ROYAL
COLLEGE
OF MIDWIVES

ISSN: 1479-4489 June 2012 Vol.10 No.2

EVIDENCE BASED MIDWIFERY

ROYAL
COLLEGE
OF MIDWIVES

EVIDENCE BASED MIDWIFERY

June 2012
Volume 10 Issue 2

EVIDENCE BASED MIDWIFERY IS A STANDALONE PEER-REVIEWED JOURNAL PRODUCED BY THE ROYAL COLLEGE OF MIDWIVES

Evidence Based Midwifery
Royal College of Midwives
15 Mansfield Street
London W1G 9NH
United Kingdom

Publishers:
Redactive Media Group

CONTENTS

Appropriateness of technology interventions in maternity systems

Key words: Birth technology, occularcentrism, decision-making and evidence-based midwifery

When we want to know about the safe and effective use of a medication, we can choose to find information from sources such as the British National Formulary, the Food and Drug Administration or the Medicines and Healthcare Products Regulatory Agency but we do not have the same level of immediate access to evidence for the safe and effective use of other, common or routinely used, birth technologies. I would strongly argue that this situation must change and, as the market becomes flooded with newer and more sophisticated technologies, we need a much more robust and transparent mechanism to aid us in our everyday decision-making. For example, on 7 May 2012, I was fascinated to read about new research emanating from Erasmus MC, *Embryos floating in i-space*, and the application of new 3D hologram technology that enables scientists to see the minutest aspects of early fetal development. For me, this is another example of our need to see what is hidden and the power of technology to show us what we cannot see with our human eye (occularcentrism driving us towards the development of newer and more powerful visual technologies).

There is no European guidance on the minimum or maximum application of technology to the 'normal' or 'higher-risk' pregnancy, and no agreed classification of the technologies currently available. It is over 25 years since the consensus conference on the appropriate use of technology by the WHO in 1985, from which targets for caesarean birth rates (10 to 15%) emerged. Today, modern women who are pregnant use Twitter, Facebook, smartphones, pregnancy apps, google analytics and online support systems, such as Netmums, to manage pregnancy, prepare for birth and adjust to motherhood. When they enter the health service, they are subject to a wide range of overt and covert birth technologies that are applied routinely. In the antenatal period, these include drawing blood for a range of purposes, electronic record-keeping, anomaly scans and fetal monitoring. In the intrapartum period, even births that are termed 'normal' are supported by a range of 'invisible technologies' from simple administration procedures to techniques and pharmacological interventions to aid effective pain relief in labour.

Defining and classifying the technological applications available is a complex process. Sinclair (2010) offered a crude classification of 'low technology' mechanical devices, such as the pinard stethoscope for fetal monitoring, that demand skill and expertise in interpretation, and high technology devices characterised by their electronic or artificial intelligence, such as the cardiotocograph machine and dinomapp classified as monitoring devices and the IVAC and Graseby devices classified as intervention controlling devices.

The majority of women who give birth in Europe follow a similar antenatal care pathway involving the use of technology for pregnancy confirmation, pregnancy monitoring, fetal surveillance and labour management. The recent EUROCAT (2010) *Special report: prenatal screening policies in Europe 2010* demonstrates the wide variation in policy, practice, legal standing and availability of a range of technologies for fetal screening, including the use of ultrasound, biochemical analyses, triple tests and abortion. However, there is no discernible distinction between 'low-risk' and 'high risk' women. More invasive and/or prolonged technological procedures and devices are used for women deemed 'higher risk' due to chronic conditions, such as epilepsy or diabetes. In many countries, such women are subject to intensive monitoring leading to a 'domino effect' that's more likely to end in higher risk of caesarean section and instrumental birth.

Women in the higher risk categories are more likely to have an increased risk of carrying a fetus with an anomaly and face the abortion decision. European data for 2006 to 2010 (EUROCAT, 2010) demonstrates the detection of 92,702 anomalies in utero of which termination of pregnancy for fetal anomaly (TOPFA) was carried out on 15,670 (rate of 16.9%). However, newer technological procedures offer the option of fetal surgery for babies who have a wide range of conditions such as cleft lip and palate, spina bifida and heart defects such as ventricular septal defect and patent ductus arteriosus. These techniques are becoming more successful, but they remain complex and expensive, and they are not always available. The US pioneered fetal surgery but Europe is developing its own body of expertise and several randomised controlled trials have taken place. The potential for technology to reduce the impact of birth defects is one area that requires careful evaluation. However, technology acceptance requires multi-faceted approaches to produce the right type of evidence and collective consciousness to interpret and transfer the meaning into everyday life. For example, the growing problem facing the population of women who conceive while on prescribed lifelong medication is what range and level of birth technology 'needs to be made available for whom' and 'in what circumstances'.

References

Erasmus MC. (2011) *Embryos floating in i-space.* See: www.erasmusmc.nl/5663/135440/2011/december2011/embryo.in.i.space??lang=en (accessed 15 May 2012).

EUROCAT. (2010) *Special report: prenatal screening policies in Europe 2010.* See: www.eurocat-network.eu/aboutus/publications/collaborative(bysubject)/prenatalscreeninganddiagnosis (accessed 21 May 2012).

Sinclair M. (2010). In: Kent B, McCormack B. (Eds.). *Clinical context for evidence based nursing practice (chapter seven).* Wiley-Blackwell: Singapore.

WHO. (1985) Appropriate technology for birth. *Lancet* **11(8452)**: 436-7.

Professor Marlene Sinclair, editor

PhD, MEd, BSc, DASE, RNT, RM, RN.
Professor of midwifery research at the University of Ulster, Northern Ireland.

Pushing boundaries and making it happen

***Mary Steen** PhD, MCGI, PG Dip HE, PGCRM, BHSc, RM, RGN.*
Professor of midwifery, Faulty of Health and Care, University of Chester, Riverside Campus, Castle Drive, Chester, CH1 1SL, England. Email: m.steen@chester.ac.uk

This paper is part of a series celebrating the contribution of professors to the midwifery profession.

Abstract

This paper describes and discusses one midwife's journey of becoming and being a professor of midwifery. The main focus is on pushing the boundaries and making it happen. The author's nursing and midwifery career is the case study and the past, present and future are the three destinations en route that are explored through personal reflections and aspirations. The content will demonstrate that 'the journey is the reward' and enjoying the adventure and having creative ideas and vision helps along the way. Nevertheless, the journey can be challenging and sometimes the path chosen is not the most direct route. It highlights the important role that others can play when supporting and encouraging you to find your way and, ultimately, meet your goals. It also discusses how you will meet people along the way who will join you on your journey and some who will not. People make systems work, so you have to know how to motivate and encourage others. Research has played an important role throughout the journey and the author demonstrates how the dissemination of research findings can ultimately make a difference. In addition, the importance of communication, collaboration and networking should never be under-estimated, as these aspects will help to push the boundaries and make it happen.

Key words: Research, professorship, communication, collaboration, evidence-based midwifery

Introduction

Through personal reflections and my continual aspirations, I will describe and discuss how pushing the boundaries and making it happen can occur from a bottom-up and then a top-down approach. My own personal midwifery career will be explored metaphorically as a journey. I have enjoyed the journey and become very aware over the years that having creative ideas and vision helps you along the way. I have had my 'off the track' moments, but that is part of the learning process and if you embrace your wrong turns positively, it helps you to ultimately achieve your goals. I am looking forward to continuing the journey, with the support and companionship of other midwives and, as the midwifery profession evolves, also the mentoring of student midwives to become calm, caring, confident midwives. One of my aspirations is to be a role model for some of these midwives and to encourage and inspire them to become researchers and undertake midwifery-led research. Together, we can achieve the ultimate goal of providing the best possible midwifery care, based on the best available evidence.

The past

I have spent 26 years working for the NHS. In 1982, I undertook registered general nurse training and upon qualifying, I gained some experience as a staff nurse at Shotley Bridge General Hospital, Co Durham. During this time period I became a mother for the first time and little did I know the impact this birth, which involved a Keilland's forceps delivery, would have upon me becoming a researcher and researching the care and consequences of perineal trauma. However, I knew very early on in my career that I wanted to be a midwife. In 1986, I began midwifery training at the School of Midwifery, Manygates, Wakefield. I then proceeded to become a qualified midwife in 1988 and was employed for 20 years in Leeds, initially spending six years in hospital settings (where I worked on both sides of the city; in the west at the Clarendon Wing of the Leeds General Infirmary and in the east at the Gledhow Wing, St James's University Hospital). During this period, I gave birth to two more children. In 1994, when my youngest child started nursery, I applied for a community midwife post and spent the next 14 years in the community responsible for a caseload. So, I would say my grassroots are in community, but along the way I was successful in being awarded research fellowships and secondments to enable me to undertake research and test out some of my creative ideas. I was, however, reluctant to give up my caseload as that was where my heart was, but I also had a strong desire to improve care for women, their partners and families, which needed to be based on the best available evidence. With this in mind, I negotiated my workload and for most of my midwifery career, I have been balancing clinical, educational and research practice. I've enjoyed linking up these three components, which helps to bridge the theory/practice gap. My work has received several awards for original research and clinical innovation.

Along the way there have definitely been challenges and some setbacks. Finding funding can be an arduous task and differences of opinions can delay progress, but you have to remain focused and believe you can make it happen. Sometimes, things haven't worked out as planned and sometimes things have happened by chance. As an example, while I was undertaking my first randomised controlled trial (RCT) in 1993/94, which involved the development of an assessment tool and the designing of a new localised cooling gel pad to alleviate perineal trauma (Steen, 1998; Steen and Cooper, 1997, 1998, 1999; Steen et al, 2000), I under-estimated the length of the pad. I based my measurements on the standard length of a sanitary towel, but when the pads were manufactured for some unknown reason they were an inch longer than I had requested. Strangely enough the extra length made an unexpected

difference and women reported that the cooling gel pads also helped to relieve painful haemorrhoids.

While undertaking this research, I enrolled onto a part-time degree course in healthcare studies and my passion for research then lead me to undertake a post-graduate certificate in research methodology. In 1996, with the support of two obstetricians, James Walker and Martin Griffiths-Jones, former head of midwifery Jean Cooper, health scientist Keith Cooper and statistician Paul Marchant, I was successful in applying for an NHS executive research fellowship. This gave me an opportunity to study for an MPhil/PhD part-time and undertake a larger RCT in 1998/99 to investigate further the efficacy of localised cooling to alleviate perineal trauma and pain (Steen and Marchant, 2001, 2007; Steen 2002). This research has led to numerous articles being published (Steen, 2010, 2008, 2007a, 2005, 2003, 2001a, 2000a; Steen and Roberts, 2011a) and a patented product known commercially as the femépad which is now available in many countries around the world. I underestimated the amount of work and time needed to complete my PhD studies and could not resist leading and being involved in other projects when asked to do so. Fortunately, I was successful in being awarded a Smith and Nephew Nursing Research Fellowship to spend time writing up my PhD thesis (Steen, 2004).

In tandem with my PhD studies, I was asked to take the lead and collaborate with the Leeds Inter-Agency Project (LIAP) for violence against women to develop an education and training programme to enable midwives to meet the needs of abused women during the childbirth continuum (Steen, 2000b; 2001b). In 2001, this programme was accredited by the University of Leeds and 360 midwives attended two study days, kept a reflective diary and then submitted a reflective assignment (Steen and Bharj, 2003).

In 2001/2002, I was asked to participate in the higher level practitioner programme, which was being piloted by our regulatory body at the time, the UKCC. I had to demonstrate evidence that I was working at a higher level than was expected of me. This involved completing a portfolio of evidence which led to a leadership in midwifery masters qualification and also membership to the City and Guilds Institute (MCGI). This enabled me to apply for and be awarded three discretionary points above my grade.

