The nursing education system in the People’s Republic of China: evolution, structure and reform

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Abstract

This article provides a comprehensive account of the nursing education system in the People’s Republic of China within its historical, economic and sociopolitical contexts. The article argues that the Western world, the United States in particular, had a profound impact on the early development of nursing education in China in the late 19th and early 20th centuries, that nursing education in China has been heavily influenced by medical education in terms of structure, curriculum and faculty training, and that challenges are enormous for Chinese nursing education to meet international standards of nursing education. Comparisons of nursing education systems between China and the United States are made when appropriate and possible. Recent developments and reforms in Chinese nursing education are also described and assessed.

Introduction

The world has entered an age of globalization and interdependence. With 1.2 million nurses and one of the largest nursing education systems in the world, China holds a pivotal role in developing a global perspective of nursing education and hence the nursing profession in general. However, owing to a long history of political secrecy and a 30-year abolition of postsecondary nursing education in China, there is little published research in the English literature about Chinese nursing education. The purpose of this article therefore is to provide a detailed account and an in-depth analysis of the nursing education system in China within its historical, economic and sociopolitical contexts. In addition, comparisons of nursing education systems between China and the United States are made when appropriate and possible. Finally, recent reforms and developments in nursing education are assessed.

A brief history of modern nursing education in China

To a large extent, modern Chinese nursing education was influenced by the influx of Western missionaries and their ideas after China lost the Opium War in 1842. Modern nursing education in China can be traced back to 1888 when the first hospital-based nursing school was established in Fuzhou, Fujian Province. Western initiatives moulded the
system in its infancy, and the contributions by missionary nurses cannot be overestimated, particularly their efforts to train native nurses at numerous missionary hospitals and nursing schools. In 1923, missionary nurses constituted 32% of the entire nurse population in China, reaching a peak in 1927 of almost 700 (Chen 1996).

American influence on the Chinese nursing profession, very much like its impact on modern Chinese medical education, was profound and far-reaching. Individual American nurse educators, nurses, missionaries and American-based foundations contributed significantly to the early development of nursing in China. In 1908, Nina Gage, a registered nurse of the Roosevelt Hospital of New York City and an associate of the Yale mission in China, arrived in Changsha, Hunan Province. In 1910, Miss Gage established a nurse-training programme as part of the Yale mission in Changsha. She later became president of the Nurses’ Association of China (1912–14) (Chen 1996) and Dean of the Hunan-Yale School of Nursing, which was affiliated with Hunan-Yale Medical College (now Hunan Medical University) (Watkins 1996).

Unlike in many other countries, modern Chinese nursing education at the tertiary level had an early start. In 1920, Peking Union Medical College (PUMC) started the first collegiate nursing programme with a 5-year curriculum (Dai 1990; Chen 1996). Intended to be the ‘Johns Hopkins of the Orient’, PUMC was founded by the Rockefeller Foundation in 1915 ‘for the purpose of developing an elite education and service programme comparable to any in the West in order to bring the best of modern scientific medicine to China’ (Allison 1993). Anna Wolf, another American nurse whose lifelong dream was to establish a collegiate nursing programme, was instrumental in the birth of the PUMC School of Nursing and was involved in its development from its infancy (Allison 1993). This initiative was remarkably significant in light of the historical context that the first baccalaureate nursing programmes in the United States and Canada were established only 1 year earlier at the University of Minnesota and the University of British Columbia, respectively (Kozier et al. 2000). The PUMC School of Nursing remained the only tertiary nursing programme in China until 1952 when the nationwide restructuring of the higher education system by the new communist government was launched. Consequently, the PUMC School of Nursing was reduced to a vocational institution. From 1924 to 1952, 264 baccalaureate nurses graduated from PUMC (Dai 1990). Most eventually became leaders in the profession. To conclude, American initiatives shaped the first baccalaureate nursing programme that trained nurse leaders and educators, who, in turn, have shaped the contemporary nursing profession in China.

In 1930, the first secondary-level nursing school funded by the nationalist government was started. During the following decades, the number of secondary nursing schools increased steadily. The training programmes in most of the schools were 3 or 4 years in length and hospital-based, with only a few trainees, poor equipment and an ill-prepared faculty. By 1949, when the communist government took over the country, there were a total of 216 secondary nursing programmes (Kamata & Chen 1997).

