisine for 'experience'. This diversity underscores a balanced interest in both theoretical and practical aspects of TCM among students.

A notable gender disparity emerged in learning preferences, with female students significantly favouring experiential learning methods, mainly through tasting medicinal food. This indicates a distinct gender-based difference in learning styles. The t-test results revealed significant gender differences in attitude and practice towards TCM, though not in knowledge or campus support. This suggests that while both genders possess similar levels of TCM knowledge, their attitudes and engagement in TCM practices vary.

The Exploratory Factor Analysis (EFA) indicated a well-structured factor model with good convergent and discriminant validity, reinforced by satisfactory composite reliability and Cronbach's alpha values. The Structural Equation Modeling (SEM) analysis revealed positive correlations between TCM knowledge, attitudes, and practices. The data supports the hypotheses that increased TCM knowledge and supportive campus culture positively influence students' attitudes and practices regarding TCM.

Campus culture emerged as a pivotal factor in shaping students' approach to TCM. Educators' promotion of TCM knowledge and healthy living concepts is crucial for cultivating a strong TCM cultural identity among students. The findings suggest that educational strategies should integrate theoretical and practical elements to enhance TCM learning effectively. The study highlights the importance of considering gender differences and the role of experiential learning in fostering a comprehensive understanding and practice of TCM among students.

4.2. Sample characteristics. Of the 309 participants who completed the survey, 157 (50.8% were male, and 152 (49.2%) were female. 116 (37.5%) are now in fifth grade, and 190 (61.5%) are in sixth grade, as shown in Table 4.1.

Regarding preferred channels and pathways for learning about Chinese medicine, the two main dimensions are subdivided into knowledge learning and experience. Knowledge learning includes media information (news-papers and magazines (21.7%), television (21%), lectures (21.7%) and basic courses (15.5%)); experience is mainly of willingness to taste medicinal cuisine (20.1%).

Regarding the preferred mode of learning TCM, more female students wanted to choose experience, that is, to gain knowledge by tasting medicinal food. $\rho=0.000<0.01$, the difference between male and female students was significant; see Table 4.2 for details.

The t-test of gender in their attitude practice showed a significant difference ($\rho < 0.05$) and no significant difference in their knowledge, TCMOCC ($\rho > 0.05$). See Table 4.3 for details.

Table 4.1: Sample characteristics

	Frequency	(%)
Gender		
Male	157	50.8
Female	152	49.2
Education level		
fifth grade (Form 5)	117	37.9
Sixth grade (Form 6)	192	62.1
Sources of TCM information		
Newspaper & Magazine	67	21.7
Watch the TCM TV program	65	21.0
TCM Lectures	67	21.7
Tasting of medicinal food	62	20.1
Learn the Foundation course of TCM	48	15.5

Table 4.2: A chi-square test for gender differences in learning TCM

	Learning	experience	Pearson Chi-Square	P
Male	139	18	14.72	0.00
	88.5%	11.5%		
Female	108	44		
	71.1%	4.20±0.62		

The t-test of the means of Different grades showed no significant difference in their knowledge, attitude, practice and campus support ($p > 0.05$). The t-test of the means of Different grades showed no significant difference in their knowledge, attitude, practice and campus support ($p > 0.05$).

4.3. Primary campus culture. The commentary on the preliminary study of Traditional Chinese Medicine on Campus Cultural Construction (TCMOCCC) in primary schools highlights a notable gap: the impact of locality (rural, urban, semi-urban) on TCM school culture and learning preferences. This aspect is vital in understanding how students engage with TCM, as their access to resources and learning opportunities can vastly differ based on their geographical location. The study reveals students’ diverse learning preferences, including traditional media and experiential methods such as tasting medicinal food. The students’ locality could significantly influence this diversity in learning preferences. For instance, urban students might have better access to various media and experiential learning opportunities than their rural counterparts. This difference in access could lead to varied exposure and attitudes towards TCM, potentially affecting the study’s generalizability across different locales.

Gender differences in learning preferences, particularly the female students’ inclination towards experiential learning, might also be impacted by locality. Urban environments, offering a more comprehensive range of learning experiences, could influence these preferences differently than rural settings.

The study did not find significant differences in TCM knowledge and campus support across educational levels. However, when considering the impact of locality, this uniformity might not hold. Schools in various localities might differ in resources and emphasis on TCM education, influencing students’ knowledge and attitudes.

