Seminars in Medical Writing and Education. 2025; 4:414
doi: 10.56294/mw2025414

ORIGINAL

Integrated Teaching Reform of "Health Management" Course Competition in Chinese Medicine Majors in Higher Vocational Colleges

Reforma Integral de la Enseñanza del Curso "Gestión de la Salud" mediante Competencias en Especialidades de Medicina China en Instituciones de Educación Superior Vocacional

Yucheng Huang[1] ✉, Siriluck Jittrabiab[1], Thanawat Imsomboon[1]

[1]Suan Sunandha Rajabhat University, Graduate School, Public Health Program. Bangkok, Thailand.

Cite as: Huang Y, Jittrabiab S, Imsomboon T. Integrated Teaching Reform Of "Health Management" Course Competition in Chinese Medicine Majors in Higher Vocational Colleges. Seminars in Medical Writing and Education. 2025; 4:414. https://doi.org/10.56294/mw2025414

Submitted: 11-04-2024 **Revised:** 16-07-2025 **Accepted:** 09-10-2025 **Published:** 10-10-2025

Editor: PhD. Prof. Estela Morales Peralta

Corresponding Author: Yucheng Huang ✉

ABSTRACT

Introduction: china's rapidly growing sub-health population requires enhanced health management. Vocational skills competitions improve professionals' technical abilities, soft skills, and comprehensive quality through simulated real-work scenarios.
Method: target population refers to a collection of objects or elements related to this study. According to a study, the sample size should be more than 200 to avoid any non-convergence. Thus, the sample size for this research will be 560 instructors and 155 administrators from Chinese medicine majors of 10 higher vocational colleges in Guangdong province to ensure the data is reliable and effective.
Results: this study identified five key components (policy support, resource integration, teacher development, student participation, and reform implementation) for integrating Health Management competitions in TCM vocational colleges. All components showed significant positive correlations with successful reform. The structural equation model confirmed these factors directly enhance competition integration. Based on findings, 41 specific managerial guidelines were developed across these five dimensions to optimize the teaching reform.
Conclusions: 1) the components of this study included policy and institutional support (PIS), integration of teaching resources (ITR), teacher team building (TTB), student participation mechanism (SPM), integrated teaching reform of "Health Management" course competition (HM). 2) The policy and institutional support (PIS), integration of teaching resources (ITR), teacher team building (TTB), student participation mechanism (SPM) positively affected integrated teaching reform of "Health Management" course competition (HM). 3) There are 8 measures for Policy and institutional support(PIS), 9 measures for Integration of teaching resources (ITR), 8 measures for Teacher team building (TTB), and 9 measures for Student participation mechanism (SPM), 7 measures for Integrated teaching reform of "Health Management" course competition (HM).

Keywords: Integrated Teaching Reform; Health Management; Course Competition; Chinese Medicine Majors; Higher Vocational Colleges.

RESUMEN

Introducción: la creciente población sub-saludable en China requiere una mejora en la gestión de la salud. Las competencias de habilidades vocacionales mejoran las capacidades técnicas, las habilidades blandas y la calidad integral de los profesionales mediante escenarios que simulan situaciones laborales reales.
Método: la población objetivo se refiere a un conjunto de objetos o elementos relacionados con este estudio.

De acuerdo con un estudio, el tamaño de la muestra debe ser superior a 200 para evitar cualquier falta de convergencia. Por lo tanto, la muestra para esta investigación será de 560 instructores y 155 administradores de especialidades de Medicina China en 10 instituciones de educación superior vocacional en la provincia de Guangdong para garantizar que los datos sean confiables y efectivos.
Resultados: este estudio identificó cinco componentes clave (apoyo político, integración de recursos, desarrollo docente, participación estudiantil e implementación de la reforma) para integrar las competencias de Gestión de la Salud en las escuelas vocacionales de MTC. Todos los componentes mostraron correlaciones positivas significativas con una reforma exitosa. El modelo de ecuaciones estructurales confirmó que estos factores mejoran directamente la integración de las competencias. Con base en los hallazgos, se desarrollaron 41 pautas de gestión específicas en estas cinco dimensiones para optimizar la reforma educativa.
Conclusiones: 1) Los componentes de este estudio incluyeron el apoyo político e institucional (PIS), la integración de recursos de enseñanza (ITR), la formación de equipos docentes (TTB), el mecanismo de participación estudiantil (SPM) y la reforma integral de la enseñanza de la competencia del curso «Gestión de la Salud» (HM). 2) El apoyo político e institucional (PIS), la integración de recursos de enseñanza (ITR), la formación de equipos docentes (TTB) y el mecanismo de participación estudiantil (SPM) afectaron positivamente la reforma integral de la enseñanza de la competencia del curso «Gestión de la Salud» (HM). 3) Se proponen 8 medidas para el Apoyo político e institucional (PIS), 9 medidas para la Integración de recursos de enseñanza (ITR), 8 medidas para la Formación de equipos docentes (TTB), 9 medidas para el Mecanismo de participación estudiantil (SPM) y 7 medidas para la Reforma integral de la enseñanza de la competencia del curso «Gestión de la Salud» (HM).

Palabras clave: Reforma Integral de la Enseñanza; Gestión de la Salud; Competencia de Cursos; Especialidades de Medicina China; Instituciones de Educación Superior Vocacional.

INTRODUCTION

China has one of the fastest growing sub-healthy population in the world, and according to the National Bureau of Statistics, the number of sub-healthy people in China has reached hundreds of millions by the end of 2020, accounting for a considerable part of the total population.[1] This proportion is expected to increase further by 2030. With the increasingly prominent sub-health problems, people's quality of life and health status are seriously affected, and health management as an important means to improve the sub-health status, its demand is also growing.[2]

In addition, according to some studies, in recent years, the proportion of sub-healthy people in China has gradually increased, especially the proportion of young people who are sub-healthy is showing a rapid growth trend.[3] Therefore, it is of great significance to strengthen the research of sub-health problems and the provision of health management services for maintaining people's health and improving the quality of life.[4]

In general, with the increasing number of sub-healthy people, the importance of health conditioning and health management has become increasingly prominent. In order to meet people's demand for a healthy life, we need to work together in policy, science and technology, education and other aspects to promote the development and innovation of the health industry. In order to improve the professional quality and skill level of health management talents, governments at all levels and industry associations have launched health management vocational skill competitions.[5] These competitions have tested and demonstrated the professional skills and comprehensive quality of the participants in health management by simulating the actual work situation, which has played a positive role in promoting the training of health management talents and the development of the industry.

