

HOSTED BY



Contents lists available at ScienceDirect

International Journal of Nursing Sciences

journal homepage: <http://www.elsevier.com/journals/international-journal-of-nursing-sciences/2352-0132>



Special Issue: Midwifery and Women's Health

A review and comparison of midwifery management and education in five representative countries

Nan Zhou, Hong Lu*

School of Nursing, Peking University, Beijing, China



ARTICLE INFO

Article history:

Received 3 March 2017

Received in revised form

7 October 2017

Accepted 21 December 2017

Available online 9 January 2018

Keywords:

Education

Personnel management

Midwives

ABSTRACT

Midwives play an important role in guaranteeing mothers and babies' good health. However, standardisation and systematic management of midwifery are insufficient in China. This study reviews and compares the present situation of midwifery management and education in five representative countries located in North America, Europe and Oceania. Based on the experience of these countries, Midwifery development in China should continue to explore and develop midwifery university education, form a midwife professional title system, standardize midwife certification and management. And a quality midwifery environment should be created in order to enhance career attractiveness.

© 2018 Chinese Nursing Association. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Women and children's health is the precondition and foundation of sustained human development. This type of health is not only an essential world-recognised health indicator but also an important comprehensive one to measure socio-economic development and human development. The maternal mortality rate (MMR) kept falling markedly since the founding of the People's Republic of China [1]. According to 'Healthy China 2030', the Chinese MMR in 2015 is 20.1/100,000 and should decrease to 18/100,000 and 12/100,000 by 2020 and 2030, respectively; this task is daunting [2]. The World Health Organisation (WHO) pointed out that midwives play an important role in decreasing MMR [3]. The International Confederation of Midwives (ICM) articulated that a midwife is a person who has been regularly admitted to a midwifery educational programme that is duly recognised in the country it is located; has successfully completed the prescribed course of studies in midwifery; and has acquired the requisite qualifications to be registered and legally licensed to practise midwifery [4].

The implementation of Chinese Two-Children Policy has greatly increased the number of births, elder pregnant women and pregnant women with scarred uterus. As a result, midwives in China

face severe challenges [5] and have a limited number, thereby bringing difficulty in meeting the needs of women and children healthcare [6]. According to the report published by the WHO, the number of midwives per 1000 population in China is 0.03, which is significantly lower than that in developed countries and lower than that in most developing countries in Asia, such as Cambodia, Vietnam, and Mongolia [7]. Li reported that 43.4% and 41.9% of full-time midwives graduate from college and technical secondary school, respectively [8]. However, a limited number of midwives have a bachelor's degree. Thus, the Long-term Talent Development Plan of Medical Science (2011–2020) aims to strengthen advanced competency of qualified midwives through various ways [9]. Therefore, midwifery management and education should be developed to strengthen midwifery workforce. This study aims to introduce the development status of midwifery management and education in five representative countries and to provide a reference for the development planning of midwifery occupation in China.

2. Review of midwifery management and education in five representative countries

Sound systems of midwifery management and education have already been established in some developed countries. The midwifery management and education of the United States, Canada, the United Kingdom, Australia and New Zealand are representative and classical. Given that these countries possess distinguishing characteristics in midwifery development and are

* Corresponding author.

E-mail address: luhong@bjmu.edu.cn (H. Lu).

Peer review under responsibility of Chinese Nursing Association.

located in North America, Europe and Oceania [10], their midwifery management and education are reviewed in this study.

2.1. United States

The American College of Nurse-Midwives (ACNM) supports midwives and improves the practice of midwifery by promoting education, research and advocacy. Improving clinical skills, expanding midwifery workforce and establishing midwifery equitable legislation, regulation and policies as a standard of care for women are beneficial. ACNM also helps midwives gain expertise in pregnancy, physiologic birth, postpartum care and newborn care. ACNM mainly aims to achieve optimal health for women in their lifespan [11].

