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Perspectives on the Synergistic Development of General Practice and Sleep Medicine (Postprint)

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Abstract

General practice medicine and sleep medicine, as two emerging clinical disciplines in China, exhibit extensive intersections in their discipline construction processes, demonstrate strong complementarity, and possess certain cross-integration in discipline development and talent cultivation. The national specialist physician certification system has paved the way for general practitioners to engage in sleep medicine work in terms of talent cultivation, thereby establishing a solid foundation and necessity for their collaborative development. This article analyzes the foundation for collaborative development and the necessity of collaborative construction between general practice medicine and sleep medicine in contemporary China, while simultaneously introducing the experiences gained from the exploration of collaborative construction between these two disciplines at Wuxi People's Hospital Affiliated to Nanjing Medical University.

Full Text

On the Cooperative Development of General Practice Medicine and Sleep Medicine

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Abstract

General practice medicine and sleep medicine, as two emerging clinical disciplines in China, intersect in many aspects during their development and demonstrate strong complementarity, with certain cross-integration in terms of disciplinary growth and talent cultivation. The national specialist physician certification system has paved the way for general practitioners to engage in sleep medicine, establishing a solid foundation and necessity for coordinated development. This article analyzes the basis and necessity for collaborative development between general practice medicine and sleep medicine in China, while also introducing the experience gained by Wuxi People's Hospital Affiliated to Nanjing Medical University in the co-construction of these two disciplines.

Keywords: General Practice; Sleep Medicine; Discipline Construction

General practice medicine and sleep medicine are relatively independent emerging disciplines in China that both originated in the 1980s. Clinical practice in general practice primarily focuses on common diseases, frequently occurring illnesses, and chronic disease management, involving the diagnosis and treatment of multi-disciplinary conditions, while also undertaking primary care physician training and teaching guidance. Sleep medicine, as an interdisciplinary field, mainly handles the clinical diagnosis, treatment, and research of common sleep disorders. In recent years, to meet the public's demand for sleep health, sleep monitoring laboratories and sleep diagnosis and treatment centers have been established at various levels of hospitals across China, leading to substantial progress in sleep medicine. The two fields intersect in many practical aspects with strong complementarity, providing a solid foundation and necessity for coordinated development. The Department of General Practice at Wuxi People's Hospital Affiliated to Nanjing Medical University has conducted exploratory work in this area and gained valuable experience in interdisciplinary construction.

1. Foundation for Collaborative Development

General practice medicine originated in Europe and America, developing from early general medical practice. The American Academy of General Practice was established in 1947 and later renamed the American Academy of Family Physicians (AAFP), becoming the 20th medical specialty in the United States. As a comprehensive clinical discipline integrating clinical medicine, preventive medicine, rehabilitation medicine, and humanities and social sciences for individuals, families, and communities, general practice medicine was introduced to mainland China in the late 1980s. The formal establishment of the Chinese Medical Association's General Practice Branch in November 1993 marked the birth of general practice medicine as a discipline in China [1]. Similarly, clinical sleep medicine in China (initially focusing on sleep-disordered breathing) was introduced by Professor Huang Xizhen from Peking Union Medical College Hospital in the 1980s. Sleep medicine covers a broad diagnostic and

treatment scope involving multiple disciplines. Its establishment as an independent interdisciplinary field stems from the unique nature of sleep disorder diagnosis and treatment, which cannot be addressed by traditional organ-based internal disease classification and treatment models. This characteristic shows high similarity with general practice medicine. Internationally, sleep medicine practitioners primarily come from family medicine, respiratory medicine, neurology, psychiatry, psychology, otolaryngology, and dentistry. The American Academy of Sleep Medicine (AASM) published the International Classification of Sleep Disorders, Third Edition (ICSD-3) in 2014, establishing an independent classification system for sleep disorders [2]. Currently, various academic organizations in China, including the Respiratory Diseases Branch, Neurology Branch, Geriatrics Branch, Pediatrics Branch of the Chinese Medical Association, and the Chinese Stomatological Association, have established sleep study groups or collaborative committees. In 2019, the Chinese Medical Doctor Association released the “Specialized Physician Training Directory (2019 Edition),” incorporating sleep medicine into the national specialist physician training system. Meanwhile, sleep medicine research has received strong national support [3], with the National Natural Science Foundation of China increasing its funding for sleep medicine annually and listing sleep medicine as an independent discipline under the Clinical Medicine Department, significantly promoting the development of sleep medicine as an independent specialty.

