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Towards the Grassroots: Reform and Optimization of the Training Mode of General Medicine Talents in Traditional Chinese Medicine Colleges and Universities

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Abstract: Primary healthcare service is the first line of defense to guard the health of the nation, and traditional Chinese medicine (TCM), with its characteristics of "simplicity, testing and inexpensiveness," holistic outlook, and the concept of treating the disease before it occurs, has a unique advantage in primary healthcare and a great demand for it. This paper analyzes the core challenges facing the cultivation of general medicine talents in TCM colleges and universities, such as the disconnection between cultivation goals and grassroots, the misalignment between practical ability and grassroots demand, and the lack of career attraction. On this basis, it puts forward a systematic reform path with the core concept of "rooting at the grassroots, highlighting characteristics, and strengthening competence" to cultivate talents that meet grassroots needs, aiming to provide theoretical references for TCM colleges and universities to cultivate excellent TCM talents who are "able to go down to the grassroots, be useful, stay in the field, and have development", and to provide theoretical reference for the training of excellent TCM talents. The aim is to provide a theoretical reference for Chinese medicine colleges to cultivate excellent Chinese medicine talents who can "get down, use, stay and develop," and to help the construction of a healthy China.

Keywords: Primary care; Chinese medicine; General medicine; Talent training; Optimization

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1. Introduction

As an important position for the inheritance of Chinese medicine culture and the cultivation of primary medical talents, the reform and optimization of the training mode of general medicine talents in Chinese medicine universities are directly related to the implementation of the strategy of Healthy China. Currently, with the full implementation of the hierarchical diagnosis and treatment system, the primary healthcare service system

is facing unprecedented challenges in capacity building. As the "gatekeeper" of residents' health, primary healthcare organizations are in urgent need of a composite talent team that understands both Chinese medicine theory and generalist thinking. Chinese medicine is based on the core concepts of "holistic concept," "diagnosis and treatment," and "simple, tested and inexpensive" diagnostic and treatment characteristics. "Its diagnostic and therapeutic features are highly compatible with the actual needs of primary healthcare, especially in the areas of chronic disease management and rehabilitation services, which have irreplaceable advantages. However, the current dilemma is that there is an urgent demand and a huge shortage of TCM general practitioners at the grassroots level who can skillfully utilize TCM technology. However, there is a significant gap between the talents cultivated by the existing TCM colleges and the requirements of the grassroots positions in terms of knowledge structure, competence, and professional identity, which leads to a prominent mismatch between supply and demand [1]. Chinese medicine colleges and universities should be problem-oriented, focusing on the reform and optimization of the training mode of general medicine talents, and cultivating talents that meet the development needs of grassroots health care.

2. Difficulties in the cultivation of contemporary Chinese medicine general practice talents

Although China nowadays vigorously promotes the development of Chinese medicine general practice at the national level, and some institutions have carried out exploratory practices, the cultivation of Chinese medicine general practice talents for the grassroots is still facing systematic bottlenecks.

2.1. Ambiguous positioning of training objectives, disconnected from grassroots needs

Currently, the training objectives of some institutions of higher education are expressed in general terms, failing to accurately align with the core competencies required by primary healthcare organizations for TCM general practitioners, including the ability to diagnose and treat common diseases and multiple diseases with Chinese and Western medicines, the ability to provide basic public healthcare services, the ability to provide health management and education, the ability to apply appropriate technologies, and the ability to communicate with doctors and patients and to work in a team. The depth of the vocational spirit of "rooting at the grassroots and serving the grassroots" and the value guidance is insufficient, which leads to the weak willingness of students to be employed at the grassroots level [2].

2.2. Curriculum system "emphasizes specialties but not general practice," and the integration of Chinese medicine characteristics and general practice is insufficient

In the higher education institutions of traditional Chinese medicine, the curriculum of traditional Chinese medicine shows a tendency of "classicization" and "specialization", focusing excessively on classical theory learning and in-depth teaching of specialized diseases, and neglecting the clinical application of Chinese medicine thinking and technology in the primary general practice scenarios. The relevance of Western medicine courses to general practice is weak, and the contents of basic medicine and clinical medicine are complicated, failing to effectively integrate and streamline the modules closely related to general practice positions (such as first aid, community infectious disease prevention and control, basic diagnostic and therapeutic skills, etc.). Moreover, the core curriculum of general medicine has insufficient credit hours and is located in marginalization, and the depth of teaching and practical training of external Chinese medicine treatment is insufficient [3]. Students' clinical internships are mainly arranged in tertiary hospital rotations, and there is a

lack of long-term, systematic internships in community health centers or township health centers. Existing community practice is often short in time and shallow in content, and it is difficult for students to deeply participate in the core work, such as family doctor contracting, health record management, follow-up of key populations, health education, etc. They do not have a deep understanding of the real working status and responsibilities of primary care general practitioners, and the community practice is just a formality, and the students lack the experience of community service [4].

