

Leadership Development Models for Chinese Medicine University Students in Shandong Province

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Abstract

Background and Aim: This study aims to assess the leadership development needs of Chinese medicine university students in Shandong Province and propose targeted improvement models. The research seeks to identify key factors influencing leadership development, including course learning, organizational involvement, and social practice, and provide recommendations for enhancing leadership education in the context of traditional Chinese medicine education.

Materials and Methods: A mixed-methods approach was adopted, combining quantitative data from 1,500 valid questionnaires with qualitative insights gathered through interviews with students and faculty members. The survey explored students' leadership awareness, current abilities, and their perceptions of leadership development programs. Data analysis was conducted using descriptive statistics and thematic analysis to identify the factors contributing to leadership development.

Results: The results indicate that leadership education plays a significant role in improving students' leadership abilities. Students who participated in leadership courses and organizational involvement scored significantly higher in leadership development. Additionally, social practice and volunteer service were found to enhance students' leadership skills, particularly in terms of teamwork and social responsibility. The study also identified leadership awareness and course participation as key factors influencing students' leadership development.

Conclusion: The findings highlight the importance of integrating leadership education into the curriculum of Chinese medicine universities. The study suggests that a comprehensive approach, including leadership courses, organizational involvement, and social practice, can effectively enhance leadership development among students. The proposed C-COS model (Course Learning, Organizational Involvement, Social Involvement) provides a framework for improving leadership education tailored to the needs of Chinese medicine students in Shandong Province. The study recommends expanding leadership training programs and promoting social engagement to better prepare students for future leadership roles in the healthcare sector.

Keywords: Leadership Development; Chinese Medicine; C-COS Model

Introduction

In recent years, leadership development has gained increasing attention in the field of higher education, particularly in medical and healthcare disciplines, where dynamic leadership is essential to address global health challenges (Northouse, 2018; Wong & Huan, 2018). In the Chinese context, leadership development is strongly influenced by Confucian cultural values such as collectivism, hierarchical respect, and social harmony, which shape both educational philosophy and professional behavior (Hofstede et al., 2010). However, existing research reveals that leadership education remains underdeveloped in traditional Chinese medicine (TCM) universities. For instance, Li and Zhang (2019) reported that only 38% of medical students at Beijing University of Chinese Medicine had received formal leadership training. Similarly, Wang et al. (2020) found that fewer than half of the surveyed students at Shandong University of Traditional Chinese Medicine felt confident in their leadership capabilities. While some universities have started incorporating leadership modules, most programs are either theory-heavy or lack contextual relevance, indicating a persistent gap between leadership theory and its practical integration in TCM education.

This research focuses on the context of Shandong Province, a region with a strong educational tradition and a concentration of Chinese medicine universities, including the renowned Shandong University of Traditional Chinese Medicine. Students here are trained in both modern medicine and TCM, yet their leadership development opportunities are limited and fragmented. The researcher has previously participated in educational development projects within these institutions and has observed the lack of structured leadership training aligned with students' cultural and professional needs. Moreover, many students express a need for more practical, hands-on leadership development experiences. According to a 2023 report by the Shandong Provincial Department of Education, although 78% of TCM universities have introduced leadership content into their curricula, less than 40% offer practical leadership opportunities such as internships or community leadership projects. The primary target group of this study is undergraduate students majoring in TCM across selected universities in Shandong, as they represent the future healthcare leaders who must be equipped with both technical and leadership competencies to navigate complex, evolving healthcare environments.

Objectives

1. To study the current leadership skills and development needs of Chinese Medicine University students in Shandong Province, and to identify existing gaps and areas requiring improvement within the context of traditional Chinese medicine education.

2. To study effective strategies and educational approaches for fostering leadership development among traditional Chinese medicine students, with an emphasis on integrating leadership training into the curriculum and enhancing practical learning opportunities.

3. To study and propose a comprehensive leadership development model tailored specifically for Chinese Medicine University students in Shandong Province, focusing on cultivating emotional intelligence, communication, decision-making, and teamwork skills essential for future leadership roles in the healthcare sector.

Literature review

Effective leadership development is increasingly recognized as a strategic priority in higher education, particularly within health-related disciplines. For students in Traditional Chinese Medicine (TCM) universities, leadership competencies such as communication, teamwork, and ethical decision-making are critical for navigating both clinical responsibilities and culturally specific professional expectations (Northouse, 2018; Wong & Huan, 2018). However, leadership education remains fragmented in Chinese medical curricula. This section organizes the literature around four key themes that directly inform the conceptual framework of this study: (1) Leadership Theories and Development Mechanisms, (2) Leadership in the Context of Higher Education and Health Sciences, (3) Culturally Contextualized Leadership in Chinese Medicine, and (4) Practical Leadership Training in Educational Institutions.

