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Review Article

Current Insights in The Barrier of Continuing Education for General Practitioners in China and Construction of A Novel Raining Model

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Abstract

Since 1997, China has been carrying out general practice education and has promulgated and implemented the "General Practitioner System", conducting general practice job transfer training and "5+3" standardized training. However, the continuing education of general practitioners in China was the weakest. This study looked insights in the barrier of continuing education for General Practitioners in China: There was no unified mode and standard for continuing education for general practitioners, lacked of management system covering the entire practice cycle of general practitioners, the focus of post graduation training was unclear, the overall level of the teaching staff was not high, and the enthusiasm of general practitioners to participate in continuing education was poor. In response to these issues, the authors constructed and implemented a full cycle general practitioner continuing education model guided by job competence. Based on summarizing the 10 core job competencies of general practitioners, they constructed a general practitioner training faculty, established general practitioner related systems (continuing education system, practice management system, and professional title promotion system), designed training courses, and conducted hierarchical training, We organized multi-path scientific research training and conducted comprehensive quality management for the continuing education of general practitioners, achieving satisfactory results. Our raining model provided a useful reference for the current continuing education of general practitioners in China and is worth promoting and applying.

Keywords: General practitioner; Continuing education; Mode; Job competence

The Current Status of General Practice Education in China

The Evolution of General Practice in China

In 1986, Chinese scholars participated in the academic annual conference organized by the World Organization of National Colleges, Academies and Academic Association of General Practitioners/Family Physicians (WONCA), and invited the President of WONCA to come to China for academic exchange. The concept of general practice gradually emerged in China. In 1993, the General Practice Branch of the Chinese Medical Association was established, marking the formal establishment of General Practice as a secondary clinical discipline in China. In 1995, China was admitted as a full member state by WONCA. 1997, the State Council, the former Ministry of Health, the National Development and Reform Commission, and other central governments or national ministries individually or jointly issued documents such as the "Decision on Health Reform and Development" and the "Plan for the Construction of Grassroots Medical and Health Teams with a Focus on General Practitioners", calling for strengthening the construction of grassroots medical institutions, accelerating the training of General Practitioners, and promoting the implementation of the graded diagnosis and treatment system. In 2006, the State Council held a national community health work conference and issued the "Guiding Opinions on the Development of Urban Community Health Services", emphasizing the development of community health services as an important measure to deepen the reform of the urban medical and health system, effectively solve the problems of difficult and expensive medical treatment for urban residents, and serve as the foundation for building a new urban health service system. It also requires relevant departments to fulfill their responsibilities effectively, Jointly promoted the de-

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velopment of community health services [3]. In July 2011, the State Council issued the “Guiding Opinions on Establishing a General Practitioner System”. At this point, the development of general practice medicine in China has entered a fast lane, and general practice education has achieved rapid development.

In 2012, there were only 110000 general practitioners in China, of which 73000 obtained general practitioner training certificates, 37000 registered as general practitioners, and 0.81 general practitioners per 10000 populations. In 2020, there were 409000 general practitioners in China, of which 153000 obtained general practitioner training certificates, 256000 registered as general practitioners, and there were 2.9 general practitioners per 10000 populations. In terms of quantity and quality, China's general medical human resources have achieved leapfrog development. In 2020, China has initially established a vibrant and dynamic system of general practitioners, basically forming a unified and standardized training model for general practitioners and a grassroots service model for first diagnosis. General practitioners have basically established a relatively stable service relationship with urban and rural residents, achieving 2-3 qualified general practitioners for every 10000 residents in urban and rural areas. According to the plan of China's "General Practitioner System", by 2030, there will be 5 general practitioners per 10000 residents, which will better provide the public with continuous, coordinated, convenient and accessible basic medical and health services.