American midwives are divided into certified nurse-midwives (CNMs), certified midwives (CMs) and certified professional midwives (CPMs) [12]. According to the American Midwifery Certification Board, the numbers of CNMs and CMs are 11,194 and 97, respectively, as of May 2015. Considering that CNMs are licensed, independent healthcare providers with prescriptive authority in all 50 states [13], their education and certification are analysed in this study.

In terms of education, a bachelor's degree from an accredited college or university should be obtained firstly. If the applicant has a bachelor's degree but without an RN license, then some programmes demand that the applicant obtain an RN license before the midwifery programme starts; others will allow the student to attain an RN license prior to graduate study. If the applicant is an RN without a bachelor's degree, then some programmes require attainment of a bachelor's degree prior to entry into midwifery programme; others provide a bridge programme to a bachelor's degree prior to midwifery section programme. Secondly, clinical experience requires that attained clinical skills must meet the Core Competencies for Basic Midwifery Education (ACNM2008). Clinical education must be given under the supervision of a CNM, CM or advanced practice RN who holds a graduate degree and has clinical expertise and has taught didactic knowledge match content. Clinical skills consist of management of primary care for women throughout their lifespan, reproductive healthcare, pregnancy and birth, care of the normal newborn and management of sexually transmitted infections in male partners [14].

In terms of certification, individuals applying for a certification examination should graduate from a nurse-midwifery education programme accredited by ACME. The education programme should be validated by the programme director of completion, and the applicant should obtain an RN license. Moreover, the applicant needs to obtain at least a master's degree before applying for the certification examination [15].

In terms of recertification, also known as the Certificate Maintenance Programme (CMP), it is designed to assist CNMs or CMs in demonstrating specified levels of knowledge not only at the time of initial certification but throughout an individual's professional career. Only if individuals accomplish the requirements of the CMP at the end of their current certification cycle (5 years) can they obtain a new certification. Individuals will not work as a midwife without current CNM or CM certificates depending on their state regulation bodies.

Recertification can be conducted using two methods. One is the AMCB Certificate Maintenance Module Method, which requires each CNM or CM to complete three modules over a five-year period and submit proof of 20 h of relevant continuing education. Each module includes current evidence-based articles, and the full scope of midwifery practice is sufficiently covered within the three existing modules. These articles are updated every three years to ensure current information is included. Each module also requires

learners to complete a post-test that assesses key points in each of the articles. The required education hours can be completed through multifarious options that include attending a conference, publishing an article or teaching midwifery students. All of these options require proof of attendance. The other is retaking the certification examination to demonstrate continued competence in midwifery practice. The certification examination includes current evidence-based knowledge, skills and abilities. To successfully pass this examination, a CNM or CM needs to be up to date on current midwifery knowledge and practice guidelines. The examination must be passed by the end of the fifth year of the certification cycle [16].

2.2. Canada

The Canadian Midwifery Regulators Council (CMRC) is a network of provincial and prefectural regulatory authorities. It provides leadership in maintaining a strong regulatory framework by building the Canadian Midwifery Competencies, setting national standards for midwifery practice, administering the national Canadian Midwifery Registration Examination and approving educational programmes. CMRC together with the Canadian Association of Midwives (CAM) and the Canadian Association of Midwifery Educators form a three-pillar approach to promote midwifery regulation, education and practice [17].

Midwifery education is offered at a university undergraduate level in Canada. The midwifery education programme is a four-year undergraduate programme. Students have seven choices of midwifery education programmes in Canada. Each programme administers examinations recognised by their respective provincial regulatory bodies [18]. Education programmes are 'direct entry' (i.e. no nursing or other credentials are required for entry) [19]. Currently, some provinces and territories regulate midwifery and others do not. In all regulated provinces and territories, midwives must be registered with the regulatory authority to work as a midwife legally.

Prior to registration, individuals must complete a process of assessment by the provincial regulatory bodies. Individuals that are registered with their provincial regulatory authority use the title Registered Midwife (or Midwife), and they are allowed by the law to perform actions that are reserved in legislation for midwives [20].