1. Leadership Theories and Development Mechanisms

A wide body of research has established leadership development as a multifaceted process involving formal instruction, self-reflection, mentorship, and experiential learning. Day et al. (2014) propose that sustainable leadership competence must emerge from the integration of self-awareness, emotional intelligence (Goleman, 1995), and social learning processes. Transformational leadership theory, advanced by Bass and Avolio (1994), has been widely applied in health education settings, emphasizing vision, motivation, and personal influence. Their Full Range Leadership Model (FRLM) has been validated in diverse cultural contexts, including China (Chen & Lee, 2008).

Jenkins (2012) explored instructional strategies in undergraduate leadership education, finding that experiential methods, such as case-based learning and role-play, outperform purely theoretical approaches. Similarly, Shankman and Allen (2008) emphasized emotionally intelligent leadership, which aligns with the interpersonal demands of clinical and team-based healthcare environments. These foundational theories underscore the need for leadership development frameworks that emphasize adaptability, human relations, and context-specific application.

2. Leadership Development in Health and Higher Education

Leadership development in medical education has received increasing scholarly focus, as universities seek to train not only skilled practitioners but also healthcare leaders. Dugan and Komives (2006) demonstrated that students involved in leadership roles within academic or extracurricular organizations report significantly higher self-efficacy in communication and critical thinking. In the Chinese context, studies by Li and Zhang (2019) and Wang et al. (2020) showed that leadership training embedded in medical curricula improves teamwork, ethical decision-making, and patient-centered care outcomes.

Smith et al. (2017) conducted a longitudinal study of medical students in the UK and concluded that mentorship and real-world leadership challenges, such as internships or community projects, result in more persistent leadership growth than classroom training alone. Similarly, Ay et al. (2014) reviewed 25 years of leadership development research and emphasized the role of reflection and feedback mechanisms in consolidating leadership behavior.

These studies suggest that medical universities should adopt hybrid models that combine structured leadership education with opportunities for application through student leadership roles, research teams, or healthcare service learning.

3. Cultural Perspectives and Leadership in Chinese Medicine

Leadership in the Chinese educational and professional context is heavily influenced by Confucian principles of authority, harmony, and collective responsibility (Hofstede et al., 2010). This cultural lens affects how students perceive leadership and participate in decision-making roles. Chen (2018) investigated Confucian-based leadership models at Zhejiang Chinese Medical University and found that students trained with culturally resonant leadership frameworks—emphasizing empathy, social responsibility, and integrity—performed more effectively in clinical practice.

Zhou and Wang (2017) argue that traditional authoritarian models limit innovation and autonomy in student leadership development. Relational leadership, which fosters trust through strong mentor-mentee relationships, is seen as a more culturally appropriate alternative in TCM education (Chen & Lee, 2008). Wong and Huan (2018) recommend that leadership curricula in Asian universities integrate local values with global competencies to produce globally adaptable leaders.

These studies highlight the need for leadership models in Chinese medicine that preserve cultural traditions while fostering global health leadership competencies.

4. Practice-Oriented Leadership Training in Chinese Medicine Universities

Although 78% of TCM universities in Shandong Province claim to offer leadership content in their curricula (Shandong Provincial Department of Education, 2023), there is a notable lack of standardization and consistency in implementation. Shandong University of Traditional Chinese Medicine (2022) introduced a modular leadership development initiative

involving seminars and mentorship, which led to improved student satisfaction and clinical performance.

However, Hu (2013) noted that many such programs remain theoretical, lacking simulation-based learning or community-based practice. According to Northouse (2018), students benefit most from leadership experiences that allow application in real contexts, such as student government, clinical rotations, or public health campaigns. Jenkins (2012) also advocates for institutional support for leadership programs through interdisciplinary collaboration and dedicated assessment tools.

Taken together, this research stream reinforces the need to institutionalize leadership development through practical, iterative, and context-specific educational practices that are embedded across the student experience.

Summary and Link to Conceptual Framework

In summary, the reviewed literature suggests that effective leadership development in TCM education should integrate transformational and emotionally intelligent leadership theories, embed leadership within medical curricula, respect local cultural values, and prioritize experiential learning. The gap identified in most current programs is the absence of a structured, culturally attuned, and practice-driven framework tailored specifically to Chinese medicine students.