As a result of the nationwide restructuring of higher education in 1952, akin to the Soviet model, postsecondary nursing education was abolished from academia. In 1961, Beijing Second Medical College established a department of nursing to enrol working nurses for further education. This initiative failed quickly owing to ongoing political upheavals. In 1963, nursing was listed as one of the 10 health-related specialties in the *Listing of Specialties and Majors in Higher Education Institutions* approved by the then State Planning Commission and Ministry of Education. Owing to the ‘Cultural Revolutions’ (1966–76), this enrolment plan was abandoned. Postsecondary nursing education in China was not revived until the 1980s.

The Chinese nursing education system

There are several avenues leading to the title of registered nurse (RN): secondary nursing programmes, zhuanke programmes (equivalent to associate degree programmes in the United States) and baccalaureate programmes. In fact, virtually
Nursing education system in China

Every approved nursing programme in China, no matter at what level, leads to eligibility for licensure as an RN. The difference between these programmes lies in that only graduates of secondary and zhuanke programmes are required to take the National Nursing Licensure Examination (NNLE) in order to be licensed as RNs, while graduates of baccalaureate programmes are granted the status automatically (Chang 1999). According to law, no one should practice nursing without a valid license. Unlike the United States, China has no further differentiation within the licensed nursing personnel, with RN as the only rank. An RN is trained as a generalist rather than a specialist. It is the minimum legal and educational requirement for professional nursing practice.

Secondary nursing education programmes

Nursing education at the secondary level is categorized by the government as secondary vocational education. A secondary nursing programme exists as an integral academic unit of a health school, as a freestanding entity, or as a nursing school attached to a medical university/college or hospital. The goal of secondary nursing programmes is to provide nurse clinicians with technical skills at the secondary level (Kamata & Chen 1997). There are two types of secondary nursing programmes. One enrols high school graduates and has a 2-to-3-year curriculum. The other admits middle/junior high school graduates and has a 3-to-4-year curriculum. Upon completion of a secondary nursing programme, graduates are eligible to take the NNLE, and those who pass the national test are qualified to work as RNs (Chan & Wong 1999). Secondary nursing programmes constitute the backbone of the nursing education system in China, and 99% of the 1.2 million nurses are trained in these programmes. In 1998, there were ≈530 secondary nursing programmes/schools in China (Chang 1999), which provided ≈40,000 graduates annually (Chiu & Lee 1996).

Two specialized secondary nursing programmes are worth noting. One is the traditional Chinese medicine nursing school (zhongyi huli yuexiao), whose goal is to prepare nurses versed in applying the holistic view and the dialectic guiding principle of Traditional Chinese Medicine (TCM) to nursing assessment, diagnosis and treatment. Graduates from this type of programme are expected to integrate, into their professional practice, the philosophy, knowledge and skills of TCM and the specific TCM treatment modalities, such as acupuncture and dietary therapy. The other specialized secondary nursing programme is the so-called foreign language nursing programme, whose goal is to train nurses with command of a specific foreign language to work in joint ventures and overseas. English and Japanese nursing programmes are the most popular.

Postsecondary nursing education programmes

Postsecondary programmes constitute advanced nursing education in China, and are perceived as the elite in the system. Postsecondary programmes have three levels: zhuanke, baccalaureate and graduate. Together, ≈10,000 nurses have graduated from these programmes over the past decade. However, nurses with postsecondary training account for only 1% of the entire nursing workforce (Chan & Wong 1999).

Zhuanke programmes

Zhuanke programmes have a 3-year curriculum and, to a large extent, are equivalent to the associate degree programmes in the United States. There are two types of zhuanke programmes. One enrols high school graduates and is part of the traditional education system. The other is part of the non-traditional education system and is designed as a mobility track for working nurses, who have the aspiration to pursue a tertiary diploma through further education. With firm commitment to the profession and rich clinical experiences, these nurses are the primary force to rely on in professional nursing practice.