2.3. United Kingdom

The Nursing and Midwifery Council (NMC) is a professional organisation regulating nurses and midwives in England, Wales, Scotland and Northern Ireland. NMC exists to protect the public and ensure that nurses and midwives can provide quality healthcare by setting standards of education, training, conduct and performance. The purpose of NMC is to ensure that nurses and midwives keep their skills and knowledge up to date and advocate their professional standards. At the same time, they have clear and transparent processes to investigate nurses and midwives who do not meet their standards and maintain a register of nurses and midwives allowed to practise in the United Kingdom [21].

Midwifery education and training programmes can only take place in their Approved Educational Institutions (AEIs) in the United Kingdom. Students should usually finish courses in at least three years. However, a registered nurse can obtain dual registration with NMC through a reduced training course of 18 months. Half of the programmes are based on clinical practice with direct contact with women, their babies and families. These programmes can include the home, community and hospitals, and other maternity services, such as midwife-led units and birth centres. During

the programme, individuals are taught to understand, promote and facilitate normal childbirth and identify complications that may arise in women and babies. They are taught when to call for assistance and implement emergency measures, and they need to know that they will work with other health professionals most of the time. Midwives also play an important role in promoting health and wellbeing. Individuals learn how to provide correct information and communicate effectively with a range of women and their families [22].

A specialised role in the United Kingdom named lead midwives for education (LMEs) helps ensure high standards in midwifery education. NMC ensures the high standards of midwifery education programmes through a network of LMEs. LMEs are based at and employed by AEs providing pre-registration midwifery education. LMEs are practicing midwives and must notify their intention to practise each year. They must also meet the NMC requirements for updating and continuing professional development to remain as a registered midwife. Moreover, LMEs need a recorded teaching qualification on the NMC register to demonstrate that they have met the standards for teaching by the organisation. NMC also regularly monitors the quality of education programmes [23].

All midwives working in the United Kingdom must be registered with NMC. Prior to certification, they need to accomplish a midwifery programme of education as mentioned above. They also need to meet NMC's requirements of good health and good character. LMEs play an important role in judging whether students are of good character, health and equal to the role of a midwife at the end of their training. The student is not recommended to continue certification if an LME cannot be assured of the student's good health and good character.

2.4. Australia

The Australian Nursing and Midwifery Accreditation Council (ANMAC) is an independent accreditation authority for the nursing and midwifery professions under the National Registration and Accreditation Scheme. The role and functions of ANMAC are to provide a good practice environment for midwives and achieve quality care in a safe and proper way. A primary function of ANMAC is to ensure that programmes that lead to certification of nurses and midwives in Australia meet the Nursing and Midwifery Board of Australia's (NMBA) approved accreditation standards [24].

The main functions of NMBA include certifying nursing and midwifery practitioners and students; developing standards, codes and guidelines for the nursing and midwifery professions; handling notifications, complaints, and investigations; evaluating overseas trained practitioners who wish to practise in Australia; and approving accreditation standards and accredited courses of study [25].

Individuals who intend to become a midwife in Australia must first complete a programme of study accredited by ANMAC and approved by NMBA. They can choose a government-accredited university or other higher education provider to study the programme qualified for certification. They will obtain a bachelor's or a postgraduate degree in Midwifery after graduation [26].

The undergraduate midwifery programmes are three-year full-time university programmes that lead to a bachelor's degree in midwifery. Students will obtain an honours bachelor's degree in midwifery if they accomplish additional one-year full-time programmes. Postgraduate midwifery programmes are also offered for registered midwives or registered nurses who want to become midwives. Registered midwives will obtain a master's degree in midwifery after graduation, and registered nurses will obtain a bachelor's degree or equivalent qualification in midwifery [27].

To become a midwife, individuals must be registered with the

Australian Health Practitioner Regulation Agency (AHPRA). AHPRA is in charge of 14 health professions regulated by nationally consistent legislation under the National Registration and Accreditation Scheme. It supports the 14 National Boards that are responsible for health professions that protect the public and set standards and policies of certification [28].

