Acupuncture and Herbal Medicine

Ten recommendations for the high-quality development of traditional Chinese medicine in the new era

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Traditional Chinese medicine (TCM) possesses original theoretical advantages and thousands of years of human experience of its application and plays an important role in the prevention and treatment of infectious diseases and major chronic illnesses. With the support of national policies, the advantages of the "five major resources" of TCM are gradually being realized, ushering the enterprise and industry of TCM into a new era of high-quality development.

The development of TCM in China has rapidly progressed, with an overall upward trend in clinical demand and the quality of medical services. According to the latest Statistical Bulletin on the Development of China's Health Sector in 2023 released by the National Health Commission, the total number of medical and health institutions using TCM nationwide reached 92,531 in 2023, with 1.732 million beds and 1.54 billion total patient visits, demonstrating considerable growth advantages[1].

Technological innovation has driven the transformation of the Chinese herbal medicine industry towards high-quality development. The application of artificial intelligence and big data analytics in TCM research and development has propelled the industry toward intelligent manufacturing. Demonstration factories employing intelligent manufacturing have achieved a 32% increase in production efficiency, 22% improvement in comprehensive resource utilization, and 19% reduction in operating costs[2].

The global outreach of TCM has yielded remarkable results. To date, TCM has spread to 196 countries and regions. Among 113 member states of the World Health Organization, all have recognized the use of acupuncture, with 29 having established relevant laws and regulations and 20 incorporating acupuncture into their medical insurance systems[3]. More than 10,000 TCM clinics have been registered in countries such as the United Kingdom, the Netherlands, Canada, and Australia, with more than 80,000 TCM medical institutions established overseas and approximately 300,000 TCM practitioners worldwide, reflecting the increasing global openness and acceptance of TCM.

Although considerable achievements have been made in the inheritance and innovation development of TCM, new challenges and difficulties have also emerged, as mentioned in the following paragraph.

1. There remains a severe shortage of top-tier TCM talent, including leading figures and interdisciplinary experts. The mindset regarding TCM is relatively weak, limiting the full utilization of its clinical strengths and distinctive features. 2. There is a lack of methods for evaluating the clinical efficacy aligned with the unique characteristics of TCM, resulting in delays in research to "explain clearly and articulate well" the therapeutic effects of TCM. 3. The quality control system across the entire Chinese herbal medicine industry chain requires strengthening. High-end pharmaceutical equipment for TCM is scarce, and research and application of new dosage forms and equipment require further advances. 4. The globalization of TCM faces challenges such as cultural differences between China and other countries, a lack of international standards, and gaps in legal frameworks, necessitating comprehensive progress in medical services, research collaboration, and industrial development.

To further implement the national TCM development strategy, address key issues constraining its high-quality development, and promote modernization of TCM, the 765th Xiangshan Science Conference was held in Beijing from November 28 to 29, 2024, under the theme "Strategies and Approaches for the High-Quality Development of TCM in the New Era."

Professors Boli Zhang, Erdan Dong, Liang Liu, Jinzhou Tian, Shilin Chen, and Liguo Zhu jointly served as executive chairs of the conference. Over 50 experts and scholars from more than 20 institutions, including

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universities, research institutes, and medical organizations, across China participated.

The conference facilitated in-depth discussions on topics such as the inheritance and innovative development of the foundational theories of TCM, clinical characteristics, advantages and evaluation of TCM, bottlenecks and strategies in the modernization of Chinese herbal medicine research, and considerations and approaches for international collaboration in TCM. A consensus was reached on strategies and approaches for the high-quality development of TCM in the new era. Experts unanimously agreed that the current period presents a favorable opportunity for the enterprise and industry of TCM. To seize this momentum and achieve meaningful progress, coordinated efforts across multiple ministries are essential. These efforts include strengthening research on the foundational theories of TCM and their scientific underpinnings, improving methods for evaluating clinical efficacy tailored to the characteristics of TCM, accelerating the upgrading and independent development of high-end production equipment for TCM, establishing an international TCM standards system, and promoting the localized development of TCM overseas. These efforts aim to accelerate the construction of a new framework for the high-quality development of TCM and achieve impactful outcomes. Specific recommendations are as follows:

1. Establish a National TCM Medical Service Quality Certification System: Refine performance evaluation metrics for tertiary public hospitals that use TCM to leverage their guiding role. Implement a "county-managed, township-utilized" system for grassroots medical personnel, optimize management models, increase financial investment, and enhance the professional capabilities and motivation of grassroots practitioners of TCM.
2. Focus research on decoding the scientific basis of the foundational theories of TCM: Propose the establishment of a dedicated research program for the knowledge system and intrinsic relationships of the foundational theories of TCM, with long-term support. Create a national foundational theory of TCM research platform to train and build multidisciplinary research teams, systematically addressing key issues in the foundational theories of TCM.
3. Systematically advance a clinical efficacy evaluation system aligned with the characteristics of TCM: Recommend the establishment of a science and technology program focused on evidence-based clinical research for diseases for which TCM excels, with sustained support. Strengthen the development of national TCM medical centers, key national laboratories, and other top-tier research platforms for TCM, advocating for the inclusion of national laboratory construction in the strategic layout of national scientific and technological capabilities. Train and build interdisciplinary research teams to systematically elevate research on key scientific questions oriented toward clinical value.
4. Launch a major acupuncture science program: Establish research paradigms and methods of evaluation tailored to the unique effects of acupuncture. Focus on fundamental scientific questions in acupuncture, systematically study the regulatory patterns of acupoints on the body, comprehensively "decode acupoints" and conduct in-depth, systematic research, on the mechanisms of action of acupuncture.
5. Deepen reforms in Chinese herbal medicine cultivation and breeding: Implement organized production strategies for Chinese medicinal materials, mobilize stakeholder enthusiasm, and develop a quality standards system oriented toward clinical efficacy. Establish a science and technology program to ensure the supply and evaluation of quality of Chinese medicinal resources.
6. Accelerate the upgrading of Chinese herbal medicine production equipment: Increase independent research and development of high-end pharmaceutical equipment. Introduce policies to encourage enterprises that manufacture TCM to upgrade equipment, reducing cost pressures through tax incentives, diversified investments, and financial support, thereby enhancing their motivation and initiative for equipment upgrades.
7. Implement a program to cultivate new productive forces in the TCM industry: Address quality assurance, cost control, and optimization of production processes in Chinese herbal medicine production, integrating artificial intelligence and industrial big data analytics to comprehensively improve lean production capabilities in the TCM pharmaceutical industry. Refine centralized drug procurement methods, launch a "scale-up common drugs, strengthen major drugs" strategy, and implement a premium pricing policy for quality products.
8. Increase support for R&D of high-end TCM pharmaceutical equipment: Establish dedicated research programs to encourage collaboration among universities, research institutes, and enterprises to overcome key technical challenges and accelerate the translation of research outcomes. Create innovation platforms such as R&D and translation centers for high-end TCM pharmaceutical equipment, improving technical infrastructure and resource support to provide a stronger foundation for scientific innovation.
9. Implement a TCM standardization project: Systematically plan a standards system for TCM and establish a project database for national and industry standards for TCM. Enhance cooperation with government agencies, the World Health Organization, the International Organization for Standardization, and other international organizations and academic bodies to secure policy support from various countries, promoting the globalization of TCM through standardization.
10. Deepen cooperation under government and international organization frameworks: Leverage existing bilateral and multilateral trade agreements to foster industrial collaboration and promote the localized development of TCM overseas. Utilize platforms such as overseas centers of TCM, international research cooperation bases, overseas Chinese cultural centers, and high-level overseas medical institutions to promote TCM services globally. Strengthen science popularization and publicity of TCM to continuously enhance its international visibility and influence.

Conflict of interest statement

Boli Zhang is the Editor-in-Chief of this journal, and Junhua Zhang is the Editorial Board Member of this journal.

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Author contributions

Boli Zhang and Junhua Zhang conceived and designed this original draft. Erdan Dong, Liang Liu, Jinzhou Tian, Shilin Chen, Liguo Zhu participated in discussion and

edition the manuscript. All of the authors have read and approved the published version of the manuscript.

Ethical approval of studies and informed consent

Not applicable.

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Data availability

None.

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