General Practice Education Status in China

The training of general practitioners in China began in 1997. Currently, China has formed a system of general practitioner training with Chinese characteristics, including medical college education and academic education at different levels, including specialized, undergraduate, masters, and doctoral levels. The training model was mainly based on the "5+3"(5 years medical school and 3 years standardized training for residents) model and supplemented by the "3+2" model, and the rural targeted free training policy, and a combination of post graduation education and continuing medical education, including job training/job transfer training. Research has found that the "5+3" training model can only meet the entry-level requirements of general practitioners, and the current training model was still missing in the continuing education dimension of general practitioners [8]. The continuing education refers to the targeted non academic education provided by general practitioners in response to their professional skills needs after completing academic education and training. At present, the way for general practitioners in China to participate in continuing education was single, mainly through attending specialized continuing education courses. In addition, a training system for continuing education has not yet been established. These issues to some extent limit the professional development and improvement of personal qualities of general practitioners [10,11].

The Barrier of Continuing Education for General Practitioners in China

Lack of Unified Continuing Education Models and Standards

China has developed a general practitioner training model based on foreign experience, with a focus on "5+3". However, there was still no unified model and standard for how to carry out continuing education for general practitioners after completing "5+3" in China. The curriculum of continuing education for most general practitioners was not standardized. Many courses were disconnected from the requirements of job abilities. Most general practitioners lacked planned and systematic continuing education in their work positions, and their continuing education become a personal selection, and just to cope with tasks. This has resulted in a slow improvement in the diagnosis and treatment level and health service level of on-the-job general practitioners in China, with significant differences in the diagnosis and treatment levels among different general practitioners [12,13].

Lack Of Management System Covering The Whole Practice Cycle Of General Practitioners

After the registration of general practitioners in China, the management of their continuing education and ability evaluation cannot keep up, resulting in a lack of attention and weak incentives and constraints. At the same time, there was currently lack of continuing education and professional technical ability evaluation systems that met the characteristics of general practitioners. The fact that on duty general practitioners participated in continuing education was a personal behavior, lacking systematic guidance and assessment requirements.

Unclear Focus on Training Content

Continuing education in general medicine in China, did not like “5+3” training in general medicine, did not have clear training outlines and content requirements. Each region only selected certain content for training general practitioners based on the needs of community health services. Therefore, there was no systematic planning and comprehensive evaluation standards, the training focus was unclear, which led it difficult to ensure the quality of training and cultivate a high-level team of specialized general practitioners [14,15].

The Overall Level of the Teaching Staff Was Not High

High quality general practitioners were the fundamental guarantee for cultivating excellent general practitioners. However, there was currently a serious shortage of general practitioners in China. The teaching staff of general practitioners were generally general practitioners and community teachers in general hospitals. Most of the teachers in comprehensive hospitals were transformed from specialized doctors, lacking full-time general practitioners who had undergone systematic theoretical training, deeply understood the connotation of general medicine services, and fully understood the progress of general medicine disciplines both domestically and internationally. The clinical base rotation of general practitioners tends to converge

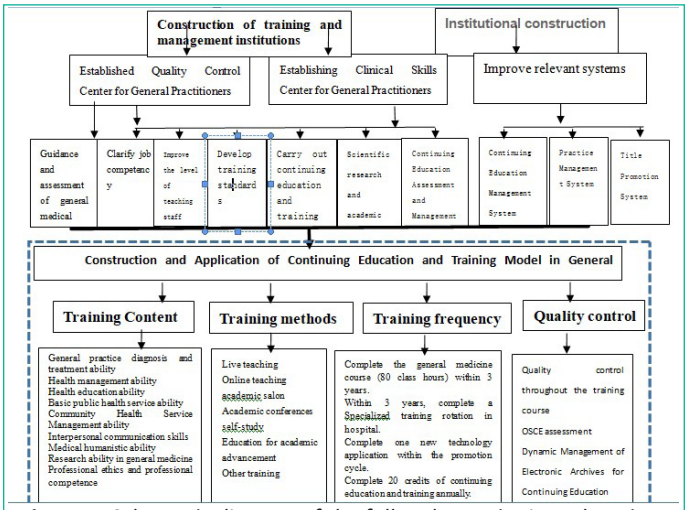

Figure 1: Schematic diagram of the full cycle continuing education model for general practitioners.

with that of specialized practitioners, who receive a "disease centered" knowledge system from specialized medical teachers. It was difficult to cultivate their comprehensive and systematic general practitioner diagnosis and treatment thinking. Although the teaching staff in grassroots practice bases had rich experience in general practice diagnosis and treatment, due to their overall low education level, most of the teachers had not received standardized training in general practice medicine, and over 80% of the managers in general practice training bases had not systematically learned corresponding medical knowledge and lacked good teaching ability. At the same time, there were also non-standard teaching management and students often use the form of "herding sheep" in continuing education, So the effectiveness of continuing education and training was not high [18].