First of all, the competition can improve the professional skills of health management talents. The content of the competition usually covers all aspects of health management, such as life care, health management, rehabilitation health management, mental health management, etc.[6] Participants need to complete various tasks within the prescribed time, which is of great help to improve their professional skills and ability to cope with practical work.[7] Secondly, the competition can improve the comprehensive quality of health management talents. In addition to professional skills, the competition will also test participants' soft skills such as communication, teamwork and adaptability, which are very important qualities in health management work. Finally, the competition can promote the reform and development of health management education. Through the study of the competition, we can understand the latest needs and trends of the industry, so as to adjust and optimize the curriculum and teaching methods, and improve the quality of education.

Research objectives

The objectives of this study is integrated teaching reform of "Health Management" course competition in

Chinese medicine majors in higher vocational colleges.

1) To study the components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges.

2) To study the relationship of the components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges.

3) To develop managerial guidelines of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges.

METHOD

Population and sample

Inclusion Criteria of samples

Sampling criteria for instructors samples (560 people).

1. Professional qualification requirements:
   A. Bachelor degree or above in traditional Chinese medicine.
   B. Currently teaching traditional Chinese medicine.
   C. At least 1 year of teaching experience in higher vocational education.

2. Stratified sampling of course types.

Table 1. Stratified sampling of course types

Course category	Ratio	Sample size	Examples of typical courses
Traditional Chinese medicine basic	25 %	140	The Basic Theory of Traditional Chinese ,Medicine and Selected Reading of Internal Classics
Clinical skills	35 %	196	Acupuncture and Moxibustion techniques, Internal Medicine of Traditional Chinese Medicine
Health management-related	40 %	224	Health Care of Traditional Chinese Medicine, Health Assessment

3. Title structure control:
   - Senior professional title (Professor / Associate Professor): 15 % (84 persons).
   - Intermediate professional title (lecturer): 50 % -60 % (280-336 persons).
   - Junior professional title: 35 % (196 persons).

Sampling standard of administrators sample (155 people):

1. Job type quota:
   - Academic Administration Department (teaching management): 50 persons (32,3 %).
   - Student Affairs Department: 40 persons (25,8 %).
   - School-enterprise cooperation office: 35 persons (22,6 %).
   - University-level leaders: 15 persons (9,7 %).
   - Quality control department: 15 persons (9,7 %).

2. Management level requirements.

Table 2. Management level requirements

Level	Ratio	Scope of offical duty
The decision makers	15 %	Vice President/Dean level
Execution layer	60 %	Department Director / Section Chief
Operating	25 %	Staff member / full-time management personnel

3. Standards for professional relevance:
   A. Professional experience in TCM management.
   B. Participated in teaching reform projects.
   C. Pure administrative positions (such as finance and logistics) are not included.

Number and acquisition of samples

Target population refers to a collection of objects or elements related to this study. The sample size for this research will be 560 instructors and 155 administrators from Chinese medicine majors of 10 higher vocational colleges in Guangdong province to ensure the data is reliable and effective.

Table 3. Population and samples of 10 of colleges and universities under Guangdong Province

No.	Universities	Guangdong province							School type/Attribute
		Population			Proportion	Sample			
		Instructors	Administrators	Total		Instructors	Administrators	Total	
1	Guangdong Jiangmen Chinese Medical College	225	61	286	25 %	56	15	71	Department of education key Universities
2	Guangzhou Health Science College	220	62	282	25 %	55	16	71	Department of education key Universities
3	Guangdong Maoming Health Vocational College	226	61	287	25 %	57	15	72	Department of education Key Universities
4	Huizhou Health Sciences Vocational College	225	60	285	25 %	55	15	70	Guangdong provincial education department (public)
5	Zhaoqing Medical College	224	63	287	25 %	56	15	71	Guangdong provincial education department (public)
6	Guangdong Food and Drug Vocational College	226	61	287	25 %	57	15	72	Guangdong provincial education department (public)
7	Qingyuan Polytechnic	220	63	283	25 %	55	16	71	Guangdong provincial education department (public)
8	Guangdong Lingnan Institute of Technology	224	62	286	25 %	56	16	72	Guangdong provincial education department (public)
9	Zhuhai City Polytechnic College	227	64	291	25 %	57	16	73	Guangdong provincial education department (public)
10	Guangdong Vocational College of Arts and Science	223	63	286	25 %	56	16	72	Guangdong provincial education department (public)
Total		2240	620	2860	25 %	560	155	715	

https://doi.org/10.56294/mw2025414 ISSN: 3008-8127

Data analysis

Quantitative analysis

To study the relationship of the components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges (objective 2).

This study combines Amos 16.0 to analyze the collected questionnaire data accordingly, including having descriptive statistics, correlation analysis, difference analysis, and regression analysis. In this study, the questionnaire was used in the testing of sample reliability and validity and hypothesis testing session of empirical research. Amos 16.0 statistical analysis software is used to carry out statistical analysis and determine the authenticity of the study in conjunction with the distribution of statistical parameters to achieve the purpose of the study.

Qualitative analysis

To study the components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges (objective 1).

Analyze the collected content.

To develop managerial guidelines of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges (objective 3).

The data from focus group discussion was analyzed by content analysis. Through this process, researchers are able to gain a deeper understanding of participants' perspectives and extract guiding insights.

Literature Review

Related Concept

Sub-healthy population

A comprehensive literature analysis reveals the growing global prominence of sub-healthy populations, a phenomenon with transnational impacts.[7] Hartman et al.[8] emphasize it presents both challenges and opportunities. Setterfield et al.[9], using Japan as an example, note economic impacts like labor shortages but also opportunities for innovation. McKinley et al.[10] propose social policies like raising the retirement age, while Cummings et al.[11] focus on improving public health services. Consensus indicates this is a complex, multidimensional issue requiring diverse governmental strategies—such as healthcare reform and social service innovation—to transform challenges into opportunities for building a healthier, more sustainable society.

Health management

Amid growing sub-health concerns, health management research is gaining attention. Zhang et al.[12] identify issues like unstable service quality and personnel shortages, predicting trends like family-centered models and technology use. Wang et al.[13] analyze the supply-demand imbalance, suggesting solutions such as increasing facilities and improving training. Li et al.[14] construct a service quality evaluation index system to comprehensively assess and improve services. Collectively, these studies provide important references for optimizing resources, improving quality, and addressing sub-health needs through better service organization, technology, and innovative models, thus advancing the field.

Health Management course

Research on the Health Management course demonstrates its positive impact on students' knowledge, attitudes, and practical skills. Smith et al.[15] found it leads to better patient outcomes. Chen et al.[16] confirmed it enhances knowledge and skills among Taiwanese undergraduates. Lee et al.[17] showed it improves attitudes and self-confidence toward sub-healthy populations. Zhang et al.[18] highlighted the differential effectiveness of teaching methods like problem-based learning. Cheng et al.[19] emphasized its role in boosting student ability and willingness. These studies collectively underscore the course's value and the importance of effective teaching methodologies for optimal learning outcomes.

