



A Special Model for Cultivating Higher Vocational Nursing Talents in China's Fourth Tier and Lower Aging Cities Based on the Integration of Industry and Education

-Taking the Employment Contradictions of Nursing Talents in Yingkou, Liaoning Province as an Example

Bihan Dong* ,Chinese

Xi'an Jiatong- Liverpool University, Suzhou, China

Bihan.Dong22@student.xjtlu.edu.cn

Abstract. In the context of the 14th Five-Year Plan, "enhancing the adaptability of vocational and technical education" has become a priority for higher vocational education. Given the tilt of urban resources (e.g. education standards, employing institutions and government policies), the development of higher vocational nursing talents and the needs of the ageing society in the fourth-tier and lower ageing cities have been neglected for a long time, resulting in a shortage of vocational education talents and difficulties in employment in these cities.

Against the background of the structural contradiction between the supply and demand of talents, the author draws on the "3-5-3" talent training, the "integration of industry and education" training under the integration of health care and the experience of developed countries in Germany, clarifies the roles of the government, the medical community and the school in the training of senior nursing talents in the fourth-tier cities and below, takes advantage of the close connection between institutions in the fourth-tier cities and below, and proposes a set of embedded senior nursing talent training programmes suitable for the fourth-tier cities and below, hoping to solve the problem of employment difficulties among senior nursing talents and to provide reference for the subsequent promotion of the comprehensive promotion of the integrated health care model in China.

Keywords: Higher Vocational Nursing Talents; "3-5-3" Talent Cultivation; Integration of Industry and Education; Embedded Talent Cultivation Project.

1 Introduction

In March 2021, the Fourth Session of the Thirteenth National People's Congress (NPC) adopted the Outline of the Fourteenth Five-Year Plan for National Economic and Social Development of the People's Republic of China and Vision 2035 ("the 14th Five-Year Plan"), proposing to "enhance the adaptability of vocational and technical education

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"and "deepen the integration of industry and education and cooperation between schools and enterprises". Later, the Fifth Plenary Session of the 19th CPC Central Committee also put forward the requirement of "enhancing the adaptability" of vocational and technical education in China. According to the "Main Results of National Education Statistics for 2021", the number of students enrolled in higher vocational education in China has reached 15.910 millions[1]. In terms of quantity, the number of vocational educations in China has taken up half of the higher education in China. But apart from the considerable number of students, what we still need to see is that in the Fourth-tier cities²(as this study focuses on enterprises, vocational schools and the government, involving the number of enterprises and the business development potential of the cities, reference is made to the RANKING OF CITIES' BUSINESS, jointly published by YICAI and the New First-Tier Cities Research Institute, where the demand for elderly care professionals remains high in areas with a growing trend of ageing.

This paper presents an example of a survey conducted in a senior care community in Yingkou, Liaoning Province, which has been ranked as the happiest senior care city in China for many years. The investigation demonstrates that even with 14 local vocational colleges in Yingkou, including one higher vocational college and 13 secondary colleges, the local care community still faces recruitment difficulties. Combined with this situation, this paper finds that the current focus of vocational education employment in Yingkou City, Liaoning Province remains on the training of technical skills in mechanical and artistic enterprises; on vocational skills training, vocational qualification training and vocational qualification certification services for 4,000 people, including new vocational farmers, rural migrant labourers, in-service workers, unemployed people, people with disabilities, retired soldiers and migrant workers; more concentrated in the field of community services in the areas of job training and lifelong learning.³ So, the shortage of vocational education personnel and the difficulty in finding employment have always coexisted in the fourth-tier cities, and the structural contradiction between the supply and demand of personnel has been highlighted. The root causes of the difficulties in recruiting community aged care workers in Yingkou are still the integration of industry and education and the lack of government attention to relevant vocational training.

Therefore, based on previous research, this study focuses on the fourth-tier cities and below, where the trend of ageing is more serious, and refers to the German vocational education⁴ and training system and the "3-5-3" talent training model, which is already replicable in first-tier cities in China. The innovative solution for the integration of education and industry in fourth-tier cities is proposed. The aim is to solve the contradiction between the surplus of nursing vocational and technical school personnel and the shortage of community nursing personnel in Tier 4 cities, and to provide ideas for the development of "integration of industry-education" vocational education in Tier 4 cities and below.