The effectiveness of TCMOCCC, as analyzed through Exploratory Factor Analysis (EFA) and Structural Equation Modeling (SEM), might not fully account for the variations brought about by locality. Factors like community beliefs, accessibility to TCM resources, and regional educational policies could play a crucial role in shaping the outcomes of TCMOCCC.

The study underscores the role of campus culture in shaping students’ knowledge and attitudes towards TCM, suggesting that locality-specific strategies might be essential, especially in rural schools where resources

Table 4.3: Gender difference in knowledge, attitude, practice and campus support

	Male	Female	p
Knowledge	3.97±0.75	3.84±0.61	0.091
Attitude	3.47±1.02	3.15±0.97	0.006
Practice	4.10±0.76	4.20±0.62	0.009
Campus support	2.90±1.17	3.86±0.83	0.149

Table 4.4: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.868
Bartlett's Test of Sphericity	Approx. Chi-Square	2207.286
	df	120
	Sig.	.000

might be limited.

In conclusion, while the study provides valuable insights into students' engagement with TCM, incorporating locality as a variable could enhance the understanding of TCM learning preferences and the effectiveness of TCMOCCC. Future research could benefit from exploring how TCM learning preferences and the success of TCMOCCC vary across different localities, leading to more customized and effective educational strategies.

4.4. Exploratory Factor Analysis. The appropriateness of data was measured by the KMO coefficient, which proved to be meritorious (0.868); Bartlett's test of sphericity was found significant ($p < 0.001$), suggesting patterned relationships among variables and resulting in a meaningful EFA [22]. See Table 4.4 for details.

The Kaiser criterion identified eight factors to retain with eigenvalue > 1 , which explained a cumulative variance of 66.187% of the variables in the data. See Table 4.5 for details.

Table 4.6 shows the EFA with a rotated component matrix for this study.

The factor loadings were > 0.5 , indicating that convergent validity is present. The rule assessed discriminant validity and stated that items should relate strongly to one extracted component. There were no cross-loadings in EFA, suggesting that discriminant validity existed among the observed variables; see Table 4.7 for details.

4.5. Measurement Model and Confirmative Factor Analysis. In the previous EFA, two items of knowledge, three items of attitude, two items of practice and two items of campus had to be deleted because their loadings were < 0.5 . All remaining items had outer loadings of > 0.6 [34]. Therefore, the four-construct had four items for each.

The reliability and validity of the measurement model are summarized in Table 4.8. To examine the reliability and validity of each study construct, the outer loadings were assessed.

The square root of AVE is shown in bold on the diagonal. CR - Composite reliability, AVE is the average variance extracted, and MSV is the maximum squared variance.

The composite reliability of attitude and TCM on campus are over 0.86, which is regarded as satisfactory. Although the Cronbach's alpha of the model was not greater than 0.7, the value of 0.6 was acceptable and indicated that the constructs were reliable [27].

The Cronbach's alpha was higher than 0.7 for the knowledge and practice construct, indicating reliability [27]. Although the Average Variance Extracted (AVE) is lower than 0.5 but higher than 0.4, that can be accepted. Because Fornell and Larcker said that if AVE is less than 0.5 but composite reliability is higher than 0.6, the convergent validity of the construct is still adequate [21,38]. So convergent validity was established in this study.

The final measurement model gained an adequate fit ($\chi^2/df = 2.003$, CFI = 0.953, GFI = 0.930, AGFI = 0.904, RMSEA = 0.057, SRMR = 0.052, all the latent factors have demonstrated discriminant validity.

Table 4.5: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	5.837	36.478	36.478	5.837	36.478	36.478	2.954	18.461	18.461
2	2.260	14.128	50.606	2.260	14.128	50.606	2.755	17.218	35.678
3	1.410	8.814	59.420	1.410	8.814	59.420	2.503	15.643	51.322
4	1.083	6.767	66.187	1.083	6.767	66.187	2.378	14.866	66.187

Table 4.6: Rotated Component Matrix

	Component			
	1	2	3	4
Campus1	.777			
Campus2	.798			
Campus3	.838			
Campus4	.833			
Attitude1		.783		
Attitude2		.732		
Attitude3		.773		
Attitude4		.752		
Practice1			.739	
Practice2			.765	
Practice3			.761	
Practice4			.707	
Knowledge1				.749
Knowledge2				.635
Knowledge3				.741
Knowledge4				.733

