

Research Article

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Strengthening Chinese Medicine Health Management Education through Artificial Intelligence: A South African Case Study

Zijing Hu 

Abstract

Background/purpose. The need for effective, accessible, and culturally sensitive training models has become increasingly important, particularly in cross-cultural and resource-limited contexts, such as Africa. Traditional Chinese Medicine has gained global recognition for its holistic and preventive approach to health. This study explores the integration of Artificial Intelligence into Chinese medicine health management training at a public university in South Africa, where interest in Traditional Chinese Medicine is growing despite significant educational and infrastructural challenges.

Materials/methods. Grounded in Everett Rogers' Diffusion of Innovation theory and framed within an interpretivist paradigm, the study adopts a qualitative case study approach to examine the experiences and perceptions of six students enrolled in a complementary medicine program. Data were collected through semi-structured interviews and analyzed thematically according to Braun and Clarke's six-step thematic analysis.

Results. Participants emphasized the potential of Artificial Intelligence to bridge linguistic and pedagogical gaps in Traditional Chinese Medicine education, particularly through tools such as adaptive learning platforms, virtual diagnosis simulators, and natural language processing for classical texts. However, they also expressed caution about the risk of eroding the philosophical and intuitive essence of Traditional Chinese Medicine if AI tools are not carefully designed and implemented.

Conclusion. The study concludes that integrating Artificial Intelligence into Chinese medicine health management training can modernize pedagogy, enhance accessibility, and support culturally grounded learning, especially in diverse contexts such as South Africa. Further research with broader participation is essential to evaluate long-term outcomes and ensure the adoption of culturally sensitive, pedagogically sound Artificial Intelligence.

1. Introduction

The integration of technology into healthcare education is reshaping traditional paradigms globally. Similarly, Chinese medicine health management presents a compelling case for innovation. As the global health community increasingly embraces complementary medicine, Traditional Chinese Medicine (TCM) is gaining recognition for its relevance in addressing modern health challenges, particularly in areas of chronic disease management, preventive care, and patient-centered treatment (World Health Organization [WHO], 2022). However, the sustainable integration of TCM into mainstream education and healthcare systems remains fraught with challenges, especially outside its cultural heartlands in East Asia (Zhou et al., 2024).

In South Africa, a country renowned for its cultural and linguistic diversity, as well as its pluralistic healthcare system, the inclusion of TCM presents new possibilities. Institutions such as the University of Johannesburg are pioneering formal education in complementary medicine, including acupuncture (Hu & Venketsamy, 2022; Razlog et al., 2024). The teaching and learning of Chinese medicine within such contexts face unique barriers, including limited clinical infrastructure, linguistic and cultural differences, and the scarcity of qualified educators (Hu, 2023; Wu & Li, 2022). Additionally, the epistemological divergence between TCM's holistic framework and the biomedical model predominant in South African health education creates further pedagogical tension. As students grapple with classical Chinese texts, complex diagnostic frameworks, and limited practical exposure, there is an urgent need for adaptive, scalable, and inclusive educational solutions (Hu, 2022; Kem, 2022).

In recent years, Artificial Intelligence (AI) has emerged as a transformative tool with the potential to bridge knowledge gaps, increase access, and enhance engagement (Chison et al., 2023). From personalised learning platforms and clinical simulations to natural language processing tools that decode classical texts, AI holds significant promise in enhancing the delivery and accessibility of TCM training (Zeng & Jia, 2024). AI-driven innovations can contextualise Chinese medicine for diverse learners, facilitate interactive and experiential learning, and help localise content to meet regional health priorities (Song et al., 2024). These capabilities are particularly critical in South Africa, where educational resources are often unevenly distributed, and students come from diverse academic, linguistic, and cultural backgrounds (Hu, 2022; Zhang et al., 2024).

Despite its potential, there are challenges in AI integration in TCM education. For instance, concerns around oversimplification, technological accessibility, cultural authenticity, and ethical use of traditional knowledge must be carefully navigated (Hou, 2025). Understanding how students—especially those in pioneering programmes—perceive and engage with AI in TCM training can provide valuable insights into how innovation can be responsibly and effectively implemented (Lu et al., 2024).