2 Literature Review

With the support of the 14th Five-Year Plan, the integration of industry and education has been widely practised in Beijing, Shanghai, Guangzhou, Shanxi Province and other first-tier cities and has achieved initial results. It has formed a replicable and sustainable model of talent cultivation⁵ However, in view of regional differences, especially in the number of students and the capacity and size of enterprises, this paper also refers to the German vocational education for elderly care, which has cutting-edge experience in the field of community nursing and community care for the elderly and has similar objectives to those of Chinese nursing personnel training⁶. The author hopes to propose a special "industry-education integration" training model for senior nursing talents that is suitable for fourth-tier cities and below, where the ageing trend is serious and the demand for nursing talents is high, through combining national nursing talents training programmes, community geriatric care and past "industry-education integration" nursing talents training programmes.

2.1 Definition of Nursing

Based on the future needs of nursing talents, this paper will further clarify the concept of nursing based on the definition of nursing proposed by the American Nurses Association ANA in 1980 and the new redefinition of nursing proposed by Niu Geng in 2004⁷ for the unique connotations not covered by the ANA and the duties of nurses in China will further clarify the four characteristics of nursing and the three duties of nursing members respectively:

ANA definition noted (Figure 1), nursing has four main characteristics: 1) Phenomena, which refers to people's reactions to pre-existing health problems; 2) Application of theory, which refers to nursing staff applying nursing theory to understand patients' reactions; 3) Nursing activities, which refers to nursing staff actually taking action to solve patients' existing or potential nursing problems; and 4) Evaluation, which assesses the patient's reactions to the nursing activities given and their effectiveness. and its effectiveness.

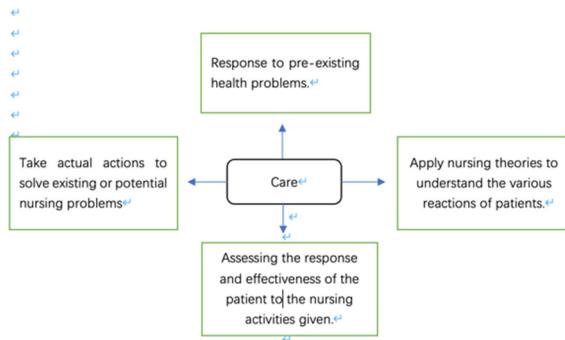


Fig. 1. Characteristics of Care Proposed by ANA

The ANA's definition of nursing emphasises the independence of the nursing profession and promotes its professionalisation. However, no matter how the nursing profession develops, the collaborative relationship with medicine cannot be changed. Mr Lin Juying, a nursing expert in China, believes that the duties of nursing staff in China are divided into three types: independent duties; interdependent duties; and dependent duties. The Ministry of Health in 1993 promulgated the management of nurses, which also stipulates that the duties of nurses include observation of illness, proper implementation of medical advice, preventive health care, rehabilitation guidance and health education⁷. This further emphasizes that nursing is not only the execution of caring acts but also the best assistant to assist in treatment.

Definition of Elder Care and Explanation of Basic Elements.

According to the definition of geriatric care based on content analysis by Qian Zhang, Hongmei Ma et al. in 2014⁸, the definition of geriatric care has been distinguished in more detail. At the same time, their 15 clear indicators that best represent the connotation of elderly care in terms of the physical, psychological, social, and cultural needs of the elderly based on the content analysis method⁸also provided a focused training programme for the subsequent training of elderly care personnel. It focused on the definition of traditional elderly care both at home and abroad, and later proposed a community care model that met the 15 items (Figure 2)based on the report "Research on Urban Home Care Services in China" published by the National Committee on Ageing in 2008.

Feature Description	Project	Specific Related Indicators	2 Coders Coding Reliability	Occurrence Frequency [n(%)]	
				Chinese	English
Who	Research Object	Elderly Patients	1	13(68.42)	6(66.67)
		Healthy Elderly	0.95	2 (9.52)	3(33.33)
		Mangnian Family Members	0.95	0(0.00)	1(11.11)
When	Time/Range	Sickness in Hospital	1	16(76.19)	6(66.67)
		Potential Problems outside the Hospital	1	11 (52.38)	6(66.67)
Where	Place	Family	0.8	9 (42.86)	1(11.11)
		Hospital	1	17(80.95)	5(55.56)
		Community	1	11 (52.38)	8(88.89)
How	Delivery Route	Information Tools (network, telephone, home visit, etc.)	0.86	1(4.76)	5(55.56)
What	Main Purpose	Maintain Health	1	21(100.00)	9(100.00)
		Socioeconomic Benefits	0.95	10(47.62)	4(44.44)
		Enhancing Self-Care Capabilities of the Elderly	1	21(100.00)	9(100.00)
Main Content	Main Content	Delay Disease Progression and Decline	1	21(100.00)	9(100.00)
		Improve the Quality of Life of the Elderly	1	21(100.00)	9(100.00)
		Supporting the Dying Patient and Maintaining their Comfort and Dignity	1	15(71.43)	8(88.89)

Fig. 2. Frequency of Occurrence of the 15 Relevant Indicators in the Sample
Sources: Qian, Z., Hongmei, M. A., & Shuang, Z. (2014)

Overall, future-oriented nursing training needs to focus on the core definition of nursing today. Rather than being limited to doing one's own work, which ANA emphasises as an independent role, it needs to collaborate with medicine to properly understand the care needs of older people, provide guidance on care, health care and health education for older people; provide round-the-clock care from the physical to the psychological, and truly "enhance the quality of life of older people" as the goal of community geriatric care, to redefine the definition of community nursing. It is also a change from the traditional concept of training nursing personnel.