In 2003, I saw some funding advertised by the local health authority to undertake small community-based projects and I applied for a small grants award to enable me to undertake baby massage training through the International Association of Infant Massage (IAIM.) The following year, I then applied for some Health Action Zone (HAZ) money to support other midwives to undertake the training. This lead to collaborating with the Leeds Community and Mental Health Trust and a joint project was undertaken to train midwives and health visitors. I regret to say, I never managed to write a paper about this project but have utilised the knowledge and skills I gained to enhance my clinical practice and also to further develop another project entitled 'Maternal health and wellbeing'.

In 2004, I approached the local authority in South Leeds to undertake some collaborative work to develop and facilitate antenatal and postnatal exercise classes. The local authority awarded me a funded place to undertake an OCR to become a qualified aerobics instructor to enable me to teach exercises. This led to the development of a holistic health and fitness programme specifically designed to raise awareness of the health benefits of normal birth and the general health and wellbeing of women, their babies and their families (Steen, 2007b). While I was piloting this project, a homeopathic student approached me to supervise her to undertake a qualitative study. She inspired me to undertake a certificate in homeopathy for midwives and this led to a study being undertaken in 2005/06 that assessed the usage and impact of providing a self-administered childbirth kit of homeopathic remedies. The data demonstrated that women and several birth partners experienced positive emotional, psychological and physical benefits (Steen and Calvert, 2006, 2007; Calvert and Steen, 2007).

When I finished my PhD studies, I was unsure as to which path I should be following. Within the NHS, there were limited opportunities for a midwifery researcher. I was happy in clinical practice, projects were keeping me busy and I was an RCM council member, but I needed more.

In 2005, I applied for a joint RCM/UCLan secondment opportunity for a research fellow position. I was successful and I must say I have never looked back. My research journey progressed and I had many opportunities to undertake collaborative research and to network nationally and internationally. Joint appointments can be a challenge and you certainly put in the hours but, nevertheless, they can be very rewarding. I had an opportunity to be involved in the Perineal Assessment and Repair Longitudinal Study (PEARLS) and the Academy of Nursing, Midwifery and Health Visiting while being a member of the learning research and practice development (LRPD) department based at RCM headquarters. I worked alongside the RCM regional officers and also the editor/deputy editor of the RCM journal. While at UCLan I was part of a research team including Soo Downe, Tina Lavender, Denis Walsh, Grace Edwards, Sheena Bryom, Fiona Dykes, Carol Kingdon, Vicky Moran, Annie Dixon, Tilley Padden, Kenny Finlayson and David King. While I was part of this team, I developed a greater understanding of qualitative research methods and became interested in how to undertake structured reviews and meta-synthesis. I published several joint papers while being on this secondment (Steen et al, 2006; Walsh and Steen, 2007; Steen and Macdonald, 2008; Steen and Kingdon, 2008a, 2008b). The internet is a powerful tool to disseminate your published work. In 2006, midwives from Mashhad Iran contacted me to collaborate with them to undertake another RCT to investigate the efficacy of localised cooling treatment to alleviate perineal trauma. The language barrier was a challenge to overcome but with passion, patience and persistence, this research study was published in English (Navviba et al, 2009).

Over the years, I have travelled extensively to present at both national and international conferences. Attending conferences is vital if you want to disseminate your research,

collaborate with others and network. I've lost count of the number of presentations I have given. I was nervous when I first started presenting at conferences but I guess I got used to it and now enjoy the discussion and debate that often follows. I have also had many opportunities to gain experience of supervising postgraduate students to undertake research and during this process I have continued to learn alongside them.

'It is not the strongest of the species that survives. It is the one who is most adaptable to change'
Charles Darwin

The present

University of Chester

In 2008, I joined the midwifery department, which is part of the Faculty of Health and Social Care, at the University of Chester. I work alongside head of department Andrea McLaughlin, deputy head Jane Harris and five senior lecturers, Kim Gibbon, Jo Bates, Taniya Roberts, Gillian Hughes and Karen Lunt. The department works in partnership with five NHS trusts in the North West of England and is involved in the education and training of undergraduate nursing, child health and midwifery. It offers a BSc (hons) in midwifery education, a return-to-practise course for midwifery and several level six modules midwives can access, such as neonatal nutrition (full BFI accreditation), family planning, sexual health, learning and assessment and change management. In addition, postgraduate courses, such as a PGCert in sexual and reproductive health and an MSc advanced midwifery practice/MSc professional studies, which incorporates work-based learning on ventouse, fetal blood sampling and clinical decision-making, are offered. I teach both undergraduate and postgraduate students. I am the programme lead for the undergraduate research dissertation module and I supervise at this level and also at masters and PhD level for midwives and other health professionals (nurses and dentists) to undertake research and complete a thesis.

I spent 18 months as a reader and then successfully met the criteria to become a professor of midwifery in 2010. My main focus since I arrived at Chester has been writing (chapters, books, articles) and increasing research/knowledge transfer activities within the faculty. My research journey, discussed in the past section of this paper, led me to write a book proposal, which would help midwives to understand and undertake research. I enrolled my colleague Taniya Roberts to help with this task, which led to the *Handbook of midwife research* being published in 2011(b). I felt it was necessary to give midwifery-led examples for both quantitative and qualitative methods to demonstrate that midwives have the knowledge and skills to undertake all types of research and take the midwifery profession forward. I have had opportunities to write and contribute to several Dorling Kindersley books which I thoroughly enjoyed, these being *Ask a midwife* (2009), *Day-by-day pregnancy care* (2010) (highly commended BMA award) and *Day-by-day baby book* (2012). I am the author of *Pregnancy and birth: everything you need to know* (2011a) (now translated into several languages). Very recently, as my grassroots are in community midwifery, I have edited and contributed to chapters of a book entitled *Supporting women to give birth at home: a practical guide for midwives* (2012). This book is evidence-based and clearly demonstrates how research evidence support midwifery education and clinical practice.

I'm presently working in collaboration with Duncan Fisher who is an honorary fellow at the University of Chester on studies involving fathers in maternity care. We are both members of the Perinatal Health Services Research Collaboration, which is led by Dr Leroy Edozien, a consultant obstetrician based at St Mary's Hospital, Manchester. As part of a programme of work researching Engaging Partners in Childbirth (EPIC), I have led on a metasynthesis to critique published evidence that explores fathers' views and experiences of maternity care (Steen et al, 2011) and presented this work at the Midwifery Doctoral Society Conference (2011), the International Confederation of Midwives, (2011) and, very recently, at the RCOG annual conference, 'risk management and medico-legal issues in women's health care' (2012). This work led to my involvement in the development of the recently funded Department of Health national guidelines *Reaching out: involving fathers in maternity care* published by the RCM, RCOG, and Fatherhood Institute (RCM, RCOG, FI, 2011).

For the last three years, I have been an external examiner for the masters in midwifery at Trinity College Dublin and found the similarities and the differences in clinical practice described and discussed by midwives fascinating. I have also examined midwifery PhD students' theses (nationally and internationally) since becoming a doctor of midwifery and I am very proud of their individual achievements.

Being the professional editor of the RCM's *Midwives* magazine, online papers and student e-news helps me to keep abreast of what is happening in clinical practice and to guide midwives and students to write about their interests and initiatives. I also contribute to the RCM magazine and have written articles entitled, *When food becomes the enemy* (2009) and, more recently, *How to encourage women to remain active in labour* (Steen, 2012).

As part of my professorial role, I have a responsibility to seek out funding opportunities to undertake service evaluation and research. Presently, I am working with two colleagues, Professor Alun Jones and Professor Elizabeth Mason-Whitehead, to undertake the Integrated Teams Around Schools and Colleges (iTASC) project, which involves investigating whether the collective resource of several services that provide care and support to young people within the school community is adding value and making a difference to students' health and wellbeing needs. In addition, I'm working on the Maternity Assist project jointly with Duncan Fisher, which aims to provide a time-saving, cost-effective, multi-channel digital information and support service to assist midwives to undertake their role to achieve holistic maternity care which is family focused.

Ongoing research entitled the Start treating others positively (STOP) study, of which phase one and two have been completed and the findings published in *Evidence-Based Midwifery* (Steen-Greaves et al, 2009; Steen et al, 2011b), has led to the development of a 'Becoming and being a parent' workshop, which incorporates how to cope with emotions and relationship conflict during the transition to parenthood, and further work on supporting abused women (Steen and Keeling, 2012). This work has also led to STOP workshops being offered to student midwives, to enable them to deal with conflict in the workplace (Steen, 2011b).

The future

I'm looking forward to continuing the journey, with the support and companionship of other colleagues and, as the midwifery profession evolves, also the mentoring of student midwives to become calm, caring, confident midwives. Some of these will become researchers and play a part in bridging the theory/practice gap.

My future plans include continuing the work with fathers; I am supervising a PhD student who is exploring the experiences of bereaved fathers and I'm also planning to do some research with disadvantaged fathers. The STOP research will continue and phase three and four of this study will be exploring the impact of the 'Becoming and being a parent' workshop on how expectant parents manage their emotions and any relationship conflict. STOP conflict in the workplace workshops will be offered to midwives as well as students and their views and experiences will be explored.

The Maternity Assist project will be piloted and every interaction with families will be automatically recorded then collated and reported on. The Riverside Innovation Centre at the University of Chester will support the project to become a social enterprise.

Leadership will play an important role in my future. As you will see, I have led from the bottom up, but I am now in a position to lead from the top down, and I will always remember my former head of midwifery Anne Geddes's wise words: 'You are as good as anyone, but better than no-one. With this philosophy you will become a calm, caring, confident midwife.'

Recently, I attended a residential Leadership in Action course, funded by Vitae, UK. Most participants were PhD students and I was asked why I was attending as I was already a professor. My answer was 'because you are never too old to learn' and, indeed, I did learn a few things such as always remember 'task, team, individual' (Adair, 2010: 4), who you are and what you do, you can lead from a distance, if you want to make things happen, lead, follow or get out of the way and remember rule number six: 'Don't take yourself so goddamn seriously' as described in *The art of possibility* (Zander and Zander, 2010: 79).

Conclusions

According to Dick-Read, 'Faith eliminates fear' (2006: 97). Believe in yourself and your own ability to push boundaries and make it happen.

I think you personally need the three p's: passion, patience and persistence (and another three) preparation, participation and praise for others, so they will follow you. Always remember task, team, individual and you will make it happen. Remember the importance of communication, collaboration and networking. Never forget to disseminate your research far and wide, as this will ultimately make a difference to women, babies, partners and families.

You will meet people along the way who will join you on your journey and some who will not. Life is all about relationships, both personal and professional, and these encounters can be challenging but also rewarding. People make systems work, so you have to know how to motivate and encourage others and this will then inspire them to follow you.

Jean Duerden, former Local Supervising Authority Midwifery Officer of Yorkshire and Humberside, once said to me: 'Mary, I wish I could bottle up your energy and enthusiasm and give a taste of it to other midwives'. Well, I hope this paper has done just that and inspires some midwives to 'push the boundaries' and 'make it happen'.

References

Adair J. (2010) *Idea one in: 100 greatest ideas for effective leadership*. Capstone Publishing: Chichester.

Bendefy I. (2012) *The day-by-day baby book*. Dorling Kindersley: London.

Blott M. (2009) *The day-by-day pregnancy book*. Dorling Kindersley: London.

Calvert J, Steen M. (2007) Homeopathic remedies for self-administration during childbirth. *British Journal of Midwifery* **15(3)**: 159-65.

Dick-Read G. (2006) *Fear*: In: *Childbirth without fear.* Pollinger: London: 97.

Navviba S, Abedian Z, Steen-Greaves M. (2009) Effectiveness of cooling gel pads and ice packs on perineal pain. *British Journal of Midwifery* **17(11)**: 724-9.

Parker-Littler C. (2008) *Ask a midwife*. Dorling Kindersley: London.

RCM/RCOG/FI. (2011) *Reaching out: involving fathers in maternity care*. RCM: London.

Steen M. (1998) Perineal trauma: how do we evaluate its severity? *MIDIRS Midwifery Digest* **8(2)**: 228-30.