4.6. Structural equation model. The structural equation model (SEM) shown in Fig. 4.1 is based on the conceptual model shown in Fig. 2.1. The questionnaire had four sections that collected data on knowledge (4 items), attitude (4 items), practice (4 items), and campus culture construction (4 items). The structural equation model represents the relationship between each item in each category. Fig. 2 displays the KAP structural equation model with the factor loadings, the standardized path coefficients and the total variance of the practices explained by its predictors. As acknowledged by previous research, self-assessment bias is often present in self-reported practices due to the influence of cognitive biases mediated by judgmental heuristics and their habitus [17]. If in other KAP studies, the nonspecific scale of the variables varies from "Strongly disagree" to "Strongly agree", in this case, the 5-point Likert scale offered a reasonable range of responses [17,75].

This study shows a positive significant correlation between TCM cultural knowledge and TCM attitude ($\beta = 0.493$; $\rho < 0.001$) among students with knowledge related to the relevant information gained through learning and experience. At the same time, practice implies the recurrent actions someone conducts based on their knowledge regarding a particular event, situation, or subject. An increased knowledge of TCM will lead to more responsible health practices.

This hypothesis has been confirmed in different domains, such as in the field of health, where good health knowledge helps to establish hygienic kitchen behaviours [45], safe health knowledge circumvents risky eating behaviours [43,70], healthy general life knowledge leads to a stable and adequate drinking process [11,78], healthy knowledge of sexual behaviour leads to safe sexual practices [13,60]. This suggests that when adolescents' knowledge of TCM culture increases, their adoption of TCM treatment and healthy life behavioural practices also increase.

A positive significant correlation between TCM cultural knowledge and TCM attitude ($\beta = 0.357$; ρ

Table 4.7: EFA with factor loadings, validity and reliability

Constructs and items	Mean	SD	Loadings	Variance, %	AVE	Composite reliability	Cronbach's alpha
Knowledge				6.767%	0.448	0.762	0.758
Knowledge1	4.13	0.887	0.749				
Knowledge2	3.45	1.033	0.635				
Knowledge3	4.10	0.798	0.741				
Knowledge4	3.95	0.880	0.733				
Attitude				14.128%	0.616	0.865	0.864
Attitude_1	3.26	1.188	0.783				
Attitude_2	3.39	1.181	0.732				
Attitude_3	3.24	1.270	0.773				
Attitude_4	3.36	1.155	0.752				
practice				8.814%	0.487	0.791	0.790
Practice_1	4.00	0.989	0.739				
Practice_2	3.75	1.179	0.765				
Practice_3	4.17	0.961	0.761				
Practice_4	3.99	0.975	0.707				
Campus				36.478%	0.615	0.864	0.862
Campus_1	2.86	1.316	0.777				
Campus_2	3.17	1.270	0.798				
Campus_3	2.54	1.352	0.838				
Campus_4	2.68	1.393	0.833				
Total variance explained (%) =				66.187%			

Table 4.8: Model validity and reliability

	CR	AVE	MSV	Knowledge	Attitude	Practices	Campus
Knowledge	0.762	0.448	0.360	0.669			
Attitude	0.865	0.616	0.360	0.600***	0.785		
Practices	0.791	0.487	0.327	0.571***	0.561***	0.698	
Campus	0.864	0.615	0.331	0.224**	0.576***	0.327***	0.784

< 0.001) among students that have TCMOCC, thus supporting hypothesis H2. This indicates that when students' Knowledge of TCM improves, their attitude regarding TCM culture becomes appropriate and vice versa, meaning that students have a positive attitude toward TCM culture if the TCMOCC is more frequent.

Hypothesis 3 suggests that TCM attitude has a significant positive effect on practices (TCM adoption and health life behaviour) ($\beta = 0.352$; $\rho < 0.001$) with a statistically significant difference. This hypothesis indicates that their healthy behaviour will also improve with a more TCM attitude of the students. Students will develop good habits in their daily lives, eat on time, rest on time, and exercise consistently to achieve a healthy body, and they will be more willing to accept the diagnosis and treatment of TCM. This suggests that when student's Knowledge of TCM improves, their healthy activity practices also ameliorate.

