ART AND TECHNOLOGY PRESS INC
(United States)

2026 Volume 2, Issue 2
Advances in Modern Chinese Medicine Research
https://arttechpress.com
Print ISSN 3068-0638 Online ISSN 3068-0646

Exploration and Reflection on Hypertension Teaching in Standardized Training for General Resident Physicians

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Abstract: Based on the current national implementation of the Healthy China strategy, Beijing is vigorously developing general practice. Since the launch of standardized residency training for general practitioners (referred to as general practice residency training) in 2010, a large number of general practitioners have been cultivated for community primary care. Standardized residency training is a part of postgraduate education and a necessary path for every physician's development. General practitioners undertake important tasks in comprehensive diagnosis and treatment, primary care, and coordinated medical care. Therefore, the standardized training of general practice residents has also become a key point in the development of general practice. With the accelerating process of population aging, hypertension in the elderly has become an increasingly prominent public health issue, and it is also a key focus area for primary care physicians and an important component of general practice residency training. Consequently, strengthening the teaching of elderly hypertension during general practice residency is an inevitable requirement for practicing "healthy aging." By strengthening the teaching faculty and optimizing teaching models, adhering to the principles of being based on the actual needs of primary healthcare services, oriented towards the competency of general practitioners, and focusing on general practice clinical thinking in hypertension teaching during general practice residency, we can effectively improve the comprehensive clinical diagnosis and treatment capabilities of general practice residents regarding elderly hypertension.

Keywords: General Practice Residents, Standardized Training, Hypertension, Competency

Online publication: May 25, 2026

1. Introduction

Hypertension is one of the major chronic diseases threatening the health of Chinese residents. The "China Cardiovascular Health and Disease Report 2019" shows an increasing trend in hypertension prevalence, with a prevalence rate of 23.2% among the population aged ≥ 18 years in China, amounting to 245 million patients [1]. Correct diagnosis, rational treatment, and standardized management are crucial for blood pressure control in patients. Primary care is the "main battlefield" for hypertension management; it is a key task for primary care physicians and

an important part of general practice residency training. However, general practitioners still have many deficiencies in the diagnosis, treatment, and management of hypertension, leading to suboptimal blood pressure control in patients, an increased risk of complications, and higher medical costs. Here, we combine the actual situation of hypertension teaching in primary care training bases to explore and reflect on this issue.

2. The Necessity of Strengthening Elderly Hypertension Teaching for General Practice Residents in the Context of a Healthy Aging Society

The aging population is accelerating, and the health needs of the elderly are increasingly growing, with a particular shortage of primary care personnel for elderly health services [2]. Strengthening the primary healthcare service system and the construction of the general practitioner workforce is one component of actively responding to population aging and implementing the Healthy China strategy[3]. The currently implemented hierarchical diagnosis and treatment model, where tertiary hospitals and community health service centers, stations, township health centers, and village clinics form medical alliances, allows residents to receive diagnosis and treatment for common and frequently occurring diseases in the community and, when necessary, be referred to higher-level hospitals within the medical alliance through a two-way referral channel. This forms a “stepped” model, which is a concrete manifestation of hierarchical diagnosis and treatment. General practitioners are the key players in this task, acting as the “gatekeepers” of residents’ health[4] by undertaking integrated services such as diagnosis, treatment, and referral of common and frequent diseases, prevention and healthcare, patient rehabilitation and chronic disease management, and health management in primary healthcare units. The requirements of healthy aging for the management of elderly hypertension include early screening, intervention, classified management, and health guidance[5]. The current situation of hypertension in China is characterized by low awareness, treatment, and control rates[6]. In general practice residency training, the teaching of elderly hypertension lacks specificity, and there are also many deficiencies in clinical practice regarding hypertension referral indications, chronic disease management, tertiary prevention, and complication management[7], which far from meeting the actual work needs of primary healthcare units as the first line of defense for hypertension prevention and treatment[7]. For example, the focus of elderly hypertension teaching differs between tertiary hospitals and community hospitals during general practice residency. In tertiary hospital teaching, the emphasis is on hypertension diagnosis and typing, grading and risk stratification, differential diagnosis between essential and secondary hypertension, and acute and chronic complications of hypertension, with more training provided. However, during rotations in community hospitals, it is found that acute complications are rare, medication adjustments during chronic follow-up are more common, training on the treatment principles of hypertensive emergencies is extensive, while training on the clinical characteristics of elderly hypertension is limited. Training on the principles of primary, secondary, and tertiary prevention of hypertension is extensive, while training on the standardized health management service protocols for hypertensive patients is limited. Training on hypertension referral indications is also limited. Practice in community hospitals reveals differences in the focus of knowledge points between rotational learning during residency and actual community practice. For instance, during the tertiary hospital residency phase, emphasis is placed on managing acute and severe conditions, differential diagnosis of diseases, and handling acute complications. However, community work requires more learning about referral indications for common diseases, tertiary prevention and health management of chronic conditions, and standardized management of multimorbidity[7]. These are relatively weak areas during the general practice residency stage.

