

Comparative assessment of Iranian midwifery education curriculum against the International Confederation of Midwives (ICM) global standards for midwifery education

Narjes Bahri¹, Mahbubeh Tabatabaiechehr², Robab Latifnejd Roudsari^{3,4,*}

¹Department of Midwifery, School of Medicine, Social Development and Health Promotion Research Center, Gonabad University of Medical Sciences, Gonabad, Iran

²Geriatric Care Research Center, Department of Midwifery, School of Nursing and Midwifery, North Khorasan University of Medical Sciences, Bojnurd, Iran

³Nursing and Midwifery Care Research Center, Mashhad University of Medical Sciences, Mashhad, Iran

⁴Department of Midwifery, School of Nursing and Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran

*Mashhad University of Medical Sciences, Ebne-Sina Street Mashhad, 9137913199 Iran

Tel: +98 5138598016

Fax: +98 5138597313

Email:

latifnejadr@mums.ac.ir

Background: The aim of this study was to evaluate the strengths and weaknesses of the midwifery curriculum in Iran according to ICM Global Standards for Midwifery Education.

Methods: In this comparative study the Iranian midwifery education curriculum in the part of 'Competency in provision of care during pregnancy' was compared against ICM Global Standards for Midwifery Education (2010) by three researchers using a checklist. In both domains of basic knowledge (35 items) and skills (26 items), the entire Iranian midwifery curriculum was searched for similar content, as well as the number of related courses. Also evaluation was done for 'adequacy' of each item by a 4 point Likert scale (adequate, relatively adequate, relatively inadequate, inadequate).

Results: Quality assessment of the Iranian midwifery curriculum in terms of basic knowledge and skills regarding 'Competency in Provision of Care during Pregnancy' showed that from 35 items in basic knowledge domain, 47.57% were adequate, 15% relatively adequate, 2.85% relatively inadequate and 2% were inadequate. In the domain of skills from 26 items, 53.85% were adequate and 46.15% were relatively inadequate. In relation to two items there was no related content in the Iranian curriculum including "signs of female genital cutting and its effects on reproductive health" and "normal limits of results from community-relevant laboratory tests commonly performed in pregnancy".

Conclusion: The curriculum of midwifery education in Iran covers ICM Global Standards for Midwifery Education (2010) in 'Competency in Provision of Care during Pregnancy' except for two items. Therefore, not covering these important issues is one of the most noteworthy weaknesses of this curriculum and should be considered in the future reforms.

Keywords: Curriculum, Education, International Confederation of Midwives, Midwifery

بررسی تطبیقی کوریکولوم آموزش ماماها با استانداردهای جهانی کنفدراسیون بین المللی ماماها برای آموزش ماماها

زمینه و هدف: مراقبت های با کیفیت ماماها یکی از مهمترین راهکارهای پیشگیری از مرگ و میر مادری در دنیا می باشد و در این راستا تربیت ماماها زنده و ماهر نقشی بسیار اساسی دارد. هدف از انجام این مطالعه ارزیابی نقاط ضعف و قوت کوریکولوم ماماها ایران در مقایسه با استانداردهای جهانی کنفدراسیون بین المللی ماماها (ICM) برای آموزش ماماها بود.

روش: در این مطالعه تطبیقی، کوریکولوم آموزش ماماها ایران با بخشی از استانداردهای جهانی آموزش ماماها که در سال ۲۰۱۰ توسط ICM پیشنهاد شده است، مقایسه شد. بخش مورد بررسی "مراقبت های دوران بارداری" بود که بر اساس فهرست استاندارد ICM شامل ۳۵ آیتم در حیطه ی دانش و ۲۶ آیتم در حیطه ی مهارت است. بررسی و جستجو توسط سه محقق بصورت جداگانه در چک لیستی که بر اساس آیتم های ICM تهیه شده بود، انجام شد و سپس در یک جلسه مشترک نتایج جمع بندی شد. در این بررسی وجود یا عدم وجود محتوی مرتبط با هر آیتم و همچنین تعداد دروسی که مرتبط با محتوای هر آیتم بودند، مد نظر بودند. در مرحله بعدی نتایج این بررسی بصورت کیفی در مقیاس چهارتایی لیکرت (کافی، نسبتاً کافی، نسبتاً ناکافی و ناکافی) دسته بندی شد.