This study explores the experiences and perceptions of students enrolled in a Chinese medicine programme at a public university in South Africa. Through a qualitative case study approach grounded in Rogers' Diffusion of Innovation theory, the author aimed to explore how AI technologies were being perceived, adopted, and potentially resisted within this unique educational setting. The findings aim to inform the development of culturally competent, technologically enhanced training models that honour the integrity of Chinese medicine while meeting the evolving needs of 21st-century learners.

2. Literature Review

2.1. Introduction to Chinese Medicine Health Management

Chinese Medicine health management, rooted in the principles of TCM, encompasses an integrative and holistic approach to health preservation, disease prevention, and rehabilitation (Xu,

2024). Central to TCM is the philosophy of prevention and early treatment of disease before symptoms manifest (World Health Organization [WHO], 2022). Health is viewed as a dynamic balance between internal elements (yin and yang, qi, blood, and body fluids) and external environmental influences. When this equilibrium is disturbed, disease occurs (Xu, 2024).

TCM's health management framework is multifaceted, incorporating diagnostic techniques (pulse reading, tongue diagnosis), therapeutic interventions (acupuncture, herbal formulas, moxibustion), dietary regulation, and lifestyle guidance aligned with seasonal, emotional, and constitutional factors (Matos et al., 2021). This approach emphasises individualisation, wherein each patient's treatment plan is tailored to their unique pattern of disharmony, as diagnosed through the lens of syndrome differentiation (Hu et al., 2022; Xu, 2024). In contemporary global health contexts, Chinese medicine health management is increasingly recognised for its contribution to complementary and integrative medicine (Seetharaman et al., 2021). The WHO has supported TCM through strategic documents like the WHO Traditional Medicine Strategy 2014–2023, highlighting its potential in achieving Universal Health Coverage (Hoenders et al., 2024). This support has catalyzed the integration of TCM into public health systems in countries such as China, Thailand, and Singapore.

In South Africa, the integration of TCM health management is still in its early stages, but it has shown promise. The Allied Health Professions Council of South Africa recognises complementary medicine as a regulated category, and educational institutions such as the University of Johannesburg have initiated offering formal training in acupuncture (Hu, 2022). In this multicultural environment, TCM offers a pluralistic and preventive model that resonates with both traditional African healing philosophies and modern biomedical systems. However, the sustainable development of this field requires a robust educational infrastructure, which brings to light several challenges.

2.2. Challenges in Chinese Health Management Training

Despite growing interest, the field of Chinese health management education—especially outside East Asia—faces numerous structural, pedagogical, and technological challenges. A fundamental challenge lies in the epistemological divergence between TCM and Western biomedicine (Seetharaman et al., 2021; Xu, 2024). TCM's theoretical frameworks—such as qi, meridians, zang-fu organs, and the five elements—are rooted in ancient Chinese cosmology and metaphysics, which differ markedly from the reductionist and empirical basis of modern science (Hu & Venkatesamy, 2022). As a result, students trained in biomedical paradigms may struggle to grasp or accept these concepts without sufficient contextual grounding. Additionally, syndrome differentiation, the cornerstone of Chinese diagnostic thinking, requires nuanced interpretation and clinical intuition developed over time (Chen et al., 2023). Traditional teaching methods often rely heavily on memorisation and apprenticeship-style learning, which may not be feasible or scalable in international training contexts where access to experienced mentors is limited (Razlog & Hu, 2024).

Furthermore, the linguistic inaccessibility of classical Chinese medical texts. Much of the foundational literature—such as the Huang Di Nei Jing (Yellow Emperor's Inner Canon) and Shang Han Lun (Treatise on Cold Damage)—is written in classical Chinese, posing translation and interpretation challenges (Goldschmidt, 2019). Many English translations are either oversimplified or inconsistent, resulting in conceptual misalignment (Hu & Venkatesamy, 2022). This problem is particularly acute in South Africa, where multilingualism and diverse educational backgrounds create additional layers of complexity in TCM training.

Practical training in Chinese medicine health management often demands hands-on clinical experience, access to medicinal herbs, and interaction with seasoned practitioners (Li et al., 2024). However, such resources are scarce outside China. In South Africa, despite recent efforts to establish acupuncture and Chinese medicine programs, there remain limited clinical placements, standardised learning materials, and qualified educators (Hu, 2024; Hu & Venkatesamy, 2022; Zhang et al., 2024).