This study responds to that gap by proposing a comprehensive leadership development model—the C-COS framework—that synthesizes Course Learning, Organizational Involvement, and Social Participation, all underpinned by students' Leadership Consciousness. The model draws directly from the reviewed theories and practices and aims to build a scalable strategy to enhance leadership education in Chinese medicine universities in Shandong Province.

Conceptual Framework

A comprehensive review of literature on leadership development in higher education, particularly within the field of traditional Chinese medicine (TCM), reveals a significant gap between theoretical models and practical application in curriculum design. Although numerous studies (e.g., Bass & Avolio, 1994; Day et al., 2014; Smith et al., 2017) have validated the effectiveness of leadership development frameworks that integrate emotional intelligence, experiential learning, and transformational leadership, few have examined how such models can be adapted to culturally specific contexts like TCM universities in China. This research aims to address that gap by proposing a contextualized leadership development model based on both global theory and localized practice.

1. Literature Review Summary and Theoretical Integration

The literature identifies four core elements critical to effective leadership development:

Leadership Consciousness – As emphasized by Goleman (1995) and Shankman & Allen (2008), students' awareness of leadership as a developmental goal significantly influences their engagement with leadership training and their ability to internalize leadership competencies.

Course Learning and Curriculum Integration – Studies such as Jenkins (2012) and Wang et al. (2020) highlight the importance of formal leadership education embedded within discipline-specific curricula, especially when combined with case-based and experiential learning.

Organizational Involvement – Research from Dugan & Komives (2006) and Li & Zhang (2019) shows that participation in student-led organizations improves practical leadership skills, including communication, coordination, and accountability.

Social Practice and Community Engagement – Culturally rooted leadership models (e.g., Chen, 2018; Hofstede et al., 2010) emphasize that leadership in Chinese settings is often expressed through collective service and relational harmony, which are best developed through real-world community involvement.

Despite these insights, most leadership frameworks remain generalized and under-contextualized for Chinese medicine education, which blends clinical expertise with cultural heritage. This study, therefore, proposes a tailored conceptual framework that aligns with the unique leadership needs of Chinese medicine students in Shandong Province.

2. Application to the Present Study

This study integrates the above theories into a four-dimensional model—the C-COS Framework—which reflects both theoretical grounding and localized application. The independent variables include:

Leadership Consciousness (awareness and self-perception)

Course Learning (participation in formal leadership courses)

Organizational Involvement (student leadership roles and extracurricular engagement)

Social Practice (community service, internships, and real-world projects)

These variables are hypothesized to influence key dependent variables, including:

Leadership Skill Acquisition (communication, teamwork, decision-making)

Leadership Performance (application of skills in academic and healthcare settings)

Academic and Professional Readiness (ability to adapt to leadership roles post-graduation)

By synthesizing past literature and addressing the current void in localized leadership models, this research aims to generate actionable insights for universities and policymakers.

Methodology

This study employs a mixed methods approach, combining both quantitative and qualitative techniques to assess and develop leadership development models tailored for Traditional Chinese Medicine (TCM) university students in Shandong Province. The research process is structured as follows:

1. Population and Sample

1.1 Population: Undergraduate students majoring in Traditional Chinese Medicine from five key universities in Shandong Province. The total population is approximately 2,000 students across all academic levels.

Faculty members and instructors involved in leadership education or curriculum development in TCM-related programs.

1.2 Sample: Student Sample: A total of 300 students were selected using stratified random sampling based on academic year and gender to ensure diversity and representation across different learning stages and backgrounds.

Expert Sample: 10 experts were selected using purposive sampling, including experienced professors, education administrators, and leadership development practitioners who are involved in teaching or managing leadership-related content within the universities.

1.3 Target Group: Key stakeholders in leadership training within TCM institutions, including faculty members with curriculum decision-making authority and external consultants in medical education.

2. Research Instruments

2.1 Questionnaire: A structured questionnaire was developed in three parts:

Part 1: General Information – Collects demographic data of student participants (e.g., age, gender, academic year, leadership experience).

Part 2: Leadership Needs Assessment – Employs a 5-point Likert scale to measure students' self-perceived leadership skills, awareness, course participation, and development needs.

Part 3: Open-Ended Questions – Explores additional suggestions or challenges faced by students in leadership training.