یافته ها: نتایج نشان داد که از بین آیتم های پیشنهاد شده ی ICM در حیطه دانش پایه در مورد مراقبت های دوران بارداری، ۴۷/۵۷ درصد آیتم ها پوشش محتوایی کافی، ۱۵ درصد آیتم ها پوشش نسبتاً کافی، ۲/۸۵ درصد از آیتم ها پوشش نسبتاً ناکافی و ۲ درصد از آیتم ها پوشش ناکافی داشتند. در بین آیتم های پیشنهاد شده ی ICM در حیطه مهارت های مورد نیاز در مورد مراقبت های دوران بارداری، ۵۳/۸۵ درصد از آیتم ها پوشش کافی و ۴۶/۱۵ درصد پوشش نسبتاً ناکافی داشتند. دو آیتمی که هیچ محتوای مرتبطی در کوریکولوم نداشتند شامل "علائم ختنه ی زنان و اثرات آن بر بهداشت باروری" و "محدودیت های طبیعی نتایج آزمایشات روتین دوران بارداری در جامعه" بودند.

نتیجه گیری: به جز دو آیتم ذکر شده، کوریکولوم ماماها ایران تمامی آیتم های پیشنهادی ICM در ارتباط با استانداردهای آموزش ماماها در حیطه ی مراقبت های ماماها را دارا می باشد. بنابراین پیشنهاد می شود که در بازنگری بعدی کوریکولوم آموزش ماماها ایران این دو آیتم نیز مد نظر قرار گیرند.

واژه های کلیدی: آموزش، کنفدراسیون بین المللی ماماها، کوریکولوم، ماماها

مقایسه برنامه آموزشی ایرانی در تعلیم القبالة في إيران مع المعايير الدولية للقبالة في الاتحاد الدولي لتعليم القبالة

الخلفية والهدف: تعتبر الرعاية النوعية التي تقوم بها القابلات من أهم التدابير الوقائية في تخفيض معدل وفيات الأمهات في العالم، ومن المهم في هذا الصدد تعليم القابلات الماهرات والنخبة وله دور مهم. كان الغرض من هذه الدراسة هو تقييم نقاط الضعف والقوة في تعليم القبالة في إيران بالمقارنة مع المعايير الدولية لاتحاد القبالة (ICM) لتعليم القبالة.

الطريقة: في هذه الدراسة المستعرضة، تمت مقارنة منهج القبالة الإيرانية بالمعيار الدولي لتعليم القبالة، الذي اقترحه ICM في عام ۲۰۱۰. كان القسم "الرعاية أثناء الولادة"، والذي يعتمد على قائمة ICM القياسية لـ ۳۵ عنصراً في مجال المعرفة و ۲۶ عنصراً في مجال المهارة. أجرى البحث ثلاثة باحثين بشكل منفصل في قائمة مراجعة أعدت على أساس عناصر ICM ثم تم تلخيصها وجمعها في جلسة مشتركة. في هذه الدراسة، تم النظر في وجود أو عدم وجود محتوى مرتبط بكل عنصر، بالإضافة إلى عدد الدروس المرتبطة بمحتوى كل عنصر. في الخطوة التالية، تم تصنيف نتائج الدراسة بشكل نوعي في مقياس ليكرت الرباعي (كافية وكافية نسبياً وغير كافية وغير كافية نسبياً).

النتائج: أظهرت النتائج أنه من بين العناصر المقترحة في ICM في مجال المعرفة الأساسية حول الرعاية السابقة للولادة، ۴۷.۵۷٪ من البنود كانت التغطية كافية، ۱۵٪ من المواد كانت تغطية كافية نسبياً، ۲.۸۵٪ من العناصر كانت التغطية غير كافية نسبياً و ۲٪ من البنود كانت تغطية غير كافية. بين العناصر المقترحة من ICM عرضت من حيث المهارات اللازمة للرعاية قبل الولادة، ۵۳.۸۵٪ من البنود كانت التغطية الكافية و ۴۶.۱۵٪ من التغطية غير كافية نسبياً. يتضمن العنصران اللذان ليس لديهما أي محتوى ذي صلة في المناهج الدراسية "أعراض ختان الإناث وتأثيراتها على الصحة الإنجابية" و "القبود الطبيعية لاختبارات الحمل الروتينية في المجتمع".

الخلاصة: ما عدا البندين المذكورين أعلاه، فإن منهج القبالة الإيرانية لديه جميع العناصر المقترحة من ICM فيما يتعلق بمعايير تعليم القبالة في رعاية القبالة. لذلك، يُقترح النظر في هذين البندين في المراجعة التالية لمنهج القبالة الإيرانية.