The goal of zhuanke programmes is to prepare expert nurse clinicians (Kamata & Chen 1997). In reality, there is not much difference between a zhuanke and a baccalaureate programme in terms
of the curriculum structure, except that the total hours for each component of the curriculum are fewer in the former. Upon successful completion of a zhuanke programme, a graduate is awarded the tertiary diploma. Approximately 1000 nurses graduate from zhuanke programmes each year (Chan & Wong 1999).

Baccalaureate nursing programmes

Baccalaureate nursing programmes have a 5-year curriculum, which is equivalent to most of the medical education programmes in length. Baccalaureate programmes admit high school graduates through highly competitive National University Admission Examinations. Graduates are awarded a bachelor of medicine degree and are automatically granted RN status. In addition to preparing expert nurse clinicians, the goals of baccalaureate programmes are to train nurse managers and administrators (Kamata & Chen 1997). In reality, only a small number of baccalaureate-prepared nurses practice in clinical settings while a significant number work in managerial/administrative and faculty capacities. Under current government regulations, the minimum qualification for the director or associate director of nursing in hospitals is a baccalaureate degree in nursing (Chang 1999).

Baccalaureate nursing programmes have been the government priority for development. In 1983, Tianjin Medical College (now Tianjin Medical University) launched the first 5-year baccalaureate programme in the post-Mao era. By 1998, there were 18 5-year baccalaureate programmes affiliated with premier medical institutions across the country (Chang 1999). An estimated 300 baccalaureate nurses graduate from these programmes annually (Chiu & Lee 1996).

 Compared with their US counterparts, Chinese baccalaureate programmes are unique in the following aspects:

- they have a 5-year curriculum, which is equal in duration to most medical education programmes in the country,
- all the nursing programmes are physically located within major medical colleges and universities as an independent academic unit,
- physicians rather than nurse educators teach most of the professional foundation courses (i.e. pathophysiology, pharmacology) and the professional courses (i.e. paediatric nursing and surgical nursing),
- the medical education model has tremendous influence on baccalaureate nursing education. In fact, its impact on nursing curriculum and faculty training goes far beyond baccalaureate nursing education (Xu et al. 1999), and
- baccalaureate nursing programmes and medical education programmes are not two parallel tracks that never meet. During the first 2.5 years, nursing students take, side-by-side, the same basic courses as medical students. Nursing students and medical students do not go their separate ways until the last 2.5 years of their professional study. Moreover, baccalaureate nursing graduates are eligible to take the national entrance examinations for graduate medical education. In other words, it is at the post-baccalaureate level that nursing education and medical education in China cross each other. For better or worse, such a cross-point provides a channel for ‘brain drain’ of the baccalaureate nursing graduates into the medical profession to pursue economic and social mobility.

Graduate nursing programmes

Masters’ programmes in nursing are 3 years in length, and enrol baccalaureate nursing graduates through competitive national examinations developed by each individual programme. Although there are variations in the admission requirements and subjects tested, more similarities are observed than differences. For example, the admission criteria for the masters’ programme at Beijing Medical University include testing and work experience requirements. The subject areas examined include Marx-Lenin philosophy, English, pathophysiology, foundations of nursing and nursing synthesis (adult, surgical, obstetric-gynaecological, paediatric nursing and pharmacology). In addition, applicants are required to have a minimum of 2 years of clinical experience. The aims of the masters’ programme are to prepare nurse educators for post-secondary nursing programmes, and to provide
researchers, administrators, clinical specialists and experts in health promotion and disease prevention (Zhao 1992).

Graduate nursing programmes in China are still in their infancy. The first masters’ programme was established at Beijing Medical University in 1992. By 1998, China had only five nursing programmes at the masters’ level in the entire country (Chang 1999). All of these five programmes are affiliated with major medical universities in metropolitan cities. The framework and foundation of the first doctoral programme in nursing has been laid out at Sun Yat-Sen University of Medical Sciences, and the first doctoral class is scheduled to start in 2000 (Sun Yat-Sen University of Medical Sciences 1998).

**Non-traditional postsecondary nursing programmes**

In addition to the traditional nursing programmes described above, there are various forms of non-traditional programmes at the zhuanke level, such as television and distance-education programmes, ‘examination-through-self-study’ programmes, and programmes at local further education colleges. These programmes are classified as continuing education and lead to a tertiary diploma in nursing. Together, they provide avenues to working nurses for career advancement.

