

# Fostering Optimal Supply-Demand Dynamics in Preventive Medicine Employment: A Case Study of Collaborative Initiatives between Colleges and Organizations, Illustrated by Guangxi University of Chinese Medicine

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**Abstract:** The increasing health demands of the population and the global rise in epidemic outbreaks present novel challenges for both preventive medicine research and public health practices. Recognizing the significance of cultivating talent in preventive medicine, the government places considerable emphasis on this endeavor. With nearly 10,000 preventive medicine graduates entering the workforce annually from various universities and colleges nationwide, the alignment of their employment with societal needs becomes a crucial focal point in nurturing these talents. Over the past three years, the author has conducted pertinent research on preventive medicine graduates from Guangxi University of Chinese Medicine. This research aims to propose a strategy for developing a high-impact, well-aligned supply-demand employment mechanism for preventive medicine graduates. The proposed approach centers on fostering collaboration between educational institutions and organizations to ensure an optimal match between the skills of graduates and the requirements of the broader society.

**Keywords:** Preventive medicine; Graduate; College-organization cooperation; Supply-demand employment; High-match

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## 1. Introduction

As the economy progresses and people's living standards continuously improve, there is a growing focus on health-related issues. Consequently, preventive medicine has garnered widespread attention. Simultaneously, the global impact of the COVID-19 pandemic has underscored the importance of public health, prompting increased demands for the training of preventive medicine professionals and their proficiency in health emergency response capabilities<sup>[1]</sup>. In 2020, the State Council Information Office published a white paper on *China's Action to Combat the Coronavirus Disease Pandemic*, wherein the National Health Commission

publicly declared its commitment to further implementing and enhancing public health service initiatives. This includes optimizing monitoring systems, reinforcing prediction capabilities, and fostering the development of professionals to fortify both the public health system and emergency response infrastructure<sup>[2]</sup>.

Across China, preventive medicine majors are currently enrolled in over 100 colleges, with an annual intake of approximately 10,000 students. Faced with the graduation of tens of thousands of preventive medicine undergraduates each year, the crucial questions arise: Can these graduates achieve a high level of employment and professional alignment<sup>[3]</sup>? What is the quality of their employment and their satisfaction with their career? Addressing these inquiries is pivotal for enhancing the higher education quality assurance system and represents a potent measure to elevate the standard of preventive medicine education.

Taking the Guangxi University of Chinese Medicine as a case study, the author has meticulously examined the employment destinations of preventive medicine graduates over the past three years. This involved surveying the degree of alignment between their employment and major, leading to the proposition of a strategy to establish a highly coordinated supply-demand employment mechanism for preventive medicine graduates through collaborative efforts between colleges and organizations.

## **2. Materials and methods**

### **2.1. Subjects of the survey**

The survey subjects encompassed a total of 108 preventive medicine graduates from 2021 to 2023 who completed their studies at Guangxi University of Chinese Medicine. This provincial institution is situated in Nanning, the capital of Guangxi Autonomous Region, and has offered its preventive medicine major for enrollment since 2016. The inaugural class of 36 preventive medicine majors graduated in 2021, followed by 37 in 2022 and 35 in 2023, all meeting academic requirements and receiving their diplomas on schedule. Notably, 78 graduates were female, constituting 72% of the cohort, while 16 graduates hailed from other provinces in China, making up 15% of the total.

### **2.2. Methods**

To gather data, online questionnaires were distributed to the graduates from 2021 to 2023 through various channels, including email, WeChat, SMS, and a dedicated website platform. A total of 108 questionnaires were dispatched, yielding 103 valid responses.

## **3. Results**

### **3.1. Graduates' pursuit of further study**

Annually, over 60.0% of preventive medicine graduates from the university engage in postgraduate entrance examinations. The pattern of graduates pursuing further study has remained relatively stable over the past three years. This constancy may be attributed to the university's talent cultivation approach, the perceived career value among graduates, and societal expectations regarding medical graduates' academic qualifications.