2.2 Nursing Personnel Training

When referring to the past literature, the author found that the current training path for elderly care talents has been relatively perfect and can be roughly divided into three types: 1)The talent training path of "integration of production and education" in general higher vocational colleges; 2)the "3-5-3" talent training path based on the integration of production and education; 3)The pathway for training nursing personnel in the context of the "integration of health care". The details are as follows:

The Talent Training Path of "integration of production and education" in General Higher Vocational Colleges.

The traditional senior nursing training in higher education institutions used the Delphi method to construct the core competency index system of geriatric nursing for senior nursing students⁹, referring to the core competency evaluation index system for geriatric nurses and the construction of core elements of geriatric nursing talent training, the study proposes a tripartite collaboration between higher vocational schools, hospitals or communities and senior nursing students to reconstruct a chimeric geriatric nursing curriculum system by embedding standards, processes and employment.

This education also implements the teaching reform of integrating the ideological elements of the curriculum into the professional teaching, the teaching content of elderly care into the main curriculum, the practice of elderly care into the professional internship, the progressive social practice into the whole process, and the organic integration of the "post-course competition-certificate" into the parallel training, strengthens the guarantee of resources for the training of talents, and promotes the core competencies of elderly care and general nursing.

However, this training pathway suffers from the fact that the content of the geriatric nursing curriculum is lagging, and the number of class hours is low, which makes it difficult to match the professional competencies of the job and leads to the lack of core competencies of elderly nursing students; the lack of integration of elderly nursing learning resources makes it difficult to stimulate students' motivation for sustainable learning.

The "3-5-3" Nursing Talent Cultivation Model Based on the Integration of Industry and Education.

Referring to the nursing personnel training model of Yantai Nursing School in Shandong Province⁵the training concept of industry-education integration, medical-education synergy, engineering integration and knowledge-doing unity was adopted to improve the employment quality of graduates as the goal. Beginning with the study of the existing advantages and common interests of the school and the hospital, through practice, the school, the hospital and the enterprise have explored the path of deep integration in teaching, enrollment, teachers, quality assessment and employment, jointly formulating talent training programmes, building a team of full-time and part-time teachers, writing school-based practical training materials and creating a ternary quality evaluation system, forming a replicable and sustainable talent training model and exploring

a win-win mechanism for the deep integration of the school, the hospital and the enterprise.

This cultivation path is also the most informative model for Tier 4 and below cities, re-mapping the liaison between employers and schools by encouraging schools to innovate.

Cultivation Paths for Elderly Care Talents in the Context of "Combined Medical and Nutritional Care"

The combined medical and nursing care model places higher demands on nursing personnel. At present, the programme draws on the experience of developed countries such as Japan and Germany in an attempt to establish unified standards for the training of nursing personnel for the integration of medicine and health care, to clarify the curriculum, course standards and teacher requirements, and to establish a clear career development plan for nursing personnel for the integration of medicine and health care, with strict entry requirements and examination systems, clear job responsibilities and promotion pathways, and corresponding laws and regulations and salary packages 5.

However, this approach is still not implemented, and the tripartite relationship between the government's top-level design, the enterprises' needs and the schools' training has not been clarified. At the same time, this approach requires the cooperation of a large number of hospitals for training, which is not in line with the demand for jobs in the very small number of tertiary hospitals in Tier 4 and below cities, or even only 1-2 hospitals in each city; the arrangement of nursing jobs in the community is also not taken into account, which is a limited reference to alleviate the employment of nursing talents in Tier 4 and below cities.

3 Methods

The author believes that to alleviate the employment problem of nursing talents in Tier 4 cities and below, and the shortage of community nursing talents, we need to integrate the "3-5-3" model and the top-level design in the context of "integration of health care", to identify the needs of the community, the innovative path of school training mode and the role of the governments, and to propose a new training programme for senior nursing talents suitable for cities with a serious trend of ageing.