Students frequently rely on imported texts or digital platforms that may not align with local health priorities or pedagogical styles (Hu & Venketsamy, 2022). While the rest of the world is moving toward digitized, interactive, and modular forms of education, many TCM training programmes continue to use traditional, lecture-based formats (Wang & Li, 2022). This disconnect between modern educational practices and TCM training can lead to disengagement, particularly among younger students who are more accustomed to e-learning environments, gamification, and multimedia content.

2.3. Values of Artificial Intelligence in Chinese Health Management Training

Artificial Intelligence represents a transformative force in education, and its integration into Chinese medicine health management training has the potential to address many of the challenges outlined above. AI tools can enhance accessibility, personalised learning, foster engagement, and promote evidence-based decision-making (Ajani et al., 2024). AI-powered educational platforms use machine learning algorithms to analyse learner performance data and adapt the delivery of content in real-time (Joshi, 2024). These systems can identify areas where a student is struggling, provide targeted feedback, and adjust the complexity or pacing of materials accordingly (Akyuz, 2020). In the context of TCM, students could receive customised instruction in difficult concepts like syndrome differentiation or pulse diagnosis, improving retention and mastery.

For example, an AI-driven TCM learning app may quiz students on tongue diagnosis and offer visual recognition training using large image databases, reinforcing pattern recognition skills through gamified repetition (Chu et al., 2023). Over time, the system can track student progress, suggest supplementary content, and even simulate clinical case studies for experiential learning. Natural Language Processing (NLP), a branch of AI, can play a crucial role in translating classical Chinese medical texts and making them more accessible (Kuwaiti et al., 2023). Advanced NLP tools can assist with terminology mapping, cross-referencing classical terms with modern equivalents, and generating bilingual glossaries or study aids (Chu et al., 2023). Moreover, speech recognition and conversational AI tools could enable students to practice TCM case reporting in multiple languages, offering pronunciation correction and real-time translation. In multilingual contexts like South Africa, such tools could support students from diverse backgrounds and facilitate more inclusive learning environments (Madahana et al., 2022).

One of the most promising applications of AI in TCM education is virtual simulation. AI can strengthen immersive, scenario-based simulations where students interact with virtual patients, conduct diagnostic interviews, observe symptoms, and formulate treatment plans (Chu et al., 2023). These simulations can mirror real-world clinical reasoning processes, providing a safe and controlled environment for trial and error. By integrating AI with augmented reality (AR) or virtual reality (VR), learners can experience an even more interactive form of TCM education, such as handling virtual acupuncture points or manipulating 3D anatomical models informed by meridian theory (Sim et al., 2022). This technology becomes especially valuable in settings where clinical exposure is limited.

In South Africa, where students may be dispersed across vast geographic regions with unequal access to academic resources, AI offers a potential solution (Hu, 2022). Cloud-based AI platforms can democratize access to quality education, enabling students in rural or underserved areas to benefit from the same curriculum and resources as those in urban centres (Leong, 2024). Moreover, AI can help institutions monitor learning outcomes, identify systemic gaps, and inform curriculum development based on aggregated student data (Wang et al., 2024). This data-driven feedback loop allows for continuous improvement and evidence-informed policy decisions in health education. Beyond education, AI can assist in organising and synthesising TCM knowledge (Wang et al., 2021). AI-driven knowledge graphs can map relationships between symptoms, patterns, herbs, and treatments, aiding both learners and researchers. These systems can facilitate the development of

decision-support tools, helping practitioners cross-reference clinical information with historical data and recent research findings (Xu, 2024). By bridging traditional knowledge with modern analytics, AI can contribute to the modernisation and global validation of Chinese medicine, promoting greater interdisciplinary dialogue and research collaboration. Therefore, this study explored the integration of AI into Chinese medicine health management training at a public university in South Africa, which aimed to provide in-depth insights into the South African context.

2.4. Theoretical Framework

To explore the values of AI in Chinese medicine health management training, this study draws on Everett Rogers' Diffusion of Innovation (DoI) theory, a widely recognised model for understanding how new ideas and technologies spread within social systems. Rogers (1983) defines diffusion as "the process by which an innovation is communicated through certain channels over time among the members of a social system." (Garcia-Aviles, 2020). This model is particularly relevant in analysing the integration of AI into educational practices within traditional health frameworks, such as TCM, especially in cross-cultural and resource-constrained environments like South Africa.