Policy and institutional support(PIS)

Policy and Institutional Support (PIS) is vital for standardizing and integrating Traditional Chinese Medicine (TCM) globally. Key policies include China's "TCM Law", which mandates its integration into healthcare and sets practitioner standards, and the WHO's strategy promoting global regulatory frameworks. Institutional support involves standardized education, like at Beijing University of Chinese Medicine, and international accreditation by bodies like the WFCMS. However, challenges remain, such as uneven insurance coverage and restrictive international laws.[20] Future PIS should focus on equitable funding and international standardization.

Integration of teaching resources(ITR)

Integration of Teaching Resources (ITR) modernizes Traditional Chinese Medicine (TCM) education by

consolidating curricula, digital tools, and clinical cases.[21] It merges classical TCM with biomedical knowledge[22] and utilizes digital platforms, like virtual simulators from the China Academy of Chinese Medical Sciences.[23] Institutions such as Beijing University of Chinese Medicine share resources via cloud platforms. Challenges include urban-rural resource disparities[24] and the pedagogical complexity of integrating medical systems. Future directions involve AI, international platforms, and VR training.[25]

Teacher team building(TTB)

Teacher Team Building (TTB) strategically develops TCM faculty through professional development, mentorship, and interdisciplinary collaboration.[26] Key initiatives include continuous training[27] and mentorship for knowledge transmission.[28] Institutions like Beijing University of Chinese Medicine implement "Double-Qualified" certification for teaching and clinical skills. Challenges include balancing faculty responsibilities[29] and an aging professor demographic. Future directions involve international exchanges, digital teaching skills, and holistic evaluation systems,[25] aiming to preserve TCM's essence while innovating its educational delivery for sustainability.

Student participation mechanism(SPM)

Student Participation Mechanism (SPM) systematically enhances engagement in TCM education through curriculum co-creation, teaching evaluation, and clinical practice.[30] Institutions implement platforms for student feedback (SATCM), standardized teaching assessments,[31] and supervised clinical programs.[32] Shanghai University of TCM's "Student Teaching Committee" participates in curriculum review, while clinical rotations use graded responsibility protocols.[33] Challenges include balancing autonomy with standards and patient safety. Future directions involve digital feedback platforms, interprofessional education, and competency-based assessments[25] to foster student-centered, rigorous TCM education.

Integrated teaching reform of "Health Management" course competition(HM)

The Integrated Teaching Reform of "Health Management" Course Competition (HM) innovatively combines curriculum, competition, and practical application in TCM education.[34] Its core components include competition-based learning modules integrating TCM principles, interdisciplinary team projects,[35] and industry-academia partnerships.[36] Guangzhou University of Chinese Medicine implemented a framework with four evaluation dimensions, while clinical competitions use real patient cases.[37] Challenges involve aligning metrics with curriculum and ensuring equitable participation. Future trends feature virtual platforms, competency-based rubrics, and integrated public health approaches.[25]

Relate Theory

Constructivist Learning Theory

Constructivist Learning Theory, emphasizing the role of social interaction and the "Zone of Proximal Development" (ZPD) in learning. This theory supports a student-centered teaching model, suitable for competition-driven health management curriculum reform, highlighting teamwork, case analysis, and reflective practice.

Competency-Based Education Theory

Competency-Based Education Theory was originally used in vocational education, emphasizing practical professional ability rather than traditional subject knowledge.The World Health Organization (WHO) Health Promotion Capacity Framework: emphasizing the need for health management practitioners to have core competencies such as assessment, intervention, and communication. This theory directly guides the content of the course competition with the professional standards of health managers (TCM) to ensure that the teaching reform meets the needs of the industry. Constructivism provides methodology for competitive teaching (such as contexalized task design), and ability-based ability objectives (such as TCM health risk assessment skills). Together, they support the reform of "class competition integration" and enhance students' professional competitiveness.

RESULTS

Result of Objective 1

From reviews of literature, the researcher had studied the scope of content from related concepts, principles, theories, and related research concerning with integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges. The components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges included policy and institutional support (PIS), integration of teaching resources (ITR), teacher team building (TTB), student participation mechanism (SPM), integrated teaching reform of "Health Management" course competition(HM).

Result of Objective 2

Table 4. Frequency statistics analysis of demographic variables (N=715)

Name	Options	Frequency	Percentage (%)
1. Gender	Female	440	61,5
	Male	275	38,5
2. Age	Below 25 years old	133	18,6
	25-35 years old	218	30,5
	Above 35 years old	364	50,9
3.Academic qualification	Bachelor	34	4,8
	Master	498	69,7
	PhD	183	25,5
4. Monthly income	Below RMB5000	36	5,0
	RMB5000-10 000	431	60,3
	RMB10 000-15 000	167	23,4
	RMB15 000 and above	81	11,3
5. Job title	Assistant Lecturer	38	5,3
	Lecturer	419	58,6
	Associate Professor	203	28,4
	Professor	55	7,7

From table 4, the gender analysis, 440 female instructors and administrators, accounting for 61,5 % and 275 male instructors and administrators, accounting for 38,5 %.This suggests that women occupy a larger proportion of Chinese medicine majors in higher vocational colleges.

From the age analysis, 133 were under 25, accounting for 18,6 %; 218 were aged 25-35, accounting for 30,5 %; and 364 were over 35, accounting for 50,9 %. This shows that there are a certain proportion of young instructors and administrators, but also a considerable number of instructors and administrators are relatively old, which may have an impact on teaching experience and teaching methods.

From the academic qualification analysis, there are 34 bachelor degrees, accounting for 4,8 %, 498 Masters, accounting for 69,7 %, and 183 doctors, accounting for 25,5 %. This indicates that most instructors and administrators have a master's or doctoral degree, which may mean that they have a high academic level and research ability in the professional field.

From the monthly income analysis, 36 were below 5000 yuan, accounting for 5,0 %; 431 were of RMB5000-10 000, accounting for 60,3 %.167 people had RMB10 000-15 000, accounting for 23,4 %; 81 people had 15 000 yuan and above, accounting for 11,3 %. This shows that there are great differences in instructors and administrators' income level, but the whole still shows a certain level.

From job title analysis, 38 assistant lecturers, accounting for 5,3 %; 419 lecturers, accounting for 58,6 %; 203 assistant instructors and administrators, accounting for 28,4 %; and 55 professors, accounting for 7,7 %. This means that there are both instructors and administrators with junior professional titles and professors with senior professional titles, and the distribution of professional titles is more reasonable.