الكلمات المفتاحية: التعليم، الاتحاد الدولي للقابلات، منهج دراسي، القبالة

ایران میں میڈوائفری تعلیمی نصاب کا میڈوائفری انٹرنیشنل کنفیڈریشن کے معیارات کے ساتھ موازنہ

بیگ گراؤنڈ: زچہ کی شرح اموات میں کمی لانے میں میڈوائفری کی معیاری خدمات بنیادی کردار ادا کرتی ہیں۔ اسی ہدف کے پیش نظر میڈوائفری کی ٹریننگ بنیادی اہمیت کی حامل ہوتی ہے۔ اس تحقیق کا ہدف ایران میں میڈوائفری کی تعلیمی نصاب کا میڈوائفری انٹرنیشنل کنفیڈریشن ICM کے معیارات کے ساتھ موازنہ کرنا ہے۔ ہم نے روش: اس تحقیق میں 'حمل کے دوران احتیاطی تدابیر' کا جائزہ لیا۔ اس موضوع میں آئی سی ایم کی فراہم کردہ فہرست کے مطابق پینتیس آئٹمز تھے اور چھبیس آئٹمز میں مہارت حاصل کرنا ضروری ہے۔ اس کے بعد ایک مشترکہ جلسے میں نتائج کا جائزہ لیا گیا۔ اس جلسے میں یہ دیکھا گیا کہ برائٹن کے ساتھ نصابی مواد موجود ہے یا نہیں۔ نصابی مواد جو برائٹن کے ساتھ تھا اس پر تاکید کی گئی۔ اس کے بعد لائٹ کرٹ فور اسکیل سے اس مواد کی درجہ بندی کی گئی۔

نتیجے: اس تحقیق کے نتائج سے معلوم ہوتا ہے کہ آئی سی ایم کی نظر میں حمل کے دوران احتیاطی تدابیر کے نصاب کو سینتالیس فیصد نصابی مواد کی مدد حاصل تھی جبکہ بعض آئٹمز کو کافی مدد حاصل تھی اور بعض آئٹمز کو ناقص مواد کی مدد حاصل تھی، انتہائی نگہداشت کے زمرے میں آئٹمز کو تین فیصد مدد حاصل تھی اور چھبالیس فیصد آئٹمز ناقص تھے۔ جن آئٹمز کو تعلیمی نصاب میں شامل نہیں کیا گیا تھا ان میں خواتین کے ختنے اور پچھیدا کرنے کی صلاحیت پر اس کے اثرات اور معاشرے میں حاملہ خواتین کے طبی معائینوں میں آنے والی رکاوٹوں جیسے آئٹمز بھی تھے۔

سفارش: مذکورہ بالا دو مضامین کے علاوہ ایران میں میڈوائفری کی تعلیمی نصاب میں آئی سی ایم کے فراہم کردہ تمام آئٹمز شامل ہیں۔ اس کے پیش نظر یہ سفارش کی جاتی ہے کہ ایران میں میڈوائفری کی تعلیمی نصاب میں مذکورہ آئٹمز کو بھی شامل کر لیا جائے۔

کلیدی الفاظ: میڈوائفری، تعلیمی نصاب، ایران، میڈوائفری انٹرنیشنل کنفیڈریشن

INTRODUCTION

Every year, 10-15 million women suffer from severe or long-lasting illnesses or disabilities caused by complications during pregnancy or childbirth (1) and 358,000 women die annually due to pregnancy, intrapartum and postpartum complications and unfortunately 99% of these deaths occur in developing countries (2, 3), while 80% of them are preventable with skilled staffs (4).

Reduction of maternal mortality by 75% until 2015 is one of the most significant Millennium Development Goals (MDGs), and the proportion of births assisted by skilled staffs is one of the indicators to measure the achievement of this important goal (5). A quality midwifery service is central to reduce maternal, newborn and infant mortality and morbidity worldwide and to achieve this quality service, the recruitment and retention of an effective trained workforce is essential (6). The state of the World's Midwifery report 2011 claims that strengthening midwifery capacities and services is the key to accelerate progress towards MDGs 4 and 5. Provided that they are trained, equipped, supported and authorized to do so, midwives can help to avert over 60% of all maternal and newborn deaths, which is equal to as many as 3.6 million lives saved by 2015 (7). It has been claimed that the availability of a health provider with specific midwifery skills and competencies, particularly life-savings skills, is acknowledged to be a key component of any safe motherhood strategy (8, 9). As identified in the International Confederation of Midwives (ICM), midwives are specialists in normal pregnancy, labor and birth and the postnatal period, with an important role to play as primary maternity care providers (3). Therefore midwives have a key role in achieving MDGs goal related to reduce the Maternal Mortality rate (MMR), Infant Mortality Rate (IMR) and health of communities (10). The United Nations pays special attention to the quality of midwifery service and to achieve this quality the recruitment and retention of educated and trained midwifery workforce is essential (11).