### **3.2. Employment destinations of graduates**

Currently, preventive medicine graduates from this university predominantly remain in China, securing employment in public institutions and government organizations. Public institutions include the Centers for Disease Control (CDC), health supervision offices, and various levels of hospitals. Government organizations encompass health inspection and quarantine agencies, health administration departments, and other

governmental bodies.

### **3.3. Employment-major matching situation**

Based on the questionnaire survey and analysis of previous employment data, excluding those pursuing further study, only 64% of 2021 graduates exhibited a high level of compatibility between their employment positions and majors. Due to the broadening of employment positions during the pandemic, 85% of 2022 graduates found their employment aligned with their majors. However, in 2023, influenced by economic repercussions and some saturation in positions, only 71% of graduates were employed, with their employment matching their major as of July 2023.

### **3.4. Graduates' willingness to be employed**

In response to the questionnaire survey, a mere 1.39% of the graduates expressed a strong willingness to opt for job positions with minimal alignment with their majors, while 12.5% conveyed reluctance. Among those willing, less than half considered such jobs as long-term options, with the majority viewing them as short-term choices leading to eventual employment in hospitals, CDCs, or other high-matching organizations.

For roles with little or no match to the preventive medicine major, only 1.39% of graduates expressed eagerness to explore such opportunities, while 31.94% were strongly disinclined. The prevailing sentiment among the remaining graduates was a willingness to consider such positions as a first step, yet they were not the preferred choice.

The primary reasons graduates avoided jobs with little or no match to their majors included: (1) reluctance to disregard five years of specialized study; (2) consideration of long-term career development; (3) inability to take the licensing examination for medical practitioners if not employed in a medical-related organization, as per regulations. When asked about circumstances under which they would accept such jobs, 72.22% of graduates indicated a willingness if it served as a transitional career choice for gaining work experience. Others would consider such roles only if the salary was substantial enough to alleviate family financial burdens, allowed residence in a major city, accommodated family care responsibilities, facilitated the continued pursuit of a major-related job, or facilitated preparation for postgraduate entrance exams.

## **4. Analysis**

### **4.1. Maintenance of high-level major-employment match and employment stability among preventive medicine graduates**

Preventive medicine graduates consistently maintain a robust level of major-employment alignment, demonstrating remarkable employment stability despite challenges like increased college enrollment and a nationwide graduate crunch. This resilience can be attributed to proactive measures taken by educational institutions to diversify employment avenues, ongoing adjustments to the talent cultivation program to enhance graduates' comprehensive skills and practical expertise, and heightened attention to public health professionals spurred by the COVID-19 pandemic. The cultivation of new preventive medicine-related positions in hospitals, communities, and academic institutions further contributes to this stability<sup>[4]</sup>. The limited mobility of preventive medicine graduates in the job market results from their conscious consideration of professional compatibility and future career plans during the job search, leading them to avoid positions that poorly match their qualifications<sup>[5]</sup>. Additionally, the profession's affiliation with medical-related organizations, crucial for obtaining a public health practitioner's license, incentivizes graduates to secure steady employment, a prerequisite for eligibility to take the medical practitioners' licensing examination.

## **4.2. Concentration of employment at local and regional levels in Guangxi**

The majority of graduates from Guangxi University of Chinese Medicine, approximately 85%, originate from Guangxi. Consequently, their employment choices predominantly gravitate toward city and county-level CDCs, hospitals, and community service centers within Guangxi. In addition, a noteworthy portion of graduates seek employment in similar units in Guangdong Province. This inclination is influenced by geographical proximity, similar living environments, dialects, and the availability of increased employment opportunities, flexible work arrangements, and higher salaries in Guangdong.

## **4.3. Factors impacting high-match employment for preventive medicine graduates**

### **4.3.1. Changing employer demands**

The evolving demand from employers has heightened the complexity of employment. With the surge in preventive medicine majors' enrollment, employers now impose higher recruitment thresholds. Units at prefecture and city levels often require a master's degree or higher, or a licensed medical practitioner's qualification certificate. County-level units typically demand at least a bachelor's degree, with specific requirements for contracted service duration.