From the perspective of diagnosis and treatment models, both general practice medicine and sleep medicine differ from the traditional biomedical model, emphasizing instead the bio-psycho-social medical model and focusing on multidisciplinary collaborative diagnosis and treatment. From a developmental standpoint, both disciplines share characteristics of late start, rapid development, high requirements, and broad service populations. Many research issues in general practice medicine are significantly associated with sleep disorders, particularly depression, low mood, elevated BMI, and smoking [4]. Sleep medicine, currently limited in scale, struggles to become an independent department in most Chinese medical institutions and is often attached to other clinical specialties. However, compared to departments such as respiratory and critical care medicine, otolaryngology, psychiatry, neurology, and pediatrics, general practice medicine better aligns with the developmental requirements of sleep medicine in terms of disciplinary attributes, service populations, and diagnosis and treatment models. Therefore, collaborative development between the two fields has a solid foundation and strong synergy, allowing them to leverage their respective advantages.

2. Necessity for Collaborative Development

With the acceleration of modern life pace and changes in lifestyle, various sleep disorders have become increasingly prominent medical and public health issues. The causes of sleep disorders are complex, often resulting from the combined effects of biological, psychological, familial, environmental, and even socioeco-

conomic factors. A German study systematically reviewed the correlation between socioeconomic status and diagnostic and treatment measures for obstructive sleep-disordered breathing [5]. These factors affecting sleep disorders are precisely the primary concerns of general practice medicine.

In recent years, with the popularization of sleep medicine, family physicians account for over 10% of certified sleep physicians, and sleep clinics have become extremely common in developed countries such as Europe and America. In clinical practice, general practitioners encounter patients with different sleep disorders daily. The International Classification of Sleep Disorders-3, published in 2014, includes over 90 sleep disorders [6], among which the most common conditions such as insomnia and sleep apnea-hypopnea syndrome have high prevalence rates in the Chinese population. Bjorvatn et al. reported that insomnia and hypnotic drug use are very common in general practice clinical work [7], suggesting that general practitioners should enhance their understanding of diagnostic assessment and family management for patients with sleep disorders. Based on literature analysis, Benjafield et al. estimated that approximately 936 million adults aged 30 to 69 worldwide suffer from severe obstructive sleep apnea, with about 425 million having moderate to severe obstructive sleep apnea, with China having the largest affected population [8]. However, current reports indicate that general practitioners in China have a serious lack of awareness regarding sleep disorders in general practice [9]. A study on Australian general practitioners showed that although they could provide sleep hygiene education for patients, their prescriptions for insomnia patients still primarily relied on sedative-hypnotic drugs, with very limited theoretical knowledge and treatment experience in cognitive behavioral therapy for insomnia (CBTi) recommended by Australian general practice guidelines [10]. This may be related to general practitioners' insufficient attention to population sleep health, limited participation in sleep disorder diagnosis and treatment, and inadequate training and guidance in this field. Identifying effective training methods to improve general practitioners' ability to screen and manage sleep disorders will be a common focus for both general practice medicine and sleep medicine discipline construction. China has incorporated sleep medicine into the specialist physician certification and training system, including content on sleep physician certification after training for general practitioners. Peking University Health Science Center has taken the lead in formulating relevant implementation details and will conduct its first sleep medicine specialized training enrollment in 2022. It is indeed the right time for general practitioners to engage in sleep medicine work. Establishing sleep disorder diagnosis and treatment centers within general practice departments can comprehensively utilize space and personnel and expand remote family services, offering unique advantages. A team led by Michael Hlavac and Michael Epton in New Zealand described how general practitioner teams, under the guidance of sleep medicine specialists, can provide rapid and accessible screening, assessment, and treatment methods for common sleep disorders, effectively shortening waiting times for patients with sleep disorders [11].