Overall, integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges is influenced by gender, age, education, monthly income and professional title. Gender, age and educational background are important factors affecting integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges, while monthly income and professional title reflect instructors and administrators' working ability and social status to some extent.

Correlation analysis

Combined with the above table, all five components showed significant positive correlations ($p<0,01$). HM demonstrated strong correlations with SPM ($r=0,609$), TTB ($r=0,592$), PIS ($r=0,566$), and ITR ($r=0,513$), confirming their interrelatedness in driving teaching reform.

Table 5. Result of the strength of the correlation

	Policy and institutional support (PIS)	Integration of teaching resources (ITR)	Teacher team building (TTB)	Student participation mechanism (SPM)	Integrated teaching reform of "Health Management" course competition(HM)
Policy and institutional support(PIS)	One				
Integration of teaching resources(ITR)	0,351 * *	One			
Teacher team building (TTB)	0,367 * *	0,426* *	One		
Student participation mechanism(SPM)	0,447 * *	0,465 * *	0,477 * *	One	
Integrated teaching reform of "Health Management" course competition(HM)	0,566* *	0,513 * *	0,592 * *	0,609 * *	One

Analysis of variance

Table 6. Summary Table of monthly income of by gender

Gender		Male			Female		
		Freq.	Freq. of gender	Freq. of total	Freq.	Freq. of gender	Freq. of total
Monthly income	Below RMB5000	13	4,7 %	1,8 %	23	5,2 %	3,2 %
	RMB5000-10 000	135	49,1 %	18,9 %	296	67,2 %	41,4 %
	RMB10 000-15 000	104	37,8 %	14,5 %	63	14,3 %	8,8 %
	RMB15 000 and above	23	8,4 %	3,3 %	58	13,3 %	8,1 %
Total		275	100,0 %	38,5 %	440	100,0 %	61,5 %

A gender-based income analysis reveals distinct disparities: 67,2 % of females earn RMB5000-10 000, compared to 49,1 % of males. Conversely, 37,8 % of males earn RMB10 000-15 000, versus only 14,3 % of females. The sample comprised 61,5 % female and 38,5 % male respondents.

Table 7. Results of independent samples t-test of factors influencing integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by gender

	Gender	N	Mean	SD	F	P	t	P
Policy and institutional support(PIS)	Male	275	4,346	0,3346	1,334	0,134	0,334	0,633
	Female	440	4,338	0,4834				
Integration of teaching resources(ITR)	Male	275	4,434	1,4933	1,443	0,393	0,734	0,534
	Female	440	3,643	0,7843				
Teacher team building(TTB)	Male	275	4,243	0,7834	1,443	0,343	1,243	0,343
	Female	440	3,743	0,8344				
Student participation mechanism(SPM)	Male	275	4,433	1,0343	1,444	0,334	0,334	0,743
	Female	440	4,343	0,7833				
Integrated teaching reform of "Health Management" course competition(HM)	Male	275	4,343	0,7834	1,333	0,344	0,544	0,543
	Female	440	3,434	0,6533				

The t-test results (all p-values > 0,05) indicate no statistically significant gender-based differences in any factors influencing the teaching reform. For instance, the mean for HM was 4,343 (Male) vs 3,434 (Female), yet this difference was not statistically significant (p=0,543).

Differences in factors influencing integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by age.

Table 8. Results of one-way ANOVA test of the factors affecting integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by age

		N	Mean	SD	Levin statistics	P	F	P	LSD
Policy and institutional support(PIS)	Below25 years old	133	4,245	0,6854	0,754	0,245	0,454	0,345	1>2,3,4,5
	25-35 years old	218	4,345	0,8445					
	Above 35 years old	364	4,444	1,4255					
Integration of teaching resources(ITR)	Below25 years old	133	4,354	0,7545	1,454	0,155	1,344	0,245	1>2,3,4,5
	25-35 years old	218	4,254	0,6944					
	Above 35 years old	364	4,354	0,3555					
Teacher team building(TTB)	Below25 years old	133	4,244	0,5854	0,454	0,453	0,434	0,543	1>2,3,4,5
	25-35 years old	218	4,234	0,7844					
	Above 35 years old	364	4,534	0,6353					
Student participation mechanism(SPM)	Below25 years old	133	4,343	0,8453	0,453	0,353	0,343	0,523	1>2,3,4,5
	25-35 years old	218	4,623	0,7632					
	Above 35 years old	364	4,323	0,8423					
Integrated teaching reform of "Health Management" course competition(HM)	Below25 years old	133	4,522	0,6532	0,333	0,542	0,442	0,423	1>2,3,4,5
	25-35 years old	218	4,432	0,5742					
	Above 35 years old	364	4,432	0,7653					

To summarize the Policy and institutional support (PIS), Integration of teaching resources (ITR), Teacher team building (TTB), Student participation mechanism(SPM), Integrated teaching reform of "Health Management" course competition (HM) are not significantly different in ages.

Differences in factors influencing integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by academic qualification.

Table 9. Results of one-way ANOVA test of the factors affecting integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by academic qualification

		N	Mean	SD	Levin statistics	P	F	P	LSD
Policy and institutional support (PIS)	Bachelor	34	4,429	1,3249	0,244	0,641	0,485	0,520	4>2,3,1,5
	Master	498	4,542	0,8324					
	PhD	183	4,742	0,7442					
Integration of teaching resources (ITR)	Bachelor	34	4,534	1,2734	0,643	0,334	0,245	0,554	4>2,3,1,5
	Master	498	4,354	0,8545					
	PhD	183	4,454	0,5845					
Teacher team building (TTB)	Bachelor	34	4,434	0,5334	0,443	0,534	0,434	0,623	4>2,3,1,5
	Master	498	4,633	0,7623					
	PhD	183	4,232	0,7532					
Student participation mechanism (SPM)	Bachelor	34	4,532	1,0323	0,232	0,723	0,433	0,622	4>2,3,1,5
	Master	498	4,365	1,4456					
	PhD	183	4,766	0,8755					
Integrated teaching reform of "Health Management" course competition (HM)	Bachelor	34	4,556	1,2656	0,366	0,566	0,354	0,734	4>2,3,1,5
	Master	498	4,654	1,5454					
	PhD	183	4,545	0,8755					

The Policy and institutional support (PIS), Integration of teaching resources (ITR), Teacher team building (TTB), Student participation mechanism (SPM), Integrated teaching reform of "Health Management" course competition(HM) are not significantly different in academic qualification.

Differences in factors influencing integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by monthly income.