Steen MP. (2000a) Out of the Ice Age and into the new millennium: the fémepad has arrived. *British Journal of Midwifery* **8(5)**: 312-5.

Steen MP. (2000b) Developing midwifery responses to women in their care who are living with violent men. *MIDIRS Midwifery Digest* **10(3)**: 313-7.

Steen MP. (2001a) Do we care enough about perineal wounds? *British Journal of Midwifery* **9(5)**: 316-20.

Steen MP. (2001b) *Being responsive to the needs of women who are being*

References continued

abused: In: *Midwives in action: a resource from the English National Board for Nursing, Midwifery and Health Visiting* **3(3.7)**: 69-72.

Steen MP. (2002) A randomised controlled trial to evaluate the effectiveness of localised cooling treatments in alleviating perineal trauma: the APT study. *MIDIRS Midwifery Digest* **12(3)**: 373-6.

Steen MP. (2003) Postnatal breast and perineal pain. *British Journal of Midwifery* **11(5)**: 318-21.

Steen MP. (2004) *Women's experiences of pain and healing following perineal trauma after childbirth (unpublished PhD thesis)*. Leeds Metropolitan University: Leeds.

Steen MP. (2005) 'I can't sit down': easing genital tract trauma. *British Journal of Midwifery* **13(5)**: 311-4.

Steen M. (2007a) Healing of perineal wounds. *British Journal of Midwifery* **15(5)**: 273-9.

Steen M. (2007b) Wellbeing and beyond. *RCM Midwives Journal* **10(3)**: 116-9.

Steen M. (2008) Understanding perineal pain: women's descriptions. *British Journal of Midwifery* **16(6)**: 383-93.

Steen M. (2009) When food becomes the enemy. *Midwives* **12(2)**: 30-1.

Steen M. (2010) Care and consequences of perineal trauma. *British Journal of Midwifery* **18(11)**: 710-5.

Steen M. (2011a) *Pregnancy and birth: everything you need to know.* Dorling Kindersley: London.

Steen M. (2011b) Conflict resolution for student midwives. *The Practising Midwife* **14(3)**: 25-7.

Steen M. (2012) How to encourage a woman to remain active in labour. *Midwives* **15(2)**: 34-5.

Steen M. (2012) *Supporting women to give birth at home: a practical guide for midwives*. Routledge: London.

Steen MP, Bharj K. (2003) Midwives' reflections: exploring attitudes, feelings and experiences when caring for women who are being abused. *MIDIRS Midwifery Digest* **13(1)**: 115-8.

Steen M, Briggs M, King D. (2006) Alleviating postnatal perineal trauma. To cool or not to cool? *British Journal of Midwifery* **14(5)**: 304-8.

Steen M, Calvert J. (2006) Homeopathy for childbirth: remedies and research. *RCM Midwives Journal* **9(11)**: 438-40.

Steen M, Calvert J. (2007) Self-administered homeopathy. Part two: a follow-up study. *British Journal of Midwifery* **15(6)**: 359-65.

Steen MP, Cooper KJ, Marchant P, Griffiths-Jones M, Walker J. (2000) A randomised controlled trial to compare the effectiveness of ice packs and Epifoam with cooling maternity gel pads at alleviating postnatal perineal trauma. *Midwifery* **16(1)**: 48-55.

Steen MP, Cooper KJ. (1999) A new device for the treatment of perineal wounds. *Journal of Wound Care* **8(2)**: 87-90.

Steen MP, Cooper KJ. (1998) Cold therapy and perineal wounds: to cool or not to cool? *British Journal of Midwifery* **6(9)**: 572-9.

Steen MP, Cooper KJ. (1997) A tool for assessing perineal trauma. *Journal of Wound Care* **6(9)**: 432-6.

Steen M, Downe S, Bamford N, Edozien L. (2011a) Not-patient and not-visitor: a metasynthesis of fathers' encounters with pregnancy, birth and maternity care. *Midwifery* doi:1016/j.midw.2011.06.009

Steen M, Downe S, Graham-Kevan N. (2011b). Development of antenatal education to raise awareness of the risk of relationship conflict. *Evidence Based Midwifery* **8(2)**: 53-7.

Steen M, Keeling K. (2012) STOP! Silent screams. *The Practising Midwife* **15(2)**: 28-30.

Steen M, Kingdon C. (2008a) Breech birth: reviewing the evidence for external cephalic version and moxibustion. *Evidence Based Midwifery* **6(3)**: 95-9.

Steen M, Kingdon C. (2008b) Breech birth: reviewing the evidence for external cephalic version and moxibustion. *Evidence Based Midwifery* **6(4)**: 126-9.

Steen M, Macdonald S. (2008) Critical review of baby skin care. *Midwives* See: rcm.org.uk/magazines/web-only-papers/a-review-of-baby-skin-care/?locale=en (accessed 29 April 2012).

Steen M, Marchant P. (2007) Ice packs and cooling gel pads versus no localised treatment for relief of perineal pain: a randomised controlled trial. *Evidence Based Midwifery* **5(1)**: 16-22.

Steen M, Roberts T. (2011a) The consequences of pregnancy and birth for the pelvic floor. *British Journal of Midwifery* **19(11)**: 692-8.

Steen M, Roberts T. (2011b) *The handbook of midwifery research*. Wiley-Blackwell: London.

Steen-Greaves M, Downe S, Graham-Kevan. (2009) Men and women's perceptions and experiences of attending an abusive behaviour management programme. *Evidence Based Midwifery* **7(4)**: 128-35.

Walsh D, Steen M. (2007) The role of the midwife: time for a review. *RCM Midwives Journal* **10(7)**: 320-3.

Zander RS, Zander B. (2010) *The art of possibility: transforming professional and personal life*. Harvard Business Review Press: Boston, Massachusetts: 78-97.

The translation of the childbirth self-efficacy inventory into Arabic

Sanaa Abujilban[1] PhD, MSN, RM, RN. Marlene Sinclair[2] PhD, MEd, BSc, DASE, RNT, RM, RN. W George Kernohan[3] PhD, BSc.

1 Assistant professor, School of Nursing, The Hashemite University, PO Box 150459, Zarqa, 13115, Jordan. Email: sanaa.abujilban@hu.edu.jo
2 Professor of midwifery research, Institute of Nursing Research, University of Ulster, Jordanstown Campus, BT37 0QB Northern Ireland. Email: m.sinclair1@ulster.ac.uk
3 Professor of health research, Institute of Nursing Research, University of Ulster, Jordanstown Campus, BT37 0QB Northern Ireland. Email: wg.kernohan@ulster.ac.uk

This research was funded by the University of Ulster vice-chancellor's research scholarships studentship. Many thanks to the women who kindly gave their time to participate.

Abstract

Aim. The purpose of this paper is to describe the translation and adaptation process using the WHO (2005) framework to adapt Lowe's (1993) English version of the childbirth self-efficacy inventory (CBSEI) into Arabic for use in Jordan.
Background. It is important for researchers who borrow instruments for use in different cultures and conceptually different contexts to ensure that these are tested for acceptability and practicality as well as linguistic/literal equivalence using a robust and transparent framework. The WHO (2005) has devised a framework for guiding researchers involved in the translation process that includes forward translation, expert panel, back translation, pre-testing and cognitive interviewing.
Methods. Ethical approval, permission to use the CBSEI and access to pregnant women was obtained respectively from the University of Ulster, Professor Nancy Lowe and the Ministry of Health in Jordan. A convenience sample of 19 nulliparous women was recruited from one major maternity hospital, one public maternal health centre and one private maternal health centre in Northern Jordan between June and July 2006. The WHO (2005) process of translation and adaptation of research instruments was used.
Findings. Pre-testing of the Arabic version showed that women found it difficult to differentiate between the four subscales of the CBSEI and the two stages of labour. The women also found the questionnaire to be long and difficult. Therefore, adaptations have been made and these include a shortened form of the Arabic CBSEI that focuses on the whole labour process rather than two separate stages.
Conclusion. Conceptual and cultural differences are important factors for consideration when using borrowed instruments, regardless of their proven reliability and validity, as demonstrated by the Jordanian women in this study. The process of adaptation and testing of instruments, as suggested by the WHO (2005), has enhanced the transferability and rigour of the CBSEI.

Key words: childbirth self-efficacy inventory, Arabic translation, WHO translation process, evidence-based midwifery

Background

In a developing country like Jordan, midwives need to understand the role of confidence and plan antenatal education to facilitate and build women's confidence in their perceived ability to birth their child. Therefore, the use of valid and reliable measures to assess and monitor pregnant women's confidence is important for programme development and evaluation. The childbirth self-efficacy inventory (CBSEI) by Nancy Lowe is a valid and reliable tool for measuring confidence, but requires translation into different languages to make it more accessible to non-English-speaking populations.

It is important for researchers who borrow instruments for use in different cultures and conceptually different contexts to ensure that these are tested for acceptability and practicality as well as linguistic/literal equivalence using a robust and transparent framework. The WHO (2005) has devised a framework for guiding researchers involved in the translation process that includes forward translation, expert panel, back translation, pre-testing and cognitive interviewing. This paper describes how the WHO method was used to translate the CBSEI into Arabic.

The CBSEI as a measure for maternal confidence in labour has been used in a number of studies across a range of cultures. These studies show the CBSEI to be a valid and reliable measure of childbirth self-efficacy among pregnant American women (Lowe, 1993), as well as women in Australia (Drummond and Rickwood, 1997), Northern Ireland (Sinclair and O'Boyle, 1999), China (Ip et al, 2005), Iran (Khorsandi et al, 2008), Spain (Cunqueiro et al, 2009) and Thailand (Tanglakmankhong et al, 2011).

Aim

The aim of this methodological paper is to describe the process undertaken to translate the CBSEI from English to Arabic.

Literature review

A literature review was conducted to find a systematic, rigorous and comprehensive process for translation using key words to explore translation, adaptation and trans-cultural research. The literature search used CINAHL, MEDLINE, PubMed, as well as a web search using Google and Yahoo search engines. Literature that solely clarified a framework for translation of instruments into another language was included.

Six papers referred to different frameworks for translation. All of these papers shared the same idea, but differed in

number of steps and objectives of the translation. The most popular framework, which is frequently used in the health literature, was described by Brislin (1986). Brislin suggested a five-step translation process: translation; blind back-translation; examination of the three versions (the original, translated and the back-translated); pilot study; and examination of the pilot data.

It is noted that this framework requires the examination of the translated version by experts only after back-translation. It does not require the their judgement at the important earlier stage, where the appropriateness of the instrument to the target population is covered. For this reason, this framework was not used for translation of CBSEI into Arabic.

Sartorius and Janca (1996) studied WHO psychiatric assessment instruments and discussed the principles used in the development of the instruments, their translation and their use across cultures and settings. They mentioned seven steps for the translation: establishment of a bilingual group of experts; examination of the original instrument's conceptual structure by the experts; translation into targeted language; examination of the translation by the experts; examination of the translation by a unilingual group; back-translation; examination of the back-translation by the experts.

This method is a very detailed process and while it expands the conceptual equivalence of the translation, it does not include a pilot for the translated version with a representative sample, which is important to check the acceptability of the tool in the targeted population. Taking this into consideration, the researchers decided that this framework would not be suitable.

Ommeren et al (1999), in an attempt to use a more systematic approach for translation, developed a translation monitoring form. Each form systematically evaluates one item at a time. The authors suggested a five-step translation process similar to that suggested by Brislin (1986): record one item in the form with the translation and a lexical back-translation, as well as the translator's opinion; an evaluation by a bilingual professional; an evaluation by at least one focus group; blind back-translation; finally, the instrument is pilot-tested.

This method was systematic but it was not used due to problems with inconvenience, timeframe and lack of professional engagement were experienced.

Jones (2004) recommended another five-step framework, which was based on the Brislin (1986) model for translation. This framework includes: discuss the questionnaire with bilingual expert; foreword translation by the expert; blind back-translation by another expert; make a comparison between the original questionnaire and the back-translated one; pilot test the original and the translated questionnaire by bilingual people.