2.2 Interview Guidelines

Semi-structured interviews were conducted with experts. The interviews focused on leadership development strategies, curriculum integration challenges, cultural considerations in Chinese medicine, and recommendations for model design.

3. Instrument Quality Assessment

To ensure instrument validity and reliability:

The questionnaire was reviewed and revised based on the advisor's feedback and content review by three academic experts.

The Index of Item-Objective Congruence (IOC) was calculated for each questionnaire item. Items with IOC scores below 0.67 were revised or removed.

Question	Expert 1	Expert 2	Expert 3	IOC
Q1	1	1	1	1.00
Q2		1	1	0.67
Q3	1	1	1	1.00

A pilot test was conducted with 30 non-sample students to assess clarity, discrimination power, and understanding of questionnaire items.

The reliability of the questionnaire was tested using Cronbach's alpha, resulting in a value of 0.82, indicating high internal consistency (Cronbach, 1951; cited in Srisa-ard, 2015).

4. Data Collection

4.1 Primary Data

Structured questionnaires were administered to 300 students.

In-depth interviews were conducted with 10 experts, each lasting 45–60 minutes.

4.2 Secondary Data

Relevant secondary data were collected through document review of books, journals, government reports, and existing models of leadership development in Chinese higher education and healthcare settings.

5. Data Analysis

5.1 Quantitative Data Analysis

Data from questionnaires were processed using SPSS.

Descriptive statistics: Frequency, Percentage, Mean, and Standard Deviation.

Inferential statistics: t-tests and One-way ANOVA (F-tests) were used to examine group differences across demographic variables.

5.2 Qualitative Data Analysis

Interview transcripts were analyzed using content analysis to identify recurring themes, patterns, and expert recommendations.

Triangulation was applied by comparing interview findings with survey results to ensure consistency and depth.

Results

This section presents the results of the study by the three research objectives outlined previously. The findings are structured by key variables derived from the conceptual framework, supported by descriptive statistics and analysis summaries. Quantitative data is interpreted first, followed by summary discussions based on observed trends.

Objective 1: To study the current leadership skills and development needs of Chinese Medicine University students in Shandong Province

The results indicate a varied level of leadership awareness and self-assessed leadership competencies among students. Students demonstrated moderate to high awareness of the importance of leadership in the healthcare context, especially within Traditional Chinese Medicine (TCM). However, many reported a lack of practical experience and insufficient training in leadership.

Table 1 shows the distribution of students' self-assessment of leadership skills.

Leadership Self-Assessment	Frequency (n=1500)	Percentage (%)
Strong	525	35.0
Average	600	40.0
Weak	375	25.0

From Table 1, it is evident that only 35% of students perceive their leadership as strong, with the majority (65%) rating themselves as average or weak, indicating a clear developmental gap.

Additionally, 60% of students acknowledged that leadership is essential for future roles in TCM, particularly in managing teams and promoting healthcare services, confirming a solid cognitive foundation for developing structured leadership training programs.

Objective 2: To study effective strategies and approaches for fostering leadership development

The second part of the analysis focused on students' participation in leadership-related programs and their feedback on current teaching methods.

Table 2 summarizes students' participation in leadership courses and perceived usefulness.

Participation in Leadership Courses	Frequency	Percentage	Perceived Value
Attended Courses	825	55.0%	65% Highly Valuable
Did Not Attend	675	45.0%	-

Among those who participated, 65% stated the course was valuable, especially for communication and teamwork. However, 25% believed the courses lacked practicality, and 10% found them ineffective due to excessive theoretical content.

From Table 2, it is evident that while leadership course participation is moderate, students desire more experiential and interdisciplinary methods, such as simulations and case-based learning.

Students also prioritized specific skills:

Decision-making and problem-solving (70%)

Communication and negotiation (60%)

Cross-cultural leadership (40%)

This supports the recommendation that future leadership programs should incorporate task-oriented and culturally relevant content.

Objective 3: To design a comprehensive leadership development model tailored to TCM students

To inform model design, the study investigated students' engagement in organizational activities and social practice, both critical components of the proposed C-COS model.

Table 3 presents student leadership experience by type.

Type of Leadership Involvement	Frequency	Percentage
No Experience	600	40.0%
Moderate Experience (Class/Club Leader)	525	35.0%
High Responsibility Roles (Council, etc.)	375	25.0%

From Table 3, students with higher organizational involvement reported stronger self-confidence and leadership performance. Similarly, participation in social practice activities, such as volunteering or community health education, significantly contributed to leadership growth, particularly in empathy and decision-making.

