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Essential competencies for three grades of midwives in China

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ABSTRACT

Objective: To identify the essential competencies for different grades of midwives in China.

Methods: A nationwide modified Delphi process was implemented to amend and screen the indicators. Thirty expert panellists including practitioners (nurse-midwives), clinical managers, academic educators and obstetricians completed a two-round Delphi study through an electronic survey that was supplemented by an expert panel meeting for discussion of comments and suggestions.

Results: All panellists completed two rounds of Delphi study and at least 75% of them achieved a consensus on 224 items ($W1 = 0.150$, $W2 = 0.173$). Seven domains were established, namely, 'Professional quality', 'Antenatal care', 'Intrapartum care', 'Postnatal care', 'Neonatal care', 'Gynaecological care', 'Public health care & Integrative competency'. Generalised maternal and neonatal knowledge and perinatal care skills were set for 'junior' midwives, pathological care for 'senior' ones and supervisory abilities and promotion of discipline for 'expert' ones.

Conclusions: This research developed three grades of essential competencies for midwives in China. The next step will be assessment in clinical settings for further response. The set was in line with the concepts of International Confederation of Midwives under the domestic context. This set could be adopted as a reference in developing normalised midwifery practice, education and certification.

1. Introduction

The perinatal mortality has decreased continually in Mainland of China over the past two decades [1]. However, the caesarean section rate is the highest in the world (46.2%), especially for caesarean deliveries without indication [2]. This phenomenon is associated with great severe maternal and neonatal morbidity or mortality, long-term harmful outcomes and serious resource drain. The two-child policy can further aggregate this dilemma [3]. The problem may be caused by the deficiency in midwives' competencies and professional functions [4]. Midwives play a dominant role in reducing mortality and morbidity. Several evidence-based studies have shown that, compared with obstetrician-managed patients, nurse-midwife-managed patients have lower rates of caesarean section [5] and persistent maternal and newborn mortality [6,7]. The World Health Organisation, International Confederation of Midwives (ICM) and Federation of Gynaecology and Obstetrics made a joint statement, which highlights the crucial function of skilled attendants in promoting maternal and newborn health and urges that all skilled attendants must have the core midwifery skills [8].

However, midwives in Mainland of China cannot shoulder the urgent mission to promote natural delivery and the health of women and newborn as far as the current practicing quality or quantity level. Firstly, the skills and abilities of these health professionals need to be ascertained and improved. According to the newest government report in 2014, 47% of avoidable maternal mortalities are caused by the lack of knowledge and skills of medical staff [9], particularly in identifying and preliminarily disposal of life-threatening diseases. Secondly, midwife manpower resources are severely short. As reported by *The State of the World's Midwifery 2014*, the number of midwives in China is 0.158 per 1000 people (217,670 nurse-midwives in total) [1], which is one-twentieth of that in Sweden and Britain and one-tenth of that in Malaysia [8]. For historical reasons, professional roles of midwives have been partly replaced by those of obstetricians and nurses for decades. Midwives are supervised separately with internal criteria in their own hospitals. The practice divisions of labour amongst midwives, doctors and nurses are confusing, and the performance of medical order occupies the majority of midwives' duties. Therefore, the competencies of midwives are degenerating

gradually [10].

The underlying reasons are the absence of certification, management system, professional regulation and standardised education for midwives in Mainland China. Retrospective policy review has shown that midwifery education and management are gradually affiliated to nursing and clinical practice system. The education level falls far behind that of the two latter professions [11]. Midwives are constrained in a dilemma wherein professional title management belongs to nursing without specialised obstetrical standards and the practical management partly belongs to maternal clinical medicine without clear legal expression of 'midwife'. Although the employment of midwives is based on acquisition of 'Maternal and newborn care technical examination certificate' [12], routes to obtain the certificate varies between counties of provinces and are obscured and nonstandard.

To achieve the 'Health China 2030' project target [13], National Health and Family Planning Commission of the People's Republic of China has planned to strengthen resources on training of midwives and medical health services during the perinatal period from beginning to end [3]. All the above-mentioned missions should be supported by competency standards for midwives. To date, many countries and Hong Kong districts are setting up competency standards as guidelines for educators and practitioners and especially constituting the basic requisites for graduates [14]. *The State of the World's Midwifery 2014* suggested that China should construct a clear description of competencies for midwives [1]. In addition, ICM determined that the competency statements should be updated continually and timely because the evidence concerning health and practices evolves and health care need changes [15]. At the same time, ICM standards in 2013 claimed that additional competencies are described for midwives who engage in a broad scope of practice to make a difference in maternal or neonatal outcome beyond 'basic' or 'core' [16].