3. Current Situation of General Practice Residency Teaching

3.1. The community teaching faculty is relatively weak.

Some supervising teachers fail to master teaching methods and techniques and do not fully grasp the key points of the teaching content. The teaching syllabus is insufficiently detailed, leading to arbitrary teaching with poor specificity, and teaching ward rounds are often non-standardized. It is also a common problem that teachers are too busy to supervise teaching effectively[7]. It is recommended to provide systematic, targeted, and standardized training for base supervising teachers and to refine the teaching syllabus with supporting teaching materials.

3.2. There is a disconnect between the training content in tertiary hospitals and the clinical practice system [8].

Analyzing the reasons, general practice residents training in tertiary hospitals primarily care for inpatients on the wards, most of whom are severely ill. The learning content focuses on managing hypertensive emergencies, complications, and disease differential diagnosis. However, the main focus of general practitioners working in primary care is elderly hypertensive patients seen in outpatient follow-up. They need to master the characteristics of elderly hypertension, key diagnostic and treatment points, referral indications, and continuous follow-up management. It is recommended to establish a comprehensive management mechanism for general practice residency, improve the access, training, and assessment mechanisms for clinical teaching staff, strengthen the discipline construction of general practice in clinical bases, and refine the training programs. Furthermore, some primary training bases lack incentives for teaching and related economic compensation, leading to low teaching enthusiasm [7]. It is suggested to provide certain economic incentives in this regard.

4. Exploration of Elderly Hypertension Teaching in General Practice Residency

4.1. Strengthening the Teaching Faculty

Standards for training teachers are as follows: ① Possess a bachelor's degree or higher, have a professional technical title of attending physician or above, and have rich clinical diagnosis, treatment, and teaching experience in elderly hypertension; ② Have participated in national or provincial general practice teacher training programs, mastering training objectives, policies, and systems; ③ Possess general practice clinical thinking ability and general practice teaching philosophy, have good clinical professional diagnosis and treatment experience and ability, and be familiar with the workflow of general practice outpatient services and public health services; ④ Have clinical teaching experience, awareness, and ability [9].

4.2. Diversification of Teaching Models

Implement a mentor responsibility system, with one-to-one or one-to-two guidance. Mentors provide personalized guidance to their students, promptly assisting in solving various problems encountered during residency training. Focus on teaching knowledge related to elderly hypertension through individualized, interactive, and small-class teaching models. Introduce role-playing teaching. Role-playing teaching methods are vivid and visual. Through rotating roles and mutual feedback, they can quickly improve doctor-patient communication skills, enhance professional skills, inspire students' thinking, and cultivate their clinical thinking abilities [10]. Strengthen case-based teaching and problem-based learning, combining teaching ward rounds, case discussions, and thematic explanations to mobilize residents' enthusiasm and stimulate their active learning and thinking.

4.3. Oriented Towards Competency

The competency of general practitioners is a prerequisite for ensuring high-quality primary healthcare services [11]. In 2005, the World Organization of Family Doctors (WONCA) proposed that general practitioners should possess six core competencies, including primary care management, patient-centered care, specific problem-solving skills, comprehensive approach, community orientation, and holistic approach [12]. So, in which areas do general practice residency training bases need to improve in cultivating these six core competencies for general practitioners? We conducted practical exploration in the field of hypertension teaching. Aiming to comprehensively enhance the competency of general practitioners, we refined the elderly hypertension teaching syllabus, focusing on training in basic medical service capabilities. This includes clinical theoretical knowledge and clinical diagnostic and treatment skills related to elderly hypertension, emphasizing the clinical characteristics of elderly hypertension, precautions for medication use, and attention to assessing psychological issues such as anxiety, depression, and insomnia, with timely clinical intervention. Combining basic medical care with chronic disease management requires comprehensive management from several aspects, including identifying risk factors, regular follow-up, and medication adjustment, to achieve the goal of improving control rates and reducing complications[13]. Teaching centered around the six core competencies helps general practice residents understand and master the processes and key points of hypertension chronic disease management, understand the important medical issues involved in cases, and cope with similar clinical situations they may face after graduation. This teaching method can help residents enhance their critical thinking skills during learning, allowing them to feel their own role transformation from medical students to general practitioners during standardized training. Furthermore, professional literacy education should be integrated throughout the entire clinical teaching process.