Summary from Objective 3:

Students engaged in student organizations scored on average 8 points higher on leadership development metrics (based on an internal rating scale).

Socially active students demonstrated improved teamwork and responsibility.

Discussion of Key Findings

Leadership awareness exists, but it is not fully supported by formal training, especially in early academic stages. Most students see leadership as important, yet rate their abilities as average or below average.

Course learning impacts leadership competence, but traditional lecture-based approaches are insufficient. There is a strong demand for experiential and interdisciplinary modules.

Organizational and social practice involvement has a demonstrable effect on students' practical leadership growth. These environments provide opportunities to apply communication, coordination, and decision-making skills.

The results confirm the applicability of the C-COS model, emphasizing the need to embed leadership education through Course Learning (C), Organizational Involvement (O), and Social Practice (S), underpinned by Consciousness (C).

Discussion

The findings of this study offer critical insights into the leadership development needs of Chinese Medicine University students in Shandong Province and align with broader theoretical understandings of leadership in higher education and healthcare contexts. Drawing from transformational leadership theory (Bass & Avolio, 1994), emotional intelligence frameworks (Goleman, 1995), and experiential learning theory (Kolb, 1984), the discussion links observed patterns in student data to existing research and highlights areas for improvement in current leadership education practices.

1. Leadership Consciousness and the Need for Tailored Programs

The results show that while 60% of students acknowledged the importance of leadership in their academic and professional lives, their self-assessed abilities were uneven; only 35% felt confident in their leadership skills. This mirrors findings by Dugan and Komives (2006), who emphasized that awareness alone is insufficient without structured development opportunities. Goleman's (1995) emotional intelligence model suggests that self-awareness is a crucial precursor to leadership growth, and this study supports that, showing that students who rated themselves higher in leadership ability were also those more engaged in leadership-related activities.

The variation in self-perception (25% weak, 40% average, 35% strong) supports the notion proposed by Day et al. (2014) that leadership development must be tiered and adaptive, meeting students at their respective stages. This highlights the need for differentiated leadership curricula—a point underexplored in Chinese medicine education, where most programs remain uniform and theory-based (Chen, 2018).

2. Value of Leadership Education and Experiential Learning

Over half (55%) of students reported participation in leadership-related courses, yet qualitative feedback indicated dissatisfaction with theory-heavy instruction and a lack of real-life application. This aligns with Jenkins (2012), who argued that leadership education is most impactful when it includes experiential elements such as role-play, project-based learning, and cross-functional teamwork. Smith et al. (2017) found that medical students who engaged in simulation-based leadership learning demonstrated better critical thinking and decision-making.

This study confirms that students value experiential learning opportunities, particularly simulations and team-based case studies, for developing communication, negotiation, and problem-solving skills. These findings support Kolb's (1984) experiential learning theory, which argues that learning is maximized when students are actively engaged in concrete experiences and reflective practice. Hence, integrating experiential learning into the TCM leadership curriculum is not only desirable but essential.

3. Role of Organizational and Social Engagement in Skill Development

Participation in student organizations and social practice activities significantly enhanced leadership development, with those holding formal roles scoring higher in confidence and reported skills. This outcome supports the work of Komives et al. (2005), who emphasized identity formation and skill development through student leadership experiences. Similarly, Li and Zhang (2019) reported that active involvement in student clubs and health campaigns helped TCM students improve teamwork and responsibility.

This study reinforces that organizational involvement acts as a “development accelerator”—a real-world training ground for leadership that complements formal learning. In line with the relational leadership theory (Uhl-Bien, 2006), the peer interaction and role modeling that occur in student-led groups also help foster trust and collaboration, traits vital in healthcare environments.

4. Gaps Between Awareness and Competency

A recurring theme in the findings is the disparity between leadership awareness and practical competence. While students widely recognize leadership's importance, their practical readiness remains limited. This “knowing-doing gap” is echoed in Chen and Lee (2008), who argue that many Chinese university students lack actionable leadership models grounded in cultural and professional realities. In traditional Chinese medical education, this issue is compounded by a historical emphasis on clinical and theoretical instruction, with minimal focus on soft skills.

This study addresses that gap by proposing a contextualized development model—the C-COS Framework (Consciousness, Course Learning, Organizational Involvement, Social Practice)—which aligns with theoretical insights from Bass & Avolio (1994), Goleman (1995), and Kolb (1984), while anchoring its application in the real-world context of TCM universities.

