Title: Changes in Nursing Education in Hong Kong - Progressive or Regressive?

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1. Introduction

To accommodate the rapidly changing socio-economic environment and the increasing diversity and complexity in a highly dynamic healthcare environment, registered nurses (RNs) must be educated and competent in providing patient care. In addition, RNs require a broad base of professional knowledge to promote community health and support healthcare development including leadership, health policy, system improvement, research and evidence-based practice, teamwork and collaboration (Institute of Medicine, U.S, 2010). Thus, a minimum bachelor of science in nursing for entry into practice is strongly recommended for nursing workforce to meet the demands of the complex and evolving health care system (Blegen et al., 2013; Institute of Medicine, U.S, 2010).

Shortages in the nursing workforce to meet increasing healthcare demands, negatively affects patient outcomes along with nurses' overall health, threatening patient safety (Aiken et al., 2017). To tackle this problem, various strategies from short to long term solutions have been introduced worldwide. In Hong Kong, hospitals providing direct patient care have introduced innovative ways to counter this problem, such as using non-licensed personnel. In the United States, licensed practical/vocational nurses usually receive training for one to two years beyond high school, and after passing the National Council Licensure Examination for Licensed Practical Nurses exam are employed in the nursing workforce to provide patient care(Health Resources & Services Administration, 2014), In the United Kingdom, a less educated 'nurse associate' was developed to support RNs in the delivery of nursing care to patients (Nursing & Midwifery Council, 2017). However, the shift in patient care policies substituting less educated personnel for professional nurses, may result in an increase in patient mortality with adverse outcomes (Aiken et al., 2017).

Additionally, the pressure to recruit and retain RNs, along with a minimum baccalaureate degree education for entry into practice is challenging and has been debated for over 40 years

(American Association of Colleges of Nursing (AACN), 2017). Currently, RNs are practicing with a diverse set of qualifications, skills and competencies. This creates a confusing climate for the nursing workforce and general public when addressing patient and community healthcare needs. With the constantly evolving roles of RNs, there is a need to follow a centralized education/qualification system to identify young adults with high academic capability, critical thinking skills and aspirations to become a professional RN. In this paper we will 1.) review the history of nursing education in Hong Kong; 2.) argue for higher nursing education; and 3.) discuss the issues and implications surrounding higher nursing education in Hong Kong.

2. History of Nursing Education in Hong Kong

In 1893, the Nethersole Hospital pioneered Hong Kong's first formal nursing education, which adopted the British 3-year apprenticeship program to train RNs. In 1931, the Nurses Registration Ordinance was enacted alongside the Nursing Board of Hong Kong (renamed the Nursing Council of Hong Kong (HKNC) in 1999) as the statutory body that regulates the education, registration and practice of RNs (HKNC, 2017). To tackle the problem of a manpower shortage in the 1960s, Hong Kong adopted the British model to prepare auxiliary nurses using a two-year hospital-based program, to begin training enrolled nurse (ENs).

Almost one hundred years later (in 1990), universities began offering a bachelor of nursing (BN) degree program which required 4-years of full-time study, suspending hospital-based nursing education; to align with the international nursing development and professionalization standards. This initiative was supported by the Hong Kong government, through the university grants committee (UGC), to support public universities by providing subsidized BN education. Later, the 4-year full-time BN program was converted to a 5-year full-time program as the Hong Kong government launched a new academic scheme (Education and Manpower Bureau, Hong Kong, 2005). During the 5-year BN study, students were required to complete 1, 250

hours of theoretical study and 1,400 hours of clinical training including a period of continuous clinical practice of not less than 3 months (NCHK, 2017). Unlike the new 5-year BN program in Hong Kong, the United States and the United Kingdom offer a 4-year college/university BN program or a 3-year full-time program in approved educational institutions, respectively (AACN, 2017; Nursing & Midwifery Council, 2017). Despite the differences in the length of these BN programs, all BN programs incorporate a series of courses and clinical practicum to prepare students with professional disciplinary knowledge, critical-thinking, clinical practice skills, leadership, and research skills to enable them being qualified for practice as RNs. Currently, in Hong Kong, there are three public universities offering the 5-year full-time BN program for students entering the profession, through a nation-wide centralized university entrance examination.