Although this model offered some element of confidence in the equivalence of the questionnaires and confidence in the information obtained from the translated questionnaire, it needed a bilingual sample for piloting, which was not available among Jordanian pregnant women. Therefore, this framework was rejected.

Another process and guideline for translation was developed by the Functional Assessment of Chronic Illness Therapy Organisation (FACIT, 2003). This guideline includes the following steps: forward translation by native speaker of targeted language translator; reconciliation of forward translation by another translator; blind back-translation of the reconciled version by a native English speaker; independent reviews by three to four bilingual experts; finalisation of the translation by bilingual experts of the original questionnaire; format and proofreading by a bilingual expert; pilot-testing with patients.

These guidelines are very systematic and effective in producing a trusted version of the instruments, but it was problematic for this study due to the lack of native English bilingual experts to evaluate the translated version. Therefore, this framework was not considered to be appropriate.

Although all of these frameworks were very good, each one proved to be problematic in some way when considered for use in Jordan. Aforementioned problems could be summarised as follows: lack of native bilingual English translator, lack of bilingual pregnant women for piloting and limited expert time.

A decision was made to use the process recommended by the WHO (2005) for translation and adaptation of research instruments. The aim of this process is to achieve different language versions of the English instrument that are conceptually equivalent in the targeted culture.

These guidelines were adopted in the translation of the CBSEI from English to Arabic, because of the need for an Arabic version that is natural, acceptable and is a convenient framework for Jordanian culture.

The implementation of the WHO (2005) method of translation includes the following steps: forward translation; expert panel; back-translation; pre-testing and cognitive interviewing; final version ready for piloting.

Translation process (WHO, 2005)

Therefore, with regard to this study, the following approaches were used:

Forward translation

One translator who held a PhD in translation worked in collaboration with the research team. He was familiar with the terminology of the areas that were being covered and was very comfortable with his knowledge of English-speaking culture. His mother tongue was Arabic and that was essential as it was the target culture and language relevant for performing the forward translation. Instructions given to the translator were to emphasise the conceptual, rather than the literal and for translations to be simple, clear and concise in formulating a question. The need to use natural and acceptable language for the broadest audience was also stressed. Following these guidelines, the translator carried out the translation and the Arabic version was ready to be reviewed by professional experts.

Expert panel

The panel comprised of six Arabic faculty members (three with PhDs in nursing, one PhD in nutrition, one with a master's degree in nursing, another with a higher diploma in midwifery, and one with a BSc in hospital management with a midwifery diploma). These individuals reviewed the English and Arabic version of the questionnaire, and aimed to identify and resolve any inadequate expressions/concepts of the translation, as well as any discrepancies between the forward translation and the original existing one. The experts gave several suggestions for the language to be used with the Arabic version and several meetings were held with them to reach consensus about the Arabic version. The wording of many items was changed in order to increase accuracy and cultural sensitivity and to make it relevant to Jordanian women. The result of this process produced a complete translated version of the questionnaire, which was sent to an Arabic teacher (with a university degree in Arabic and higher diploma in education) for proofreading. Some changes were made accordingly.

Blind back-translation

An independent translator, who has a PhD in translation and who had no knowledge of the original CBSEI questionnaire, translated it back to English. The same instructions for the forward translation were used for the back-translation.

A parallel comparison was undertaken by a bilingual master's student in collaboration with the lead researcher, and discrepancies between the original CBSEI and the back-translated one were discussed, and further work (forward translations, discussion by the bilingual experts) repeated many times until a conceptually equivalent and accurate version was developed. No significant translation problems were experienced and discussion resolved any ambiguities. The emergent Arabic version of the CBSEI was prepared for piloting with Jordanian women.

Pre-testing and cognitive interviewing

Ethical consideration: The pilot participants gave informed consent to participate in the study. Furthermore, approval to conduct the study was given by the Human Subjects Committees of the Hashemite University in Jordan and the University of Ulster in Northern Ireland. Institutional permission to collect the data was obtained by official letter from the host university.

Setting: The pilot study was performed at a major public hospital located in northern Jordan, one public maternal health centre and one private health centre, between June and July 2006.

Data analysis: Descriptive and inferential statistics were used for analysing the data with SPSS for Windows, version 11.0. The internal consistency reliability of the Arabic CBSEI was assessed by determining the coefficient alpha and item total correlation of each subscale.

The sample: A convenience sample of 19 nulliparous pregnant women filled in the questionnaire. Those women were representative of Jordanian pregnant women. Furthermore, they were systematically debriefed about what they thought the questionnaire was for, whether they could repeat the items in a different way, any word they did not understand, and any unacceptable expression, as well as any difficulties during completion of the Arabic CBSEI.

The women's gestational age ranged from 12 to 39 weeks with a mean age of 27.6 years. The majority were secondary school educated (n=6, 31.6%) and all were married. A total of 63% (n=12) of the sample were housewives. Their household income ranged from 70 to 500 JD (£55 - £430), most of them (n=11, 57.7%) above 250 JD (£200). The majority (n=13, 68.4%) of the sample had no medical or obstetric problems and most of the women had a planned pregnancy (n=12, 63.2%).

Clinical problems found during piloting

Jordanian women reported difficulty in completing the Arabic CBSEI because they found it difficult to differentiate between the two stages of labour (first and second stage) and frequently asked for clarification of the difference between stages. The Jordanian women understood labour as a continuous process, not as two distinct phases.

The research team faced a problem with women complaining that it took far too long to complete the 62-item instrument and required 15 minutes of their time. This is an important aspect of the nature of Jordanian women, who do not usually read or write anything that is not related to compulsory education and they do not usually express their feelings openly.

Another problem identified was the repetitive style of the questionnaire. Jordanian women thought that the first 15 items in the first subscale were repeated four times, without clear differentiation between the timing and the nature of the items. Women frequently asked why we repeated the exact same items four times, and they needed careful explanation about the difference between the subscales.

In summary, the problems of the Arabic CBSEI were related primarily to the repetition of the instrument not the actual items. Women accepted the instrument and it was perceived to be culturally relevant.

Internal consistency of the Arabic CBSEI

The pilot data CBSEI consisted of four subscales that contained 62 items. In the pilot study, the Cronbach's alpha coefficient of the translated tool was 0.86 for the total outcome expectancy subscale, and 0.9 for the total self-efficacy expectancy subscale. For the four subscales, it was 0.82 for outcome expectancy active labour, 0.78 for self-efficacy active labour, 0.92 for outcome expectancy second stage, and 0.91 for self-efficacy second stage, all of which indicate a high level of internal consistency.

Discussion

The value of this paper is the transparent process undertaken to translate the CBSEI from English to Arabic prior to conducting a much larger doctoral study in northern Jordan. This paper also provides more information about the validity and reliability of the CBSEI in Arabic and contributes to the knowledge transfer process.

Previously, Lowe (1993) studied the psychometric properties of the CBSEI and found that the internal consistency estimates ranged from 0.86 to 0.95, and item total correlations were greater than 0.30 for all items on each scale. Correlations of test-retest scores over a two-week period ranged from 0.46 to 0.76. Validity of the CBSEI was supported by significant positive correlations with measures of generalised self-efficacy, self-esteem, and internal locus of control, and by significant negative correlations with external health locus of control and learned helplessness. Validity was also supported by significantly higher self-efficacy scores for multiparous compared with nulliparous pregnant women. Factor analysis suggested that each CBSEI scale is unidimensional. Mean scores were 128 for outcome expectancy during active labour, 103 for self-efficacy during active labour, 130 for outcome expectancy during birth, 107 for self-efficacy during birth, 258 total outcome expectancy score, and 210 total self-efficacy score (Lowe, 1993).

Later, Drummond and Rickwood (1997) studied psychometric characteristics of the CBSEI in a sample of 100 Australian women. Consistent with Lowe (1993), the measure was shown to have high internal consistency (above 0.90) on all four subscales. Consistent with self-efficacy theory, having a prior good birth experience and knowledge about childbirth had significant effects on childbirth self-efficacy, supporting validity of the CBSEI. On the other hand, other variables that might also be predicted by theory to self-efficacy (parity, social support, and anxiety) were not significantly related to CBSEI scores.

This study has shown the highly significant correlations between CBSEI subscales, which means that the inventory may be largely unidimentional and, as a result, not a valid measure of outcome and self-efficacy expectancies for both active and second stage of labour. On the other hand, a principal component analysis of the entire CBSEI showed that the Australian women were able to understand the differences between the behaviour importance and their ability to use that behaviour. But, at the same time, those women could not differentiate between active and second-stage labour, which was apparent in their response to the items of CBSEI in the same manner across both the stages of labour (first and second).

This study (Drummond and Rickwood, 1997) showed that several CBSEI items did not load onto outcome nor self-efficacy expectancy dimensions. And, when the authors explored those items, concluded that they appeared to correspond to a more external coping focus than the reminder of the CBSEI items. Therefore, they suggest combining internally and externally focused coping statements into one measure may be a threat to the validity of the measure, as the self-efficacy expectancies are based on internal beliefs.

Sinclair and O'Boyle (1999) studied the performance of CBSEI in a Northern Ireland convenience sample of 126 women. This study confirmed earlier findings including reliability estimates of 0.91 – 0.95 as well as 0.3 or more correlation between each subscale and the total inventory, which confirmed Lowe's (1993) findings.

While Lowe (1993) reported an effect of parity on self-efficacy, as supported by Bandura's theory (1977), this study and that conducted with Australian women (Drummond and Rickwood, 1997) did not demonstrate a similar difference due to parity. Furthermore, this study did indicate that a significant difference exists between outcome and self-efficacy expectancies and this was congruent with Lowe's (1993) and Drummond and Rickwood's (1997) results as well as Bandura's theory (1977).

A methodological study conducted in Hong Kong by Ip et al (2005) discussed a translation of the inventory and examination of its reliability and validity among a convenience sample of 148 pregnant Chinese women. Translation of CBSEI into Mandarin was done by two experienced midwives and the independently blind back-translation into English was done by another two experienced midwives. Face and content validity was considered by a panel of six healthcare experts as well as ten pregnant women.

This study emphasised the unidimentional nature of each subscale, which is consistent with the original English version. The women in the study showed the lowest self-efficacy and outcome expectancies levels when compared with the previous three studies that used the CBSEI; the authors stating that this was due that to the differences of the participant characteristics or the data collection method. Furthermore, as in the previous three studies, the outcome expectancy scores differed significantly from the self-efficacy expectancy scores in the two stages of labour. This is consistent with the Bandura's (1977) self-efficacy theory propositions. On the other hand, parity and childbirth education had no effect on self-efficacy expectancy, which is in contradiction to the beliefs of Bandura (1977) and Lowe (1993), but is congruent with the findings of Sinclair and O'Boyle (1999), while Drummond and Rickwood (1997) found only parity had no effect on self-efficacy and knowledge significantly affected self-efficacy.

The study by Khorsandi et al (2008) supported the unidimensional aspects of the scale and the ability of pregnant Iranian women to distinguish between self-efficacy and outcome expectancy. However, the Iranian women were not able to distinguish between the active phase of labour and the second stage. In addition, religious beliefs were deemed to be important.

As previous studies, Ip et al (2005) and Khorsandi et al (2008) show high internal coherence of the subscales. Furthermore, the high correlations among the parallel expectancy scales between the two stages of labours and non-significant findings in paired t-test indicated that pregnant women may not differentiate well between the two stages of labour, and this result corresponds with Drummond and Rickwood (1997). The authors of this study ran four principal component analyses to study the construct validity of the inventory and this resulted in the development of a shortened version of CBSEI that focused on labour as one process rather than the two

separate stages.

The authors of the methodological study by Cunqueiro et al (2009) did a principal components analysis, which supported the ability of the self-efficacy inventory to distinguish between outcome and self-efficacy expectancies. Also, they found that the internal consistency reliability of the inventory was adequate, and the most important factor influencing the confidence of a woman to cope with labour was the previous knowledge of the women. Futhermore, they found that the four principal components after factor analysis of the data did not match the four scales of the CBSEI, and this result is congruent with Drummond and Rickwood (1997).