### **4.3.2. Graduates' own considerations**

Some graduates face challenges due to unrealistically high employment expectations, as they may be unwilling to work at fundamental organizational levels or in remote and underdeveloped areas in Western China <sup>[6]</sup>. Additionally, parental influence plays a role, with some graduates swayed by stereotypes, either seeking employment in developed cities within the province or close to their family's location. Moreover, a shift in graduates' employment attitudes, influenced by the contemporary trends of "slow employment" and taking a "gap year," challenges the traditional pattern of immediate career establishment post-graduation <sup>[7]</sup>.

### **4.3.3. Negative social relations impacting fair talent selection**

In the recruitment processes of various organizations, unfair competition persists, accompanied by career discrimination practices, such as preferential treatment towards male graduates, hindering the open and equitable selection of talent.

## **5. Path: Building a high-match mechanism of supply-demand employment for preventive medicine graduates through enhanced college-organization cooperation**

### **5.1. Strengthening college-organization cooperation in professional practice**

In light of the imperative for preventive medicine education reform, particularly in response to the challenges posed by the COVID-19 pandemic, the enhancement of practical teaching is crucial <sup>[8]</sup>. By fostering collaboration and exchange between colleges and organizations, such as co-education initiatives with CDCs, higher education institutions can leverage the resources of public organizations for practical teaching activities. This collaboration aims to expand the avenues of cultivating emergency skills among preventive medical talents. Emphasis on experiments, real-life cases, and active participation of graduates in on-site teaching with the employing units can jointly enhance graduates' emergency response abilities, communication skills, teamwork, and modern information management capabilities. This approach aligns with the overarching goal of preventive medicine undergraduates, thereby meeting societal needs.

Simultaneously, higher education institutions can optimize curriculum design and professional training programs, placing significant emphasis on emerging and recurring infectious diseases education to enhance

identification and prediction capabilities. Additionally, integrating compulsory courses related to public health emergency response can further fortify graduates' skill sets <sup>[9]</sup>.

## **5.2. Building college-organization cooperation through cultural and sports activities**

Research statistics from preventive medicine graduates at Guangxi University of Chinese Medicine reveal that 90.28% of graduates are eager to engage in extracurricular activities with CDCs, medical units, and community health service centers. Beyond social practice programs, graduates express interest in diverse cooperation forms, including cultural performances and sports activities. Initiatives by the College of Public Health and Management at Guangxi University of Chinese Medicine, such as joint activities between students and health service centers, New Year's celebrations, and knowledge promotional activities, establish bridges for communication between graduates and employers. These opportunities provide graduates with insights into the culture and operations of potential employers.

## **5.3. Building college-organization cooperation with employment guidance**

Research findings from preventive medicine graduates at Guangxi University of Chinese Medicine highlight that CDCs, hospitals, and community health service centers are the preferred employers, with 97.22% of graduates seeking effective employment information from joint activities. The rest experienced a desire for internship opportunities and personal guidance. To facilitate this, colleges and universities can invite employers to give presentations and conduct on-site requirements during recruitment fairs. This approach aids graduates in understanding job content and career development, broadening their employment channels, and targeting their job search for high-match employment.

## **6. Conclusion**

In conclusion, reinforcing cooperation between colleges and employers significantly benefits preventive medicine graduates in achieving high-match employment. Through various collaborative initiatives like academic lectures, social practices, volunteer services, and cultural and sports activities, graduates adapt to the cultural atmosphere of employing units, enhancing their comprehensive qualities. This collaboration also allows colleges to adjust curricula and talent cultivation programs based on employer feedback, ensuring the cultivation of practical public health professionals that meet societal needs. For employers, this collaboration offers an efficient and comprehensive means to evaluate potential hires and select reserve talents.

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## **Disclosure statement**

The author declares no conflict of interest.

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