2.5. New Zealand

The New Zealand College of Midwives (NZCOM) is the professional organisation for midwives. NZCOM sets professional standards, provides continuing education for registered midwives and conducts the Midwifery Standards Review process for all practicing midwives. It also provides the Midwifery First Year of Practice Programme for new graduates under contract with the Ministry of Health. NZCOM is composed of 10 regional committees that are all autonomous but are working together with the College's overall objective to maintain maternity service quality and midwifery practice standards and support midwives to provide woman-centred care. Every regional committee is led by volunteers [29].

Midwifery education in New Zealand includes pre-registration midwifery education and continuing midwifery education.

Pre-registration midwifery education programmes require each midwifery school to offer an extended three-year bachelor's degree programme; specifically, each year contains a minimum of 45 programmed weeks rather than the usual 36 programmed weeks. All students, whether full time or part time, must complete the programme within four years. This condition is fundamental for midwifery registration. Each programme has a Recognition of Prior Learning Policy that enables students who have equivalent learning experience to receive credits or exemptions for aspects of the programme. Under these policies, midwifery students will obtain credit and complete a short programme if they have a nursing registration or relevant experience. Registered nurses can accomplish the full programme in at least two years [30].

Continuing midwifery education is for registered midwives who want to gain further qualifications, such as a master's degree or a PhD in midwifery or health science. Health Workforce New Zealand often provides financial grants to subsidise the cost of enrolment fees and travel expenses to encourage students' participation in postgraduate education. Short courses and workshops are also provided to ensure that midwives are up to date with midwifery clinical skills. These courses provide evidence of competence within the recertification programme [31].

Becoming a midwife in New Zealand requires registration with the Midwifery Council of New Zealand, which is a complementary organisation to NZCOM. The Midwifery Council has set the competencies and educational requirements for midwifery certification, which were developed in collaboration with the NZCOM [32]. Midwives in New Zealand need to complete the practice requirement in theory and clinic, obtain an approved midwifery undergraduate education programme, facilitate a minimum of 40 births and meet the competencies for certification. Then, students must be recommended for registration by the School of Midwifery and pass the National Examination set by the Midwifery Council [33]. Following registration, an annual practicing certificate is demanded. Midwives must apply for the certificate at the start of each year. Meanwhile, they must continue enhancing competence to satisfy the requirement of registration [34].

3. Comparison of midwifery management and education amongst five representative countries

To provide a comprehensive and clear picture of midwifery management and education, a comparison is conducted amongst

Table 1
Comparison of five countries in professional organisation, education and certification.

	USA	Canada	UK	Australia	New Zealand
Professional Organisation	The American College of Nurse-Midwives	The Canadian Midwifery Regulators Council; the Canadian Association of Midwives and the Canadian Association of Midwifery Educators	Nursing and Midwifery Council	Australian Nursing and Midwifery Accreditation Council and Midwifery Board of Australia	The New Zealand College of Midwives
Education Course requirements	Nursing or a health-related field other than nursing	Four-year undergraduate programme	Three-year programme and at least 18 months of nursing programme	Three-year full-time university programme	Extended three-year university programme
Qualifications of certification	Master's degree	Bachelor's degree	Bachelor's degree	Bachelor's degree	Bachelor's degree
Certification	Recertification every five years	Midwifery regulation certificates from some provinces and territories	Dual registration	Registration with the Australian Health Practitioner Regulation Agency	Annual practicing certificates

five representative countries. The detailed information is shown in Table 1.

Midwifery education in these countries have significant similarities. For example, their midwifery education programmes are based in universities that follow academic conventions for the length of programmes of study that lead to the awarding of academic degrees; these programmes are consistent with the recommendations of the WHO [35]. The five countries have sound and good supervision management system being responsible for the education, examination and certification of midwives. Furthermore, midwifery managements in the above-mentioned countries present their own characteristics. For example, the Certificate Maintenance Programme every five-year cycle in the United States and an annual practicing certificate in New Zealand are implemented to keep midwives' knowledge and skills up to date. In addition, a unique educational supervision network composed of LMEs exists.