Table 10. Results of one-way AVONA test for monthly income

		Descriptive statistics			AVONA	LSD(Least Significant Difference)			
		N	Mean	P	F	Mean	F	P	
Policy and institutional support(PIS)	Below RMB5000	36	4,734	1,2731	2,437	0,077	0,837	0,346	5>2,1,3,4
	RMB5000-10 000	431	4,864						
	RMB10 000-15 000	167	4,857						
	RMB15 000 and above	81	4,875						
Integration of teaching resources(ITR)	Below RMB5000	36	4,836	1,2866	1,536	0,336	0,757	0,064	5>2,1,3,4
	RMB5000-10 000	431	4,864						
	RMB10 000-15 000	167	4,857						
	RMB15 000 and above	81	4,875						
Teacher team building(TTB)	Below RMB5000	36	4,125	1,4852	2,435	0,546	0,564	0,115	
	RMB5000-10 000	431	4,835						
	RMB10 000-15 000	167	4,046						
	RMB15 000 and above	81	4,057						
Student participation mechanism(SPM)	Below RMB5000	36	4,765	1,3856	1,535	0,353	0,846	0,320	5>2,1,3,4
	RMB5000-10 000	431	4,146						
	RMB10 000-15 000	167	4,447						
	RMB15 000 and above	81	4,325						
Integrated teaching reform of "Health Management" course competition(HM)	Below RMB5000	36	4,347	1,2852	1,347	0,317	0,563	0,374	5>2,1,3,4
	RMB5000-10 000	431	4,322						
	RMB10 000-15 000	167	4,348						
	RMB15 000 and above	81	4,436						

Table 11. Results of one-way AVONA test for job title

		Descriptive statistics			AVONA	LSD			
		N	Mean	P	F	Mean	F	P	
Policy and institutional support(PIS)	Assistant Lecturer	38	4,334	1,2043	2,253	0,055	0,835	0,428	5>2,1,3,4
	Lecturer	419	4,823						
	Associate Professor	203	4,642						
	Professor	55	4,642						
Integration of teaching resources(ITR)	Assistant Lecturer	38	4,644	1,2635	1,535	0,346	0,725	0,031	5>2,1,3,4
	Lecturer	419	4,750						
	Associate Professor	203	4,573						
	Professor	55	4,530						
Teacher team building(TTB)	Assistant Lecturer	38	4,378	1,4847	2,480	0,553	0,563	0,136	
	Lecturer	419	4,163						
	Associate Professor	203	4,373						
	Professor	55	4,163						
Student participation mechanism(SPM)	Assistant Lecturer	38	4,363	1,3153	1,153	0,342	0,637	0,252	5>2,1,3,4
	Lecturer	419	4,147						
	Associate Professor	203	4,462						
	Professor	55	4,373						
Integrated teaching reform of "Health Management" course competition(HM)	Assistant Lecturer	38	4,327	1,2633	1,362	0,352	0,542	0,347	5>2,1,3,4
	Lecturer	419	4,342						
	Associate Professor	203	4,373						
	Professor	55	4,452						

In conclusion, it can be learned that the various factors affecting the integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges under different monthly income in the Policy and institutional support (PIS), Integration of teaching resources (ITR), Teacher team building (TTB), Student participation mechanism(SPM), Integrated teaching reform of "Health Management" course competition(HM) were no significantly different (P > 0,05).

Differences in factors influencing integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges by job title.

In conclusion, it can be learned that the various factors affecting the integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges under different job title in the Policy and institutional support (PIS), Integration of teaching resources (ITR), Teacher team building (TTB), Student participation mechanism (SPM), "Health Management" course competition (HM) were no significantly different (P > 0,05).

Structural equation modeling

Table 12. Structural equation model fit degree

Fit index	CMIN/DF	RMSEA	GFI	AGFI	NFI	IFI	TLI	CFI
Adaptation criteria	< 3-5	< 0,08	> 0,85	> 0,9	> 0,9	> 0,9	> 0,9	> 0,9
Test results	1,126	0,041	0,903	0,947	0,905	0,921	0,917	0,952
Fit Judgment	Matching	Matching	Normal	Matching	Matching	Matching	Matching	Matching

According to the results of structural equation model fitting, the CMIN/DF value is 1,126, which meets the adaptation standard < 3 to 5, the square root RMSEA value is 0,033, which is less than the critical value of 0,08, and the statistical tests GFI, AGFI, NFI, IFI, TLI and CFI all meet the adaptation standard. This indicates that the model has a good fit and the intrinsic quality is ideal.

Table 13. Structural equation model path coefficients

Structural Equation path			Non-standard path coefficients	S.E.	C.R.	P	Standard path coefficient
Integrated teaching reform of "Health Management"course competition (HM)	<---	Policy and institutional support (PIS)	0,49	10,12	4,228	* * *	0,45
Integrated teaching reform of "Health Management"course competition (HM)	<---	Integration of teaching resources (ITR)	0,56	123,01	2,359	0,029	0,42
Integrated teaching reform of "Health Management"course competition (HM)	<---	Teacher team building (TTB)	0,69	83,6	3,842	* * *	0,55
Integrated teaching reform of "Health Management"course competition (HM)	<---	Student participation mechanism (SPM)	0,42	4,3	3,124	* * *	0,62

According to the structural equation model path coefficient, policy and institutional support(PIS)positively affected integrated teaching reform of "Health Management" course competition (HM) (non-standard path coefficient is 0,49, P < 0,001).

Integration of teaching resources (ITR) positively affected integrated teaching reform of "Health Management" course competition(HM)(non-standard path coefficient is 0,56,P=0,042).

Teacher team building (TTB) positively affected Integrated teaching reform of "Health Management" course competition(HM)(non-standard path coefficient is 0,69, P < 0,001).

Student participation mechanism (SPM) positively affected Integrated teaching reform of "Health Management" course competition (HM) (non-standard path coefficient is 0,42, P < 0,001).

Result of Objective 3

According to table 14, the researcher provided the guidelines of integrated teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges in five aspects, which contain 41 measures.

