

## ENABLING NEW GRADUATE MIDWIVES TO MANAGE EMERGENCIES CONFIDENTLY: A PILOT STUDY

Lindsay Fergusson, RN RM MHSc(Hons)<sup>1</sup> & Said Shahtahmasebi, PhD<sup>1,2,3</sup>

<sup>1</sup> Centre for Health & Social Practice, Wintec, NZ.

<sup>2</sup> The Good Life Research Centre Trust, Christchurch, New Zealand

<sup>3</sup> Division of Adolescent Medicine, University of Kentucky, Lexington, KY, USA

**Keywords:** OSCE, Midwifery Emergency Management, Student Midwives, Simulation Teaching, New Zealand Undergraduate Midwifery Assessments.

Received: 20/5/2014; Revised: 6/6/2014; Accepted: 10/6/2014

### ABSTRACT

This project aims to develop the confidence of new graduate midwives in the management of midwifery emergencies during their first year as midwives. It is postulated that application of theoretical knowledge to experiential learning in simulated emergencies will prepare students for clinical practice as registered midwives. That is, perceived theoretical knowledge will translate into objective confidence when a midwifery emergency is encountered.

**Method:** The intervention links theory to practice through simulated real life emergencies incorporating the application of theoretical knowledge prior to Objective Structured Clinical Examinations (OSCEs). The simulation workshops and OSCEs addressed a 'worst case' scenario when the midwife is working in a rural primary birthing unit setting, with an unpredictable ambulance availability and one midwife assistant. A simulation workshop was delivered one month prior to the OSCEs within a three phase before-after study design; that is, students were surveyed before the workshop, immediately after the workshop and three months post OSCEs. Within this design students are their own control in order to detect changes in perceptions of their knowledge and confidence. Twenty students completing their final clinical paper in the Wintec Bachelor of Midwifery programme consented to participate in this three stage design tool with the same baseline questionnaire used for all three phases.

**Results:** Students' theoretical knowledge was generally good and improved following the workshop. Most importantly, results suggest theoretical knowledge applied within practical settings will translate perceived (subjective) confidence into objective confidence.

**Conclusion:** It is plausible that midwifery educational interventions which link experiential learning in a simulated setting to practise theory reinforces learning and improves confidence in midwife graduates. As a result, a major longitudinal project to replicate the results of this survey commenced in 2013.

### INTRODUCTION

It is imperative for midwives to manage emergency situations appropriately, in order to achieve optimum health outcomes. When dealing with human emergencies involving the wellbeing of both mother and infant, midwives must be confident to manage not only health outcomes but also legal, moral and ethical responsibilities. Theoretical knowledge often supports our perception of confidence; however such complexities combined with the practical 'hands on' reality of a midwifery emergency situation may impact upon those perceptions of confidence. In other words we may 'feel' confident upon acquiring theoretical knowledge, practical clinical skills, and passing pre requisite examinations but our perception of confidence may change upon encountering a 'real life' emergency situation.

Undergraduate New Zealand student midwives complete an intensive four year degree programme condensed in to three years. The degree provides theoretical and experiential learning incorporating 'on line' e-learning, self-directed learning, face- to -face academic teaching, clinically supervised placements in hospital environments and also working alongside Lead Maternity Carers (LMC). LMCs comprise 85% of case loading midwives in New Zealand and make up 38.1% of the New Zealand midwifery workforce (Midwifery Council of New Zealand, 2012).

The New Zealand midwifery profession has experienced significant changes since amendments to legislation in the Nurses Act 1990 (Department of Health, 1990) with registered midwives becoming autonomous practitioners on qualification and able to become Lead Maternity Carers. The scope of practice of a registered midwife includes the requirement to 'implement emergency measures as necessary' in her clinical practice, (Midwifery Council of New Zealand, 2014).

Features of delivering competent midwifery care include provision of safe and effective services, evidence of critical thinking, and demonstration of clinical skills competencies. Midwifery undergraduate study and associated clinical placements are designed to meet these objectives. Students are required to demonstrate they have met these objectives by passing Objective Structured Clinical Examination's (OSCE) (Waikato Institute of Technology, 2010). Students are tested on various elements of midwifery which makes the OSCE a gruelling experience. Some authors have gone as far as reporting that students find OSCEs examinations more stressful than formal written examinations (Furlong et al, 2005, Brosnan 2006, Mahmoud & Mostafa 2011). However, there is some evidence to suggest that students' performance in clinical placements may mirror their performance in OSCE (Pender and de Looy 2004, Walters and Adams 2002, cited in Byrne & Smythe, 2008). Thus it is safe to assume that preparing for OSCEs and performing well will benefit both midwives as they enter their first year of midwifery practice and their clients.