However, no integrated and clear standard of midwifery practice competencies exists in Mainland of China. Exceptions are studies of a relative scale including 5 domains and 54 items from 2012 ICM standard and are formulated mainly on intrapartum care [17]; and a pilot province-level operating instruction for obstetric nurses [18], such as familiarity with check route of doctors' advices, which is different from competency standards abroad. Therefore, the set of essential competencies for midwives need to be established imperatively. The *'Essential competencies for basic midwifery practice 2013'* were established and recommended by ICM and can serve as a model to draft the competencies. Indigenisation for Mainland China is necessary as its health system and responsibilities of midwives are different from those of other countries. The unequal competency levels should be considered on the basis of the areas, provinces and grades of hospital. Considering the lack of regulations of practice scope, this research focused on future policy planning development.

2. Methods

2.1. Previous framework

We developed this survey on the basis of a previous work, a pilot qualitative study, to draft the original item list [19]. In this survey, literature review and interview were implemented using competency models for guidance from ICM and countries with superior midwifery system (Table 1). On this basis, seven domains and 186 items were formulated. Competencies were defined as knowledge, skills and codes within the seven domains of 'Antenatal care', 'Intrapartum care', 'Postnatal care', 'Feminine care', 'Public health care & Integrative competency' and 'Professional quality'. Three grades for midwives were set following a model from Britain [20] as

follows: junior (novice and advanced beginner), senior (competent and proficient) and expert without seniority setting. Thus, we hypothesise that midwives who meet the standard will be certified as the corresponding grade. The list needs to be testified and worded deliberately through quantitative method in follow-up study. The survey design was tested for clarity by five nursing specialists.

2.2. Modified Delphi procedure

A modified Delphi technique was used to obtain consensus on the essential competencies for different grades of midwives in Mainland China. The draft was distributed by e-mails to panellists for modification of items. All procedures met the anonymous distribution requirement. In the first round, the panellists were given one week to respond for their five levels of agreement (i.e. 'strongly agree', 'somewhat agree', 'unable to comment', 'somewhat disagree' and 'strongly disagree') on items and their grades for each round. Open text fields were given to panellists to suggest edits or additional items, and their grades were encouraged. Documents of participant inclusion criteria and informed consent were collected. The second draft was presented to panellists with the reasons why their suggestions were adopted or not. The second round was the same as the first round for consensus. Items of over 75% agreement were again fed back to respondents in the second round to avoid duplicated proposal and confusion in an integral and structured list as they might bias the range of opinions from successive rounds [21].

2.3. Consensus criteria

According to considerable published literature, consensus percentages range from 51% to over 90% [21,22]. In this study, iterations continued until a 75% degree of consensus was achieved [23]. Kendall's rank-order correlation coefficient (W) was used to test the consensus [24]. Items were included simultaneously on the basis of the following criteria [23,25]:

● Central tendencies (median>3.5 and ratios of 'strongly agree' and 'somewhat agree' >75%);
● Tendency of dispersion (coefficient of variation, CV < 0.25);
● The item content validity was revised as Kappa >0.78. Items should be amended when 0.78 < Kappa<0.5 and deleted when Kappa<0. 5 [26].

We planned the iterations depending on the consensus level whereas strong disagreements remained on several fixed items in the first and second rounds. The preset consensus level was difficult to achieve. To avoid fatigue and thus spurious results in the subsequent round [24], we halted the iteration and launched an expert panel meeting to discuss the divergence and then validate the draft.

2.4. Panel meeting

Controversial items after Delphi iterations were discussed in an analogue of expert panel (also known as the nominal group technique). Pre-existing group relationship was chosen depending on the population strata included and the scope of this research sampling [27,28]. We recruited 14 experts in the end [29]. The meeting was guided by a skilful facilitator. Spoken opinions and nonverbal behaviours of each participant were recorded. After group discussion and debating process, written opinions were gathered as the terminal decision. The study spanned from December 2013 to December 2014. The research had been rigorously reviewed in terms of ethics from the design stage to the end