A comparison of the nursing education systems in China and the United States is presented in Table 1.

**Recent reforms and developments in nursing education**

**Upgrading of nursing education programmes**

With recognition of the disparity between nursing education in China and other countries, especially North America, China has launched a major initiative to upgrade the secondary-level programmes to postsecondary level. A consensus in the Chinese nursing community is emerging, after years of discussion, that the secondary education-based training is inadequate to prepare competent nurses in the increasingly knowledge- and technology-driven economy, and therefore needs to be phased out gradually. One plan is to add 1 year to the dominant 3-year secondary programmes. Another approach is to raise the admission requirement of basic nursing education from the present completion of junior high school to that of high school. In fact, secondary nursing programmes in Shanghai will experience a decline in enrolment and undergo this transformation during the next 3 to 5 years (Ying Gao, personal communication, 21 December, 1999). The latter move is more fundamental, which is perceived as a step towards international standards and is in line with the World Health Organization (WHO) Global Advisory Group’s recommendation in 1992 to move basic nursing education to the college level (Modley et al. 1995).

Another factor underlining the upgrading initiative is a concern regarding the maturity and competence of secondary nursing graduates to provide adequate patient care. The graduates of secondary nursing programmes are still adolescents in their developmental stage, and \( \approx 70\% \) are the only child in the family as a result of China’s one-child policy. Brought up in a prevalingly overprotective family environment, many of these graduates have demonstrated deficits in the affective domain of their development, such as in decision-making, conflict and ethical dilemma resolution, collaboration, delegation and leadership.

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<tr>
<th>Type of programme</th>
<th>China (years)</th>
<th>US (years)</th>
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<tr>
<td>Secondary programmes</td>
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<td>Post-secondary programmes</td>
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<td>Zhuanke/Associate</td>
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<td>Baccalaureate</td>
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<td>Master</td>
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<td>Doctoral</td>
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* The first doctoral programme in nursing was started at Sun Yat-Sen University of Medical Sciences with a proposed 3 + 2 format (3 years of course work and a 2-year dissertation). The first class of doctoral students is scheduled to start in 2000.
The momentum to upgrade nursing education has resulted in an increased number of baccalaureate programmes. Whilst the upgrading of basic nursing education is exciting and long overdue, it remains a lofty and long-term goal that may take decades to achieve, given the present socioeconomic and cultural situations in China. A tangible strategy is to prioritize the upgrading into stages: upgrading the secondary programmes to zhuanke level first, and then raising some of the zhuanke programmes to baccalaureate level. It is neither feasible nor necessary to upgrade all the zhuanke programmes in the foreseeable future. At present, a plausible tri-strategy is to expand zhuanke programmes rapidly, consolidate secondary nursing programmes, and develop baccalaureate and graduate programmes gradually. Particularly, efforts should be made to ensure that zhuanke programmes maintain their appeal to working nurses.

Internationalization of nursing education

Globalization has been and will continue to be one of the driving forces behind the Chinese nursing education reforms and developments in the post-Mao era. The WHO Collaborating Center in Nursing and Midwifery, the Project Hope, Heart to Heart, and many other programmes sponsored by government and non-government organizations, have expanded the horizon for Chinese health care. Of special significance is the contribution of the China Medical Board (CMB). The New York-based agency, an offshoot of the Rockefeller Foundation, has traditionally played a critical role in financing health-care projects in China, including founding of the PUMC, and has provided significant funding to nursing projects related to faculty training, textbooks and programme building. For example, the CMB funded a training programme to prepare Chinese nursing faculty at Chiang Mai University, Thailand, during 1994–96. About 40 Master of Science in Nursing (MSN) students completed the programme (Guifang Guo, personal communication, 22 January, 2000), the majority of whom eventually assumed faculty roles in the baccalaureate and masters’ programmes across the country.

In addition, exchanges and collaboration between Western and Chinese institutions have produced substantive outcomes in terms of faculty training, curriculum development, instructional design and enhancement, and institutional building. Exchange programmes between sister schools, such as Hunan Medical University and Yale University, generated enthusiasm and positive outcomes (Watkins 1996). Perhaps the two exemplary projects in this regard are:

• the multicomponent collaborative endeavour between the Tianjing Medical University and the University of Ottawa Schools of Nursing to build community-based programmes (Edwards et al. 1999; Papai et al. 1999),

• the Community-Based International Learning Programmes – China Project between Schools of Nursing, Beijing Medical University and the University of Michigan (University of Michigan School of Nursing 1999).