Empowerment in maternal and newborn health is achieved when midwives receive a firm and standard education. This means that although curricula vary between and within countries, all must meet particular requirements of clinical and theoretical hours and specific skills (12). Standard and qualified training programs are suggested by the International Confederation of Midwives (ICM) and midwives must be educated and trained according to the Global Standards for Midwifery Education (13). The International Confederation of Midwives is a global association representing approximately 250,000 midwives in 108 member associations in 98 countries (14).

The ICM Global Standards for Midwifery Education (2010) is one of the essential pillars of ICM's efforts to strengthen midwifery worldwide by preparing fully qualified midwives to provide high quality, evidence-based health services for women, newborns, and childbearing families. ICM's pillars include updated core competencies for basic midwifery practice, midwifery education, midwifery regulation and strong midwifery associations. The education standards were developed in tandem with the update of the Essential

Competencies for Basic Midwifery Practice (2010) as these competencies define the core content of any midwifery education program. The education standards were also completed in harmony with midwifery standards of practice and regulation (15).

Having global standards for midwifery education available to countries and regions, most especially those without such standards currently, will help to set benchmarks for the preparation of a midwife based on global norms. Standards also help to define the expectations for the performance (competencies) and scope of midwifery practice for a given country or region needed to promote the health of women and childbearing families. These minimal education standards can be expanded to include higher expectations and to reflect country specific needs for curriculum content and cultural appropriateness (15).

ICM suggested that using the ICM Global Standards for Midwifery Education for countries with existing standards for midwifery education, who may wish to compare the quality of their programs to these minimum standards (15). The aim of this study was to evaluate strengths and weaknesses of midwifery curriculum in Iran according to ICM Global Standards for Midwifery Education in the section of 'Competency in Provision of Care during Pregnancy'.

METHODS

This comparative study was conducted using the ICM Global Standards for Midwifery Education (2010) to evaluate the educational curriculum of midwifery in Iran. The midwifery education standards were developed globally using a modified Delphi survey process during 2009-2010, and represent the minimum expected for a quality midwifery program, with emphasis on competency-based education rather than academic degrees (16). The ICM Global Standards for Midwifery Education (2010) suggest six categories for the evaluation including: organization and administration (6 sub-categories), midwifery faculty (8 sub-categories), student body (with 7 sub-categories), curriculum (6 sub-categories), resources; facilities and services (5 sub-categories) and assessment strategies (5 sub-categories) (13). We assessed the midwifery education curriculum of Iran against the category of curriculum of ICM Global Standards for Midwifery Education (2010). We used the curriculum mapping tool. The wording of the ICM Essential Competencies for Basic Midwifery Practice has been amended in this document. This mapping tool is focused on the basic knowledge, professional behaviors and skills and/or abilities that the individual midwife should know/demonstrate/perform. This mapping tool is focused on the curriculum of studies (17). In this mapping tool competency-based midwifery education program is evaluated in seven main domains, including:

- 1- Competency in the social, epidemiologic and cultural context of maternal and newborn care: this domain includes 21 items of knowledge, ten of specific professional behaviors and six item of skill or ability, 37 items in total.
- 2- Competency in the pre-pregnancy care and family planning: this domain includes 15 items of knowledge, no item of specific professional behaviors and 11 items of skill or ability, 36 items in total.

- 3- Competency in the provision of care during pregnancy: this domain includes 35 items of knowledge, no items of specific professional behaviors and 26 items of skill or ability, 61 items in total.
- 4- Competency in the provision of care during labor and birth: this domain includes 26 items of knowledge, no item of specific professional behaviors and 43 items of skill or ability, 69 items in total.
- 5- Competency in the provision of care for women during the postpartum period: this domain includes 22 items of knowledge, no item of specific professional behaviors and ten items of skill or ability, 32 items in total.
- 6- Competency in the postnatal care of the newborn: this domain includes 18 items of knowledge, no item of specific professional behaviors and 18 items of skill or ability, 36 items in total.
- 7- Competency in the facilitation of abortion-related care: this domain includes ten items of knowledge, no item of specific professional behaviors and eight items of skill or ability, 18 items in total.
- 8- In the current study, we compared the Iranian midwifery education curriculum in the third competency: 'competency in provision of care during pregnancy' of ICM Global Standards for Midwifery Education (2010). The curriculum was examined against ICM standards by three researchers using a check list contained three columns including "the items", "number of related courses", and "adequacy". In both domains of basic knowledge (35 items) and skills (26 items) related to 'competency in provision of care during pregnancy', we searched the entire Iranian midwifery curriculum for similar content, and then we identified related courses by numbers. Also we evaluated 'adequacy' of each item by a 4 point Likert scale (adequate, relatively adequate, relatively inadequate, and inadequate).
- 9- The results were reported using descriptive statistics in terms of the related courses for each item and also number (percent) in terms of adequacy of items.