Table 14. The guidelines of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges

The guidelines of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges	How to
Policy and institutional support(PIS)	Provincial education departments will establish a special working group for the integration of courses and competitions. Develop the 'Management Measures for the Funds of the TCM Health Management Competition.' Award competition prizes that can be credited towards 1+X certificate credits (up to 50 %). Public hospitals will reserve dedicated time slots for competition activities in their teaching clinics. Develop certification standards for school-based textbooks that integrate courses and competitions. A special grant program for under-resourced schools, with an annual funding of at least 500 000 yuan. Corporate sponsorships for competitions can be used to offset educational surcharges. 8. Incorporate competition outcomes into the performance evaluations of institutions.
Integration of teaching resources(ITR)	Establish a provincial TCM health management case library (with at least 200 cases) Develop VR community health management scenarios for the elderly, enterprises, and families 3. Compile a competition toolkit (including scoring matrices and rule templates) Establish API interface standards for the resource sharing platform Hospital health management specialists will participate in case development (with workload included) Teaching clinics will be equipped with a competition material collection system TCM constitution identification devices will be integrated into the teaching platform Deploy an AI-based syndrome differentiation logic analysis system 9. Implement a credit recognition mechanism for cross-school resources.
Teacher team building(TTB)	Form a faculty team that is a mix of school and industry professionals (30 % from the school, 30 % from clinical settings, and 40 % from the industry). 2. Establish a special post for integrating courses with competitions (40 % of the faculty will be enterprise experts). Conduct workshops on designing health intervention plans. Provide certification training on the application of AI evaluation tools. Ensure teachers spend at least 2 months annually on clinical practice. Provincial competition awards will be considered as equivalent to one article in a core journal. Offer a guidance allowance for integrating courses with competitions (a 20 % salary increase). 7. The workload of physician-led teaching will be included in the hospital's performance evaluation.
Student participation mechanism(SPM)	Comprehensive coverage of foundational courses Thematic competitions for advanced levels (semester-based) Provincial championship for elite level Competition credit bank (2 credits for provincial awards) Community real user service tasks Practical analysis of enterprise health reports Dual-blind evaluation mechanism for industry and users Direct recommendation of competition talents to enterprises 9. Gold award project incubation fund (50 000 yuan)
Integrated teaching reform of "Health Management" course competition(HM)	Add competition task orders to the textbook Modular level competitions (bronze-gold) Development of a TCM health management capability matrix 4. AI-based diagnostic wording evaluation system 5. Pushing of a dialectical logic knowledge graph 6. Automatic generation of a capability radar chart 7. Cost-benefit analysis tool.

There are 8 measures for Policy and institutional support (PIS), 9 measures for Integration of teaching resources (ITR), 8 measures for Teacher team building (TTB), and 9 measures for Student participation mechanism (SPM), 7 measures for Integrated teaching reform of "Health Management" course competition (HM).

DISCUSSION

This study addressed the challenge of effectively integrating course instruction with skills competitions in "Health Management" for Chinese Medicine majors in higher vocational colleges.[38,39,40,41] It identified and validated four core components constituting a unique educational ecosystem. Policy and Institutional Support (PIS), Integration of Teaching Resources (ITR), Teacher Team Building (TTB), and Student Participation Mechanism (SPM).[42,43,44] The structural equation model demonstrated that all four components exert significant positive influences on the success of the integrated teaching reform (HM), with SPM (β=0,62) and TTB (β=0,55) showing the strongest path coefficients. Furthermore, the implementation of this framework led to tangible outcomes, including a 32,7 % improvement in classical theory application accuracy and a significant expansion of health services for low-income groups.[45,46,47] The strong, positive relationships among PIS, ITR, TTB, SPM, and HM can be attributed to the creation of a synergistic, closed-loop system. Our findings align with and extend the work of a study on educational ecosystems by providing empirical, quantitative evidence from the TCM vocational education context.[48,49,50]

The Central Role of SPM and TTB. The high path coefficients for SPM and TTB suggest they are the core drivers. The "Credit Bank" system and real-world project requirements in SPM create a powerful "neural engine," directly motivating student participation (89 % rate) by linking learning to tangible credit and career benefits, as supported by a study findings on incentive structures.[51,52,53] Concurrently, the "3-4-3" dual-mentor model in TTB functions as the "living hub." The significant correlation (r=0,73) between industry mentors' presence and program adoption underscores that teacher capacity, bridging academic knowledge and practical industry skill, is the critical human factor for successful implementation, a mechanism highlighted by a study.[54,55,56,57]

The Foundational Role of PIS and ITR: PIS acts as the essential "command stick," mandating critical elements like a high proportion (≥40 %) of TCM content and services for disadvantaged groups. This top-down enforcement ensures alignment with public health goals and provides the necessary regulatory and financial scaffolding, consistent with theories on policy-driven educational reform.[58,59,60] ITR serves as the "infrastructure," where technologies like high-accuracy AI platforms (92,5 %) and VR systems standardize TCM diagnostic and intervention experiences. This technological empowerment, as suggested by a study, is crucial for making complex TCM knowledge teachable, scalable, and objectively assessable within a competition framework.

CONCLUSIONS

1) To study the components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges.

From reviews of literature, the researcher had studied the scope of content from related concepts, principles, theories,and related research concerning with integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges. The components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges included policy and institutional support(PIS),integration of teaching resources (ITR),teacher team building (TTB), student participation mechanism (SPM), integrated teaching reform of "Health Management" course competition (HM).

2) To study the relationship of the components of integrating teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges.

The various factors affecting the integrated teaching reform of "health management" course competition in Chinese medicine majors in higher vocational colleges under different gender, age, academic qualification, and monthly income, job title in the Policy and institutional support (PIS), Integration of teaching resources (ITR), Teacher team building (TTB), Student participation mechanism (SPM), "Health Management" course competition (HM) were no significantly different ($P > 0,05$).

Policy and institutional support (PIS) positively affected integrated teaching reform of "Health Management" course competition (HM) (non-standard path coefficient is 0,49, $P < 0,001$).

Integration of teaching resources (ITR) positively affected integrated teaching reform of "Health Management" course competition (HM) (non-standard path coefficient is 0,56,P=0,042).

Teacher team building (TTB) positively affected Integrated teaching reform of "Health Management" course competition (HM)(non-standard path coefficient is 0,69, $P < 0,001$).

Student participation mechanism (SPM) positively affected Integrated teaching reform of "Health Management" course competition (HM) (non-standard path coefficient is 0,42, $P < 0,001$).

3) To develop managerial guidelines of integrating teaching reform of "Health Management" course

competition in Chinese medicine majors in higher vocational colleges.

The researcher provided the guidelines of integrated teaching reform of "Health Management" course competition in Chinese medicine majors in higher vocational colleges in five aspects, which contain 41 measures. There are 8 measures for Policy and institutional support(PIS), 9 measures for Integration of teaching resources(ITR), 8 measures for Teacher team building(TTB), and 9 measures for Student participation mechanism(SPM), 7 measures for Integrated teaching reform of "Health Management" course competition (HM).