However, a more significant undertaking is the collaborative project between the PUMC and the University of North Carolina (UNC) at Chapel Hill to train graduate nurses in China. This project was approved by the Ministry of Health in 1999, and will admit three groups (about 20 participants in each) of baccalaureate nursing graduates in the next few years to prepare as master’s level nurses. This programme requires 2 years of full-time study. Instruction will be carried out in English, and the faculty from UNC will provide most of the teaching. Upon successful completion of the programme, graduates will be awarded MSN degrees from UNC (Peking Union Medical College 1999).

Nursing institutions in Hong Kong have played a particularly relevant role in bridging the two nursing worlds of the East and the West. As a result of its long association with the Western world and unique geographical location, Hong Kong served as an experimental station for Mainland China long before it was returned to Chinese sovereignty in 1997. The first China–Hong Kong Nursing Education Conference was held in 1996. Since then, collaboration between nursing programmes in Mainland China and Hong Kong has increased notably and has generated significant outcomes. For example, the Quality of Life for Clients with Diabetes
study and the *Survey on the Expectations of Baccalaureate Nursing Graduates* project between Shanghai Medical University and the Chinese University of Hong Kong were successfully completed (Shanghai Medical University Faculty of Nursing 1999). Another collaborative project on the code of ethics for nurses in the new millennium between the Chinese Nursing Association (CNA) and Hong Kong Polytechnic University is still underway (Hong Kong Polytechnic University Department of Nursing & Health Sciences 1999).

In addition, individual nurse educators from other countries have contributed to the development of Chinese nursing education through teaching, research and consulting. A case in point is Dr Chien-Yun Wu, a Chinese American nurse educator who is affiliated with George Mason University. Dr Wu has been involved extensively in the reform of nursing education and practice in China since the early 1990s through the introduction of Western models of nursing education, research and practice. Endorsed by the CNA and the Ministry of Health, Dr Wu was instrumental in launching the campaign to shift nursing from the fragmented care model to a holistic one (Wu & Jin 1995). Nevertheless, how to successfully adapt Western concepts, theories and nursing care delivery models to the Chinese culture remains a considerable challenge. Some nurse educators are sceptical because the infrastructure, personnel and management system inherently required by the Western models are not readily available in the Chinese environment. Moreover, the wholesale attitude towards Western nursing theory and practice without critical discrimination will probably prove to be unworkable, even harmful and disastrous (Shilan Wang, personal communication, 7 May, 1998).

The authors believe that indigenous nursing professionals, including those who were originally educated in China and later obtained their advanced training in other countries, will play an increasingly important role in integrating the Chinese nursing profession into the global nursing community. Integration is not only important for this newly revitalized profession in China, but also timely and realistic as a growing number of Chinese nurse professionals are obtaining their advanced degrees and valuable experiences in other countries. Consequently, the pattern of expertise utilization for modernizing Chinese nursing education will shift from Western and overseas Chinese scholars to indigenous nurse experts, thus completing the transition from dependence to independence and interdependence.

### Reforms in instruction

#### Change of paradigm

Historically, biomedical paradigm and medical education models have undergirded nursing education in China. The ‘paradigm shift’ from the biomedical model to the biopsychosocial model in medicine and later in medical education, triggered by Engel (1977), has generated significant derivative effects on nursing practice and nursing education. While the curriculum design and development in nursing education in the United States have mirrored the impact since the 1970s, nursing education curriculum in China is currently undergoing revision to reflect such fundamental changes (Xu et al. 2000). Other ‘paradigm shifts’ include moves from the disease-centred to the prevention-focused curriculum and from the acute-care-orientated to the community-based curriculum to respond to demographic changes.