Based on the previous literature experience, the complementarity analysis skills formation system 10 and the employment situation of nursing professionals in fourth-tier cities, the author takes Yingkou as an example to propose a characteristic higher vocational nursing talent training model based on the integration of production and education in China's Tier-four and below aging cities, as shown in Figure 3:

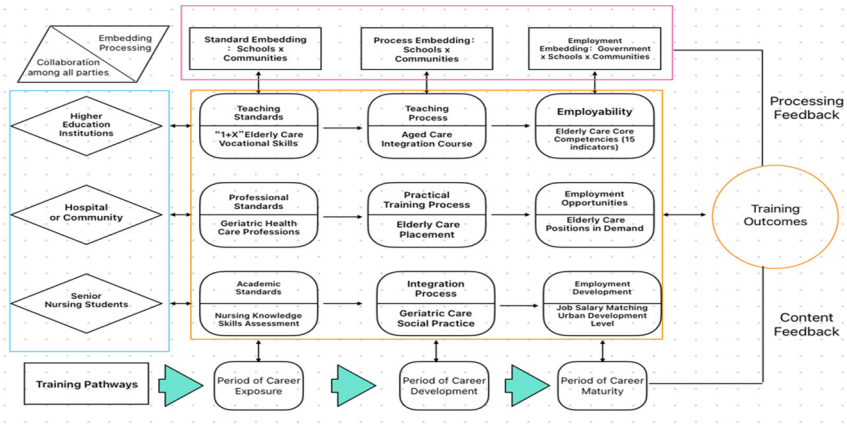


Fig. 3. Top-level Design of Geriatric Nursing Talents Cultivation Pathway

1) Embedding Standards between Schools and Community

In vocational schools, the school is responsible for the Teaching Standard and the teachers who teach the theoretical knowledge usually need to have studied nursing pedagogy in higher education, and they have a solid knowledge of nursing theory in addition to a certain pedagogical basis to be better able to teach the theoretical knowledge to the apprentices. Then, each (elderly) nursing school sets up an examination board to evaluate the apprentices. The committee is chaired by an expert appointed by the competent authority, with the director of the nursing school for the elderly as vice-chairman, and the community and the hospital sending experts to complete the assessment of professional competence. Ultimately, under this model, students can complete the Period of Career Exposure, qualifying them to become caregivers and ready to enter the professional development phase.

2) Embedding the Process between the School and the Community

Schools and communities/hospitals propose a co-cultivation process that changes the existing top-up or off-the-job placement to community placement, where a mentor from the community/hospital begins to familiarize the student with the business that he/she will be undertaking independently. At this stage, the school's role is more one of moral education, ensuring that the students' thinking, and political skills are up to the standard required to become health care professionals. While the community provides the internship and the corresponding remuneration (at least for the duration of the apprenticeship to meet the needs of daily life).

3) Embedding of Employment before School, Government and Community

This embedding is also the most critical part of the project. China's National Occupational Skills Standard for Elderly Care Workers (2019 Edition) has adjusted the general education level of the practitioner standard from "junior high school graduation" to "no education requirement"; adjusted the declaration requirement for "Grade 5 / Elementary Worker" from "more than 2 years of continuous apprenticeship in this occupation" to "accumulated experience in this occupation". Although this has to some extent alleviated the shortage of demand for elderly care in China, the quality of service

provided by such employees is not high and has created a social prejudice against the elderly care industry, especially among young people, who are not so different from unemployed re-employed people who choose elderly care at the specialist and undergraduate level, making it difficult to highlight the attractiveness of the profession. Thus, the governments of Tier 4 and lower cities need to issue relevant documents to guarantee employment opportunities for young people and pay attention to their career needs. Through top-level design by the government, the current shortcomings of the elderly care sector in Tier 4 and below cities, which is currently characterized by a low level of specialization, low educational qualifications, and the general age of the practitioners, can be improved.

Overall, this model clarifies the responsibilities of the government, higher education institutions and the community by learning from the German geriatric care training model. Through the three embedded models the integration of industry and education in the fourth tier and below cities is tightly linked, giving full play to the close type of connection between small-scale urban institutions, ensuring the suitability of talents and jobs and the employment efficiency of counterparts, and looking forward to solving the current vicious circle of the existing nursing industry.

4 Conclusion

Although the problem of an ageing population and a shortage of elderly care workers is a problem that China needs to face, the employment problem of higher vocational students is gradually being improved through the coordination and cooperation between employers, schools, and the government to enhance the attractiveness of apprenticeships and to adapt the curriculum to the demographic development. However, by comparing the development of vocational nursing education with the three mainstream models, the "3-5-3" model of higher vocational nursing training with Chinese characteristics is expected to provide a reference for the subsequent employment conflicts in the Tier 4 cities and below.

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