Poor Enthusiasm of General Practitioners to Participate in Continuing Education

At present, the implementation of continuing education in general medicine in most regions of China lacked organization, and the reward mechanism was not perfect. In addition, due to the relatively insufficient human resources of grassroots health in China and the large workload of community general practitioners, the contradiction between work and education was obvious, and the overall enthusiasm for them to participate in continuing education separately was not high. In fact, most general practitioners hope to continuously improve their professional abilities and had a need to participate in continuing education. However, due to the fragmented training that was currently the main focus of most general practitioners' continuing education, the lack of systematic training and the low quality of training, it was not easy for students to appreciate and gain much, which was also reason why the low enthusiasm of general practitioners to participate in continuing education [19].

Exploration of Continuing Education Model for General Practitioners

Based on a comprehensive analysis of the relevant policies on general practitioner education and management in China, our team had developed a full cycle general practitioner continuing education model guided by job competency through expert consultation, thematic discussions, student interviews, and questionnaire surveys, in response to the problems in general practitioner continuing education in China (Figure 1).

Clarify the Job Competence of General Practitioners

Based on the requirements for general practitioners both China and internationally, our team summarized 10 core job competencies for general practitioners in China, including: general practice diagnosis and treatment ability, health management ability, health education ability, basic public health service ability, community health service management ability, interpersonal communication ability, medical humanities ability, general practice medical research ability, professional ethics and professional literacy ability, etc. [20].

Establishing a Quality Control Center for General Practitioners and a Skills Training Center for General Practitioners:

With the support of the health administrative department of government, we have established a regional general practice quality control center, which included a general practice expert committee responsible for guiding, supervising, and evaluating the effectiveness of general practice in the region. At the same time, we were responsible for formulating general practice career plans and continuing education plans for the entire region. Established a general practitioner skills training center, which was responsible for continuing education, training, and assessment of general practitioners throughout their entire career cycle.

Improving the Level of General Practice Training Faculty

We have selected and evaluated the existing faculty of general practitioners, eliminated some unqualified teachers, and invited well-known general practitioners both domestically and internationally as training teachers, significantly improving the overall level of the faculty. At the same time, we regularly hold general practice teacher training courses, which include progress in general practice, clinical skills in general practice, scientific research in general practice, and teaching methods in general practice, comprehensively improving the professional and teaching level of the general practice training teacher team.

Improving the Continuing Education Management System

Based on the professional development requirements of general practitioners and the job competency requirements of general practitioners with different professional titles, we developed a full cycle general practitioner continuing education system guided by job competency, which clarified the job competencies that each level of general practitioner (junior general practitioner title, intermediate general practitioner title, and senior general practitioner title) should possess, The training content, methods, frequency, and continuing education credited to be completed for each stage, which let each general practitioner clarify their future career development path and the tasks and requirements for each stage [21].

Carried out General Practice Training Courses

According to the requirements of general practice job competence, two complete general practice theoretical and skill training courses were held annually for a total of 80 class hours, including 40 theoretical courses and 40 general practice skill training courses. The content covered general practice diagnosis and treatment, health management, health education, basic public health services, community health service management, interpersonal communication and medical humanities, general practice medical research, and other content. All courses were' free and open to general practitioners.

Conducted Multi-Path Research Training for General Practitioners

We established an academic exchange system for general practitioners, strongly encouraging them to participate in various forms of academic training and exchange activities. We regularly sent general practitioners to participate in domestic and international general practitioner academic conferences, and held research salons every two weeks. We encouraged general practitioners to boldly innovate management and service models in their work, strongly supported the promotion and application of new technologies and methods introduced by general practitioners. At the same time, actively invited general practitioners to participate in the development of continuing education courses, courseware production, and teaching activities.