The latest study of Tanglakmankhong et al (2011) found that outcome and self-efficacy expectancies measures were shown to have high internal consistency. The internal consistency estimates for the CBSEI support the equivalence of the CBSEI across cultures (Sinclair and O'Boyle, 1999; Lowe, 1993, 2000; Drummond and Rickwood, 1997; Ip et al, 2005) and the equivalence of the Thai and English versions. The study showed that the Thai women could not distinguish between the stages of labour and this is consistent with previous findings of Drummond and Rickwood (1997) and Ip et al (2005). CBSEI was found to have a single factor for each subscale, as did the Chinese study by Ip et al (2005) and the English study by Lowe (1993). Furthermore, contrasting group and criterion-related validity were consistent with self-efficacy theory (Bandura, 1977) and Lowe's study (Lowe, 1993). The interesting finding of the study was that the differences between the stages of labour across expectancies in the CBSEI were found only for second stage. Taking this finding into account, it may be appropriate for Thai women to use the childbirth self-efficacy inventory only in relation to the second stage of labour.

In view of the repeated studies, which demonstrate that pregnant women could not differentiate between the two stages of labour in their thinking, and the difficulties that Jordanian women faced during piloting (the difficulty to differentiate between the two stages of labour, took too long to complete instrument, repetitive style of the questionnaire without clear differentiation between the timing and the nature of the items), a shortened form of the Arabic CBSEI is recommended, focusing questions on the whole labour process rather than the two separate stages.

Conclusion

CBSEI shows a high internal consistency structure, a high coherence between its subscales and a unidimensional nature, as well as a good distinction between outcome and self-efficacy expectancies.

The major limitation for this methodological study was the inclusion of only 19 convenient nulliparous women. The reason for this is the purpose of the study (to describe the translation and adaptation process itself). Further large scale study is recommended to explore the reliability, criterion-related validity and predictive validity of the Arabic CBSEI and its short version to enhance its applications in midwifery practice and research.

Conceptual and cultural differences are important factors for consideration when using borrowed instruments regardless of their proven reliability and validity as demonstrated by the Jordanian women in this study.

The process of adaptation and testing of instruments as suggested by the WHO (2005) has enhanced the transferability and rigour of the CBSEI.

References

Bandura A. (1977) Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev* **84(2)**: 191-215.

Brislin RW. (1986) *The wording and translation of research instruments*: In: Lonner WJ, Berry JW. (Eds.). *Field methods in cross-cultural research*. Sage: Beverly Hills, California: 137-64.

Cunqueiro MJ, Comeche MI, Docampo D. (2009) Childbirth self-efficacy inventory: psychometric testing of the Spanish version. *J Adv Nurs* **65(12)**: 2710-8.

Drummond J, Rickwood D. (1997) Childbirth confidence: validating the childbirth self-efficacy inventory (CBSEI) in an Australian sample. *J Adv Nurs* **26(3)**: 613-22.

FACIT. (2003) *Translation project procedures and guidelines*. See: facitorg000.web108.discountasp.net/translation/trans_guidelines.pdf (accessed 29 May 2012).

Ip WY, Chan D, Chien WT. (2005) Chinese version of the childbirth self-efficacy inventory. *J Adv Nurs* **51(6)**: 625-33.

Jones EG. (2004) Translating questionnaires for use with patients or research subjects. *J Undergraduate Nursing Scholarship* See: juns.nursing.arizona.edu/editorial5.htm (accessed 29 May 2012).

Khorsandi M, Ghofranipour F, Faghihzadeh S, Hidarnia A, Bagheban AA, Aguilar-Vafaie ME. (2008) Iranian version of childbirth self-efficacy inventory. *J Clin Nurs* **17(21)**: 2846-55.

Lowe NK. (1993) Maternal confidence for labor: development of the childbirth self-efficacy inventory. *Res Nurs Health* **16(2)**: 141-9.

Lowe NK. (2000) Self-efficacy for labor and childbirth fears in nulliparous pregnant women. *J Psychosom Obstet Gynaecol* **21(4)**: 219-24.

Ommeren M, Sharma B, Thapa S, Makaju R, Prasain D, Bhattarai R, Jong J. (1999) Preparing instruments for transcultural research: use of the translation monitoring form with Nepali-speaking Bhutanese refugees. *Transcultural Psychiatry* **36(3)**: 285-301.

Sartorius N, Janca A. (1996) Psychiatric assessment instruments developed by the World Health Organization. *Soc Psychiatry Psychiatr Epidemiol* **31(2)**: 55-69.

Sinclair M, O'Boyle C. (1999) The childbirth self-efficacy inventory: a replication study. *J Adv Nurs* **30(6)**: 1416-23.

Tanglakmankhong K, Perrin NA, Lowe NK. (2011) Childbirth self-efficacy inventory and childbirth attitudes questionnaire: psychometric properties of Thai language versions. *J Adv Nurs* **67(1)**: 193-203.

WHO. (2005) *Process of translation and adaptation of instruments*. See: who.int/substance_abuse/research_tools/translation/en (accessed 29 May 2012).

Enhancing parent-infant bonding using kangaroo care: a structured review

Jane McGregor[1] *BSc. Jackie Casey*[2] *MSc, BSc, PgCHEP.*

1 Community occupational therapist, University of Ulster, School of Health Sciences, Newtownabbey, BT37 0QB, Northern Ireland. Email: jane.mcgregor@northerntrust.hscni.net
2 Lecturer in occupational therapy, University of Ulster, School of Health Sciences, Newtownabbey, BT37 0QB, Northern Ireland. Email: j.casey2@ulster.ac.uk

Abstract

Aim. To review the literature on the effectiveness of kangaroo care with premature infants for enhancing bonding.
Methods. Seven electronic databases were searched for research papers published between 2000 and 2011. The methodology, interventions, outcome measures, statistical analyses and the results of the studies were critically appraised using the McMaster critical review forms and the effectiveness of interventions in enhancing parent-infant bonding determined.
Results. Six papers were identified that reported experimental studies conducting kangaroo care with premature infants and that met the inclusion criteria for this review. The majority of results indicated that kangaroo care for premature babies helped increase the maternal-infant bond. Effects on decreasing maternal stress and depressive emotions, decreasing infant distress and pain and enhancing the father-infant and entire family relationships were also reported.
Conclusions. Kangaroo care positively enhances the parent-infant bonding; however results should be interpreted with some caution due to small sample size, uncertainty of duration, and the use of numerous outcome measures. Further research should concentrate on exploring the sustainability of kangaroo care gains into later childhood and the best practice time-frame for implementation of kangaroo care. Having an understanding of kangaroo care and its impact upon the bonding process is important for all healthcare professionals to help ensure best practice interventions for premature infants, to positively impact upon later developmental outcomes.

Key words: Bonding, premature infants, kangaroo care, parent, structured literature review, evidence-based midwifery

Introduction

Babies born prematurely are at significant risk of developing short- or long-term complications such as physical disabilities, cognitive impediments or delayed development (Hunter, 2005; Hutchon, 2002). The EPICure study conducted in the UK and Ireland in 1995 showed that while 81% of infants born at 24 weeks survived (Costeloe et al, 2000), a high level of disability was found at six years of age, with only 20% showing no problems (Marlow et al, 2005) and at 11 years of age, they had significantly lower scores for academic attainment than their peers (Johnson et al, 2009). As healthcare professionals we often find ourselves working with these children who present with a variety of difficulties affecting their performance at home and in school. In England and Wales, one in 13 live births are born pre-term (before 37 weeks gestational age (GA) (Office for National Statistics, 2007) giving rise to considerable potential risk in development.

Therapists can support nursing intervention in the neonatal intensive care unit (NICU) through their often unique knowledge and expertise in the interaction between the biological, developmental and social-emotional aspects of human function. Occupational therapists in particular can bring a distinctive focus on human occupation and function, which helps promote the infant and their parents as active participants in meaningful daily activities to support and improve health, skill development, parent-infant engagement and quality of life. Parent-infant occupations include feeding, bathing, dressing and cuddling (Holloway, 1998). Providing education and support to families throughout hospitalisation, promoting parent-infant attachment and facilitating effective parenting has been described as one of the main occupational therapy roles within the NICU (Hutchon, 2002; American Occupational Therapy Association (AOTA), 2006). Further interventions include therapeutic positioning to promote appropriate posture and movement and also help reduce the risk of positional deformities (Chang et al, 2002; Hunter, 2005), the implementation of feeding treatment techniques (often in collaboration with a speech and language therapist), including feeding training and positioning (Hutchon, 2002) and individualised developmental care, which is the modification of the NICU environment depending on infant responses to either decrease or alter the sensory stimulation (Warren, 2008).

Kangaroo care (KC) was first introduced in Columbia in the 1980s as an intervention to maintain a pre-term infant's temperature due to the unavailability of incubators, and today is employed worldwide (Nagorski Johnson, 2007). It involves a baby dressed only in a nappy and sometimes a cap, being placed in skin-to-skin contact (SSC) with their caregiver. KC is described as being effective in promoting cardio-respiratory stabilisation, increasing sleep, decreasing signs of agitation, increasing the rate of weight gain, improving thermoregulation, shortening hospital stay and functioning as analgesia (Dodd, 2005; Nagorski Johnson, 2005; Ludington-Hoe and Swinth, 1996); all of which can help in supporting the development of the child and helping to minimise any damage as a result of being born pre-term. Benefits are not limited to the premature infant only; in a qualitative study by Neu

(1999), mothers described feeling intense connectedness to their infants, increased satisfaction in their role identity and found KC to help relationship building. A Cochrane review completed by Conde-Agudelo et al (2011) which looked at KC in relation to morbidity and mortality in low birthweight infants, positively associated KC with mother-infant attachment. KC has also been shown to help increase maternal confidence and optimism and reduce maternal stress levels (Nagorski Johnson, 2007).

Chia et al (2006: 20) state that *'parent-infant attachment is a complex relationship brought about by physical closeness and early interaction between parents and their newborn'*. It is during this early attachment stage when mothers develop a strong sense of commitment and enduring feelings of affection for their child (Roller, 2005). Through successful attachment parents learn to recognise their infant's cues and successfully adapt their own behaviours and responses to meet the infant's needs (Johnson, 2008). Indeed early contact between mothers and their infants is essential for initiating their relationship; however, many premature infants are separated from their mothers after birth, which can significantly disrupt the bonding process (Nystrom and Axelsson, 2002). Mother-infant contact is important for an infant's growth and development (Holloway, 1998). Additional factors such as maternal stress (Gale et al, 2004), depression or perceptions of parental incompetence and infant distress can also delay the attachment process (Roller, 2005). Successful mother-infant attachment also improves maternal psychological wellbeing (Greenberg et al, 2004). This is important as mothers of premature babies often report higher levels of depression, which can be an independent risk factor for an infant's cognitive and social development (Goodman and Gotlieb, 1999).

For these reasons all healthcare professionals should be knowledgeable of and involved in interventions used in the NICU to enhance the parent-infant bonding process. The aim of this review is to evaluate the evidence to support the assertion that KC for premature infants enhances parent-infant bonding.

Method

The search strategy

A comprehensive search of the medical and health literature was undertaken using a search strategy developed for Medline (see Table 1) using combinations of the search terms premature infant, neonate, kangaroo care, swaddling, parent-infant bonding, bonding, and attachment. This search strategy was used as a base and then modified for use in each of the seven electronic databases: Medline, CINAHL, OTDBASE, PsycINFO, Applied Social Sciences Index and Abstracts (ASSIA), Allied and Complimentary Medicine Database (AMED), and British Nursing Index (BNI). The search was limited to primary research studies, written in English and published in peer-reviewed journals from January 2000 to June 2011. The search was kept to this time-frame to ensure that only recent research was considered. Ancestral searching of the reference lists of papers identified in the search was also completed.

