

Research on the Integration of Traditional Chinese Medicine Theory into Medical Students' Clinical Internship

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Abstract: The integration of traditional Chinese medicine (TCM) into clinical education presents an opportunity to enhance medical training by providing students with a more holistic approach to patient care. This study explores the methods and challenges of integrating TCM theory into clinical internships for medical students at the First Affiliated Hospital of Guizhou University of Traditional Chinese Medicine. A mixed-methods approach was employed, combining quantitative surveys and qualitative interviews with medical students, clinical instructors, and TCM practitioners. The results indicate that while students generally recognize the relevance and benefits of TCM in enhancing diagnostic skills and promoting a holistic understanding of health, several challenges remain. These include the lack of standardized TCM training, limited practical exposure to TCM diagnostic methods, and resistance from some clinical instructors. Despite these challenges, students expressed a strong desire for more structured TCM training and greater support from instructors. Based on the findings, the study recommends the standardization of TCM curricula, enhanced professional development for instructors, and increased collaboration between Western and TCM practitioners. The study concludes that the integration of TCM into medical education can significantly improve student clinical skills and patient care outcomes if appropriately structured and supported.

Keywords: Traditional Chinese medicine; Clinical education; Medical internships; TCM integration; Medical curriculum; Holistic approach; Student training; Healthcare education; Interdisciplinary collaboration

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1. Introduction

Traditional Chinese medicine (TCM) has a profound history, with roots extending over two millennia, offering a unique and holistic approach to healthcare. It focuses on the balance of the body's vital forces, often referred

to as Qi, and the relationship between the human body and its environment, emphasizing the interconnectedness of physical, mental, and spiritual health. In recent decades, TCM has gained increasing recognition worldwide, not only for its efficacy in treating a variety of health conditions but also for its potential to complement modern medical practices. Despite its long-standing existence, the integration of TCM into contemporary medical curricula remains a challenge, especially in clinical training environments where Western medicine predominantly shapes the educational framework.

The application of TCM theory in clinical practice offers significant benefits, particularly in promoting a more holistic understanding of patient care. TCM's core principles, such as Yin-Yang, the Five Elements, and the Zang-Fu organ theory, provide a comprehensive view of health, which contrasts with the more reductionist approaches of Western medicine. These traditional concepts can deepen students' understanding of disease pathogenesis, diagnosis, and treatment by encouraging them to consider the broader context of a patient's condition, something that may be underemphasized in conventional medical training. However, despite this potential, medical students often face challenges in fully incorporating TCM principles into their clinical practice during internships due to the dominant focus on Western methodologies^[1-3].

The First Affiliated Hospital of Guizhou University of Traditional Chinese Medicine plays a pivotal role in medical education, offering a distinctive environment for the training of both undergraduate and graduate students in TCM. This hospital, with its integration of both traditional and modern medical practices, provides a unique opportunity to examine how TCM theory can be effectively integrated into clinical internships. The purpose of this study is to investigate the methods of integrating TCM theory into the clinical internships of medical students, focusing on how these methods can enrich the students' clinical skills and improve their diagnostic and treatment abilities.

This research aims to achieve the following objectives: first, to identify the strategies and methods used to incorporate TCM principles into medical student training; second, to evaluate the effectiveness of these integration methods from the perspectives of both students and clinical instructors; and third, to explore the challenges and barriers faced by students and faculty in incorporating TCM theory into clinical practice. Furthermore, this study seeks to provide actionable recommendations for enhancing the integration of TCM into the clinical education system.

By investigating the integration of TCM into clinical internships, this paper will offer insights into how medical students can benefit from a more holistic approach to patient care, one that encompasses both Western and Eastern medical traditions. Ultimately, the findings of this research could contribute to the development of an educational framework that fosters greater understanding and application of TCM principles, enhancing the overall quality of medical education and patient care.

2. Literature review

2.1. Overview of traditional Chinese medicine education in medical curricula

Traditional Chinese medicine (TCM) has a long and rich history, offering a holistic approach to healthcare that emphasizes the balance of physical, mental, and spiritual well-being. Despite its profound influence, TCM has faced challenges in gaining widespread integration into mainstream medical education, particularly in clinical internships where Western medicine tends to dominate. In many regions, TCM is treated as a complementary or alternative approach rather than being fully integrated into the core curriculum of medical schools.

The integration of TCM into medical curricula has been approached differently across educational systems. In countries where TCM has a long-standing tradition, such as China, its principles are often embedded within the medical curriculum. However, in other parts of the world, TCM is largely excluded from the mainstream medical training, and students are exposed to it in a limited, often theoretical manner. This divergence in educational practices highlights the challenges faced by medical schools in effectively incorporating TCM principles into their clinical training programs^[4, 5].