Both shoulder dystocia and PPH (Post Partum Haemorrhage) may occur with no warning and are examples of emergencies where midwives need to be decisive and manage the emergency within life saving time constraints. For example, during a shoulder dystocia emergency, the midwife has a limited time frame with which to complete manoeuvres and release an impacted shoulder before a reduction in the pH chemistry of the blood results in irreversible compromise for the infant. The midwife is required to complete manoeuvres, communicate with shoulder dystocia assistants whilst simultaneously thinking ahead and directing preparations for potential subsequent infant resuscitation and post-partum haemorrhage emergencies. Multi-tasking requires confidence, competence, effective communication and critical thinking skills. Lawton et al. (2014) identified that 75% of PPH emergencies in their New Zealand research study were shown to have been either preventable or in need of improved provision of care.

As such, use of OSCEs as a summative assessment was deemed appropriate for students completing their final clinical undergraduate Bachelor of Midwifery papers (New Zealand College of Midwives, 2005).

Some authors have proposed that students' performance may be improved by removing some of the stress associated with OSCE through simulated practice (Boud and Falchikov 2006).

In this article I discuss the results from a pilot study which was designed to help prepare student midwives to deal with midwifery emergencies.

## METHOD

A workshop incorporating evidence based knowledge with clinical practice was designed to allow students to apply theoretical and clinical knowledge acquired during their undergraduate studies to their individual decision making and leadership skills within a supportive simulation learning environment.

Simulation workshop scenarios with 'real life' actresses prior to the OSCEs exposing students to experience simulated midwifery emergencies helps students self-reflect, to be better prepared for their OSCEs and importantly, for 'real life' situations. Birch et al. (2007) suggest that participants who experienced simulation based training demonstrated improvements in performance.

The pilot study was carried out within a three phase before and after study design: in phase I students were surveyed using a specially designed questionnaire to measure their perception, confidence and knowledge of midwifery, before the workshop. In phase II students participated in a workshop simulating real life emergency scenarios in preparation for their OSCEs where participants had to demonstrate and apply their theoretical knowledge in simulated real life emergency situations. On completion of the workshop, participants were surveyed using the same questionnaire as used in phase I.

A question arises about knowledge retention following the workshops. In phase III, participants were surveyed three months after their OSCEs, using the same questionnaire as in the previous phases. This provided information about students' retention of knowledge and their experiences of application of their learning to real life midwifery emergencies they had subsequently encountered in clinical practice.

The design allows an assessment of change following the intervention (workshop) in students' knowledge and their perceptions of personal confidence, competence and communication skills whilst managing specified simulated midwifery emergency situations.

Twenty students completing their final clinical teaching module at Waikato Institute of Technology (Wintec) in New Zealand consented to participate in this pilot study. Ethical approval was sought and granted from the institution's ethical committee.

The same baseline questionnaire was used for all three phases of the survey with each questionnaire linked to the same student at all phases, thus providing three time information on the same individual. In this way, students were their own control with changes in knowledge, confidence, competence, communication skills and their progress analysed. The

Statistical Package for the Social Sciences (SPSS) was utilised to match the three-time data sets for descriptive analysis.

In this paper we report results concerning changes to students' perceived competence, confidence and communication skills following the workshop and on completion of phase III. Measures of perceived competencies are student's self-assessment by scoring their level of confidence or competence on a Likert scale taking values 1-10 (1-very low, 10-very high). A more objective measure can be extracted from students' feedback reporting involvement in a midwifery emergency.

## RESULTS

Subjective or perception of competency and confidence grows knowledge and practice, however, there is some evidence to suggest that midwifery preceptors tend to shield student midwives during a midwifery emergency and 'take over' the situation (Skirton et al, 2012). In other words, students potentially gain no experience of prioritising or actually managing an emergency prior to registration. Participants' feedback from phase I highlighted their lack of clinical experience in decision making and leadership roles:-