Table 1. Medline search strategy

Search	Search terms	No of hits
1	Premature infant	34,340
2	Neonatal	435,021
3	Premature infant or neonatal	436,834
4	Kangaroo care	141
5	Swaddling	111
6	Kangaroo care or swaddling	249
7	Parent-infant bonding	23,312
8	Bonding	54,408
9	Attachment	64,850
10	Parent-infant bonding or bonding or attachment	139,825
11	Premature infant or neonatal and kangaroo care or swaddling and parent-infant bonding or attachment	41

Inclusion/exclusion criteria

Studies were included if they investigated the use of KC from the parent's perspective rather than from a healthcare practitioner's perspective; had parent-infant bonding as a measured outcome; utilised quantitative methodologies; and the neonates in the study were born pre-term or with low birthweight (≤2590g). Articles were excluded if they were commentaries or qualitative, focused on babies born full term or with normal birthweight (≥2600g).

Selection of articles was determined by both authors independently reviewing the titles and abstracts against the inclusion and exclusion criteria. Consensus was obtained and the full papers were retrieved. The methodology of the papers was then independently reviewed by the authors and given a quality rating using the National Health and Medical Research Council (NHMRC), (2009).

Results

Identification of studies

A total of 85 papers were identified through the electronic database searching. Duplicates were removed and a further paper was found through ancestral searching of the reference lists. Independent application of the inclusion/exclusion criteria by the authors resulted in six papers that met the criteria for this review. Table 2 shows the number of hits found for each database and number of eligible papers retrieved for this review. The six papers were: Young et al, 2010; Gathwala et al, 2008; Miles et al, 2006; Mörelius et al, 2005; Feldman et al, 2003; Feldman, et al, 2002. The data were extracted from the six papers using the McMaster critical review forms (Law et al, 1998) to ensure a systematic review of them was undertaken. The six papers were analytical in nature and used various designs. All the papers, bar one (Gathwala et al, 2008) retrieved for this review were determined to have a quality rating at level 3 (NHMRC,

2009). Gathwala et al (2008), level 2 quality rating, used a randomised controlled trial (RCT) with randomisation of participants to each group. None of the other papers used any randomisation; although they did use either matched controls or the participants became their own control. However, with the majority of the studies being level 3, this would suggest that caution must be exercised in interpreting the findings from these studies, as there may be inherent bias in their design which the researchers have not accounted for. Nonetheless, the level 2 study would increase our confidence in the reliability of the results.

Critical appraisal

During the selected time period which ranged from January 2000 to June 2011, the authors have investigated the effectiveness of KC on parent-infant bonding for premature infants. These studies will be critically appraised below to assess their methodological quality in relation to study design, sample characteristics (group allocation, inclusion/exclusion criteria, and size), interventions (types and duration), outcome measures (application and type) employed and data analysis. The study findings will be outlined and discussed in relation to the strengths, limitations and generalisability of the findings from these studies.

Study designs

The studies utilised a range of designs. Mörelius et al, (2005) used a single case series. This design enables each mother-infant pair to act as their own 'control' by comparing the results both pre- and post-intervention. This design is easy to replicate and due to its flexible nature, it is highly suitable for use within a clinical setting (Bowling, 2009); however, with a single case series, it can be difficult to guarantee that the results are exclusively caused by the intervention (Law et al, 1998). Young et al (2010) used a matched controlled group design, matching the premature infants for gestational age and birthweight. Studies using matched control groups attempt to control for bias, by controlling other factors which they believe may influence the outcome (Parahoo, 2006); however, there is the possibility that they may not have considered all the relevant extraneous factors.

Table 2. Search results and total eligible papers

Database	Total number of results	Included in review
Medline	43	4
CINAHL	29	1
OTDBASE	0	0
PsycINFO	1	0
Applied Social Sciences Index and Abstracts (ASSIA)	3	0
Allied and Complimentary Medicine Database (AMED)	0	0
British Nursing Index (BNI)	12	0
Hand Searching	1	1
Total papers retrieved for review	-	**6**

Gathwala et al (2008) used an RCT, which are often considered to be the gold standard in research for determining the effectiveness of a treatment. Miles et al (2006) used a pragmatic cluster recruitment trial. Pragmatic trials are an RCT adaption used in health care to establish if a new treatment has advantages over the best current treatment and are particularly useful where the intervention is non-standardised (Oakley et al, 2006). With cluster recruitment clusters of people are randomised into either a control or an intervention group. Blinding in pragmatic trials is not always possible and so it is more difficult to control bias resulting from subject or observer awareness (Peat et al, 2002); however, the authors attempted to explore both process and outcomes from the trial (Oakley et al, 2006). The final three studies (Feldman et al, 2002; Feldman et al, 2003; Young et al, 2010) used a quasi experiment (a matched comparison between an intervention and control group). This design has some features of an RCT. As both studies were prohibited from an RCT on ethical grounds, a quasi experiment was the best approach, although with this design it is not possible to ascertain with as much conviction that outcomes were due to intervention (Aveyard and Sharp, 2009).

Sample characteristics

Recruitment

Each study used incidental sampling recruiting participants from the units where they were receiving treatment. Incidental sampling is the cheapest and least time-consuming sampling technique, however, it leads to the possibility of bias as participants are from only one area and may not be representative of the entire population (Polgar and Thomas, 2008). All participants were approached to enrol in the studies if their infants met the inclusion criteria set by the researchers. Three studies recruited from a university hospital NICU (Mörelius et al, 2005; Gathwala et al, 2008; Young et al, 2010); two studies recruited from two hospital tertiary referral nurseries (Feldman et al, 2003; Feldman et al, 2002), and the sixth (Miles et al, 2006) recruited participants from two tertiary referral NICUs. Since the latter three studies (Feldman et al, 2002; Feldman et al, 2003; Miles et al, 2006) recruited using more than one NICU site in each of their studies, this may have improved their population validity. One study was carried out in the UK (Miles et al, 2006), while the others were conducted in Sweden, India, Israel and South Korea. Thus the findings of this review must be generalised with caution when referring to any population of premature babies in the UK or elsewhere.

Group allocation

Three of the five studies that use an intervention and control group (Gathwala et al, 2008; Feldman et al, 2003; Feldman et al, 2002) provided details of how participants were allocated to either group. In relation to the two studies that did not provide detail (Miles et al, 2006;

Young, et al, 2010), it is difficult to ascertain the potential for selection bias, reliability or generalisability. Mothers in the Feldman et al studies (2002; 2003) delivered in a given hospital based on the geographic catchment area where they lived. Thus selection bias was minimised as mothers did not choose a hospital based on prior knowledge of infant care practices. Gathwala et al (2008) used random number tables, so likewise selection bias was minimised. Comparability between groups at baseline was reported in all four studies with similar birth weight and GA means.

Inclusion/exclusion criteria
All six studies outlined detailed inclusion and exclusion criteria, which according to Peat et al (2002) helps ensure that the study sample can be accurately described and so generalisation of the results can be more precisely illustrated. Each study had similar inclusion criteria with slight differences between birthweights and GA. Mörelius et al (2005) only included infants being exclusively cared for in an incubator, Miles et al (2006) included infants less than seven days old, and Gathwala et al (2008) only included medically stable infants. Common exclusion criteria included infants with additional medical risks such as major congenital abnormalities and intraventricular haemorrhage. Gathwala et al (2008) was the only study to exclude infants if their mother was unwell. The exclusion of infants with more medical risks may impinge upon the external validity of this review, as it weakens the potential for the results to be applied to the entire neonatal population.

Sample size
In quantitative research, larger sample sizes increase the probability of detecting significant findings and reduces the possibility of error in the same (Macnee, 2004). The sample sizes of the studies reviewed ranged from 17 to 146 mother-infant pairs. Only two of the studies justified the sample size based on ethical and practical grounds (Mörelius, et al, 2005; Miles et al, 2006). Furthermore, Miles et al (2006), with a sample size of n=78, was the only study to report power calculations to determine the size of the sample needed to detect a true difference in mean outcome measures, therefore increasing confidence in their results.

Types of intervention
All of the studies except Young et al (2010) offered a detailed description of the intervention provided which enables future replication to occur (Crombie, 2006). Each study implemented KC in comparable approaches; infants were always naked except for a nappy and often a cap and were placed in SSC under the mother's gown and between her breasts. Some of the studies used additional blankets to cover the infants (Mörelius et al, 2005; Miles et al, 2006). Environmental grading of noise was also included by Mörelius et al (2005). Gathwala et al (2008) was the only study to describe in detail the care received by both the intervention and the control group; and Feldman et al (2002) was the only study that incorporated KC provided by fathers (in addition to the mother).

Duration of intervention
Although KC was initiated in the NICU, the duration and frequency of the intervention varied in each study. In the Feldman et al studies (2002; 2003) the intervention was performed for at least 14 consecutive days and for at least one hour daily. Likewise in Mörelius et al (2005), KC was provided in one hour sessions, however they had no definitive time-frame, simply stating outcome measurements ceased after the fourth session of KC. Miles et al (2006) included KC for 20 minutes daily for four weeks. In Gathwala et al(2008) the intervention continued for three months. They reported that KC was provided for at least six hours daily (in no more than four sittings) however, they also stated that each KC session was provided for a minimum of one hour at a time and continued for as long as the participants were comfortable, thus the duration and frequency in this study is somewhat ambiguous. In Young et al (2010), KC consisted of ten one-hour sessions for three weeks, but it was unclear if there was any pattern to days of delivery of this.

Application of outcome measures
There was much variation in the intervals at which outcome measures were implemented. Feldman et al, (2002) and Feldman et al (2003) conducted outcome measures pre-intervention and at 37 weeks of GA, three and six months corrected age. Miles et al (2006) reported collecting measurements at baseline, in hospital, upon discharge, at four and 12 months post-birth and at one year from term. Gathwala et al (2008) implemented outcome measurements at three months post-intervention and none pre-intervention. While Mörelius et al (2005) and Young, et al (2010) conducted pre-intervention measures they did not indicate a concrete time frame for conducting the post-intervention measures.

Types of outcome measures
Some of the studies included measurements of infant development, infant characteristics and the quality of the home environment (Feldman et al, 2002; Feldman et al, 2003; Miles et al, 2006); however, for the purpose of this review only those measurements related to bonding and attachment are included. Attachment was measured using an extensive variety of methods. Three measured attachment directly (Miles et al, 2006; Gathwala et al, 2008; Young et al, 2010), and all used a variety of indirect measures which will be explored in this review. These indirect measures of the attachment relationship include pain scales to measure infant distress, tools to measure parental mood, distress or satisfaction and measurements of parent-infant interactions.

Miles et al (2006) used 16 outcome measures, 11 of which relate to this review. According to Law et al (1998), the use of too many outcome measures for the sample size can introduce measurement bias which favours the control

group, as overuse of measurements makes it difficult to detect significant findings. Miles et al (2006) only made reference to one of the measure's psychometric properties, namely the video analysis of mother-infant responses to immunisation which they reported to have a high inter-rater reliability (0.95) and test-retest reliability (0.95). Additional measures used included the Parent Stressor Scale: Neonatal Intensive Care, which has been reported to have excellent internal consistency (Miles et al, 1993), the State-Trait Anxiety Inventory for Adults (STAI) recent literature lacks consensus on its reliability (Barnes et al, 2002) and the Infant Toddler Social and Emotional Assessment (ITSEA), which has acceptable test-retest and inter-rater reliability (Carter et al, 2003). When validity and reliability for an outcome measure have not been established, the results should again be cautiously applied to practice.