Improve the Practice Management and Professional Title Promotion System

For practicing physicians registered as general practitioners,

it was required to complete the continuing education and training content for general practitioners every year, and must pass the assessment of basic theories, basic knowledge, and basic skills. Those who failed the assessment would be given a make-up exam after training. If they still failed, they need to study for one month off work until they pass the assessment before returning to work. Reforming the policy of promoting professional titles, the new policy placed more emphasis on the evaluation of professional and technical abilities of general practitioners in practical work (mainly including basic information, core abilities, and expanded abilities) and their effects; The evaluation results of the professional and technical abilities of general practitioners also served as the main reference basis for hiring general practitioners, determining salary and benefits, evaluating professional titles, and evaluating talent levels.

Strengthened the Assessment and Quality Control of Continuing Education for General Practitioners

The General Practitioner Skills Training Center had been equipped with dedicated teaching management personnel responsible for the overall quality management of continuing education for general Practitioners. For our general practice continuing education training course, we conducted a questionnaire survey and interview before the training to understand the students' needs and suggestions for training content and methods; After each class, students were required to evaluate the teaching content, teaching methods, and teaching effectiveness; After completing the entire training, conducted an OSCE assessment on the students. Established electronic records for the practice management and continuing education of all general practitioners, mainly including personal basic information; Education information such as medical college education, post graduation education, continuing education, and skill assessment; Provided regular feedback and reminders to general practitioners on the level of professional qualifications such as practice registration, regular assessment, professional title evaluation, and professional technical ability evaluation, assist them in completing continuing education for general practitioners, and improved the effectiveness of continuing education [22,23].

Discussion

With the rapid development of medicine, the health policies, the diagnosis and treatment guidelines of diseases are frequently updated. Familiarizing one with the latest health policies and mastering the latest guidelines of diseases, continuously improving one's diagnosis and treatment level and health service ability are essential tasks for doctors. Continuing education is the most important way to complete these tasks. Therefore, continuing medical education accompanies the career of clinical doctors, and the effectiveness of continuing teaching can even directly affect the level of clinical doctors [24,25]. In China, currently only a small number of general practitioners graduated through standardized training, while most general practitioners were trained through other specialized job transfers. The overall level of the general practitioner team in China was low, and there is insufficient mastery of the concepts and standardized diagnostic and treatment skills of general medicine. Therefore, in China, compared to other specialized doctors, continuing education is more important in enhancing the professional and health service capabilities of general practitioners.

Developed countries have established training systems for general practice medicine, and their training mechanisms are also complete and sound. In terms of policies, many countries ensure the compulsory implementation of continuing education for general practitioners through laws or other forms. In terms of teaching evaluation systems, foreign continuing education effectively measures the educational content received by general practitioners through the credit system. In terms of medical qualification certification, linking continuing education with professional qualifications will enhance the initiative of general practitioners to receive further education. In addition, in terms of the content of continuing education, almost all general practitioners in foreign countries have fully mobilized social forces and provided multi-dimensional, multi-directional, and multi-form courses for general practitioners to choose from, with medical schools and medical associations as the main body, which can meet the needs of different levels of general practitioners. In addition, the continuing education of general practitioners abroad has maintained a good continuity, and the process of continuing education can run through the entire career of general practitioners, in order to ensure the increasing demand for medical services brought about by the times and social progress, and truly play the important role of general practitioners in the social medical and health industry [26].