Although some medical schools offer courses in TCM, these courses are typically not included as part of clinical internships, where hands-on experience and direct patient care are emphasized. This discrepancy between classroom learning and clinical practice can hinder medical students from fully understanding how TCM concepts can be applied in real-world healthcare settings.

2.2. The role of TCM theory in clinical practice

TCM is founded on several key theoretical principles, such as Yin-Yang, Qi, the Five Elements, and Zang-Fu organ theory. These theories provide a framework for understanding the body's health and its interactions with the environment. While Western medicine often focuses on the biological and mechanical aspects of disease, TCM emphasizes balance, harmony, and the interconnectedness of bodily systems. By considering these broader factors, TCM offers an alternative perspective that can complement conventional medical practices.

In clinical practice, TCM theory serves as a guide for diagnosing and treating a wide range of conditions, particularly chronic and complex diseases. TCM encourages a more personalized approach to care, where the practitioner takes into account not only the physical symptoms but also the emotional and environmental factors that may contribute to the patient's condition. This holistic perspective can help medical students gain a deeper understanding of the complexities of patient health and expand their diagnostic and therapeutic skills^[4-7].

Despite its potential benefits, the integration of TCM into clinical practice faces challenges. Many medical students, especially those trained in Western medicine, may find it difficult to apply TCM principles alongside the evidence-based practices they have learned. TCM's emphasis on qualitative assessment methods, such as pulse diagnosis and pattern identification, contrasts with the more quantitative and standardized diagnostic techniques of Western medicine. This difference can lead to confusion and difficulty in integrating both approaches during clinical internships.

2.3. Challenges in integrating TCM into clinical education

Several obstacles hinder the effective integration of TCM into clinical education. One major challenge is the resistance to change from both medical students and clinical instructors who may have limited exposure to TCM or may not fully understand its principles. For many students, especially those primarily trained in Western medicine, TCM can seem foreign and disconnected from the evidence-based approaches they are accustomed to. This resistance is often compounded by the lack of a clear, standardized framework for teaching and applying TCM in clinical settings.

Another challenge is the shortage of qualified instructors who are proficient in both Western and TCM practices. The integration of TCM into clinical internships requires instructors who are not only experts in Western medical techniques but also well-versed in the application of TCM principles in patient care. Without such dual expertise, students may struggle to understand how to effectively apply both paradigms in their clinical practice.

Additionally, TCM's reliance on more subjective, individualized methods of diagnosis and treatment presents

a challenge in a clinical internship setting where standardization and objectivity are often prioritized. TCM's holistic approach, which involves a detailed examination of a patient's emotional, physical, and environmental states, does not always align with the more reductionist approach of Western medicine. As a result, students may find it challenging to reconcile these two approaches when making clinical decisions ^[8].

2.4. Benefits of integrating TCM in medical education

Despite these challenges, there are significant benefits to integrating TCM into clinical education. One of the most notable advantages is the development of a more holistic understanding of health. TCM encourages students to consider the interconnectedness of the body's systems, the role of environmental factors, and the importance of prevention and lifestyle modification. This approach can be particularly valuable when addressing complex and chronic health conditions that require long-term management, rather than just acute intervention.

Furthermore, TCM's emphasis on patient-centered care aligns well with the growing emphasis on personalized medicine in modern healthcare. By incorporating TCM principles into their training, medical students can develop a more comprehensive approach to patient care that considers the whole person, rather than focusing solely on specific diseases or symptoms. This approach can foster a deeper empathy for patients and improve the overall quality of care.

The integration of TCM can also enhance students' diagnostic skills by encouraging them to look beyond the immediate physical symptoms and consider the broader context of a patient's health. This can be particularly useful in cases where conventional treatments may not be sufficient or when the patient presents with symptoms that do not fit neatly into Western diagnostic categories.

2.5. Conclusion of the literature review

The literature highlights the ongoing challenges and barriers to integrating TCM into clinical education. Resistance to change, the lack of qualified instructors, and the absence of standardized teaching frameworks are significant obstacles that need to be addressed. However, there is also considerable evidence supporting the benefits of TCM integration, particularly in enhancing diagnostic skills and fostering a holistic approach to patient care.

In order to effectively integrate TCM into medical curricula, it is essential to develop standardized guidelines and teaching strategies that clearly define how TCM can be applied in clinical settings. By doing so, medical schools can ensure that students gain a comprehensive understanding of both Western and Eastern medical practices, which will ultimately contribute to better patient outcomes and a more holistic approach to healthcare.