The Parental Stress Index (PSI) was used by both Miles et al, (2006) and Feldman et al (2003) who reported that it has high internal consistency and good test-retest reliability. Feldman et al (2003) also used the Parental Competence and Satisfaction Scale (PCSC) reporting good reliability and validity and the Home Observation for Measurement of the Environment (HOME), which according to Totsika and Sylva (2004), has sound internal consistency, concurrent validity and test-retest reliability; however it lacks a standardised administration procedure. Both the Feldman et al studies (2002; 2003) used the Coding Interactive Behaviour Manual (CIB). This was reported by the authors to have been validated in many studies of health and at risk dyads, and to have shown sensitivity to infant age, culture setting and both biological and emotional risks, as well as having high inter-rater reliability. Feldman et al (2002) implemented the mother-newborn coding system and reported good reliability for this measure. Mörelius et al (2005) employed the Mood Scale and a Visual Analogue Scale (VAS), but did not comment on either measures' validity or reliability. Two pain profiles were used, namely the Premature Infant Pain Profile (PIPP) and the Neonatal Infant Pain Scale (NIPS), and both have been reported to have good validity and reliability. Young et al (2010) utilised the Edinburgh Postnatal Depression Scale (EPDS) and a modified questionnaire to determine maternal attachment.

Gathwala et al (2008) only used a non-standardised structured maternal interview. Consequently, the results of this study should be interpreted with caution, as there is no way to ascertain the validity or reliability of the measure. Law et al (1998) also indicate that measurement bias can occur when a study uses only one single outcome measure.

Data analysis

All six studies reported statistical significance of their results. A variety of statistical tests were used including ANOVA, Mann-Whitney U test, Chi Square tests, Fisher's exact test and t-tests, which were suitable for analysing the data of interval and ratio levels of measurement (Polgar and Thomas, 2008).

Findings

Five of the studies reported significant improvements in mother-infant attachment following KC intervention. Miles et al (2006) was the only study to report finding no statistically significant differences between either group in benefits to the mother or infant. Mörelius et al (2008) reported short-term results immediately post-intervention, indicating that both mothers and infants felt less distressed post SSC. Looking at the indirect measures, significant differences were found in decreased salivary cortisol of mothers (32%, p=.03), which is correlated to painful/stressful situations, decreased heart rate (7%, p=.03) and VAS scores (89%, p=.002). Infant's heart rates and NIPS pain scores significantly decreased during intervention (p=.007 and p=.005, respectively) and post-intervention (p=.03 and p=.04, respectively), although there was no significant differences in infants' cortisol levels. Young et al (2010) reported increases in infant height (p=0.013) and head circumference (p=0.027), indicating that the infants were developing well. The other three studies reported results on a longer-term basis. Gathwala et al (2008) found significantly enhanced maternal to infant attachment scores for the intervention group compared to the control group ($p<0.001$). Feldman et al (2002) reported a significant overall positive effect for KC intervention on mother-infant interactions ($p<0.001$). They found KC mothers showed more positive effect, touch and adaptations to their infant's cues, while the infants showed more alertness and less gaze aversion. Interestingly, at three months (corrected age), they found both KC mothers ($p<0.01$) and fathers ($p<0.05$) were significantly more sensitive to the infant's cues. They also established at six months (corrected age) mother-infant interactions were significantly more optimal for the KC group ($p<0.05$). Likewise, Feldman et al (2003) reported significant increases in both KC parent's sensitivity and decreased intrusiveness during interactions with the infant ($p<0.01$) and those parents from the KC group provided more affectionate touch to their infants in triadic play ($p<0.05$).

Discussion

The aim of this review was to evaluate the evidence that the use of KC with premature babies helps enhance parent-infant bonding. Generally the findings tend to suggest that the use of KC does enhance parent-infant bonding. This conclusion is widely supported by numerous research studies completed with medical staff or prior to the search period of this review (de Macedo et al, 2007; Roller, 2005; Kennell and McGrath, 2005; Neu, 2004; Tessier et al, 1998). Additional outcomes of KC highlighted in these studies include improved developmental outcomes (Feldman et al, 2002; Feldman et al, 2003), shorter hospital stays (Gathwala et al, 2008), greater infant thriving (Young et al, 2010), less maternal stress (Mörelius et al, 2008), more stimulating home environment (Feldman et al, 2002) and improved family relationships (Feldman et al, 2003).

Nonetheless, it is important to consider the methodological flaws of these studies when interpreting their findings. In particular results of the studies with smaller sample sizes (Mörelius et al, 2005; Miles et al, 2006; Young, et al, 2010) should be treated with caution, especially when generalising comments. All six studies in this review used self-report tools to measure outcomes and many of these were completed in retrospect, which presents a risk of both report and recall bias (Peat et al, 2002). Only three studies attempted to reduce observer bias during the study by blinding the outcome assessor to group allocations (Feldman et al, 2002; Feldman et al, 2003; Miles et al, 2008). In balance though, all the studies, bar Young et al (2010) provided excellent procedural detail, thus they could be effectively replicated to validate the findings. Some used large sample sizes (Feldman et al, 2002; Feldman et al, 2003; Gathwala et al, 2008) and well-established and validated outcome measures (Feldman et al, 2002; Feldman et al, 2003; Mörelius et al, 2005), although they did use a considerable number between them all. Miles et al (2006) used copious outcome measures, which may have introduced measurement bias in favour of the control group and furthermore as the validity and reliability for a number of these was not established, results should be applied cautiously. Additionally the variety of outcome measures used across all of the studies makes it difficult to accurately compare results between them.

While implementation of KC for premature infants is predominantly governed by nursing professionals (Chia et al, 2006; Smith, 1996), all healthcare professionals working with the infant need to be knowledgeable of and involved in KC interventions that aim to enhance the parent-infant bonding process, as this in turn successfully influences the infants' developmental progression (Hunt, 2008; Dodd, 2005) and parental wellbeing.

This review is limited by the inclusion of only quantitative papers written in English language, however, it was felt that neonatal care would be likely to have greater similarities in countries where English is the primary language. In completing this review, the results indicated that there is a gap in determining if there are any long-term gains from KC which persist into childhood. Further research therefore should explore if there is an optimal time-frame and duration for implementing KC and if its effects are different when provided by an individual who is not the infant's mother.

Implications for research, practice and education

Additionally, further research should include those neonates with serious medical risks such as major congenital abnormalities and intraventricular haemorrhage as there are increasing numbers of children surviving today with complex medical needs. Generally the studies reviewed present significant and important findings suggestive that KC does enhance parent-infant bonding. Additionally, healthcare professionals should be appraised with how to support the implementation of KC by both the parents; of the developmental benefits for the neonate; and of the emotional and potential psychological benefits that it has to offer the parent in bonding with their child.

Healthcare professionals are largely responsible for training and educating parents on how to best care for their fragile infant, this is particularly important as mothers are the primary caregivers for the neonate upon discharge from NICU (Tanta et al, 2010). Therefore healthcare professionals should seek out postgraduate training in the use of KC and take the time to educate parents on the technqiues and benefits of the intervention, thus ensuring that they use their unique position to help enhance the attachment process between parents and their infants and in turn improve the wellbeing of both infant and parent.

References

American Occupational Therapy Association. (2006) Specialised knowledge and skills for occupational therapy practice in the neonatal intensive care unit. *American Journal of Occupational Therapy* **60**: 659-68.

Aveyard H, Sharp P. (2009) *A beginner's guide to evidence-based practice in health and social care*. Open University Press: Berkshire.

Barnes LLB, Harp D, Jung WS. (2002) Reliability generalisation of scores on the Spielberger state-trait anxiety inventory. *Educational and Psychological Measurement* **62(4)**: 618-803.

Bowling A. (2009) *Research methods in health – investigating health and health services (third edition)*. Open University Press: Berkshire.

Carter AS, Briggs-Cowan MJ, Jones SM, Little TD. (2003) The infant-toddler social and emotional assessment (ITSA); factor structure, reliability and validity. *Journal of Abnormal Psychology* **31(5)**: 495-515.

Chang YJ, Anderson GC, Lin CH. (2002) Effects of prone and supine positions on sleep state and stress responses in mechanically ventilated preterm infants during the first postnatal week. *Journal of Advanced Nursing* **40(2)**: 161-9.

Chia P, Sellick K, Gan S. (2006) The attitudes and practices of neonatal nurses in the use of kangaroo care. *Australian Journal of Advanced Nursing* **23(4)**: 20-7.

Conde-Agudelo A, Belizán JM, Diaz-Rossello J. (2011) Kangaroo mother care to reduce morbidity and mortality in low birthweight infants (review). *Cochrane Database of Systematic Reviews* **3**: CD002771.

Costeloe K, Hennessy E, Gibson AT, Marlow N, Wilkinson AR. (2000) The EPICure study: outcomes to discharge from hospital for infants born at the threshold of viability. *Pediatrics* **106(4)**: 659-71.

Crombie IK. (2006) *Synthesising qualitative and quantitative health evidence: a guide to methods*. Open University Press: Maidenhead.

de Macedo EC, Cruvinel F, Lukasova K, D'Antino ME. (2007) The mood variation in mothers of pre-term infants in kangaroo mother care and conventional incubator care. *Journal of Tropical Pediatrics* **53**: 344-6.

References continued

Dodd VL. (2005) Implications of kangaroo care for growth and development in pre-term infants. *JOGNN* **34(2)**: 218-32.

Feldman R, Weller A, Sirota L, Eidelman AI. (2003) Testing a family intervention hypothesis: the contribution of mother-infant skin-to-skin contact (kangaroo care) to family interaction, proximity, and touch. *Journal of Family Psychology* **17(1)**: 94-107.

Feldman R, Eidelman AI, Sirota L, Weller A. (2002) Comparison of skin-to-skin (kangaroo) and traditional care: parenting outcomes and pre-term infant development. *Pediatrics* **110(1)**: 16-26.

Gale G, Flushman B, Heffron M, Sweet N. (2004) *Infant mental health: a new dimension to care*: In: Carol K, Jacqueline M. (Eds.). *Development care of newborns and infants – a guide for healthcare professionals*. Mosby: St Louis, US.

Gathwala G, Singh B, Balhara B. (2008) KMC facilitates mother baby attachment in low birthweight infants. *Indian Journal of Pediatrics* **75(1)**: 43-7.

Goodman SH, Gotlieb IH. (1999) Risk for psychopathology in the children of depressed mothers: a developmental model for understanding mechanisms of transmission. *Psychological Review* **106(3)**: 458-90.

Greenberg JS, Seltzer MM, Kraus MW, Chour J-A, Hong J. (2004) The effect of quality of the relationship between mothers and adult children with schizophrenia, autism, or Down Syndrome on maternal wellbeing: the mediating role of optimism. *American Journal of Orthopsychiatry* **74(1)**: 14-25.

Holloway E. (1998) *Relationship-based occupational therapy in the neonatal intensive care unit*: In: Case-Smith J. (Ed.). *Pediatric occupational therapy and early intervention (second edition)*. Butterworth-Heinemann: Woburn, MA: 111-26.

Hunt F. (2008) The importance of kangaroo care on infant oxygen saturation levels and bonding. *Journal of Neonatal Nursing* **14(2)**: 47-51.

Hunter JG. (2005) *Neonatal intensive care unit*: In: Case-Smith J. (Ed.). *Occupational therapy for children (fifth edition)*. Elsevier: Missouri: 688-770.

Hutchon B. (2002) *Occupational therapy in the neonatal intensive care unit*: In: Hong CJ, Howard L. (Eds.). *Occupational therapy in childhood*. Whurr Publishers: London: 153-91.

Johnson S, Hennessy E, Smith R, Trikic R, Wolke D, Marlow N. (2009) Academic attainment and special educational needs in extremely pre-term children at 11 years of age: the EPICure study. *Archives of Disease in Childhood: Fetal and Neonatal Edition* **94(4)**: 283-9.

Johnson A. (2008) Promoting maternal confidence in the NICU. *Journal of Paediatric Health Care* **22(4)**: 254-7.

Kennell J, McGrath S. (2005) Starting the process of mother-infant bonding. *Acta Paediatrica* **94(6)**: 775-7.