The DoI model outlines five key stages in the innovation-decision process: knowledge, persuasion, decision, implementation, and confirmation (Vejlgaard, 2018). Applied to this study, the 'knowledge' stage involves awareness among educators and institutions about the potential of AI to enhance training efficacy in TCM. 'Persuasion' refers to the attitudes formed toward AI, whether it is perceived as a valuable tool that complements traditional knowledge systems or as a disruptive force (Bolici et al., 2020). The 'decision' stage is where stakeholders commit to adopting or rejecting AI-based approaches. 'Implementation' involves the actual use of AI tools in training environments, while 'confirmation' reflects the evaluation of outcomes and reinforcement of continued use (Min et al, 2018). Rogers further identifies five attributes of innovations that influence their rate of adoption: relative advantage, compatibility, complexity, trialability, and observability (Dar, 2018). These attributes provide a useful lens through which to assess how AI tools are received by TCM educators and learners. Table 1 below illustrates the five attributes of innovations.

Table 1. Attributes of the DoI model (As adapted from Dar [2018])

Attributes	Descriptions/Applicability to this study
Relative Advantage	AI technologies offer clear benefits over traditional didactic methods, such as personalized learning, interactive simulations, and multilingual accessibility, especially important in multilingual South African contexts.
Compatibility	AI adoption is more likely when aligned with existing pedagogical values and the holistic, individualized nature of TCM. For AI to be embraced, it must support rather than supplant TCM epistemologies.
Complexity	If AI systems are perceived as overly technical or difficult to use, adoption may be hindered. Designing intuitive, culturally contextual platforms is critical to reducing perceived complexity.
Trialability	The ability to experiment with AI tools without full commitment encourages adoption. Pilot projects, modular courses, or sandboxed simulations can facilitate gradual uptake among institutions and educators.
Observability	The more visible the positive outcomes—such as improved student performance, increased access, or enhanced engagement—the more likely others will follow suit.

In the South African context, the DoI model emphasizes the importance of social influence and institutional support in facilitating adoption. Given the pluralistic healthcare environment and the emerging status of TCM, showcasing successful AI-enhanced training models can create a ripple effect across institutions. Therefore, the DoI framework provides a structured, theory-driven approach for analysing the adoption dynamics of AI in TCM education, helping to identify barriers, enablers, and strategic interventions necessary to foster sustainable innovation.

3. Methodology

This study adopted a qualitative case study approach within the interpretivist paradigm, aiming to investigate students' lived experiences with the use of AI Chinese Medicine Health Management training at a public university in South Africa. The interpretivist perspective enables researchers to explore how participants make sense of their experiences within real-life settings (Maree, 2020). A single case study was deemed suitable due to the distinctive nature of the acupuncture programme, which is uncommon in South Africa (Hu & Venketsamy, 2022; Zhang et al, 2024). Yin (2018) and Hu (2023) concur that case studies are particularly valuable when the subject of inquiry is exceptional, crucial, or contextually relevant.

3.1. Sampling

A purposive sampling strategy was used to identify and select participants who could provide rich, relevant insights (Razlog & Hu, 2024). Recruitment was initiated through a poster displayed on campus notice boards, followed by direct communication with participants who met the inclusion criteria. These criteria required that students: (a) be enrolled in the Complementary Medicine Practice 3 module within the Bachelor of Health Science in Complementary Medicine; (b) voluntarily agree to participate by signing an informed consent form; and (c) be 18 years of age or older. Due to the relatively small cohort size—only 39 students were registered in the module—the pool of potential participants was limited. Consequently, six students agreed to participate in the study. Pseudonyms were assigned to each participant to protect their identity and maintain confidentiality throughout the research process. The demographic information of participants is presented in Table 2.