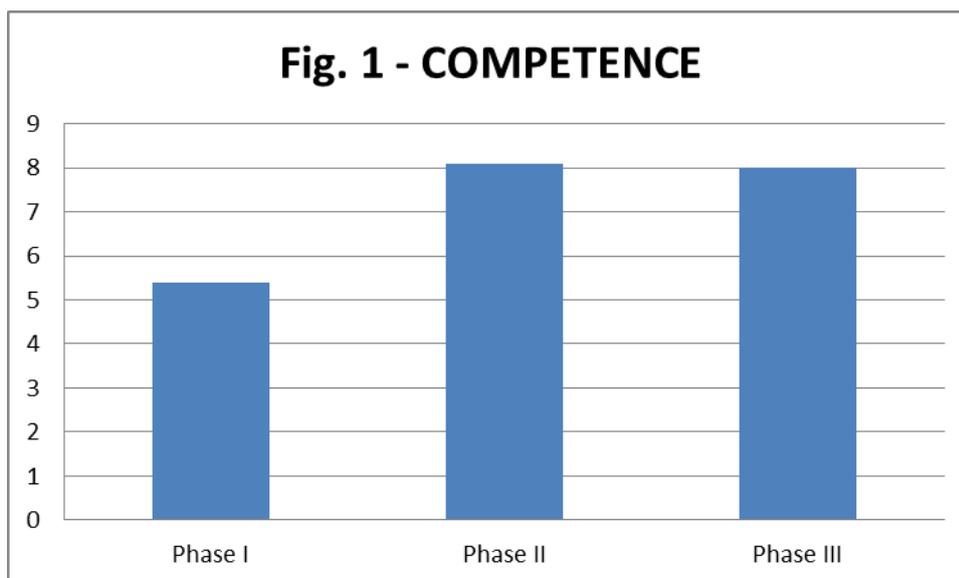
*Being the student I have yet to be 'the director'...*

*In theory I feel confident but in practice it's a lot harder...*

*I am more confident in a secondary/tertiary setting with equipment, drugs, personnel readily available...*

*I only have textbook knowledge...*

*I only had experience in my first year when I didn't really know what was happening.*



One of the main aims of the simulation workshops and OSCEs was to enhance students' personal sense of competence and confidence to manage emergencies confidently at 'beginner practitioner' level when they returned to clinical practice. Results from the surveys,

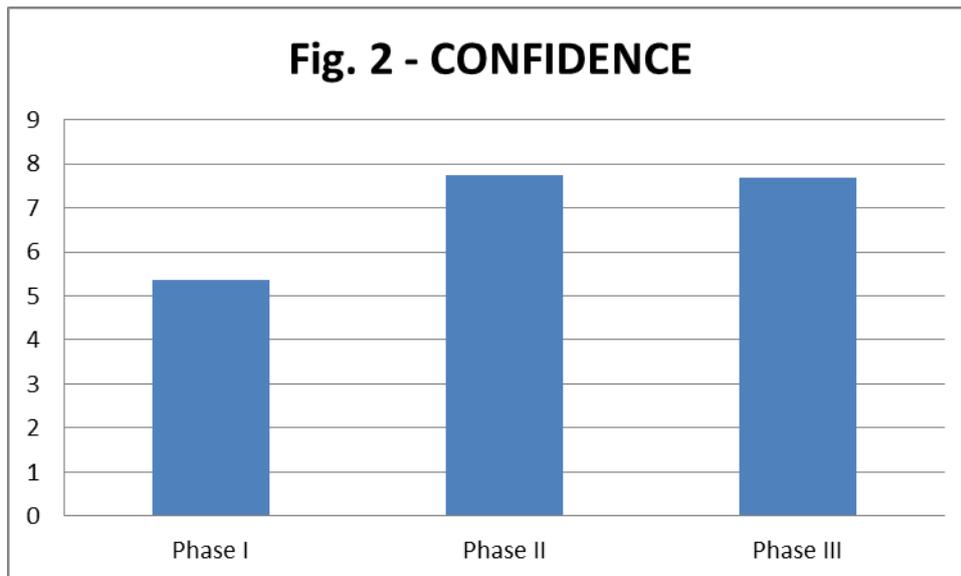


Fig. 1 & 2, suggest that both competence and confidence considerably improved after the workshop and remained high three months after OSCEs.

Participants' feedback from phase II further support the results in shown Fig. 1 and 2, and provide some insight as to how confidence levels have improved, e.g.:

*Great to practice skills in real time...*

*Real simulation really helps...*

*Feeling better about everything...*

*Need to manage getting flustered and breathe through each step and keep calm...*

*Great to be pushed in to a leadership role when I tend to stand back...*

*I believe visualisation of these scenarios will help when faced with these emergencies.*

An interesting and somewhat unexpected result was the impact of the workshop on students' confidence which was reflected in the feedbacks from phase III, three months after their OSCEs. In their third feedback, a significant number of students had negotiated with their preceptor LMC midwife to be able to lead an emergency under supervision if an appropriate situation arose:-

*'I was at a birth the same night after the OSCE, it was like "move over, I know what to do".... I was on fire! The Lead Maternity Carer was a little surprised. We resolved the PPH quickly'*