A positive significant correlation between campus culture construction and TCM cultural knowledge ($\beta = 0.229$; $\rho < 0.001$) among students that have TCMOCC, thus supporting hypothesis H4.

A positive significant correlation between campus culture construction and TCM cultural knowledge ($\beta = 0.462$; $\rho < 0.001$) among students that have TCMOCC, thus supporting hypothesis H5.

TCM culture is based on unique Eastern philosophical thinking and has special characteristics. TCM cultural mindset is formed implicitly over a long period and requires guidance and education starting from adolescence. The influence of TCM books, TCM forums and TCM extracurricular practical activities can positively affect the enhancement of TCM cultural literacy among adolescents, so campus cultural support is

Table 4.9: Results of structural modelling

Hypotheses	Path coefficient	p	
The knowledge of TCM is positively related to the attitude.	0.493	0.001	Yes
The knowledge of TCM is positively related to the practice.	0.357	0.000	Yes
The attitude of TCM is positively related to the practice.	0.352	0.000	Yes
The campus support is positively related to the knowledge of TCM.	0.229	0.000	Yes
The campus support is positively related to the attitude of TCM.	0.462	0.000	Yes

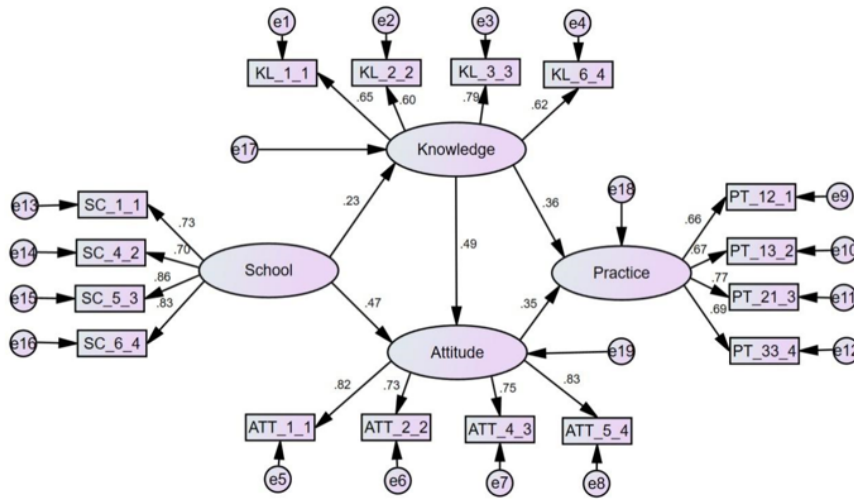


Fig. 4.1: Structural model with the relationships between TCM knowledge, attitude, practices and TCM on-campus campaign

significant. A multifaceted and multileveled interaction results in the formation and strengthening of good knowledge and positive attitudes. All teachers should be encouraged to actively promote TCM knowledge, help students establish healthy living concepts, encourage students to adopt healthy lifestyles, and continuously build and consolidate the cultural identity of TCM among youth. The evaluation results of the structure model are summarized in Table 4.9.

Applying the KAP SEM model in the current survey confirms that probable knowledge of TCM correlated with a wide-awake attitude regarding TCM benefit for a healthy life positively influences TCM adoption and healthy life behaviour. Campus culture construction is essential for building the knowledge of TCM and attitude.

5. Measurement of the Fitness Index in the Study. The measurement of the fitness index in the study was carried out through a well-structured process. The sample was collected using an online-based questionnaire distributed to students participating in the Traditional Chinese Medicine (TCM) on Campus Campaign, with 329 initial respondents. Data screening and cleaning were performed to ensure validity, resulting in 309 valid responses. The questionnaire was carefully designed and structured into five sections to measure health-related Knowledge, Attitudes, and Practices (KAP) among primary campus students, with questions adapted from existing scales in the literature to ensure theoretical soundness. The measurement instrument had four constructs: knowledge, attitude, practice, and campus culture construction, with items adapted from relevant studies. Reliability analysis using Cronbach’s alpha coefficient indicated good internal consistency among these variables. Statistical analysis, including Structural Equation Modeling (SEM), examined the relationships between these constructs. The results supported hypotheses regarding the positive

relationships between TCM knowledge and attitude, knowledge and practice, attitude and practice, campus culture construction and knowledge, and campus culture construction and attitude. The study provided valuable insights into the influence of TCM campus culture on health-related KAP among primary campus students. It highlighted the role of education and the campus environment in shaping perceptions and behaviours related to TCM and health practices.