Table 2. Participants' information

Codes	Sex	Age
P1	Female	24
P2	Male	27
P3	Female	22
P4	Male	24
P5	Female	25
P6	Female	23

3.2. Data Collection and Analysis

Before initiating data collection, ethical clearance was granted by the relevant university ethics committee in Gauteng Province (Ref No: REC-1443-2022). Permission was also obtained from the departmental head. Data were gathered through semi-structured interviews, which were scheduled and conducted between November and March 2025. This format allowed participants to share their experiences openly while providing the researcher with the flexibility to probe for deeper insights. Interview recordings were transcribed verbatim and analysed using the six-phase thematic analysis method proposed by Braun and Clarke, as adapted by Cohen et al. (2018) and Hu (2024). This

analytical process included: (1) familiarization with the data, (2) generating initial codes, (3) searching for patterns or themes, (4) reviewing themes for coherence, (5) refining and naming the final themes, and (6) producing the final narrative report. To ensure research trustworthiness, multiple strategies were employed. Member checking was conducted by allowing participants to review their interview transcripts, ensuring the accuracy of captured data. An audit trail was maintained throughout the research process to promote transparency and consistency. As a result, the study demonstrated credibility, transferability, dependability, and confirmability, enhancing the rigour and validity of the findings. Due to the small sample size, the transferability of the findings was negatively influenced.

4. Results

The study explored the perceptions and experiences of participants on the integration of AI in training for Chinese medicine health management within the South African context. Two overarching themes emerged from the qualitative data: (1) Benefits brought by AI and (2) Concerns, Limitations, and the Need for Cultural Compatibility.

Theme 1: Benefits brought by AI

Participants expressed a strong sense of enthusiasm about the transformative potential of AI in Chinese medicine education. AI was widely perceived as a tool capable of expanding educational access and deepening student engagement, particularly in environments where traditional learning resources—such as physical clinics, textbooks, or senior practitioners—may be limited. AI was seen as a solution to the diverse learning needs of students. P2 explained,

“Many of us come from different educational backgrounds, and not everyone is comfortable with Chinese medical theory initially. AI-based learning systems that adjust to their pace and give instant feedback can make this knowledge far more approachable.”

The ability of AI to bridge linguistic and cultural barriers was also highlighted. With Chinese medicine deeply rooted in classical texts, participants noted that AI tools—particularly those offering real-time translation or explanations—could demystify complex terminologies and classical thinking for South African students.

As P4 noted: “Reading something like the Huangdi Neijing in English is tough enough, but understanding the philosophy behind the words is even harder. If AI could explain those concepts with examples or case simulations, it would help me connect better with the material.”

Participants described how AI-based platforms could simulate diagnostic and therapeutic interactions, helping learners to develop clinical decision-making skills in virtual settings, especially in the absence of live clinical practice opportunities.

“It’s not always possible to provide hands-on experience for every student. AI-based virtual clinics or diagnostic simulators can fill that gap and build confidence before they interact with actual patients,” said P1.

AI was also seen as a tool that could localize learning by incorporating South African health data and disease patterns into the traditional Chinese medicine diagnostic framework. P6, observed:

“Our local context has different disease burdens compared to China, so tools that incorporate South African health data into Chinese medicine pattern recognition would be extremely valuable.”

Theme 2: Concerns, Limitations, and the Need for Cultural Compatibility

While participants largely acknowledged the benefits of AI integration, they also expressed significant concerns. A major theme was the risk of oversimplification, with AI potentially reducing the deeply philosophical and intuitive elements of Chinese medicine into rigid algorithms. P3 articulated this tension clearly: “I’m worried that relying too much on AI could make Chinese medicine feel mechanical, like it’s just data inputs and outputs. But TCM is intuitive—it’s more about feeling and understanding the whole person.”

Another concern was the digital divide. While students may adapt quickly to new technologies, some older lecturers and practitioners might resist or struggle with the shift toward AI-based teaching. P5 emphasised: “Some of our lecturers are not trained in using digital tools, let alone AI. If we’re going to integrate it, we must ensure we provide adequate training and support.”

Finally, ethical issues surrounding knowledge ownership and data privacy emerged. As AI tools increasingly learn from and interpret ancient Chinese medical texts, questions about intellectual heritage and proper representation arise. “Who owns the knowledge when AI learns from centuries of Chinese medical texts? We need to think about intellectual heritage, not just technological advancement,” noted P6.

Despite these concerns, participants generally agreed that AI could bring substantial value to Chinese medicine health management training—provided it is implemented thoughtfully, inclusively, and with respect for cultural nuances.