Home-based non-invasive ventilation therapy for sleep apnea syndrome can ac-

cumulate experience in family medicine and establish preliminary management mechanisms, providing a reference for developing family medicine for other chronic diseases and serving as a good entry point for exploring new family medicine models [12]. Thus, the collaborative development of general practice medicine and sleep medicine is crucial. Only by leveraging the advantages of each discipline, strengthening training and guidance for general practitioners on sleep disorders in general practice and talent cultivation, and fully utilizing the position of general practitioners in sleep medicine development can we enable general practitioners to provide comprehensive, whole-person, and whole-cycle care for the broad population.

3. Experience from Wuxi People' s Hospital Affiliated to Nanjing Medical University

In response to national requirements for establishing general practice departments in tertiary general hospitals, our hospital' s Department of General Practice became an independent department in 2017. During the initial planning of discipline construction, we focused on several key questions: First, how could general practice medicine, as an emerging clinical specialty, establish itself among numerous clinical specialties in tertiary hospitals beyond the initial “policy dividend” ? Second, how could general practice medicine establish its own research direction and conduct high-level scientific research? Third, how could we leverage our disciplinary advantages to explore subspecialty construction and cultivate general practitioners with subspecialty expertise?

Addressing these initial considerations, through thorough pre-establishment demonstration and investigation, and combining the professional advantages of our academic leaders, Wuxi People' s Hospital Affiliated to Nanjing Medical University established the discipline construction concept of integrating general practice medicine with sleep medicine. While ensuring the completion of medical education tasks assigned by the state, we strive for innovation in clinical and research work. By cross-integrating and collaboratively developing general practice medicine and sleep medicine, we undertake the diagnosis and treatment of sleep-related diseases throughout the hospital, establishing sleep disorder diagnosis and treatment and research as the department' s technical characteristics and clinical research direction. We emphasize the cultivation of sleep medicine talents within the general practitioner team, strengthen training on sleep disorder diagnosis and treatment capabilities, and improve general practitioners' ability to diagnose, treat, and manage common sleep disorders. All registered general practitioners in the department must understand and participate in routine sleep center work, achieving proficiency in operation, diagnosis, and treatment.

The department strives to cultivate sleep medicine talents among general practitioners through three approaches: First, selecting general practitioners with master' s degrees or above and backgrounds in respiratory or neurology as backbone forces to lead by example and serve as talent reserves for sleep medicine

subspecialty construction; second, cultivating part-time sleep medicine physicians among general practitioners in primary community hospitals through encouraging advanced training and promoting appropriate technologies in rural areas, familiarizing them with polysomnography screening and relying on family doctor contract services to conduct long-term follow-up of sleep disorder patients undergoing home treatment, implementing whole-process and whole-cycle management of their home treatment; third, focusing on cultivating sleep technicians, requiring them to master polysomnography monitoring technology and various common sleep disorder treatment techniques including non-invasive ventilation therapy, and regularly conducting sleep monitoring technology training in medical consortium units to accelerate the cultivation of primary sleep technical talents. We strive to cultivate comprehensive general practice talents with technical skills, management understanding, teaching ability, and research expertise for discipline construction.

The foundation of a discipline's development lies in its independence and professionalism from other specialties, which should also be the basis for its establishment. In current tertiary general hospitals, general practice medicine primarily focuses on general medical practice and cultivating qualified general medical talents, but as a clinical specialty, it inevitably must emphasize its clinical, teaching, and research attributes. The main service targets of general practice medicine are common diseases, chronic diseases, and undifferentiated diseases, among which sleep disorder patients constitute the vast majority. Therefore, general practice medicine provides a good clinical research foundation for sleep medicine, while sleep medicine can become a research direction for general practice medicine. Since its establishment, our Department of General Practice has created a sleep center that operates at full capacity year-round. All project approvals, paper topics, and patent applications unrelated to teaching focus on sleep disorders, expanding pathways for training general practice master's students and enhancing the professional belonging of young general practitioners.

In summary, as emerging clinical disciplines in China, general practice medicine and sleep medicine have many intersections in discipline construction and substantial space for cooperation. Based on the concept of integrating general practice medicine with sleep medicine for collaborative development, we have tentatively established sleep medicine as a clinical characteristic subspecialty of general practice medicine, achieving significant improvements in discipline development, talent cultivation, and scientific research innovation in recent years. We hope this effort will explore a new development model for both general practice medicine and sleep medicine, better improving general practitioners' capabilities in diagnosing, treating, and managing sleep disorders.

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