6. Discussion. The findings from the study on Traditional Chinese Medicine (TCM) campus culture and its influence on health-related Knowledge, Attitudes, and Practices (KAP) among primary campus students have several important implications, both with the research objectives and within the broader context of existing literature.

Firstly, the significant correlation found between TCM cultural knowledge and positive attitudes towards TCM among students reinforces the crucial role of education in shaping perceptions and receptiveness towards traditional medicine practices. This aligns with the research objectives and supports existing literature, which suggests that increased awareness and understanding of health practices can lead to more favourable attitudes towards them. The study contributes to this body of knowledge by explicitly focusing on TCM, a less-explored area in the context of primary education. Regarding practical significance, the study's findings highlight the potential of TCM campus culture initiatives in fostering positive health-related behaviours among young students. The positive relationship between TCM knowledge and practices suggests that integrating TCM into the campus curriculum could effectively promote healthier lifestyles and choices among children. This is particularly relevant given the increasing global interest in holistic and integrative health approaches.

Furthermore, the study underscores the importance of the campus environment and culture in health education. The fact that TCM cultural knowledge and attitudes were positively influenced by campus culture construction implies that campuses play a crucial role in promoting and disseminating health-related knowledge. This insight is valuable for educators and policymakers who are tasked with developing and implementing health education programs. In light of these findings, efforts to promote TCM knowledge and health-related behaviour on campuses could involve a more integrated approach, combining traditional educational methods with experiential learning opportunities, such as TCM-related activities and campus-wide campaigns. Additionally, the study suggests the need for teacher training and resource development to deliver TCM education effectively and to foster a supportive learning environment.

Overall, the study contributes to understanding how TCM can be effectively incorporated into primary education to enhance students' health-related knowledge, attitudes, and practices. It provides a foundation for future research in this area. It offers practical insights for developing campus health education programs, particularly those aimed at promoting traditional and holistic health practices.

The study has several limitations. First, the sample size is small for the representativeness and generalizability of the results. It is helpful to compare results between campuses that participate in TCMOCC and those that do not compare the differences in knowledge, attitude, and practice with the construction of campus culture. The study's second limitation is that it relies on self-reported data and is prone to recall or social desirability biases. As a result, the outcomes might not accurately reflect the participants' actual behaviours and attitudes. Third, the study only examines the relationships between traditional Chinese medicine (TCM) campus culture construction and health-related knowledge, attitudes, and practices (KAP). The scope of this article does not include additional variables like socioeconomic status, family history, or peer pressure that may affect students' behaviour on primary campuses. The study only considers how TCM campus culture construction affects students' health-related behaviour on primary campuses. It does not consider how it might affect other areas of their lives, like their achievement on campuses or mental health. Future research ought to collect and compare data on healthy living behaviours to determine the essential components that influence campus culture and suggest strategies and initiatives for the wide-scale promotion of the behaviours. A more extensive and varied sample of primary campus students from various parts of China can be added to the study. Future research can also examine the relationships between the three constructs—knowledge, attitude, and practice—and the factors that influence them [5,20,49]. Theoretical implications of the study include offering empirical evidence that campus culture construction in traditional Chinese medicine (TCM) influences health-related knowledge, attitudes, and practices (KAP) among primary campus students. The findings of the study have several managerial implications. To improve health-related KAP among primary campus students,

it emphasizes the necessity of promoting TCM culture in educational institutions. The study also suggests that TCM campus culture construction should focus on the communicator, content, medium, audience, and effect to ensure the campaign's effectiveness. The study's practical implications include showing how TCM campus culture construction can influence primary campus students' health-related KAP positively. The study's social implications include promoting the importance of TCM culture in China's long history and its potential role in improving health-related behaviour among primary campus students. Overall, the study's findings contribute to promoting TCM culture and improving health-related behaviour among primary campus students in China.

7. Summary of the Study findings. To summarize the main findings of this study and their significance. We have decided to conclude with statements about the broader implications of your research.