#### Curriculum

Chinese nurse educators have perceived that the greatest weakness in the Chinese nursing education curriculum is the minimal presence of the humanities and social sciences (Yuen & Jin 1995). This situation has changed considerably in the past few years with the addition and integration into the curriculum of a greater number of courses (both mandatory and elective) in the humanities and social sciences, to provide a broader foundation of knowledge. Nevertheless, the Chinese nursing curriculum is still viewed predominantly as ‘physiologically based and disease-orientated’ (Chan & Wong 1999).

One unique aspect of Chinese nursing education is the integration of TCM into the curriculum, at
both secondary and tertiary levels. In most programmes, TCM is an integral component of the curricula that addresses its fundamental principles (i.e. the holistic view, the dialectical treatment strategy and the emphasis on prevention) together with the nursing regimens and techniques consistent with these principles (including acupuncture, dietary therapy and psychosocial skills). Graduates are expected to incorporate TCM into their professional repertoire. Throughout the programme, holistic perspective and nursing care is emphasized.

Clinical instruction

Clinical teaching and learning are an integral part of nursing education as some nursing knowledge and many nursing skills can only be learned, improved and perfected through clinical experience. More importantly, clinical experience is critical in transforming a student nurse into a professional nurse. The format of clinical experience in Chinese nursing education at both the secondary and tertiary levels is a full-time practicum in the final year of the curriculum. The practicum is heavily focused on acute-care settings. Otherwise, both programmes offer little clinical experience beyond learning laboratories prior to the last year.

In an increasingly market-driven health-care industry in China, clinical placement is becoming a growing challenge for secondary nursing programmes that do not have their own teaching facilities. The practicum is co-ordinated through and, to a considerable extent, dictated by the facility. Most programmes do not have a school-based clinical faculty. In most cases, clinical preceptors serve as clinical instructors. A Chinese nurse educator believes that the concentrated arrangement of clinical instruction is more for the convenience of the agency than for the education of nursing students (Shilan Wang, personal communication, 7 May, 1998).

The question of whether it is more beneficial to arrange clinical experience in a concentrated manner or to spread it throughout the entire duration of the programme is still under debate among Chinese nurse educators. The same is true with the hospital-based preceptor model vs. the school-based clinical instructor model. Theoretically, it appears that the American model, i.e. to arrange clinical experience throughout an entire nursing programme, is more conducive to learning, and therefore more effective and efficient with regard to educational outcome. However, empirical studies are needed to test this hypothesis.

A pilot programme for comprehensive nursing education

In 1998, Sun Yat-Sen University of Medical Sciences (SUMU) developed A Blueprint for Nursing Education in China (hereafter referred to as Blueprint) in consultation with a group of American nurse experts, and submitted a proposal to the CMB to pilot the Blueprint. In 1999, the CMB granted $2 million to SUMU to execute the pilot programme over 1999–2004. Built upon the strengths, needs and characteristics of the Chinese health-care system, the Blueprint was designed as a model that called for a multilevel nursing education system (Table 2).

The pilot programme will establish the first doctoral nursing programme in Mainland China and differentiate competencies of zhuankan, baccalaureate and doctoral level nurses. At the technical level, the 3-year reformed zhuankan programme will regard as its objective the training of bedside nurses in hospitals, clinics and home care. The redesigned 4-year baccalaureate programme will prepare nurses for supervisory positions and for leadership in the delivery of general nursing care in the hospital and the community. The highest level is the clinical Doctor of Science in Nursing (DSN) programme that will prepare the top-level nurse educators, administrators and clinical specialists for leadership in the profession. The proposed DSN programme has a 3+2 format (3 years of course work plus a 2-year dissertation) (Sun Yat-Sen University of Medical Sciences 1998). In order to implement the pilot programme, and later the Blueprint, across the country, SUMU also proposed to eventually phase out secondary nursing programmes and upgrade nursing education by replacement with two transitional programmes: one for nurses with secondary diploma to the zhuankan level and the
The significance of the pilot programme is three-fold:

1. it will contribute to nursing as an independent discipline, its identity formation and self-sufficiency, especially with the founding of the first doctoral programme;
2. it will upgrade nursing education in China to international standards, and
3. it will help to meet the urgent challenge of providing a pool of qualified faculty for the post-secondary nursing programmes, especially at the graduate level.