4.4. Cultivating General Practice Clinical Thinking

General practice is a comprehensive clinical secondary discipline integrating clinical medicine, preventive medicine, rehabilitation medicine, and social-behavioral sciences, covering various diseases in internal medicine, surgery, gynecology, and pediatrics[10]. Cultivating general practice clinical thinking is an important means to achieve general practitioner competency, emphasizing holistic and comprehensive thinking, being problem-oriented and patient-centered, and providing comprehensive, full-lifecycle health management[11]. To this end, a blended teaching method combining case analysis with problem-based learning[7] is used to cultivate general practice residents' ability for comprehensive analysis from multiple dimensions, including basic knowledge, symptoms, physical examinations, auxiliary examinations, diagnosis, and treatment involved in the occurrence, development, and evolution of diseases[13]. The bio-psycho-social medical model thinking is integrated into this process to reduce missed diagnoses and misdiagnoses. Cultivate the clinical thinking model for hypertension in general practice residents: diagnose whether it is hypertension, rule out secondary hypertension, assess risk stratification, formulate individualized treatment plans, and complete SOAP (Subjective, Objective, Assessment, Plan) medical records. Combined with hypertension chronic disease management, implement the principle of "prevention first," strengthen training in ethics, doctor-patient relationships, and social services, pay attention to the full lifecycle, delay the progression of cardiovascular disease, improve the physical and mental health and quality of life of elderly hypertensive patients, pay attention to patients' psychological states, explore influencing factors from the family and social levels, and strive for effective identification and intervention in the early stages of the disease before clinical complications occur. This makes the entire clinical thinking training reflect the core philosophy of general practice: "long-term responsible care centered on people, based on the family unit, and oriented towards the maintenance and promotion of overall health"[14]. Through training, the learning interest and enthusiasm of general practice residents are stimulated, their

autonomous learning ability, communication and expression skills, teamwork ability, and problem-solving ability are enhanced, and their general practice clinical thinking ability and competency are significantly improved.

4.5. Improving Department-Exit Assessment Methods

In the era of widespread internet application, we can consider using models that combine real-world consultation videos and audios with face-to-face consultations in the clinic to recreate patient visit scenarios. This allows for training and assessing the consultation skills and core competencies of general practice residents, transforming the traditional method of indirectly reflecting medical students' consultation abilities through writing lengthy medical records into assessments using evaluation tools. Role-playing can also be used to simulate daily work scenarios in primary healthcare institutions. The assessment content includes reception and consultation, physical examination, ECG operation, SOAP medical record writing, hypertension health education, and establishing health records with follow-up. Through assessment, the abilities of general practice residents in various aspects such as the diagnostic and treatment process, diagnosis and treatment capabilities, operational skills, doctor-patient communication, and overall coordination can be objectively evaluated [15].

5. Results of Teaching Exploration

Through training, the learning interest and enthusiasm of general practice residents were stimulated, their autonomous learning ability, communication and expression skills, teamwork ability, and problem-solving ability were enhanced, and their general practice clinical thinking ability and competency were significantly improved. During department-exit assessments, it was found that the subjective feelings of the trainees had greatly improved. They no longer felt like cheap labor and the feeling of being neglected because supervising teachers were too busy to teach was effectively alleviated. Their recognition of the specificity of the teaching content was high. Competency was also significantly improved compared to before, mainly manifested in the ability to adopt a people-oriented approach to treating patients and handling their problems based on the patient's environment, establishing effective doctor-patient relationships using general practice consultation methods while respecting patient autonomy, and handling hypertension diagnosis and treatment processes, referral indications, chronic disease management, tertiary prevention, and complication management. Among these, the most significant improvement in competency was in the ability to solve specific clinical problems, including the ability to conduct consultations and interviews, collect data and explain information through physical examinations and laboratory tests, and work with patients to determine reasonable management plans.

6. Conclusion

General practice residency training is an important method for hospitals to cultivate high-quality, high-level physicians. It is a continuous educational task closely linked to the progress of China's medical system reform and directly impacts the succession and renewal of general practice talents[16]. The continuous revision and improvement of general practice residency training programs are key to ensuring the quality of training. Improvements and enhancements can be made based on feedback from general practice trainees and problems identified during teaching to optimize the training program, enhance training quality, and better serve community general practice. Taking hypertension teaching as an example, this paper suggests that during the general practice residency stage, the training program should be based on the actual needs of health services, oriented towards general practitioner

competency, and focused on general practice clinical thinking. Strengthening relevant theoretical learning, refining the teaching syllabus, closely integrating the training content of tertiary hospitals with the clinical practice system, further improving the level of the teaching faculty, refining teaching methods, and appropriately providing economic incentives can help formulate a general practice residency training program that better meets the needs of primary care general practitioner positions. This can effectively improve the comprehensive clinical diagnosis and treatment capabilities of general practitioners for elderly hypertension, lay a solid foundation for chronic disease management in primary care, and cultivate more general practice talents.

Disclosure statement

The author declares no conflict of interest.

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