The study on Traditional Chinese Medicine (TCM) campus culture's influence on primary campus students' health-related Knowledge, Attitudes, and Practices (KAP) yielded several significant findings. First and foremost, the research established a positive correlation between exposure to TCM culture on campuses and enhanced knowledge and attitudes towards TCM among students. Specifically, students who were part of the TCM campus culture demonstrated a greater understanding of TCM concepts and practices, alongside more favourable attitudes toward TCM.

Moreover, the study found that this increased knowledge and positive attitude towards TCM translated into healthier practices. Students exposed to TCM culture were more likely to engage in health behaviours influenced by TCM teachings, suggesting a direct impact of educational exposure on student behaviour. This result is particularly noteworthy, highlighting the practical benefits of integrating traditional medicine and holistic health concepts into campus curricula.

Another critical finding was the role of the campus environment in fostering an appreciation and understanding of TCM. The study underscores the importance of campus culture construction in promoting TCM, suggesting that a supportive and resource-rich educational setting is crucial for effective health education.

The broader implications of this research are multifaceted. Firstly, it contributes to the growing body of evidence supporting the integration of traditional health knowledge into modern educational settings. By demonstrating the positive impact of TCM exposure on young students' health-related knowledge, attitudes, and practices, the study provides a compelling argument for incorporating TCM into campus curricula, not just in China but potentially in other cultural contexts.

Secondly, the findings have practical implications for educators and policymakers. The clear link between campus-based TCM programs and improved health-related outcomes among students suggests that such initiatives can effectively promote holistic health and wellness in young populations. It also opens opportunities for developing similar programs based on other traditional health practices.

Lastly, the study contributes to a broader understanding of how cultural practices and knowledge can be harnessed in educational settings to promote overall health and well-being. It underscores the potential of traditional knowledge systems in enriching modern education and healthcare practices, encouraging a more integrative approach to health education.

In conclusion, this research not only sheds light on the positive impact of TCM campus culture on students' health-related KAP but also paves the way for further exploration and integration of traditional health knowledge in education, with far-reaching implications for health promotion and cultural education.

8. Conclusion. This study evaluated the associations among health-related knowledge, attitudes, practice (KAP), and traditional Chinese medicine (TCM) campus culture construction among Chinese primary campus students. It was found from the results that factor loadings that are used to measure convergent validity were more significant than 0.5, which indicates a positive correlation among the TCM campus culture construction on knowledge, attitudes, and practices among the students. The study contributes to the existing literature by providing empirical evidence on the influence of TCM campus culture construction on health-related KAP among primary campus students. The findings have important implications for the ongoing efforts to promote TCM on campuses and enhance health-related KAP among students. Future research could further explore the impact of TCM campus culture construction on other aspects of campuses' lives and examine the effectiveness of different strategies for promoting TCM culture on campuses.

9. Future works. The study examining the impact of Traditional Chinese Medicine (TCM) campus culture on primary campus students' health-related Knowledge, Attitudes, and Practices (KAP) suggests several avenues for future research and methodological enhancements. Expanding the sample size and diversity is recommended to improve the generalizability of findings and to understand TCM's impact across varied student demographics. Incorporating a control group not exposed to TCM culture is crucial for establishing a more precise cause-and-effect relationship. Adopting a longitudinal study design would provide insight into the long-term effects of TCM exposure. Integrating qualitative methods like interviews or focus groups would offer deeper insights into student perceptions of TCM. Exploring additional variables such as family influences, peer interactions, and societal attitudes towards TCM could provide a more holistic view of factors affecting student engagement with TCM. Investigating specific TCM interventions within campuses could help identify the most compelling aspects of TCM culture in influencing KAP. Advanced statistical techniques could refine the analysis and address potential biases, while ethical and cultural considerations are essential, particularly in studies involving traditional practices and young students. The future research directions also aim to enhance the study of Traditional Chinese Medicine (TCM) in the context of campus culture and its impact on students' health-related knowledge, attitudes, and practices (KAP). Other suggested areas for future research include expanding the sample to encompass diverse demographics, utilizing diverse data collection methods such as in-person surveys, and incorporating qualitative methods like interviews or focus groups to gain deeper insights into student perspectives on TCM. These approaches aim to improve the generalizability and comprehensiveness of the findings.

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