RESULTS

The results of comparing the Iranian midwifery curriculum against ICM standards, the number of related courses and quality assessment for each item in Basic knowledge domain in the context of 'competency in provision of care during pregnancy' are shown in Table 1. This table demonstrates the majority of items covered by the Iranian midwifery curriculum; but in two items there is no related content in this curriculum. These items are: "signs of female genital cutting and its effects on reproductive health" and "normal limits of the results from community-relevant laboratory tests commonly performed in pregnancy".

Table 2 shows the results of comparing Iranian midwifery curriculum against ICM standards, the number of related courses and quality assessment for each item in skills domain in the context of 'Competency in provision of care during pregnancy'. This table demonstrates all of the items covered by the Iranian midwifery education curriculum.

Quality assessment distribution of the Iranian midwifery curriculum in terms of basic knowledge and skill domain in the context of 'competency in provision of Care during

pregnancy' shows that from 35 items in basic knowledge domain, 47.57 % were adequate, 15 % relatively adequate, 2.85 % relatively inadequate and 2% were inadequate. In Skill domain from 26 items, 53.85% were adequate and 46.15% were relatively inadequate (table 3).

DISCUSSION

This study showed that the Iranian curriculum of midwifery education regarding 'competency in provision of care during pregnancy' covers the ICM Global Standards for Midwifery Education (2010). With respect to the knowledge domain, 90.42% of the items were "adequate" or "relatively adequate" and only 8.56% of items were "relatively inadequate" or "inadequate". In the domain of skills related to 'competency in provision of care during pregnancy', the Iranian curriculum of midwifery education had a better condition compared to the knowledge domain; as 100% of items were covered by the Iranian curriculum.

The Iranian curriculum of midwifery education in comparison with some countries in Asia and the Middle East has a better situation and this curriculum covers the ICM Global Standards for Midwifery Education (2010) carefully. The International Confederation of Midwives (ICM) and United Nations Population Fund (UNPAF) evaluated the situation of midwifery education, regulation and association in six South Asian countries (Afghanistan, Bangladesh, Bhutan, India, Nepal, and Pakistan) in 2010. According to this study only Afghanistan and Bangladesh had a midwifery curriculum based on ICM's essential competences for basic midwifery practice (18). Also in the mentioned study, a content analysis was done on the open questions. The results showed that in Afghanistan, the main concern of participants was 'Inadequate formal midwifery education'. In Pakistan comments reflected the inadequacy of formal midwifery education and inadequacies in competency-based education curriculum. Respondents from Bangladesh highlighted that legislation to address the education and deployment of midwives is required (18). Bogren and et.al suggested that midwifery education curriculum in these countries should be reformed based on international standard programs such as ICM Global Standards for Midwifery Education (18).

Also Apay et.al (2012) assessed the situation of midwifery education in Turkey. They stated that "midwifery education in Turkey has reached to undergraduate level through a gradual and slow progress" (19). Shaban and Leap (2012) reviewed midwifery education curriculum documents in Jordan. According to their findings, they suggested that there is no regulatory standards for the accreditation of midwifery education program in Jordan, including competency standards and minimum clinical practice requirements (20). Another study was done in order to assess the quality of training of community midwives in Pakistan. Results showed that the knowledge and skills of community midwives are insufficient. Due to the findings, the researcher recommended to allocate more time to clinical training and the theory to practice ratio of 25:75 that should reach to 40:60. They suggested to provide additional support to teachers for developing academic calendars and course plans (21).

