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Self-assessed confidence of students on selected midwifery skills: Comparing diploma and bachelors programmes in one province of India

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ABSTRACT

Objective: There are two integrated pre-service education programmes for nurses and midwives in India; a diploma in General Nursing and Midwifery (GNM) and bachelor's in nursing (B.Sc. nursing). This study assessed and compared confidence of final-year students from these two programmes for selected midwifery skills from the list of midwifery competencies given by the International Confederation of Midwives (ICM).

Design: A cross-sectional survey.

Participants: 633 final-year students, from 25 educational institutions randomly selected, stratified by the type of programme (diploma/bachelor), and ownership (private/government) from the Gujarat province.

Data collection and analysis: Students assessed their confidence on a 4-point scale, in four midwifery competency domains-antepartum, intrapartum, postpartum, and newborn care. Skill statements were reduced to subscales for each competency domain separately through Principle Component Analysis. Crude and adjusted odds ratios with 95% CI were calculated for students with high confidence (≥75th percentile on each subscale) and not high (all others) between diploma and bachelor students.

Findings: The diploma students were 2–4 times more likely to have high confidence on all subscales under antepartum, intrapartum, postpartum and newborn care compared to the bachelor students. Though both groups had less hands-on clinical practice during their education, more diploma students could fulfil the requirements of attending recommended number of births compared to the bachelor students.

Conclusion: Overall the students of the general nursing and midwifery (GNM) programme have higher confidence in skills for antepartum, intrapartum, newborn and postpartum care. One important reason is more hands-on clinical practice for the diploma compared to the bachelor students.

Introduction

India has been grappling with slow decline of maternal and neonatal mortality rates. Out of eleven countries in the South East Asia region, the Maternal Mortality Ratio (MMR) of India at 174 per 100,000 live births is more than that of Bhutan, Thailand, Korea, Sri Lanka, Indonesia and Maldives, and more than the regional average of 164 per 100,000 live births (World Health Organization 2016). The MMR in India varies from 300 in the Assam province to 61 in Kerala (Registrar General India 2013).

It is widely recognized that countries which invested in midwives achieved rapid reduction in maternal and neonatal mortality rates irrespective of the available financial and other resources (Loudon, 1992; Pathmanathan et al., 2003; Vidysagar, 2003; Koblinsky, 2003). Evidence derived from randomized controlled trials in high-income settings (Sandall et al., 2009), and from practical experience in low and middle income, settings such as Sri Lanka (Pathmanathan et al., 2003; Vidysagar, 2003), and high-income countries such as Sweden (Loudon, 1992; Högberg, 2004), show that skilled professional care contributes to high quality maternal and newborn care. Midwives save lives,

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prevent physical, and psychological morbidities and lessen the social and economic burden on families, irrespective of socio-economic settings (Renfrew et al., 2014; ten Hoope-Bender et al., 2014).

In-spite of this wisdom of the worth of investing in midwives, the national maternal and neonatal health strategies in India have overlooked this aspect focusing instead on incentive schemes for promoting institutional births (Powell-Jackson et al., 2015; Vellakkal et al., 2017), and task shifting from specialist doctors to general physicians (Mavalankar; and Sriram, 2009), with some degrees of success. Though the incentive schemes have been successful in bringing the majority of the women in India to health centres for child birth, they have failed to reduce the inequities in access of maternity services between the poor and the rich (Mavalankar; and Sriram, 2009) and have failed to provide quality of services (Jha et al., 2016).

Historically, formal western style education of midwives preceded that of nurses in British India (Adranwala, 1968). The Madras presidency established the first midwifery school in 1854 (Lang, 2005; Wilkinson, 1958). The Madras presidency passed the first nursing and midwifery act in 1926 that professionalized and legally recognized the training and practice of nurses, midwives, and Dais. It also established the first midwifery council (Academy for Nursing Studies 2005). Similar acts were passed in the Calcutta Presidency and other areas of British India.

Soon after independence the Indian Nursing Council (INC) was established for regulating the "Nurses", "Health Visitors" and "Midwives". The INC standardized the syllabus for Diploma programme in general nursing and midwifery which was for 3 $\frac{1}{2}$ years and Bachelors in nursing for 4 years which still continue. Midwifery training was an additional 9 months for those who chose to be further trained as midwives in the General Nursing and Midwifery programme until 1955. Since 1957, midwifery and nursing education merged and all graduates of both the diploma and the bachelor's programmes get a joint registration as Registered Nurse (RN) and Registered Midwife (RM). This step is seen as a dilution of midwifery education (Mavalankar et al., 2011).