As Hong Kong continued to face severe nursing shortages, the government re-opened hospital-affiliated nursing schools and provided subsidies for private institutions offering self-financed BN programs in 2008, to increase the number of nursing students. This may serve as a quick solution to tackle workforce shortages. However, differences in educational frameworks and standards between UGC-funded and non-UGC funded programs pose significant issues, as UGC-funded programs are governed by more stringent quality assurance mechanisms, such as the qualifications and expertise of the academic staff, smaller student-staff ratios, along with rigorous teaching and learning standards than the non-UGC funded programs (HKNC, 2017). According to the Teaching and Learning Model (Kember and Leung, 2009), teaching and learning environment can influence the development of graduates' capabilities such as critical thinking, problem-solving, communication skills, interpersonal skills and teamwork. Thus, nursing graduates from UGC-funded universities may be more competent in providing quality nursing care than those from non-UGC funded universities. This may also indicate the need of investments for UGC-funded BN programs to produce more

competent graduates to take the evolving role of RNs.

3. The Case for Higher Nursing Education

Over the past several decades, advancements in healthcare, such as pacemakers, have led to greater patient survivorship and set in motion a paradigm shift in healthcare delivery from a model of acute hospital care to chronic community care. As patient care needs have become more complex, RNs need to attain requisite competencies to deliver high-quality care. The ways in which RNs were educated in the past, are no longer adequate for dealing with the realities of healthcare in the 21st century. Having a BN degree (at minimum) as the standard for entry into practice ensures that RNs are prepared for these challenges in healthcare (Institute of Medicine, U.S, 2010). As pointed out in the American Association of Colleges of Nursing Position Statement in 2001, RNs entering the profession with an associate or diploma degree usually need further support in critical thinking skills, leadership and management, health promotion, community care and case management. Moreover, solid evidence has been documented by AACN, reporting improved patient outcomes when cared for by baccalaureate-prepared RNs (Aiken et al., 2014; Blegen et al., 2013). According to a multi-national study involving 300 hospitals across nine European countries, a 7% decrease in 30-day mortality was associated with every 10% increase in RNs with a baccalaureate degree (Aiken et al., 2014). This highlights the importance of having baccalaureate-prepared nurses working at the bedside to improve patient outcomes.

In Hong Kong, as of December 2016 there were 52,389 nurses (39,178 RNs), with over one-fourth having only two-years of training as an EN (13,211 ENs), in a city with 7.4 million residents (HKNC, 2017). Among these RNs, many do not possess a BN degree and likely lack essential knowledge and skills needed for complex patient care or quality improvement initiatives. In contrast, the number of graduates from RN-to-BSN programs in the United States increased 170% from 2010 (22,531) to 2016 (60,842) since the recommendation of increasing

the proportion of nurses with a baccalaureate degree to 80% by the year 2020 (Campaign for Action, U.S, 2017).

Bachelor's degree. In Hong Kong, UGC-funding has remained unchanged for the past decade, despite the increased healthcare demands and needs for more RNs (HKSAR, 2016). The current UGC-funded student allocated placements are insufficient to prepare an adequate number of competent RNs to address current and future healthcare challenges. In fact, the UGC-funded programs receive a large number of qualified applicants, but do not have enough placements to accept these students. For example, the Chinese University of Hong Kong receives over 6,000 applications for its BN program every year; though only 200 students can be admitted (Chair et al., 2016). The stagnant UGC-funding has resulted in the rejection of qualified applicants interested in a nursing education.

Denying admission to qualified applicants interested in nursing education, is common worldwide. For example, nursing schools in the United States rejected 64,067 qualified applicants from baccalaureate and graduate nursing programs in 2016, due to budget constraints, lack of faculty and/or clinical preceptors, or insufficient classrooms (AACN, 2017). This serves as a lesson to all of us, urging swift action to ramp up our educational efforts among the next generation of RNs, to ensure a sufficient workforce to meet future societal healthcare needs (O'Connor, 2012).