Table 1. Competency in provision of care during pregnancy in the domain of basic knowledge			
	ICM Competency	Course number	Adequacy
	Basic knowledge		
1	Human anatomy and physiology	01- 03- 04- 05- 06- 25- 27	Adequate
2	Biology of human reproduction	02-07-25-26-27-67	Adequate
3	Signs and symptoms of pregnancy	27-28-31-38- 39	Relatively adequate
4	Tests for confirmation of pregnancy	27- 28	Relatively adequate
5	Diagnosis of ectopic pregnancy	31	Relatively adequate
6	Principles and methods for dating pregnancy	27- 28- 31- 38	Adequate
7	Components of antenatal history and physical examination	27- 28- 38- 39	Adequate
8	Signs of female genital cutting and effects on reproductive health	-	Inadequate
9	Normal limits of results from community-relevant laboratory tests commonly performed in pregnancy	-	Inadequate
10	Normal changes related to progression of pregnancy	27- 28- 29- 38- 45	Adequate
11	Indications and implications of deviations from expected fundal growth patterns	27- 28	Relatively adequate
12	Fetal risk factors requiring transfer of women to higher levels of care during the antenatal period	23- 27- 34- 36	Adequate
13	Normal psychological changes in pregnancy; indicators of stress	27- 38- 39	Relatively adequate
14	Non-pharmacological measures for relief of common discomforts of pregnancy	27- 46- 70	Relatively adequate
15	Assessment of fetal well-being (heart tones, activity)	27- 28- 29- 30- 31- 46	Adequate
16	Nutritional needs during pregnancy	21-27- 46- 55- 71	Adequate
17	Health education topics relevant during pregnancy	27- 46	Relatively adequate
18	Principles of pharmacokinetics of drugs commonly taken during pregnancy	13-14	Adequate
19	Maternal and fetal effects of prescribed and illicit drugs taken during pregnancy	14- 33- 46	Relatively adequate
20	Maternal and fetal effects of smoking and alcohol during pregnancy	17- 27- 46	Relatively adequate
21	Topics important to birth planning	27- 29- 60	Adequate
22	Topics important to preparation of home for the newborn	18- 29- 46- 70	Relatively adequate
23	Signs and symptoms of the onset of labor	27- 28- 29- 30-	Adequate
24	Relaxation and pain relief methods for use during labor	27- 29- 30- 38- 39- 56	Adequate
25	Signs and symptoms of conditions that are life-threatening to woman or fetus during pregnancy	11- 23- 27- 29- 31- 38- 73	Adequate
26	Information relevant to counseling or care of the HIV+ woman, and prevention of maternal to child transmission	19- 42	Relatively inadequate
	Signs and symptoms and indications for referral for complications that arise during pregnancy		
27	Diabetes	19- 33- 41	Adequate
28	Cardiac conditions	19- 33- 41- 42	Adequate
29	Mal-presentations/abnormal lies	29- 31	Relatively adequate
30	Placental disorders	29- 31	Adequate
31	Pre-term labor	31	Relatively adequate
32	Post-dates pregnancy	31	Relatively adequate
33	Principles of malaria prevention and control	09- 42	Adequate
34	Pharmacology of de-worming in pregnancy	09- 13- 19- 33- 42	Adequate
35	Preparation for breastfeeding	46-55	Relatively adequate

Considering the ICM Global Standards for Midwifery, education of midwives is important due to WHO statement, which emphasizes that qualified midwives provide one of the most effective interventions to reduce deaths in pregnancy

and childbirth(22, 23). Fullerton et al. stated that in order to be considered as a fully qualified midwife, a formal education is required based on ICM Essential Competencies for basic midwifery (24). Conversely, a health care system

Table 2. Competency in provision of care during pregnancy in the domain of skills