More than hundred thousand nurse-midwives graduate every year from roughly 3000 schools and colleges of nursing and midwifery across India. Yet, India does not have midwives as defined by the WHO and the International Confederation of Midwives (ICM). Though graduates from the GNM and BSc nursing programmes are the closest to the definition of a midwife given by the ICM (International Confederation of Midwives 2013), the integrated pathway to midwifery compromises the duration and quality of midwifery education. The scope of practice of the nurse-midwives called staff nurses in India is not defined. Though they are an important human resource for maternal and neonatal health, their contribution is not legally recognized making their practice invisible, and risky (Sharma et al., 2013).

As part of a recent survey in India with the graduating students (~633) from the two formal programmes, the students self-assessed their confidence on selected midwifery skills against the competencies given by the ICM (Sharma et al., 2015). Ninety-nine skill statements from four domains; Antepartum, Intrapartum, Postpartum and Newborn care were included. The study found that majority (70%) of the students could not attend the required number of births mandatory for registration by the Indian Nursing Council (INC). Nearly 50% had confidence below the 50th percentile in all the subscales under the four selected domains of midwifery competencies. In the antepartum and postpartum care domains, the students expressed low confidence in recognizing and managing complications before referral. For the newborn care domain, 30–40% students expressed low confidence in handling newborn complications. Sixteen percent students also expressed low confidence in essential newborn care. In the intrapartum care domain, about 30–40% students expressed low confidence in performing basic skills such as per vaginal examinations, and counting and assessing uterine contractions. More than half of the students expressed low confidence in recognition and management of intrapartum complications.

The eligibility for admissions for both programmes is 12 years of school. However the diploma programme admits candidates from any major stream such as science, arts and commerce whereas the bachelor programme only admits candidates with science as their major subject. The duration, and structure of the two programmes also differs which might influence the confidence of students in midwifery skills. In this paper we compare confidence for selected midwifery competencies of the diploma and bachelor students using the same data set.

Confidence and competence

The conceptual framework used by Sharma et al. (2015) was used for this current study (Fig. 1). In the complex relationship between confidence and competence, confidence seems to be a mediating factor for achieving and demonstrating competence and partially predicting performance. The structured experiences of the learning environment is one of the determinants of confidence (Norman; and Hyland, 2003; Sewell; and George, 2000; Donovan, 2008). Poor performance and lack of confidence among newly qualified nurses was found to be a direct consequence of pre-registration programmes lacking practice-based training (While et al., 1998). In case of midwives, confidence would concern task performance and perseverance when confronting difficulties and setbacks in the work situations. Being a safe practitioner is one of the essential competencies required of a midwife at registration (Butler et al., 2006), including the ability to detect deviations, take appropriate action, and respond to emergencies (Butler, 2001). The factors which facilitate confidence emphasize student-teacher relationships such as; Learning, experiencing and achieving, feeling secure and receiving positive feedback, familiarity and receiving support and encouragement, working with staff at the teaching practice placement, and being treated well (Norman and Hyland, 2003).

Therefore we assumed that measuring confidence could partly reflect the quality of teaching-learning experiences the midwifery educational institutions are able to provide to their students, and therefore it would be worthwhile to compare the diploma and the bachelor's programme.

Design and method

The study was a cross-sectional survey, carried out in the Gujarat province situated in northwest of India. Gujarat had 134 educational institutions for nursing and midwifery at the time of this study. Out of 92 diploma schools, 71 (77%) and out of 42 bachelor's colleges 34 (81%) were privately owned.

Sample

From a list of 134 institutions provided by the Gujarat Nursing Council, 79 were excluded as they were newly established and therefore did not have final year students. The remaining 55 institutions were divided into four strata according to their ownership (government/private) and type of programme (bachelor's/diploma). We aimed to select 30% of students from each stratum. We picked names of institutions randomly until we could get at least 45% of students from each stratum (considering the possibility of dropouts). Twenty-five institutions were thus selected; 17 schools (out of 38) and 8 colleges (out of 17). All final-year students from these institutions participated in the study (Table 1).

Data collection

A questionnaire was designed for the study (Sharma et al., 2015). The tool was translated into Gujarati and pilot tested. The final tool included 19 skill statements for antepartum, 38 for intrapartum, 14 for postpartum, and 19 for newborn care. The tool also included background questions as well as a question on total number of births attended. Students assessed self-confidence on a 4-point scale for each skill statement; 'I do not have skill', 'I have little skill but need a lot of practice', 'I have some skill but need some more practice' and 'I am confident'. The data were