Regarding the midwifery administrative association, independent counsels or colleges of midwives are available in Canada and New Zealand. However, midwives and nurses in the United States, Australia and the United Kingdom are managed by the same association but with separate requirements and standards.

4. Conclusion

Midwifery environment should include high-quality education and continuing professional development to make midwifery an attractive career. This environment also should contain a strong and functional regulatory system, including certification and promotion, to meet international standards and country-specific needs [36]. Midwifery education in China is still dominated by secondary and tertiary education, and university education is still in the exploratory stage. Midwifery university education and multiple midwifery programmes can be developed on the basis of experiences from the five studied countries while focusing on competency-based education.

Nurses and midwives are of the same professional title system. Thus, managing them is difficult. Different branches or independent standards and a separate system, such as those developed in Canada and New Zealand, can be established to manage these health professionals in the short and long terms, respectively.

A large number of midwives can be trained to compensate for the shortage of manpower. Shortening the period of midwifery courses or exempting nurses from some courses can be conducted on the basis of experiences from the United Kingdom or New Zealand to accelerate the training of midwives.

In general, the development of midwifery in China will continue and must be based on experiences of other countries.

Appendix A. Supplementary data

Supplementary data related to this article can be found at <https://doi.org/10.1016/j.ijnss.2017.12.007>.

References

- [1] Ministry of Health, People's Republic of China. Report on women and Children's health development in China, vol. 2011; 2011.
- [2] CPC Central Committee, State Council. Healthy China 2030". Planning Outline; 2016 [Cited 2016 Dec 5]. Available from: http://www.gov.cn/xinwen/2016-10/25/content_5124174.htm.
- [3] World Health Organization. Global action for skilled attendants for pregnant women. 2016 Dec 5. Available from: http://www.who.int/making_pregnancy_safer/zh/index.html.
- [4] International Confederation of Midwives. International definition of a midwife. 2016 Dec 5. Available from: <http://www.internationalmidwives.org/who-we-are/policy-and-practice/ICM-international-definition-of-the-midwife/>.
- [5] Kang CY, Gao YQ, Song L, Pang RY, Wang Y. Hospital delivery volume and maternal constituent ratio effects of fertility policy adjustment. *Popul Res* 2015;39(6):85–93.
- [6] Pang RY. Current situation and development of midwifery profession in China. *Chin J Nurs Edu* 2010;7(7):293–5.
- [7] World Health Organization. The World Health Report 2006– working together for health. Geneva: WHO; 2006.
- [8] Li DD, Luo SS, An L. Study on the current situation of midwifery personnel in China. *Matern Child Care of China* 2014;29(7):993–6.
- [9] Ministry of Health. Long-term talent development plan of Medical Science (2011–2020). 2011.
- [10] Sun RY. Preliminary construction of midwifery education training objectives and curriculums based on Core competency at bachelor. Beijing: Peking University School of Nursing; 2013. p. 3–6.
- [11] American College of Nurse-Midwives. The story of ACNM. 2016 Dec 5. Available from: <http://www.midwife.org/Our-Mission-Vision-Core-Values>.
- [12] Zhang SQ, Li L, Ye WQ. The development and status of American Midwife. *Chin J Nurs* 2012;47(12):1140–2.
- [13] American College of Nurse-Midwives. Midwives & birth in the United States. 2016 Dec 5. Available from: <http://www.midwife.org/Essential-Facts-about-Midwives>.
- [14] American College of Nurse-Midwives. Comparison of certified nurse-midwives, certified midwives, and certified professional midwives. 2014.
- [15] American College of Nurse-Midwives. The credentials CNM and CM. 2016 Dec 5. Available from: <http://www.midwife.org/The-Credential-CNM-and-CM>.
- [16] American Midwifery Certification Board. Certificate maintenance program requirements. 2016 Dec 6. Available from: <http://www.amcbmidwife.org/certificate-maintenance-program>.
- [17] Canadian Midwifery Regulators Council. ABOUT CMRC. 2016 Dec 6. Available from: <http://cmrc-ccosf.ca/about-cmrc#initiatives>.
- [18] Canadian Association of Midwives. Midwifery education in Canada. 2016 Dec 6. Available from: <http://www.canadianmidwives.org/midwifery-education.html>.
- [19] Canadian Midwifery Regulators Council. Canada midwifery education programs. 2016 Dec 6. Available from: <http://cmrc-ccosf.ca/canadian-midwifery-education-programs.html>.
- [20] Canadian Midwifery Regulators Council. Midwifery in Canada. 2016 Dec 6. Available from: <http://cmrc-ccosf.ca/midwifery-canada#status.html>.
- [21] Nursing and Midwifery Council. Our role. 2016 Dec 7. Available from: <https://www.nmc.org.uk/about-us/our-role/>.
- [22] Nursing and Midwifery Council. Becoming a midwife. 2016 Dec 7. Available from: <https://www.nmc.org.uk/education/becoming-a-nurse-or-midwife/>