Additional feedback from phase III included:-

*PPH – felt calmer knowing the sequence of events...*

*PPH everything was crystal clear...*

*PPH, be in charge instead of watching...*

*An amazing feeling to know what to do with confidence...*

*PPH – I had better time management skills – performed under pressure...*

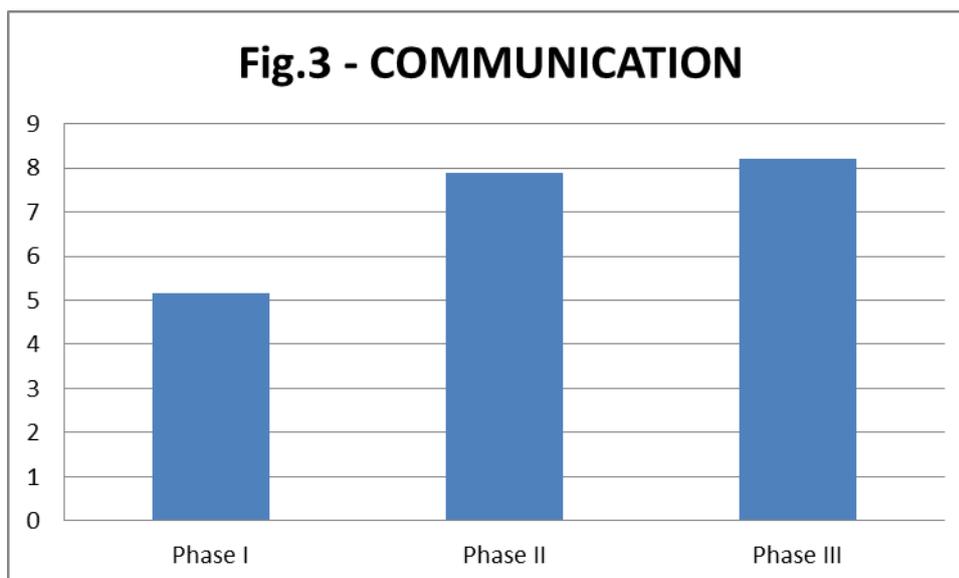
*The structure of the OSCE was such that it could be performed under pressure...*

*Entered for the posterior arm with a shoulder dystocia and felt competent and confident in the management as part of a team and in a leadership role.*

Student midwives are part of a hierarchical health care system, whether it be in their learning institution, a clinical community setting, a birth centre or hospital setting. In a midwifery emergency, teamwork is required between midwives, student midwives, medical staff, ambulance staff and associated health professionals with clear, respectful communication critical for client safety. Failure to communicate could result in role ambiguity, conflict and possible adverse outcome for the client (Sutcliffe et al. 2004). Feedback from phase I (prior to the workshop) suggests a lack in confidence to communicate, e.g.:-

*I know what I need to do but am not confident in delegating to others...*

*I need practice in effective and concise communication.*



The workshop was also designed to address this issue in order to enable students gain confidence in their communication skills. Results suggest considerable improvement in students' perceived effective communication, see Fig. 3. This result is further supported by feedback from phase II which can be summed up by:-

*I feel confident stating what needs to happen.*

## DISCUSSION AND CONCLUSION

An OSCE is a demanding complex assessment process where the student is required to use her clinical judgment to interpret and respond appropriately within a specific time frame (Mitchell et al, 2008). Theoretical knowledge and testing of knowledge whilst imperative, must follow with more practical applications within a supportive learning environment to build student midwives ability to not only understand and manage the normal but also recognise and respond appropriately and effectively when emergencies arise.

Simulation workshops and OSCEs are acknowledged to be stressful experiences. They not only test critical thinking, decision making, communication, leadership and clinical skills but are also a test of students' resilience which is the reality of midwifery emergency management in a primary birthing setting. Whilst authors have reported high levels of anxiety in students prior to the OSCEs, the results from the simulation workshop suggest that the anxiety can be turned into a positive experience as reflected in Figs 1-3 and students' feedback. It is reassuring that other studies have also reported a positive impact on students' subsequent performances in their clinical placements post OSCEs (Byrne and Smythe 2008).

This pilot study was based on a small sample of participants and raised the question about durability of the confidence generated through simulation workshops and OSCEs. It is plausible that midwifery educational interventions that link experiential learning in a simulated setting to practise theory reinforces learning, prepares students for clinical practice as registered midwives and improves confidence in midwife graduates.