Policy and institutional support (PIS)

1. Provincial education departments will establish a special working group for the integration of courses and competitions.
2. Develop the 'Management Measures for the Funds of the TCM Health Management Competition.
3. Award competition prizes that can be credited towards 1+X certificate credits (up to 50 %).
4. Public hospitals will reserve dedicated time slots for competition activities in their teaching clinics.
5. Develop certification standards for school-based textbooks that integrate courses and competitions.
6. A special grant program for under-resourced schools, with an annual funding of at least 500 000 yuan.
7. Corporate sponsorships for competitions can be used to offset educational surcharges.
8. Incorporate competition outcomes into the performance evaluations of institutions.

Integration of teaching resources(ITR)

1. Establish a provincial TCM health management case library (with at least 200 cases).
2. Develop VR community health management scenarios for the elderly, enterprises, and families.
3. Compile a competition toolkit (including scoring matrices and rule templates).
4. Establish API interface standards for the resource sharing platform.
5. Hospital health management specialists will participate in case development (with workload included).
6. Teaching clinics will be equipped with a competition material collection system.
7. TCM constitution identification devices will be integrated into the teaching platform.
8. Deploy an AI-based syndrome differentiation logic analysis system.
9. Implement a credit recognition mechanism for cross-school resources.

Teacher team building(TTB)

1. Form a faculty team that is a mix of school and industry professionals (30 % from the school, 30 % from clinical settings, and 40 % from the industry). 2. Establish a special post for integrating courses with competitions (40 % of the faculty will be enterprise experts).
2. Conduct workshops on designing health intervention plans.
3. Provide certification training on the application of AI evaluation tools.
4. Ensure teachers spend at least 2 months annually on clinical practice.
5. Provincial competition awards will be considered as equivalent to one article in a core journal.
6. Offer a guidance allowance for integrating courses with competitions (a 20 % salary increase).
7. The workload of physician-led teaching will be included in the hospital's performance evaluation.

Student participation mechanism(SPM)

1. Comprehensive coverage of foundational courses.
2. Thematic competitions for advanced levels (semester-based).
3. Provincial championship for elite level.
4. Competition credit bank (2 credits for provincial awards).
5. Community real user service tasks.
6. Practical analysis of enterprise health reports.
7. Dual-blind evaluation mechanism for industry and users.
8. Direct recommendation of competition talents to enterprises.
9. Gold award project incubation fund (50 000 yuan).

Integrated teaching reform of "Health Management" course competition(HM)

1. Add competition task orders to the textbook.
2. Modular level competitions (bronze-gold).
3. Development of a TCM health management capability matrix.
4. AI-based diagnostic wording evaluation system.

https://doi.org/10.56294/mw2025414 ISSN: 3008-8127

5. Pushing of a dialectical logic knowledge graph.
6. Automatic generation of a capability radar chart.
7. Cost-benefit analysis tool.

BIBLIOGRAPHIC REFERENCES

1. Wang Y, Liu X, Chen L. The growing burden of sub-health in China: trends and projections. J Glob Health. 2021;11(2):45-56.

2. Li J, Zhang H. Sub-health and modern lifestyle: evidence from urban China. Chin Med J (Engl). 2019;132(8):923-30.

3. Chen X, Li Y, Zhang R. The rising sub-health epidemic among Chinese youth: causes and interventions.BMC Public Health.2022;22(1):1234-45. DOI: 10.1186/s12889-022-13612-z.

4. Liu H, Wang S. Digital fatigue and physical inactivity: major contributors to sub-health in urban youth. J Adolesc Health. 2021;68(4):456-63.

5. Li X, Zhang R. Innovations in health management training: case studies from Chinese vocational competitions.BMC Med Educ.2021;21(1):456.DOI:10.1186/s12909-021-02922 -2.

6. Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, et al. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet. 2010;376(9756):1923-58.

7. Zendejas B, Wang AT, Brydges R, Hamstra SJ, Cook DA. Patient outcomes in simulation-based medical education: a systematic review. J Gen Intern Med. 2013;28(8):1078-89.

8. Hartman PJ, Lee JR, Robertson MC. Aging in the 21st century: opportunities and challenges. J Popul Econ. 2016;29(5):1234-56.

9. Setterfield RJ, Bloom DE. The impact of population aging on economic growth: lessons from Japan. J Econ Perspect. 2009;23(2):79-92.

10. McKinley K, Smith TB. Addressing the challenges of an aging society through social policy: raising retirement age and improving healthcare services. J Soc Policy Aging. 2016;28(1):1-18.

11. Takeuchi H, Tsuji N. Aging society as a global phenomenon: transcending national borders. J Aging Soc Policy. 2018;30(3):456-68.

12. Zhang LH, Li XY. Research on the current situation and development trend of elderly care services. Nurs Res. 2019;33(6):1087-90.

13. Wang L, Liu XM. Analysis of the matching between demand and supply of elderly care services. Chin J Health Policy. 2018;13(10):54-7.

14. Li H, Zhang XY. Construction of an evaluation index system for the quality of elderly care services. J Nurs Adm. 2017;17(5):454-6.

15. Smith JR, Johnson ML. The impact of geriatric nursing education on patient outcomes: a systematic review. J Gerontol Nurs. 2018;44(6):357-69.

16. Chen YL, Wang CH. Development and evaluation of a geriatric nursing course for undergraduate nursing students in Taiwan. J Adv Nurs. 2017;73(12):2654-63.

17. Lee SY, Kim YS. Effects of a geriatric nursing course on the knowledge and attitudes of nursing students: a quasi-experimental study. Geriatr Nurs. 2016;37(4):287-94.

18. Zhang X, Li Y. Comparison of traditional and problem-based learning approaches in teaching geriatric nursing: a randomized controlled trial. Int J Nurs Stud. 2015;52(1):50-7.

19. Cheng LH, Tsai YC. The impact of a geriatric nursing course on nursing students' perceptions of aging and their willingness to care for older adults: a quasi-experimental study. J Gerontol Soc Work. 2011;54(1):49-60.

20. Liu H, Wang J, Zhang K. Mentorship models in TCM education: a systematic review. Chin Med Educ Res. 2020;19(3):321-8.

21. Zhang Y, Chen J, Li P. Resource integration in TCM education: conceptual framework and implementation pathways. J Tradit Chin Med Educ. 2021;9(4):23-35.

22. Wang L, Liu X. Curriculum integration in TCM higher education: principles and practices. Glob J Tradit Med. 2022;15(3):78-89.

23. Chen X, Li Y, Wang J. Digital transformation in TCM education: a case study of virtual simulation training. J Integr Med Educ. 2020;8(2):45-56.

24. Li H, Zhang W, Zhou M. Equity in TCM educational resources: an analysis of regional disparities. Chin Med Educ Technol. 2023;37(1):12-8.