Specialization and Advanced Practice. With a changing paradigm of healthcare needs, due in part to an aging population and complex chronic health conditions, nurses today are expected to acquire higher and broader levels of competencies to assume specialized roles as advanced practice nurses (APNs), an umbrella term that includes nurse practitioners (NPs) and nurse specialists. APNs have the autonomy to examine patients in nurse clinics, initiate treatments, and make medication adjustments under supervision (Parker and Hill, 2017). The contribution of APNs to high-quality patient care, better patient outcomes, and decreased

healthcare expenditures has been well documented (Newhouse, 2011). In Hong Kong, the first APN role was established in 1993. Nursing clinics managed by the Hospital Authority of Hong Kong and run by APNs were established in 2011 by the Hong Kong Academy of Nursing, and accredited through high standards.

APNs are typically required to obtain a Master's degree in nursing at minimum, to equip them with higher-order problem solving skill. In Hong Kong, major responsibilities of nurse consultants include: evidence-based practice, leading education, initiating service development, guiding continuous quality improvement, and conducting research. Apart from advanced clinical practice responsibilities, nurse specialists and nurse consultants are also expected to play an important role in evidence-based research to inform nursing practice and healthcare reform (Parker and Hill, 2017). In Hong Kong, three UGC-funded universities provide a range of postgraduate programs (master's level or higher) to support the professional growth and career progression of RNs, to prepare them for these new roles.

4. Relationships between Nursing Education and Workforce Shortages

The common reasons for nursing workforce shortages include low salaries, night shifts, demanding workload, limited career progression, stressful and challenging work environments (Chan et al., 2013; MacKusick and Minick, 2010). This results in nurse burnout and job dissatisfaction, negatively impacting care quality and patient outcomes (Toh et al., 2012; Zhang et al, 2014). However, nursing education as an insidious contributing factor has received less attention, yet holds great potential in ameliorating this long-standing problem.

Nursing workforce shortages have traditionally been simply quantified as the disproportionate nurse-to-patient ratio. In Hong Kong, the average nurse-to-patient ratio in a general ward is 1:12, far from the international average of 1:6 (Chair et al., 2016). Notably, there are no standardized recommendations on an adequate staffing ratio, as this depends on various factors such as case mix, skills mix, patient profiles, market forces and organizational

structure. It is well established that nurses with higher education, professional expertise, and communication skills contribute to fewer medication errors, falls and mortality among patients (Aiken et al., 2016, Duffield et al., 2011). Thus the quality of (highly educated) nurses, not just the quantity of nurses, is an important when considering the increasing demands in healthcare and the nursing workforce. As a result, preparing nurses with baccalaureate or higher degrees fosters their competence in assuming multiple responsibilities while providing high-quality patient care (Institution of Medicine, U.S, 2010).

5. Issues and Implications of Higher Nursing Education in Hong Kong

Building and expanding the clinical care competency of RNs is a highly-prioritized agenda for maintaining quality care and patient safety in an increasingly complex healthcare environment (Aiken et al., 2016). A competent RN not only performs the care duties effectively, but also exercises professional clinical decision making and high-order problem-solving in the process. Yet, multiple educational pathways and persistent workforce shortages among RNs have a bearing on higher nursing education.

Multiple Educational Pathways. Similar to the United States, Hong Kong has multiple educational pathways leading to an entry-level license to nursing practice. As of June 2017, there were four options for the pre-licensure education of RNs: a.) a full-time 5-year university-based baccalaureate degree program, b.) a full-time 3-year hospital-based diploma program, c.) a part-time 3-year EN to RN conversion program, or d.) a full-time 3-year university-based master's degree program (for those with a bachelor's degree in any other discipline). Despite the large discrepancy in entry level nursing education, academic admission scores, scope and duration of nursing education; upon graduation, all are titled RN. According to the Nursing Council of Hong Kong, hospital-based professional diploma graduates are now considered as qualified RNs as the graduates of baccalaureate degree programs in terms of: a.) knowledge and intellectual skills, (b) processes, (c) application, autonomy and accountability, and (d)

communications, information technology and numeracy (Level 5, expected outcomes standards).