5. Discussion

The integration of AI into the training of Chinese medicine health management represents a dynamic intersection of traditional medical epistemologies and advanced technological innovation. The findings from this study reveal both enthusiasm and caution among stakeholders, reflecting a broader tension between innovation and cultural preservation.

5.1. Relative Advantage and Pedagogical Transformation

The most prominent driver of adoption, as highlighted by participants, is the relative advantage that AI offers over traditional teaching methods. The flexibility, adaptability, and interactivity of AI-powered learning platforms provide students with a personalised educational experience, bridging gaps in learning pace, language proficiency, and prior exposure to TCM (Song et al., 2024; Zeng & Jia, 2024). In a multicultural and multilingual society like South Africa, such personalisation can address inequities in educational access and comprehension (Hu & Venketsamy, 2022). Furthermore, AI’s ability to simulate clinical scenarios offers an innovative solution to resource constraints. South African institutions frequently encounter limitations in providing consistent clinical exposure due to staff shortages, infrastructure constraints, and geographical disparities (Razlog & Hu, 2024; Hu & Venketsamy, 2022). By enabling virtual diagnostic reasoning, treatment planning, and interactive case studies, AI empowers students to develop core competencies in pattern differentiation and herbal or acupuncture-based interventions—even in the absence of in-person training. These findings align with earlier research that supports the use of virtual simulations in medical and health sciences education to enhance clinical confidence and critical thinking (Chu et al., 2023; Sim et al., 2022).

5.2. Compatibility with Philosophical and Cultural Foundations

Despite its potential, participants underscored the importance of cultural and epistemological compatibility, a key dimension of Rogers’ model. Chinese medicine is not only a medical system but also a philosophical worldview (Hu, 2022). Participants were particularly sensitive to the risk of reductionism, where AI could simplify or distort TCM’s holistic and syndrome-based diagnostics into algorithmic outputs akin to biomedical classification systems (Seetharaman et al., 2021; Xu, 2024). As such, successful AI adoption depends on whether the innovation aligns with TCM’s core principles, such as the balance of yin and yang, the five-element theory, and the subjective and artistic aspects of diagnosis, including pulse and tongue examination. This calls for culturally sensitive AI design that goes beyond data processing, incorporating narrative case histories, context-aware interpretations, and diagnostic reasoning rooted in traditional frameworks. It also requires collaboration between technologists and TCM scholars to ensure the pedagogical fidelity of digital content.

5.3. Complexity and Digital Literacy

The perceived complexity of AI systems was another determinant of adoption. While younger students are often digitally literate, many senior educators and traditional practitioners, who serve as the knowledge holders and mentors in TCM, may lack exposure to digital teaching platforms. Without proper capacity building and professional development, these educators may resist AI integration, thereby slowing its diffusion through the institution. This digital divide reflects the importance of not only introducing new technologies but also ensuring inclusive training and support (Zhang et al., 2024). Institutions should, therefore, prioritise workshops, peer-to-peer mentoring, and structured onboarding programs for educators. Moreover, the user interface of AI tools should be intuitive, multilingual, and built for low-bandwidth environments where connectivity might be inconsistent.

5.4. Trialability and Observability: The Path to Institutional Adoption

The trialability of AI innovations emerged as a practical consideration. Participants suggested that being able to experiment with AI systems in low-stakes settings, such as short courses or pilot modules, would build confidence and familiarity. This aligns with Rogers' idea that when individuals can test an innovation without committing fully, they are more likely to adopt it. Institutions could therefore initiate AI integration through modular, elective courses or summer intensives, rather than overhauling entire curricula (Bolici et al., 2020; Vejlgard, 2018). Additionally, observability—the ability to see the results of AI integration—was noted as a driver of adoption. Participants pointed to improvements in student performance, engagement, and clinical reasoning as key indicators that would encourage broader uptake. These visible outcomes could be documented through case studies, internal evaluations, and student feedback, creating a feedback loop that reinforces the innovation's value.