2.3. Structural imbalance in the faculty, lack of grassroots talents

Among the faculty of universities, teachers of the Tertiary hospitals with profound specialty backgrounds dominate, but they lack practical experience in primary general practice positions for a long time, and the proportion of teachers who are truly familiar with the laws of primary health care and have excellent teaching ability is relatively low, and the introduction mechanism of is not sound, which leads to a shortage of composite faculty members with theoretical backgrounds and practical abilities [5,6]. At the same time, the training system of primary care general practitioners has not yet been perfected, medical schools generally have not established independent general medicine teaching organizations, the proportion of full-time teachers is insufficient, the teaching methods and curriculum are relatively single, and some colleges and universities do not even offer general medicine courses. In addition, primary care organizations generally have problems such as low treatment, heavy workload, limited space for career development, and the implementation of establishment, title promotion, remuneration and continuing education policies have not yet been improved, resulting in the persistence of the dilemma of "unable to get down and unable to stay" [7]. This structural contradiction not only affects the training quality of general practitioners but also restricts the sustainable development of primary health care services.

3. Reshape the training mode with the orientation of grassroots demand

As an important base for cultivating primary medical talents, Chinese medicine colleges and universities should take the strategy of "Healthy China" as an orientation, and build a training system of general medicine talents that is adapted to the grassroots' needs [8], and urgently need to achieve the goal of "going down, being used, and being retained" through systematic reforms and optimization. The core of the reform lies in the establishment of the nurturing concept of "rooted in the grassroots, highlighting the characteristics, and strengthening the ability," and all the training links must be designed to serve the cultivation of Chinese medicine general practitioners who are truly willing and able to serve the grassroots in the long term and solve the practical problems at the grassroots level. The unique value and advantages of Chinese medicine in primary medical care will be fully utilized, and the thinking of Chinese medicine, the characteristic diagnosis and treatment techniques of Chinese medicine, and the concept of "treating the future disease" of Chinese medicine will be deeply integrated into the whole process of general practitioner training. Focus on the core competencies of primary care positions, especially the ability to solve common health problems by combining Chinese and Western medicines, basic public health services, health management and education, communication and coordination, and the ability to use appropriate technology.

4. Reform and optimization path: building a "five-in-one" training system

Based on the above concept and problem analysis, the following systematic reform and optimization path is

proposed:

4.1. Reconstruct the goal of talent training to meet the needs of the grassroots

Cultivate talents who have solid theoretical foundation in TCM and concepts of general medicine, have the ability to effectively diagnose and treat common and frequent diseases at the grass-roots level and manage chronic diseases by combining traditional Chinese medicine and Western medicine, are skilled in appropriate TCM technology, are good at health education and health management, have good communication skills between doctors and patients and teamwork spirit, have deep humanistic feelings and a strong sense of social responsibility, and are determined to and able to root in the grass-roots level to serve the community and the countryside. The program is designed to provide comprehensive and applied Chinese medicine talents. The education of medical ethics and medical style of "Great Medical Excellence and Sincerity," the education of dedication to serve the grassroots, and the education of humanistic qualities of medical practitioners' benevolence are carried out throughout the whole process of cultivation, and the guidance of values is strengthened. By offering courses such as "Medical Humanities" and "Primary Care and Society," inviting outstanding primary care doctors to give presentations, and organizing social practice at the primary care level, students can enhance their knowledge, understanding, and emotional recognition of primary care services.

4.2. Construct a modularized curriculum system that integrates Chinese and Western medicine, highlights general practice, and strengthens the characteristics of Chinese medicine

Integration and optimization of the fundamentals of Chinese medicine and the fundamentals of modern medicine, emphasizing the relevance of knowledge and its supportive role in the subsequent clinic, synchronously introducing the knowledge of Chinese medicine and Western medicine on the disease when explaining the disease, and focusing on cultivating the students' ability to use the two systems of medicine to solve the practical problems [9]. Teaching cases are designed around common health problems at the grassroots level (e.g., fever to be checked, chronic cough, dizziness, hypertension management, diabetic foot prevention, etc.) to promote students' active learning, integration of knowledge, and training of clinical thinking.