The multiple entry policy hinders the development of baccalaureate nursing education in Hong Kong to produce a highly educated nursing workforce and inevitably results in great frustration, dissatisfaction and burnout among nursing students. For example, Hong Kong nursing students are often oppressed by traditional practices in conflict with their university education (Chan et al., 2009). This scenario may potentially create conflicts among RNs, due to different academic backgrounds, practices and attitudes; and likely negatively affect the morale and teamwork of the workforce (Aiken et al., 2017).

A university-based baccalaureate (at minimum) nursing education stands out from other options, as it emphasizes a holistic development of nursing students, provides a stimulating and resourceful environment to foster capable and autonomous nurses with professional competencies, practical intelligence, and generic attributes (Lee et al., 2010). Moreover, university-based education differs in having a broader scope and complexity of program curriculum, a theoretically-based teaching and learning framework, and higher qualifications among the teaching faculty. All these factors are considered as facilitators in increasing nursing graduates' capabilities in assuming multiple RN roles (Kember and Leung, 2009). Therefore, in the context of Hong Kong, students graduating from UGC-funded nursing programs, in general, are of relatively higher caliber to overcome challenges inherent within an ever changing and complex healthcare facility or organization.

Nursing Shortages. Nursing workforce shortages in Hong Kong continues to be a key issue in the healthcare reform agenda. According to the registration and enrollment statistics, the total number of nurses in the past ten years has increased over 40% from 2007 to 2016 (HKNC, 2017). A further increase in the demand of nurses is expected, as about 5,000 additional public hospital beds will be provided in the next decade (HKSAR, 2016). Despite

the fact that the government has initiated many “quick fix” solutions to address the nursing shortage, it is yet to be resolved. In addition to these “quick fix” solutions, Hong Kong can learn from the initiatives launched in other countries to alleviate nursing shortage. For example, the United States government provides grant funding through the Health Resources and Services Administration (HRSA) to nursing schools to support nursing education and practice, such as the nursing workforce diversity program, to assist students from disadvantaged backgrounds to become registered nurses. In addition, HRSA established a nurse faculty loan program, to offer loans to nursing students in advanced education nursing degree programs who agree to teach in academic institutions after graduation, and thus reduce the nursing workforce shortage by increasing the number of qualified nursing faculty (AACN, 2017). Additionally, the high attrition rate of nurses leaving the workforce is another concern in dealing with nursing shortages (Chan et al., 2013). In the past three years, the turnover rate of nurses in public hospitals in Hong Kong has increased from 4.7% to 5.2% (Yeung, 2016). This likely represents new challenges and dilemmas related to quality care along with the morale of nursing workforce in Hong Kong.

6. Conclusion

In dealing with the problem of the nursing shortage, some healthcare regulatory authorities resort to lowering the RN qualification process. However, this compromises the quality of nursing education and hence nursing care, resulting in adverse patient outcomes in the long run. Moreover, this does not address the issue of recruitment and retention of highly educated nurses, to sustain professional nursing and prepare for future healthcare demands. Instead of focusing on a quick and drastic increase in the number of RNs by shortening the length of the required educational programs; workforce forecasting and planning groups need to carefully consider the benefits of employing RNs that have graduated from the accredited UGC-funded nursing programs instead. Additional resources and placements in UGC-funded nursing programs are

recommended, to enable program expansion and increase the number of qualified and competent graduates. Nursing education in Hong Kong should consider adopting a unified framework that is comparable to international standards, so as to uphold the standards of nursing care to improve patient outcomes.

Keywords: nursing education; nursing shortage; professionalization; specialization; health care reform.

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