3. Theoretical framework

3.1. Core principles of traditional Chinese medicine

Traditional Chinese medicine (TCM) is built upon a set of foundational theories that explain the dynamics of health and disease. These principles are rooted in a holistic understanding of the human body, where the physical, mental, and environmental aspects are seen as interconnected and interdependent. The primary concepts of TCM that influence its clinical practice include Yin-Yang, Qi, the Five elements, and Zang-Fu organ theory. These theories provide a framework that guides diagnosis, treatment, and prevention ^[9].

- (1) Yin-Yang theory: One of the most fundamental concepts in TCM, Yin-Yang represents the dualistic nature of existence. Yin and Yang are opposite but complementary forces that are in a constant state of dynamic

balance. In TCM, health is viewed as the harmonious interaction between Yin and Yang within the body. An imbalance in this relationship leads to disease. For instance, a deficiency in Yin (cool, passive energy) or an excess of Yang (hot, active energy) can manifest as various clinical conditions such as fever or cold sensations.

- (2) Qi: Qi, often translated as “vital energy” or “life force,” is another core concept in TCM. It is considered the vital substance that flows through the body, sustaining all physiological functions. Qi is believed to circulate through pathways called meridians, and any disruption in its flow can lead to illness. Qi deficiency, stagnation, or blockage is commonly identified as a cause of many ailments. Treatment in TCM aims to restore the smooth flow of Qi and reestablish balance in the body ^[10–12].
- (3) Five elements theory: The five elements—wood, fire, earth, metal, and water—are used in TCM to explain the relationships and interactions between the body’s organs and systems. Each element is associated with specific organs, emotions, and physiological functions. For example, the liver is associated with wood, the heart with fire, and the kidney with water. These elements are in constant interaction, and imbalances among them can result in physical and emotional disorders. The five elements theory is essential for understanding the underlying causes of disease and creating individualized treatment plans.
- (4) Zang-Fu organ theory: This theory categorizes the organs in TCM into two groups: Zang (solid organs) and Fu (hollow organs). The Zang organs, including the heart, liver, spleen, lung, and kidney, are responsible for the production and storage of vital substances such as Qi, blood, and fluids. The Fu organs, such as the stomach, large intestine, and bladder, primarily function to transform, transport, and excrete substances. The interaction between Zang and Fu organs governs the body’s overall health. Disruptions in their function can manifest as various diseases, which are treated by restoring balance between these organs ^[13, 14].

3.2. Integration of TCM theories into clinical practice

In clinical practice, TCM’s core theories are applied to diagnose and treat diseases based on a holistic approach. Unlike Western medicine, which often focuses on isolated symptoms and specific organs, TCM emphasizes the interconnectedness of the entire body. Diagnosis in TCM involves a thorough assessment of the patient’s physical, emotional, and environmental states through various methods, such as pulse-taking, tongue examination, and inquiry into lifestyle and habits.

- (1) Diagnosis: In TCM, diagnosis is not limited to laboratory tests or imaging but includes a comprehensive understanding of the patient’s symptoms, lifestyle, and constitutional factors. The four diagnostic methods—observation, auscultation and olfaction, inquiry, and palpation—are used to gather information and form a diagnosis. For example, a TCM practitioner may examine the tongue and pulse to determine the state of Qi and blood, identify any imbalances in Yin and Yang, and understand the underlying root cause of the condition.
- (2) Treatment: The treatment in TCM is aimed at restoring balance within the body using methods such as acupuncture, herbal medicine, and Qi Gong. Acupuncture stimulates specific points on the body to regulate the flow of Qi and restore balance in the Yin-Yang relationship. Herbal medicine uses a wide variety of plants and natural substances to treat imbalances, often targeting specific organs or systems to promote healing. Dietary therapy, which aligns with the principles of the five elements, is also commonly employed to support the body’s natural healing processes.

3.3. The role of TCM theory in enhancing clinical education

The integration of TCM theory into clinical education offers a valuable opportunity to expand medical students' perspectives on health and disease. While Western medicine emphasizes the scientific and evidence-based treatment of diseases, TCM offers an alternative approach by encouraging students to view health through a more holistic lens. This broader perspective can deepen students' understanding of patient care, particularly in treating chronic conditions, multifactorial diseases, and patients with complex health profiles.