According to the proposal, a total of 80 doctoral students, 325 baccalaureate students and 5825 zhuanke students will be admitted into the pilot programme over a 5-year period (Sun Yat-Sen University of Medical Sciences 1998).

### Absence of an MSN tier

However, the first thing one notices is the absence of an MSN tier in the proposed nursing education system. The rationale is that ‘The goals of masters’ degrees in nursing are similar to the goals of the doctoral degree in nursing and differ only in degree of intensity’ (Sun Yat-Sen University of Medical Sciences 1998). The authors assert that a formal MSN structure should be incorporated into the system so as to provide an option for students who choose to do so. Moreover, an MSN should not be perceived merely as a transitional degree, at least not in the foreseeable future, especially in the current context of the state of the profession in China. Finally, with severe scarcity of resources, vastly diverse needs, and different levels of affordability across regions and groups, China needs to think carefully as to whether to phase out the entire secondary nursing programmes at this point in time. Essentially, the Blueprint is an adapted version of the US nursing education system.

### Discussion and conclusions

The path of modern nursing education in China has been tortuous since its inception in 1888. The fact that there was only one baccalaureate nursing programme in the entire country from 1923 to 1952, and subsequent abolition of the programme, undeniably demonstrates nursing’s inferior economic and social status in the Chinese society in
Within the profession, nurses with postsecondary qualifications do enjoy pride and prestige because of the intrinsic value the Chinese culture has put on education in general, and higher education in particular. However, this elite group is the only segment of the entire nursing workforce that has achieved the middle-class status. Outside the profession, nursing is still perceived, in both economic and social terms, as a less desirable career. For some nursing students, nursing is not their first career choice, but the only realistic and reasonable one left. These students enter nursing with varying degrees of ambivalence, hesitancy and reservation. Moreover, nursing still remains an exclusive field for females owing to the predominant social stigma and prejudice. Once there was a widespread Chinese saying that: ‘one can at least become a nurse if she is good for nothing else’. Perhaps, from a psychosocial and cultural perspective, this culturally and socially ingrained mentality and misconception delayed the development of postsecondary nursing education in China. Ultimately, to change the social and cultural stigma and to make nursing into a respected profession and an attractive career choice requires improvement in the economic and social status of nurses.

Nevertheless, there are reasons for optimism after reviewing the achievements of the past two decades and the changes currently underway. Certainly, there are more challenges ahead.

First and foremost, the infrastructure of a comprehensive and multilevel nursing education system has been put in place. This is especially noteworthy when one realizes that all of the postsecondary nursing programmes started from scratch in the 1980s. There are currently about 20 baccalaureate programmes, five masters’ programmes, and one doctoral programme in the system. The implementation of the pilot programme at SUMU to validate the Blueprint will potentially have far-reaching effects, both on nursing education and the profession in general. It is predicated that postsecondary nursing programmes, especially at the zhuanke level, will expand rapidly because of the market demand and the advancement of health sciences and technology.

Second, the community of nurse educators has attempted to examine many domains of nursing education. The hottest issues at present are:
- What are the differences in objectives of the nursing programmes at various levels?
- What are the competencies of nurses prepared at different levels and how should they be differentiated in the curriculum?
- What knowledge and how much to give to students?

It is imperative that the profession, in consultation with other stakeholders in health care, should sort out the roles and functions of nurses prepared at different educational levels so that they will be utilized and compensated accordingly.

Third, the establishment of the National Nursing Center is a milestone for the profession. Nursing research is merging into the mainstream of health sciences. However, how to utilize the scientific methods to conduct nursing research and how to bridge the discrepancy between research and practice remain a challenge for the profession. A rudimentary review of the studies published between 1990 and 1998 in the Chinese Journal of Nursing, the official publication of the CNA, has led the authors to believe that nursing research in general lacks the scientific rigor evidenced in other, more established disciplines, such as medicine and public health. Moreover, how to utilize research findings in regard to health-care policy-making is an issue that should be considered by each and every member of the profession.

Finally, it is imperative for the CNA to assume a more assertive role for the profession, to promote nursing’s visibility and representation in health-care decision-making, and to take a more proactive approach to transforming nursing. The CNA’s leadership and initiative are critical in moving nursing forward in the midst of drastic economic and social changes that have presented both challenges and opportunities to the profession.

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