4.3. Establish a practical teaching system that runs through the whole process and is rooted in the grassroots

Arrange for students to enter community health service centers/township health centers for apprenticeship from the lower grades to feel the grassroots atmosphere, understand the workflow, and "early clinical, multi-clinical, repeated clinical". Significantly increase the time and weight of internship in primary healthcare organizations (no less than 1/2 or even 2/3 of the total internship time is recommended). Adopt the "1+X" model: "1" is a more comprehensive clinical rotation (internal medicine, external medicine, gynecology, pediatrics, emergency medicine, etc.) in district and county-level Chinese medicine hospitals (or Chinese medicine departments/ general medicine departments of general hospitals); "X" is in-depth rotation in several community health service centers/township health centers to promote the construction of "school-hospital integration", and to realize the organic combination of theoretical teaching and clinical practice through bedside teaching, the "college-affiliated hospitals" model and the "medical teaching and research fusion mentorship" education model [10]. Students must participate in the work of the family doctor team, undertake the core tasks of contracting, follow-up, health management, health education, etc., and refine their clinical resilience in real-life scenarios. In the course of an internship, students are required to master several safe, effective and easy-to-promote TCM techniques at the

grassroots level (e.g. acupuncture at specific acupoints, massage techniques for common diseases, moxibustion, cupping, etc.), and to pass a strict examination.

4.4. Deepening teacher-training education

A "dual tutor system" is established as the core mechanism for the training of general medicine talents in TCM colleges and universities, realizing the in-depth integration of theoretical guidance and clinical practice through the collaborative education model of institutional tutors and grass-roots practice tutors. Among them, the institutional tutors are responsible for systematic theoretical teaching and academic leadership, focusing on cultivating students' basic theoretical quality of Chinese medicine and scientific research and innovation ability; the grass-roots famous veteran Chinese medicine practitioners or excellent Chinese medicine general practitioners with the qualities of "both virtues and excellence" are selected as the practice tutors, and the mode of "one-to-one" orientation and collaborative learning is adopted, to enable students to master systematically the wisdom of their experience of applying Chinese medicine in grass-roots diagnosis and treatment, the skills of doctor-patient communication and the ability to deal with complicated cases. This will enable students to systematically master the wisdom of their experience in the use of Chinese medicine in primary care, patient communication skills, and clinical thinking in dealing with difficult and complicated diseases [11]. Special emphasis is placed on incorporating the assessment of the quality of teacher training into the comprehensive evaluation system for graduation, ensuring the precise alignment between the quality of talent training and the needs of primary care through the establishment of multi-dimensional assessment indicators, such as the ability of clinical practice, the performance of medical ethics and medical ethics, and innovative thinking, etc. [12], and organically combining the education of the institution with the teacher education of renowned veteran Chinese medicine practitioners rooted in the grassroots and with rich clinical experience to realize the transmission of appropriate clinical experience [10].

4.5. Create a teaching team that emphasizes both "dual-teacher type" and "grassroots type"

Establish a system for teachers to go to primary health care organizations for regular practice and training (e.g., not less than 3 months every 3-5 years). Encourage teachers to actively participate in grassroots health service programs and scientific research cooperation, and introduce excellent talents with rich grassroots work experience to enrich the teaching team. Vigorously attract outstanding grassroots talents to teach, and establish a stable pool of part-time teachers from outstanding grassroots Chinese medicine general practitioners. Clearly define their teaching duties, workload recognition standards and reasonable remuneration. Employ them to undertake practical courses, case teaching, internship teaching, lectures and other tasks. Establish a mechanism for the certification and incentive of teachers of primary practice teaching bases, and provide training on the teaching ability of primary care doctors who undertake teaching tasks and certify their qualifications for leading teaching. They will be favored in terms of title promotion, evaluation of merits, and priorities. Enhancement of the "general practice quality" and "grassroots experience" of teachers on campus. Through the synergistic effect of the dual tutor system of "institution-grassroots," we can break through the limitations of the traditional single tutor system, which is difficult to meet the needs of general medicine practice, and ensure that students can obtain systematic theoretical knowledge of Chinese medicine general practice and grass-roots clinical experience [13].

5. Conclusion

Reform of the training mode of general medicine talents in TCM colleges and universities for the grassroots is a key initiative to respond to the needs of the Healthy China strategy and to solve the dilemma of primary healthcare talents. The characteristics of Chinese medicine of "simple, tested and inexpensive" and the concept of "treating the future disease" are very suitable for the service orientation of "prevention as the mainstay and combination of prevention and treatment" at the grassroots level. At present, from the precise alignment of training objectives and grass-roots needs to the in-depth integration of theory and experience under the "dual tutor system," a series of reform paths are systematically cracking the pain point of "can't get down, can't be used, can't be retained." This reform is not only the optimization of the education model, but also the adherence to the value orientation of "rooting at the grassroots and serving the people." Continuing to deepen the "institution-grassroots" collaborative education mechanism, so that the education chain resonates with the chain of primary health care needs, and guards health at the grassroots level.

Disclosure statement

The authors declare no conflict of interest.

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