- (1) Holistic approach to patient care: The holistic nature of TCM encourages students to consider not only the physical symptoms of a patient but also the emotional, psychological, and environmental factors that contribute to the patient's overall health. This aligns with the growing emphasis on patient-centered care in modern medicine, where treatment is tailored to the individual rather than being based solely on disease-specific protocols.
- (2) Preventive medicine: TCM places a strong emphasis on prevention, which is increasingly important in contemporary medical practice. By incorporating TCM theory, students can learn the importance of preventing disease before it manifests, rather than focusing only on the treatment of existing conditions. Prevention in TCM includes dietary adjustments, lifestyle changes, and the use of herbs and acupuncture to maintain balance and strengthen the body's resistance to illness.
- (3) Complementary role in modern medicine: TCM theory also complements modern Western medical practices. By integrating both approaches, medical students can develop a more comprehensive and flexible approach to patient care. For instance, TCM's focus on individualized treatment can be beneficial in addressing conditions that are less well-understood or poorly managed by Western medicine alone, such as chronic pain, gastrointestinal disorders, and stress-related conditions ^[15].

3.4. Bridging Eastern and Western medical practices

The integration of TCM theory into clinical internships allows medical students to experience firsthand how these two approaches can work together to enhance patient care. While Western medicine is rooted in scientific research and evidence-based practices, TCM offers a different perspective that focuses on the balance of energies and the prevention of illness. By blending these approaches, students can learn to recognize the strengths and limitations of both systems and apply them effectively in clinical settings.

This theoretical framework highlights the value of integrating TCM theories into medical education. By understanding and applying TCM principles, students can develop a more nuanced approach to patient care, enhancing their ability to treat a wide range of conditions and improving patient outcomes. Furthermore, the incorporation of TCM theory can foster a deeper understanding of health as an interconnected system, promoting more effective, individualized, and preventive care.

4. Methodology

4.1. Study design

This mixed-methods study explores the integration of Traditional Chinese Medicine (TCM) theory into clinical internships at the First Affiliated Hospital of Guizhou University of traditional Chinese medicine. Quantitative data are collected through structured surveys, while qualitative insights coming from in-depth interviews and participant observations. This approach enabled a comprehensive analysis of the benefits and challenges of

integrating TCM into clinical education.

4.2. Participants

Participants included 150 final-year medical students, 30 clinical instructors (from both TCM and Western medicine), and 15 experienced TCM practitioners. Purposive sampling ensured relevant experience with TCM education and clinical practice. Twenty students, along with all instructors and practitioners, also participated in interviews.

4.3. Data collection

Quantitative data are gathered via a 30-item electronic survey assessing attitudes and experiences with TCM integration. Semi-structured interviews explored the relevance of TCM theory, integration challenges, and suggestions for improvement. Participant observations documented clinical interactions, including diagnostic methods and TCM treatments in practice.

4.4. Data analysis

Survey responses are analyzed using descriptive and inferential statistics. Interview transcripts underwent thematic analysis using both inductive and deductive coding. Triangulation of survey, interview, and observation data enhanced validity and ensured robust findings.

4.5. Ethical considerations

The study is approved by the hospital's IRB. All participants gave informed consent, with assurances of confidentiality and the right to withdraw at any time.

4.6. Limitations

Findings are limited by the single-site design and reliance on self-reported data. Broader studies using objective measures across institutions are recommended.

5. Results

5.1. Overview of participants

A total of 150 medical students completed the survey (80% response rate), alongside interviews with 20 students, 30 clinical instructors, and 15 TCM practitioners. The student group was 60% female with an average age of 24. Most students (70%) had prior exposure to TCM. Instructors included both Western-trained doctors (60%) and TCM practitioners (40%), averaging 10 and 15 years of experience, respectively.

5.2. Quantitative results

Survey results indicated that 75% of students saw TCM as relevant to clinical practice, though 25% found integration difficult. Sixty percent felt confident combining TCM and Western medicine, while 40% lacked confidence. Seventy percent believed TCM improved diagnostic skills, and 65% reported using TCM methods like pulse-taking. Satisfaction was high, with 80% valuing TCM exposure and 70% desiring more structured training.

5.3. Qualitative results

Interview data highlighted perceived benefits of TCM's holistic view, particularly for chronic conditions. However, students faced challenges applying TCM in settings dominated by Western diagnostic methods. Instructor support varied, with some lacking TCM expertise. Many students called for more structured, hands-on TCM training during internships.

5.4. Instructor and TCM practitioner feedback

Clinical instructors generally supported TCM integration but noted limited capacity to teach it effectively. TCM practitioners emphasized the need for collaboration with Western-trained staff and expressed willingness to mentor students.

6. Conclusion

Overall, students viewed TCM integration positively, citing enhanced diagnostic skills and patient understanding. However, they also identified barriers such as limited training opportunities and inconsistent instructor support. Expanding structured, practical TCM training and fostering interdisciplinary collaboration are key to improving integration in clinical education.

Disclosure statement

The authors declare no conflict of interest.

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