ICM Competency		Course number	Adequacy
Skills			
1	Conduct of an interval antenatal history	27- 28- 33- 38- 39	Adequate
2	Physical examination	27- 28- 33- 38- 39	Adequate
3	Assessment of maternal vital signs	27- 28- 33- 38- 39	Adequate
4	Assessment of and provision of advice about maternal nutrition	21- 27- 46- 55- 71	Adequate
5	Abdominal assessment	27- 28- 38- 39	Adequate
6	Fetal growth assessment (manual)	27- 28- 38- 39	Adequate
7	Assessment of fetal growth, placental placement, and amniotic fluid volume (ultrasound) (optional)	27- 51	Relatively adequate
8	Assessment of fetal heart rate and activity	27- 28- 29- 31	Adequate
9	Monitoring of fetal heart rate (ultrasound) (optional)	27- 28- 29- 51	Adequate
10	Pelvic examination, including uterine sizing	27- 28	Adequate
11	Clinical pelvimetry	27- 28- 29	Adequate
12	Calculation of the estimated date of delivery	27- 28	Relatively adequate
13	Counseling and health education about pregnancy progression and danger signs	27- 28- 33- 46- 65- 70	Relatively adequate
14	Teaching/demonstrating methods to decrease common discomforts of pregnancy	27- 28- 45- 70	Relatively adequate
15	Providing guidance for preparation for labor, birth and parenting	18- 27- 28- 29- 46- 60- 65- 66- 70	Relatively adequate
Identification of variations from normal pregnancy; independent or collaborative management of:			
16	Low or inadequate maternal nutrition	21- 27- 33- 34- 45- 55- 72	Relatively adequate
17	Inadequate of excessive uterine growth	27- 28- 38- 39	Relatively adequate
18	Signs and symptoms indicating onset of pre-eclampsia	31- 32	Relatively adequate
19	Vaginal bleeding	29- 31- 32- 43	Relatively adequate
20	Multiple gestation and/or abnormal lie	31- 32- 34	Relatively adequate
21	Intrauterine fetal death	11- 23- 27- 29- 31- 38- 73	Adequate
22	Rupture of membranes prior to term	31- 32	Relatively adequate
23	HIV positive status and/or AIDS	02- 08- 19- 42	Adequate
24	Hepatitis B and/or C positive	08- 19- 42	Adequate
25	Midwifery provision of selected, life-saving drugs (in accord with legal/regulatory authority)	13- 33- 56- 73	Adequate
26	Identification of deviations from normal pregnancy progression and how to implement referral	23- 29- 31- 33- 42- 73	Relatively adequate

Table 3. Frequency distribution of quality assessment of Iranian midwifery curriculum in term of basic knowledge and skill domains related to 'Competency in Provision of Care during Pregnancy'

Competency	Adequate Number (%)	Relatively Adequate Number (%)	Relatively Inadequate Number (%)	Inadequate Number (%)
Basic knowledge (35 items)	17 (47.57)	15 (42.85)	1 (2.85)	2 (5.71)
Skills (26 items)	14 (53.85)	12 (46.15)	0 (0)	0 (0)

that relies on midwives who are less than competent to provide care throughout their professional careers is dangerous to women, newborns, families and communities (1).

The curriculum of midwifery education in Iran covers ICM Global Standards for Midwifery Education (2010) in relation to 'competency in provision of care during pregnancy'

except for two items. One of the items that was not found in the Iranian curriculum is: "Signs of female genital cutting and its effects of reproductive health", although this matter is very important due to high incidence of female genital cutting in the west and southwest region of Iran. The incidence of female genital cutting had been reported to be 55.7% to 70% in these regions (25,26). So not covering this important issue by the Iranian curriculum of midwifery education is one of the most noteworthy weaknesses of this curriculum and should be considered in future reforms.

Another item that is not covered by the Iranian curriculum of midwifery education is: "Normal limits of results from community-relevant laboratory tests commonly performed in pregnancy". Nowadays using pregnancy kits is very

common, so it is necessary that midwifery students have enough information about these kits and interpretation of their results in order to help women and counsel them. We suggest that this item be considered in the future reforms of midwifery education curriculum of Iran.

ACKNOWLEDGMENTS

We specially thank all the researchers and scientists that have developed ICM Global Standards for Midwifery Education as a valuable reference for midwifery education and have provided us a treasure of valuable knowledge in this field.

Conflicts of interest: There were no conflicts of interest in conducting this research.