Beyond the diffusion process, participants raised critical concerns about the ethical implications and ownership of knowledge. The use of AI to process, interpret, and distribute ancient Chinese texts raises questions about intellectual property, cultural stewardship, and the commodification of traditional knowledge. These concerns are particularly relevant in a postcolonial context like South Africa, where indigenous and traditional systems are often vulnerable to appropriation. Furthermore, participants emphasized that AI tools should not universalize or homogenize diagnostic protocols. Chinese medicine, by nature, is context-specific rooted in environmental, seasonal, emotional, and physiological patterns that vary not only between individuals but also between cultures and geographies. Thus, AI models must be localised to reflect the disease burdens, dietary practices, climatic conditions, and sociocultural realities of South Africa, rather than replicating Chinese or Western norms (Bolici et al., 2020).

6. Conclusion

The findings of this study revealed that AI integration must be strategic, inclusive, and reflexive. Beyond the technological interface, the true value of AI lies in its ability to amplify—not replace—the wisdom of traditional medicine. For this to occur, institutions should ensure transdisciplinary collaborations between AI developers, TCM educators, local health practitioners, and students to co-create solutions that are pedagogically sound, culturally grounded, and ethically responsible. The DoI framework provides a valuable lens for understanding how AI adoption in Chinese medicine training may unfold in South Africa. While the benefits are promising, success ultimately depends on effective cultural integration, stakeholder empowerment, and meticulous implementation. If approached holistically, AI can become a powerful ally in modernising Chinese medicine education while preserving the integrity of its ancient wisdom.

The integration of AI into Chinese medicine health management training offers a powerful strategy to modernize pedagogy, expand access, and enhance learning outcomes, particularly in diverse contexts such as South Africa. While TCM presents unique challenges due to its rich philosophical heritage and complex knowledge systems, AI offers a way to bridge these gaps by providing personalised, accessible, and context-aware educational tools. By embracing AI, educators and institutions can better prepare a new generation of practitioners equipped to apply Chinese health management principles in a globalised, digital health landscape. As this field evolves, further research and investment will be essential to ensure that AI-driven tools are culturally sensitive, scientifically grounded, and pedagogically effective.

6.1. Limitations

While this study provides valuable insights into the use of AI in Chinese medicine health management training, several limitations should be acknowledged. Firstly, the study was conducted at a single institution with a relatively small sample size of six participants, which may limit the transferability of the findings. The views expressed may not fully represent the diverse experiences of students across other programs or institutions in South Africa, where similar technology may be implemented. Secondly, the research employed a qualitative case study design, relying on self-reported data collected through semi-structured interviews. As such, responses may have been influenced by participants' perceptions, memory recall, or social desirability bias, particularly given the researcher's dual role as an academic within the same programme. Although measures were taken to ensure confidentiality and trust, this relationship may have affected the openness of some participants. Future research should include a broader range of stakeholders and explore longitudinal impacts of AI on academic outcomes and professional readiness.

7. Suggestion

Based on the results and discussion, the author reached the following recommendations:

Integrate AI Tools with Traditional Pedagogy: Higher education institutions offering Chinese medicine health management programs should consider formally integrating AI teaching assistants as complementary tools, rather than replacements for traditional instruction. Emphasis should be placed on developing AI systems that are grounded in the philosophical foundations of Chinese medicine, ensuring that the technology enhances rather than dilutes the discipline's holistic nature. Furthermore, capacity-building for Educators, Professional development, and digital literacy training should be offered to Chinese medicine educators to reduce resistance and improve the effective use of AI tools. This will help bridge the gap between traditional knowledge holders and emerging technological tools, fostering greater collaboration and acceptance within academic environments.

Pilot AI Adoption Through Modular Implementation. Institutions are encouraged to implement AI-assisted teaching gradually, beginning with pilot modules or elective courses. This trial-based approach will allow for refinement based on student and faculty feedback, increasing confidence in AI integration while minimizing disruption to existing curricula. Moreover, include Stakeholders in Co-Design Processes. Future development of AI tools for Chinese medicine education should involve collaborative input from students, educators, AI developers, and cultural scholars. Participatory design ensures that digital tools are contextually and culturally responsive, improving both usability and educational impact.

Declarations

Conflicts of Interest. The author declared that he had no conflict of interest.

Ethical Approval. Before initiating data collection, ethical clearance was granted by the relevant university ethics committee in Gauteng Province (Ethics Reference No: REC-1443-2022)

Data Availability Statement. Data is available upon request to the author.

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