The results of this pilot study provided a baseline for a more comprehensive longitudinal research study which commenced in 2013 and will incorporate a fourth stage whereby students will be followed up as new graduate midwives post registration in 2014/15.

## REFERENCES

Birch, L., Jones, N., Doyle, P. M., Green, P., McLaughlin, A., Champeny, C., Williams, D., Gibbon, K., & Taylor, K. (2007). Obstetric skills drills: Evaluation of teaching methods. *Nurse Education Today*, 27 (8), 915-922.

Brosnan, M., Evans, W., Brosnan, E., & Brown, G. (2006). Implementing objective structured clinical skills evaluation in nurse registration programmes in a centre in Ireland: A utilisation focused evaluation. *Nurse Education Today*, 26(2),115-122.  
doi:10.1016/j.nedt.2005.08.003

Boud, D., & Falchikov, N. (2006). *Assessment & Evaluation in Higher Education*. Retrieved from [http://www.numyspace.co.uk/~unn\\_evdw3/skills/current/papers/assess1.pdf](http://www.numyspace.co.uk/~unn_evdw3/skills/current/papers/assess1.pdf)

Byrne, E., & Smyth, S. (2008). Lecturer's experiences and perspectives of using an objective structured clinical examination. *Nurse Education in Practice*. 8, 283 - 289.

Department of Health (1990). *The Nurses Amendment Act 1990*, Retrieved from

[http://www.moh.govt.nz/notebook/nbbooks.nsf/0/7e9811383ed959b34c2565d7000de831/\\$FILE/Nurses%20Amendment%20Act%201990%20-%20information%20for%20health%20providers.pdf](http://www.moh.govt.nz/notebook/nbbooks.nsf/0/7e9811383ed959b34c2565d7000de831/$FILE/Nurses%20Amendment%20Act%201990%20-%20information%20for%20health%20providers.pdf).

Furlong, E., Fox, P., Lavin, M & Collins, R., 2005. Oncology nursing students' views of a modified OSCE. *European Journal of Oncology Nursing* 9(4), 351-359.

Lawton, B.L., MacDonald, E.J., Brown, S.A., et al. (2014). Preventability of severe acute maternal morbidity. *American Journal of Obstetrics and Gynaecology*;210:x.ex-x.ex.  
DOI.org/10.1016/j.ajog.2013.12.032.

Mahmoud, Ghadah, A., & Mostafa, Manal, F. (2011). The Egyptian Nursing Student's Perceptive view about an Objective Structured Clinical Examination (OSCE). *Journal of American Science*, 7(4), 730-738.

Mitchell, M.L., Henderson, A., Groves, M., Dalton, M., & Nutty, D. (2009). The objective structured clinical examination (OSCE): Optimising its value in the undergraduate nursing curriculum. *Nurse Education Today*, 29, 398-404.doi:10.1016/j.nedt.2008.10.007

Midwifery Council of New Zealand. 2012). *Midwifery Workforce Survey*, Retrieved from <http://www.midwiferycouncil.health.nz/images/stories/pdf/Publications/workforce%20survey%202012.pdf>

[Midwifery Council of New Zealand. . Competencies for entry to the register of midwives.](http://www.midwiferycouncil.health.nz/images/stories/pdf/competencies%20for%20entry%20to%20the%20register%20of%20midwives%202007.pdf)  
Accessed June 2014:

<http://www.midwiferycouncil.health.nz/images/stories/pdf/competencies%20for%20entry%20to%20the%20register%20of%20midwives%202007.pdf>

New Zealand College of Midwives Inc. (2005). *Midwives Handbook for Practice*, Christchurch: New Zealand College of Midwives.

Pender, F.T., de Looy, A.E., 2004. The testing of clinical skills in dietetic students prior to entering clinical placement. *The British Dietetic Association Ltd. Journal of Human Nutrition and Dietetics*, 17, 17–24.

Skirton, H., Stephen, N., Doris, F., Cooper, M., Avis, M., & Fraser, D. Preparedness of newly qualified midwives to deliver clinical care: An evaluation of pre-registration midwifery education through an analysis of key events. *Midwifery*, 28, DOI: e660-666.doi10.1016/j.midw2011.08.007S.

Sutcliffe, K., Lewton, E., & Rosenthal, M. (2004). Communication Failures: An insidious contributor to medical mishaps. *Journal of the Association of Academic Medical Colleges. Academic Medicine*, February 2004, 79(2), 186-194.

Waikato Institute of Technology, School of Health, Hamilton, New Zealand. (2010). *Bachelor of Midwifery Programme Approval and Accreditation*. Wintec: Hamilton, New Zealand.