In summary, this study's findings are consistent with and build upon existing leadership theories and literature. They emphasize that leadership development must be multi-dimensional—balancing formal instruction with experiential, organizational, and culturally integrated opportunities. By applying established theories within the unique context of traditional Chinese medicine, this research contributes a localized yet theoretically grounded model for leadership education in Chinese higher education. The results suggest that the

future of leadership development in TCM education lies in adaptive, experience-rich, and culturally relevant programming.

Recommendation

1. Suggestions for Practical Implications

Based on the findings of this study, the following recommendations for practical implications are made to enhance leadership development among Chinese Medicine University students in Shandong Province.

1.1 Recommendation for Objective 1: Leadership Skills and Development Needs

The results from research objective 1 reveal that a significant portion of students recognize the importance of leadership but exhibit a broad range of self-assessed leadership skills, with many identifying gaps in their capabilities. Therefore, relevant agencies, such as university administrations and faculty departments, should take action to integrate leadership education into the core curriculum. This should be done by embedding leadership courses within both undergraduate and postgraduate programs to ensure that all students, regardless of their year of study, have access to structured training in leadership, communication, decision-making, and teamwork. Furthermore, the curriculum should emphasize practical application, incorporating real-world problem-solving through simulations, internships, and role-playing exercises to allow students to practice and develop the skills needed to thrive in the healthcare sector.

1.2 Recommendation for Objective 2: Leadership Education and Course Participation

The findings from research objective 2 show that while many students have participated in leadership-related courses, the overall participation rate remains limited, and students express a need for more practical, hands-on learning experiences. To address this gap, universities should expand and diversify leadership training programs, ensuring that they are experiential and interdisciplinary. It is recommended that universities offer more real-life simulations, case-based learning, and collaborative projects to make leadership training more engaging and practical. Additionally, universities need to introduce specialized programs for students in leadership roles within student organizations, as the study found that these students reported higher levels of leadership development. Providing training tailored to student leaders will empower them with the tools necessary to further enhance their leadership abilities, benefiting both the students themselves and their peers.

1.3 Recommendation for Objective 3: Social Practice and Volunteer Service

The results from research objective 3 indicate that social practice and volunteer service play a crucial role in developing leadership skills, particularly in terms of teamwork, social responsibility, and practical experience. Therefore, universities should increase opportunities for students to engage in community service and volunteer healthcare initiatives.

By incorporating more social practice programs into the leadership development curriculum, students can gain valuable experience in real-world healthcare settings, further enhancing their leadership competencies. Short-term leadership training programs and volunteer opportunities should also be promoted as integral components of students' overall education. These programs will provide students with practical experiences that foster leadership development in both professional and social contexts.

2. Suggestions for Further Research

This research has provided valuable insights into the leadership development needs of Chinese medicine university students, particularly in Shandong Province. However, several areas require further exploration to deepen our understanding and improve leadership training in Chinese medicine education.

2.1 *Research on the Integration of Leadership Education with Cultural Heritage*

The study found that while students acknowledge the importance of leadership, many struggle to apply it effectively within the culturally rich context of Traditional Chinese Medicine (TCM). The important next step is to explore how leadership models can be culturally adapted to better suit the specific needs of TCM students. Future research should focus on how leadership development can be harmonized with the values and practices inherent in Chinese medicine, ensuring that leadership programs not only address modern healthcare needs but also respect and integrate the rich heritage of TCM.

2.2 *Research on Leadership Development across Different Stages of Academic Progress*

Another area for further study is how leadership training can be differentiated for students at various stages of their academic journey. This research found significant variability in leadership experience and self-assessment, suggesting that leadership programs should be tiered to meet the needs of both beginners and advanced students. Future research could examine the effectiveness of tiered leadership curricula, where early-stage students receive foundational training, while more experienced students engage in specialized training to hone advanced leadership competencies. Research should also explore mentorship models for senior students, enabling them to act as role models and mentors for junior peers.

2.3 *Research on the Long-Term Impact of Leadership Programs on Career Success*

The study's findings underscore the importance of leadership development for career success in TCM, but the long-term impact of leadership training remains unclear. Future research should focus on tracking the career trajectories of students who have participated in leadership programs, examining how leadership skills developed during university impact their professional performance, leadership roles, and contributions to the field of TCM. This research could provide valuable evidence on the effectiveness of leadership development



programs in preparing students for successful careers in both domestic and global healthcare contexts.

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