REFERENCES

- Campbell J, Fauveau V, Hoop-Bender P, Matthews Z, McManus J. The state of the world's midwifery 2011 [Internet]. New York: UNFPA; 2011. Chapter 1, Midwifery around the world. [cited 2018 Dec 10]. Available from: https://www.unfpa.org/sites/default/files/pub-pdf/en_SOWMR_Full.pdf
- Hogan MC, Foreman KJ, Naghavi M. Maternal mortality for 181 countries, 1980-2008: a systematic analysis of progress towards millennium development goal 5. *The Lancet* 2010; 375:1609-23.
- WHO, UNICEF, The world bank. Trends in maternal mortality 1990 to 2008: Estimates. World Health Organization, Geneva; 2010.
- Khan KS, Wojdyla D, Say L, Gulmezoglu AM, VanLook PF. WHO analysis of causes of maternal death: a systematic review. *The Lancet* 2006; 367:1066-74.
- Adegoke AA, Mani S, Abubakar A, Van den Broek N. Capacity building of skilled birth attendants: a review of pre-service education curricula. *Midwifery* 2013; 29(7):e64-72. doi: 10.1016/j.midw.2012.08.009.
- Albarran JW, Rosser EA. The challenges facing midwifery educators in sustaining a future education workforce. *Midwifery*. 2014; 30(8):949-55. doi: 10.1016/j.midw.2013.07.016.
- United Nations Population Fund. Strengthening Midwifery [Internet]. [cited 2018 Dec 10]. Available from: <http://www.unfpa.org/webdav/site/global/shared/documents/Midwives/Midwifery%20brochure-Sep13.pdf>.
- Bullough C, Meda N, Makowiecka K, Ronsmans C, Achadi EL, Hussein J. Current strategies for the reduction of maternal mortality. *BJOG*. 2005; 112(9):1180-8.
- Fullerton JT, Johnson PG, Thompson JB, Vivio D. Quality considerations in midwifery pre-service education: exemplars from Africa. *Midwifery* 2011; 27(3):308-15. doi: 10.1016/j.midw.2010.10.011.
- The World Health Report 2005-Make every mother and child count [Internet]. [cited 2018 Dec 10] Geneva, WHO. Available from: <http://www.who.int/whr/2005/en>.
- Adequate midwifery could save 3.6 million lives, new report shows [Internet]. 2011 [updated 20 June 2011; cited 2018 Dec 10]. Available from: <http://www.unfpa.org/public/home/news/pid/7859>.
- Carolan-Olah M, Kruger G. Final year students' learning experiences of the bachelor of midwifery course. *Midwifery* 2014; 30(8):956-61. doi:10.1016/j.midw.2013.07.010.
- International Confederation of Midwives. Companion guidelines for ICM Global Standards for Midwifery Education [Internet]. 2010; amended June 2013, [cited 2018 Dec 10]. Available from: www.internationalmidwives.org.
- International Conference of Midwives, [Internet]. 2012. [cited 2018 Dec 10] Available from: <http://www.internationalmidwives.org/Whoweeare/tabid/1087/Default.aspx>.
- International Confederation of Midwives. Global Standards for Midwifery Education 2010, Amended [Internet]. 2013. [cited 2018 Dec 10]. Available from: <http://www.internationalmidwives.org>.
- Fullerton JT, Thompson JB, Severino R; The International Confederation of Midwives essential competencies for basic midwifery practice. An update study:2009-2010. *Midwifery* 2011; 27(4):399-408. doi: 10.1016/j.midw.2011.03.005.
- International Confederation of Midwives. 2013. Curriculum mapping tool: concordance of midwifery Curriculum with ICM essential competencies for basic midwifery practice [Internet]. [revised 2013 May; cited 2018 Dec 10]. Available from: <http://www.internationalmidwives.org>.
- Bogren MU, Wiseman A, Berg M. Midwifery education, regulation and association in six South Asian countries: a descriptive report. *Sex Reprod Health* 2012; 3(2):67-72.
- Apay SE, Kanbur A, Ozdemir F, Pasinlioglu T. Midwifery education in Turkey. *Coll Antropol*. 2012; 36(4):1453-6.
- Shaban I, Leap N. A review of midwifery education curriculum documents in Jordan. *Women Birth*. 2012;25(4):e47-55. doi: 10.1016/j.wombi.2011.09.001.
- Assessment of the quality of training of community midwives in Pakistan: September 2010. [Internet]. [cited 2018 Dec 10]. Available from: http://www.trfpakistan.org/LinkClick.aspx?fileticket=jNucN7xoy_E%3D&tabid.
- Making pregnancy safer: The critical role of the skilled attendant. A joint statement by WHO ICM FIGO [Internet]. Geneva: World Health Organization; 2004. [cited 2018 Dec 10]. Available from: <http://whqlibdoc.who.int/publications/2004/9241591692.pdf?ua=1>.
- Fauveau VS, Sheratt Della R, De Bernis Luc. Human resources form health: multi-purpose or specialists? *Hum Resour Health* 2008; 6:21.
- Fullerton J, Thompson JB, Lacey M. Examining Q4the evidence for The International Confederation of Midwives' essential competencies for midwifery practice. *Midwifery* 2005; 21:2-13.
- Ahadi H, Khadivzadeh T, Seyyedlavi GH, Esmaili H. Women's circumcision in Minab: prevalence, knowledge, attitude. *J Qazvin Univ Med Sci* 2003; 7(4):14-20. Persian.
- Pashaie T, Rahimi A, Ardalan A, Majlesi F. Prevalence of female genital mutilation and factors associated with it among women consulting health centers in Ravansar City, Iran. *SJSPH*. 2012; 9(4):57-68. Persian.