- becoming-a-midwife/html.
- [23] Nursing and Midwifery Council. The role of lead midwives for education. 2016 Dec 7. Available from: <https://www.nmc.org.uk/education/lead-midwifery-educators/the-role-of-lead-midwives-for-education/.html>.
- [24] Australian Nursing and Midwifery Accreditation Council. National guidelines for the accreditation of nursing and midwifery programs leading to registration or endorsement in Australia. 2016 Dec 7. Available from: http://www.anmac.org.au/sites/default/files/documents/National_Guidelines_for_the_Accreditation_of_Nursing_and_Midwifery_Programs_Aug15_0.pdf.
- [25] Australian Nursing and Midwifery Accreditation Council. About ANMAC. 2016 Dec 7. Available from: <http://www.anmac.org.au/about-anmac/about.html>.
- [26] Australian Nursing and Midwifery Accreditation Council. Midwife accreditation standards 2014. 2016 Dec 7. Available from: http://www.anmac.org.au/sites/default/files/documents/ANMAC_Midwife_Accreditation_Standards_2014_Pdf.html.
- [27] Wikipedia. Midwife. 2016 Dec 7. Available from: http://en.wikipedia.org/wiki/Midwife#United_Kingdo.html.
- [28] Australian Health Practitioner Regulation Agency. Who we are. 2017 May 8. Available from: <http://www.ahpra.gov.au/About-AHPRA/Who-We-Are.aspx>.
- [29] New Zealand College of Midwives. Role of the New Zealand college of midwives. 2016 Dec 8. Available from: <https://www.midwife.org.nz/home/about-us.html>.
- [30] New Zealand College of Midwives. Where to start becoming a midwife. 2016-12-08. Available from: <http://midwife.org.nz/education/.html>.
- [31] Midwifery Council. Types of midwifery education in New Zealand. 2016 Dec 8. Available from: <https://www.midwiferycouncil.health.nz/professional-standards/types-midwifery-education-new-zealand.html>.
- [32] New Zealand College of Midwives. Regulation. 2016 Dec 8. Available from: <https://www.midwife.org.nz/in-new-zealand/regulation.htm>.
- [33] New Zealand College of Midwives. To register as midwife in NZ. 2016 Dec 8. Available from: <https://www.midwife.org.nz/in-new-zealand/regulation.html>.
- [34] Midwifery Council. Why are midwives regulated. 2016 Dec 8. Available from: <https://www.midwiferycouncil.health.nz/professional-standards/why-are-midwives-regulated.html>.
- [35] World Health Organization. Strengthening midwifery toolkit, Module 5: development midwifery curriculum for safe motherhood: guideline for midwifery education programmes. Geneva: WHO; 2005.
- [36] UNFPA, ICM, WHO. The statement of world' miwifery: a universal pathway. A Women's Right to Health; 2014.