Compared to the general practice in developed countries, the development of general practice in China was relatively late. But in the past decade or so, China's general practice has developed rapidly. In recent years, the Chinese government has attached increasing importance to general practice education, continuously increasing investment in the training and training of general practitioners, and providing policy support for the development of general practice education. The Guiding Opinions on Establishing a General Practitioner System issued by the State Council in 2011 require the gradual establishment of a unified and standardized training system for general practitioners. It was mentioned that the continuing education of general practitioners should be guided by new knowledge and technologies in the development of modern medical technology, to enhance the practicality and pertinence of training content. However, no detailed planning has been made for the construction of a team of continuing education teachers, a team of general practitioners, and lifelong education. In addition, due to the current focus of the Chinese government's work on increasing the number of general practitioners and filling the gap in in-service personnel, and the relatively insufficient supervision and guidance of various administrative departments on continuing education for general practitioners, many parts of China's continuing education for general practitioners only stays in the form, while the actual effect of continuing education is not satisfactory. Some teams in China have also conducted explorations on the continuing education model of general practice medicine and achieved good results, but due to limitations in training conditions, it has not been widely promoted and applied [27]. Therefore, the barrier of continuing education in general practitioners in China has become an important factor restricting the development of the existing general practitioner team.

To solve the problems in continuing education of general practice in China, we constructed a full cycle general practitioner continuing education model guided by job competence through a series of methods. A general practice quality control center and a general practice skill training center had been established, and a general practice expert committee had been built. On the basis of summarizing the core job competencies of general practitioners in China at present, we carried out a general practitioner training faculty team, general practitioner

related systems (continuing education system, practice management system, and professional title promotion system), continuing education curriculum system, and conducted 80 hours of general practitioner training courses. We organized multi-path scientific research training for general practitioners. Under the assessment and incentive system, carried out full process quality management of continuing education for general practitioners. Practice has proven that this continuing education model in general practice has received unanimous praise from general practitioners and achieved satisfactory results.

Teachers play a crucial role in continuing education. At present, the quality of the teacher a major challenge for community health training in China. Especially in community training bases, the level of general practitioners varies and the overall level were not high, resulting in significant differences in training quality and unsatisfactory overall results. In response to this issue, we improved the professional and teaching level of the general practice training faculty through rolling management of teachers, regular assessments, timely elimination of some unqualified teachers, and methods such as supplementing high-level teachers and strengthening the training of existing teachers, ensuring the quality of training [28,29].

In order to solve the problem of insufficient emphasis on continuing education in general practice and lack of an efficient system in China, we referred to the requirements of domestic and foreign general practitioners and first determined the 10 core job competencies of general practitioners in China. Based on this, we designed a training course system, organized training, and implemented flexible training methods such as on-site teaching, online teaching, general practice salon, academic conferences, and self-learning, Effectively improving the trainees' training experience, alleviating the problem of work-study conflicts, and achieving satisfactory training results.

In order to solve the problem of inadequate implementation of continuing education and training in general medicine, and low enthusiasm for students to participate in training, we formulated a continuing education system, practice management system, and professional title promotion system. By guiding on-the-job general practitioners to make career plans, guiding them to complete comprehensive medical continuing education in a hierarchical and regular manner through relevant systems, and ensuring the effectiveness of internal and external general medical training through quality control throughout the entire process of continuing education. Assisted general practitioners in timely promotion of professional titles while enhancing their professional abilities in general medicine. This practice has been unanimously recognized by general practitioners.

The full cycle continuing education model for general practitioners guided by job competence constructed in this study provided useful reference for innovating the current mode of continuing education for general practitioners in China, which is worth promoting and applying. However, in the process of practice, we also realized the shortcomings and areas worth improvement in the future: (1) Currently, there is no authoritative policy reference in China for the competency standards and career development paths of practicing general practitioners, so the current continuous training system lacks quantitative effectiveness evaluation standards [33]. (2) In the process of cultivating general practitioners, the teaching courses and practical methods for specific clinical operations, physician career promotion and development still need to be continuously improved, especially the training system for general practitioners' sub specialties still needs to be deeply explored and practiced [34,35]. (3) How to continuously mobilize the enthusiasm of grassroots general practitioners to receive training still requires in-depth practice. Due to the fact that the promotion of physician titles in China is led by government departments, it is necessary for the government health administrative department to establish a continuing education incentive system that matches the upgrading of human resources, fundamentally improving the enthusiasm of general practitioners for continuing education, and thereby comprehensively enhancing the diagnostic and treatment abilities and job competence of Chinese general practitioners.

Author Statements

Conflicts of Interest

All other authors declare no conflicts of interest.

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