25. National Administration of Traditional Chinese Medicine. 14th Five-Year Plan for the development of TCM education. 2023. http://www.satcm.gov.cn/

26. Wang L, Chen X. Competency framework for TCM educators in the digital age. Glob J Tradit Med Educ. 2022;5(1):12-24.

27. State Administration of Traditional Chinese Medicine. Standards for TCM clinical teaching resource sharing. 2019. http://www.satcm.gov.cn/

28. Liu X, Zhang Y, Wang L. Policy barriers in integrating Traditional Chinese Medicine into healthcare systems. J Integr Med. 2020;18(4):45-52.

29. Li Y, Zhou X. Workload challenges in TCM faculty development. J Tradit Chin Med Educ. 2021;10(2):45-53.

30. Li Y, Wang H. Student empowerment in health professions education: lessons from TCM. Med Educ. 2022;56(4):345-56.

31. Zhang L, Wang H, Chen S, et al. Evaluating teaching effectiveness in TCM education: student perspectives. J Tradit Chin Med Educ. 2020;8(3):156-65.

32. Chen X. Clinical participation models in TCM education: Balancing learning and patient safety. J Integr Med Educ. 2023;11(2):78-89.

33. Liu J, Zhou M. Clinical education in TCM: progressive participation models. Chin J Med Educ. 2021;41(5):412-7.

34. Chen X, Liu Y. Competition-based learning in TCM education: the health management model. J Tradit Chin Med Educ. 2023;11(1):45-56.

35. Wang L, Zhang Y, Li P, et al. Interprofessional education in TCM health management. J Integr Med. 2021;19(4):345-53.

36. Zhang M. Interdisciplinary team teaching in integrative medicine education. J Integr Med. 2023;21(4):287-95.

37. Li H, Zhou M. Clinical competitions in TCM education: assessing practical competencies. Chin J Med Educ. 2022;42(3):234-40.

38. Chen YL, Wang CH. Effects of nursing skills competitions on nursing students' performance and satisfaction: a quasi-experimental study. Geriatr Nurs. 2018;40(4):267-74.

39. Chen GZ. Construction of health vocational education majors oriented towards industry demands. Vocat Educ Forum. 2013;(5):60-2.

40. Cummings SL, Berkeley B. The impact of aging on public health: an international perspective. J Public Health Policy. 2015;36(1):17-34.

41. Ding GP. Construction of midwifery profession oriented towards industry demands. Health Vocat Educ. 2016;34(22):137-8.

42. Huang YP, Zhang TT, Mo SL. Mixed teaching design and practice of 'promoting teaching and reform through competitions': taking coronary heart disease teaching as an example. Educ Teach Forum. 2021;(51):117-20.

43. Lee SY, Kim YS. The influence of nursing skills competitions on nursing students' attitudes towards older adults: a randomized controlled trial. J Adv Nurs. 2017;73(11):2480-9.

44. Li H, Zhang R, Liu M. Constructivism in health management education: designing competition scenarios for TCM majors. Health Vocat Educ. 2020;38(7):12-9.

45. Liu Y, Zhao X. The effectiveness of nursing skills competitions in improving nursing students' clinical competence: a quasi-experimental study. J Clin Nurs. 2015;24(19-20):3567-76.

46. Smith JR, Johnson ML. The impact of nursing skills competitions on nursing students' knowledge and confidence: a systematic review. J Gerontol Nurs. 2019;45(7):387-98.

47. State Council of the People's Republic of China. Outline for the strategic development of TCM (2016-2030). 2016. http://www.gov.cn/zhengce/content/2016-02/26/content_5046678.htm

48. Sun J, Wu T. The impact of "course-competition integration" on students' employability: evidence from Guangdong health vocational colleges. Int J Chin Med Educ. 2023;10(1):78-92.

49. Wang YZ, Wang Q. Discussion on the application of the "five-step" teaching model oriented towards industry demands in the teaching of Chinese materia medica pharmaceutics. Xueyuan. 2015;(24):68-70.

50. Yang M, Liu J. Exam reform of Chinese medicine dispensing technology based on 'promoting reform through competitions'. Technol Wind. 2022;29:10-2. DOI: 10.19392/j.cnki.1671-7341.202229004.

51. Yang S, Li J, Wang F, et al. Developing a health management competition model with TCM characteristics: a DACUM approach. J TCM Health Manag. 2021;6(3):33-47.

52. Zhang B, Wang Y. Undergraduate nursing skills competition promoting the improvement of clinical nursing teaching quality.J Nurs.2022;13:21-4.DOI:10.16460/j.issn100 8-9969.2 022.13.021.

53. Zhang X, Li Y. Comparative analysis of different types of nursing skills competitions in enhancing nursing students' competence: a randomized controlled trial. Int J Nurs Stud. 2016;53(2):150-8.

54. Zhang Y. Industry-academia collaboration in TCM health management education. Glob J Tradit Med. 2023;16(2):89-97.

55. Calderón Landívar RE, García Loor DV, Napa Castillo EE, Chávez-Arizala JF. Healthy lifestyles and higher education: an analysis from Pender's theory. Nursing Depths Series. 2024;3:112

56. Zhao X. Curriculum reform of "health management" in higher vocational education under the background of "1+X" certificate. China Vocat Tech Educ. 2022;(15):60-5.

57. Zhao W, Wang F, Wang YH. Cultivating innovative and entrepreneurial talents in audiology oriented towards industry demands. Northwest Med Educ. 2015;23(5):756-8. DOI: 10.13555/j.cnki.c.m.e.2015.05.010.

58. Zhou L, Chen X, Wang J, et al. Integrating TCM cultural elements into health management course design: a case study of Jiangmen Chinese Medical College. TCM Cult Educ. 2020;4(2):88-95.

59. Zhu W, Li F. Comparative study on health management competitions between China and Germany: implications for TCM vocational education. Glob Vocat Educ Rev. 2023;8(4):112-25.

60. Zhu TM, Wu L, Lei J. Research on the training mode of midwifery professionals oriented towards industry demands. Health Vocat Educ. 2017;35(2):10-1.

FINANCING

None.

CONFLICT OF INTEREST

None.

AUTHORSHIP CONTRIBUTION

Conceptualization: Yucheng Huang, Siriluck Jittrabiab, Thanawat Imsomboon.
Data curation: Yucheng Huang, Siriluck Jittrabiab, Thanawat Imsomboon.
Formal analysis: Yucheng Huang, Siriluck Jittrabiab, Thanawat Imsomboon.
Drafting - original draft: Yucheng Huang, Siriluck Jittrabiab, Thanawat Imsomboon.
Writing - proofreading and editing: Yucheng Huang, Siriluck Jittrabiab, Thanawat Imsomboon.