Law M, Stewart D, Pollock N, Letts L, Bosch J, Westmorland M. (1998) *Guidelines for critical review form – quantitative studies*. See: fhs.mcmaster.ca/rehab/ebp/pdf/quanguidelines.pdf (accessed 30 May 2012).

Ludington-Hoe S, Swinth J. (1996) Developmental aspects of kangaroo care. *JOGNN* **25(8)**: 691-703.

Macnee CL. (2004) *Understanding nursing research – reading and using research in practice*. Lippincott Williams and Wilkins: Philadelphia.

Marlow N, Wolke D, Bracewell MA, Samara M. (2005) EPICure Study Group: neurologic and developmental disability at six years of age after extremely pre-term birth. *New England Journal of Medicine* **352(1)**: 9-19.

Miles R, Cowan F, Glover V, Stevenson J, Modi N. (2006) A controlled trial of skin-to-skin contact in extremely pre-term infants. *Early Human Development* **82(7)**: 447-55.

Miles MS, Funk SG, Carlson J. (1993) Parental stressor scale: neonatal intensive care unit. *Nursing Research* **42**: 148-52.

Mörelius E, Theodorsson E, Nelson N. (2005) Salivary cortisol and mood and pain profiles during skin-to-skin care for an unselected group of mothers and infants in neonatal intensive care. *Pediatrics* **116(5)**: 1105-13.

Nagorski Johnson A. (2005) Kangaroo holding beyond the NICU. *Pediatric Nursing* **31(1)**: 53-6.

Nagorski Johnson A. (2007) The maternal experience of kangaroo holding. *JOGNN* **36(6)**: 568-73.

Neu M. (1999) Parents' perceptions of skin-to-skin care with their pre-term infants requiring assisted ventilation. *JOGNN* **28(2)**: 157-64.

Neu M. (2004) Kangaroo care: is it for everyone? *Neonatal Network* **23(5)**: 47-54.

National Health and Medical Research Council. (2009) *NHMRC levels of evidence and grades for recommendations for developers of guidelines*. See: nhmrc.gov.au/_files_nhmrc/file/guidelines/evidence_statement_form.pdf (accessed 30 May 2012).

Nystrom K, Axelsson K. (2002) Mothers' experiences of being separated from their newborns. *JOGNN* **31(3)**: 275-82.

Oakley A, Strange V, Bonell C, Allen E, Stephenson J, Ripple Study Team. (2006) Process evaluation in randomised controlled trials of complex interventions. *British Medical Journal* **332**: 413-6.

Office for National Statistics. (2007) *National statistics news release*. See: www.statistics.gov.uk/pdfdir/preterm0507.pdf

Parahoo K. (2006) *Nursing research. Principles, process and issues (second edition)*. Palgrave and Macmillan: Basingstoke: 218-21.

Peat J, Mellis C, Williams K, Xuan W. (2002) *Health science research – a handbook of quantitative methods*. Sage: London.

Polgar S, Thomas SA. (2008) *Introduction to research in the health sciences (fifth edition)*. Churchill Livingstone: Edinburgh.

Roller CG. (2005) Getting to know you: mother's experiences of kangaroo care. *JOGNN* **34(2)**: 210-7.

Tanta KJ, Faota L, Youngblood Langton S. (2010) NICU primer for occupational therapists: exploring the needs of fragile infants, the context in which they are cared for, and the role of OT in this specialized practice area: part I of II. *Journal of Occupational Therapy, Schools and Early Intervention* **3**: 179-86.

Tessier R, Cristo M, Velez S, Giron M, de Calume ZF, Ruiz-Palaez JG, Charpak Y, Charpak N. (1998) Kangaroo mother care and the bonding hypothesis. *Pediatrics* **102(2)**: 390-1.

Totsika V, Sylva K. (2004) The home observation for measurement of the environment revisited. *Child and Adolescent Mental Health* **9(1)**: 25-35.

Warren I. (2008) The Casson Memorial Lecture 2008: Right from the start. *British Journal of Occupational Therapy* **71(7)**: 270-6.

Young HA, Lee J, Shin H-J. (2010) Kangaroo care on premature infant growth and maternal attachment and postpartum depression in South Korea. *Journal of Tropical Pediatrics* **56(5)**: 342-4.

Grading pre-registration midwifery practice: a concept analysis

Samantha Chenery-Morris[1] *MA, NMC RTQ, BSc, RM, RGN/RSCN.* ***Heather Passmore***[2] *MPhil, BA, ADM, PGCEA, RM, RGN.*

1 Senior midwifery lecturer, UCS, Waterfront Building, Neptune Quay, Ipswich IP4 1QJ England. Email: s.chenerymorris@ucs.ac.uk
2 Senior lecturer/lead midwife for education, UCS, Waterfront Building, Neptune Quay, Ipswich IP4 1QJ England. Email: h.passmore@ucs.ac.uk

Abstract

Aim. This paper aims to start a professional and academic dialogue on grading pre-registration midwifery practice.
Background. The introduction of grading pre-registration student midwives' practice has been implemented within an all-graduate midwifery curricula in the UK (NMC, 2009a). The practice of grading does not have one commonly shared understanding within midwifery, so this analysis seeks to explore that concept. While many universities had utilised some form of grading for midwifery practice within their curricula prior to inclusion into the regulatory requirements for pre-registration midwifery education (NMC, 2009a), relatively little is written on the topic within the profession.
Method. The Walker and Avant (2011) framework for conceptual analysis was used to determine the attributes, antecedents, consequences and empirical referents associated with grading pre-registration midwifery practice.
Results. Assessment and grading of student clinical performance is complex. Multiple methods of assessment are often used to grade practice. Frequently used methods include grading tools with explicit descriptions of students' performance with three or four grades for use by mentors in clinical practice, portfolios or objective structured clinical examinations (OSCE) graded by faculty alone, or in collaboration with practice partners. Conceptually, only the clinical mentor's assessment is appropriate, despite its limitations. The empirical referents for grading practice are ongoing high-quality education and support for mentors and evaluation of the grading processes used.

Key words: Concept analysis, pre-registration midwifery education, mentors, practice assessment, grading, student performance, evidence-based midwifery

Introduction

Six years ago the NMC (2006), the regulatory body for nursing and midwifery in the UK, reviewed the standards for pre-registration midwifery education. They assessed whether it equipped students with the necessary skills, attitudes and knowledge to meet the needs of women, babies and their families. This consultation considered whether student midwifery practice should be graded, among other issues.

A total of 75% of the respondents to the consultation agreed that practice should be graded (NMC, 2006), but there were reservations.

Documented discussions included: the subjectivity of grading professional practice, issues of inter-rater reliability, how grading practice would add value to the midwifery curriculum, skewing of marks, grade inflation attributed to grading practice, and the importance of a consistent standard across the UK (NMC, 2006). Despite the reservations voiced by the review committee, grading became part of the midwifery curriculum in 2009.

Grading practice is not uncommon in healthcare education, both pre-registration (Calman et al, 2002; Watson et al, 2002) and post-registration nursing programmes (Baulcomb and Watson, 2003; Gill et al, 2006), midwifery (Smith, 2007) and medical education (de Haes et al, 2005), but it is not without its documented problems. The published literature concurs with the issues raised by the midwifery consultation respondents (NMC, 2006) that grading practice is a complex assessment with inherent problems, notably reliability (Fisher and Parolin, 2000) grade inflation (Walsh and Seldomridge, 2005; Cacamese et al, 2007; Scanlan and Care, 2008) and lack of consistency across the UK which can cause inequalities for students (NES, 2008).

Concepts are the building blocks of theory development. For a concept to be strong, it must name the phenomenon to which it refers, be clearly defined or have structure and a function, so that anyone wanting to use it can understand it (Walker and Avant, 2011). Concept analysis is a formal analysis of language that must be rigorous, but the end product is always incomplete (Walker and Avant, 2011). Several frameworks for concept analysis exist, typically consisting of seven to 11 steps (Wilson, 1963; Meleis, 2007).

Walker and Avant (2011) recommend eight steps are sufficient to explore the concept and understand its 'essence'. The steps typically include:

- Choosing the concept
- Defining the aims of the concept
- Identifying uses of the concept
- Determining the defining attributes
- Identifying model case
- Identifying alternative cases
- Identifying antecedents and consequences
- Defining empirical referents (Walker and Avant, 2011).

This framework has been tried and tested and refined. Other literature using concept analysis has explored terms such as competency in nursing practice (Elcock, 1998; Axley, 2008; Tilley, 2008) but not explored the grading of nursing or midwifery practice.

1. Select a concept

The concept to be analysed is grading practice, specifically within pre-registration midwifery curricula. Following the consultation process, the revised standards for pre-registration midwifery education were published (NMC, 2009a). They state: 'Clinical practice must be graded' (NMC, 2009a: 17), with guidance as to how to meet this standard: '*Assessment of practice, which is direct hands-on care, must be graded. The grades achieved must contribute to the outcome of the final academic award. If the assessment of clinical practice involves a variety of components and the student fails to achieve competence in one of the components, then the student must fail*' (NMC, 2009a: 18).

The mandatory introduction that clinical practice must be graded within pre-registration midwifery curricula, and the variety of means by which this may be achieved (NMC, 2009b), provided the impetus for the concept to be selected for analysis. This concept analysis will explore grading practice so educationalists, sign-off mentors, students and the regulatory body can begin the discussions on what the concept means in practice. Ultimately, a clear understanding of the concept should be shared by all, although this analysis is only the beginning of an academic discussion on grading practice.

A concept, such as grading practice, can be mapped or analysed for a variety of reasons (Gomm, 2009). In this case, the concept of grading is being defined to plan a research project and to begin a dialogue. In order to explore the concept of grading, the philosophical basis needs to be identified. For grading to be successful, a common understanding of this concept needs to be operationally defined and accepted by those in grading practice. It is not enough to write definitions and synonyms of grading; the concept has to be operationalised so it can be used for theory development or research. It is, in effect, the first step in the research process.

2. Determine the aims of analysis

The purpose of this analysis is to clarify the meaning of grading pre-registration midwifery practice, by differentiating it from similar concepts such as competency or proficiency. As educators, this topic has concerned us. How best to grade practice, by whom and how much should count towards the degree classification is unclear within the NMC documentation, therefore open to interpretation by each academic education institute (AEI) within the UK (Chenery-Morris, 2010). Whether grading of practice should take place 'in' the clinical environment or a proxy 'of' practice, such as a portfolio or simulation, is also undefined. This conceptual analysis aims to explore and develop an operational definition for grading practice and offer to the profession its value.

To define and analyse the concept of grading practice, a systematic literature search was conducted using the CINAHL, Medline and PubMed databases. Because the term grading is relatively new, competenc*, proficiency, assessment, mentor*, performance, evaluation and appraisal within interprofessional published literature were all used as search terms.

3. Identify uses of the concept

In order to identify a meaning of a word, the boundaries and usage need to be considered in a given context of the term (Hart, 2009). The phenomenon in this case is grading, so this term needs to be isolated from similar phenomena (Hart, 2009). This can be undertaken by explicitly stating what grading is and what it is not to help focus the analysis. There are numerous methods of examining the definition of words or phenomenon, using dictionary meanings of a word 'etymologies' tracing the development of a word and demonstrating how the word is used through examples.

The term 'grading' can be defined as a noun or verb. As a noun, definitions include: any of the stages of an orderly systematic process, a rating associated with a classification of quality, an accepted standard and a group of people with the same merit. The verb 'to grade' means to score or mark a piece of work. It is a transitive verb meaning it has two characteristics, it has an action and secondly that action can be applied to something, a direct object. Thus, the action is to grade and the direct object of the grading is clinical practice (NMC, 2009a).

The etymology of grading is referenced to the Roman word 'gradus' as a classification or a way to keep order or value something relative to others (Verboven, 2010). In education, a higher grade is considered to be superior to a lower grade. The Latin derivative of this word is similar; today, the merit of educational ability is classified by the grade (Verboven, 2010).

Grading practice reflects a decision made (Lanphear, 1999). It allows for recognition of merit or excellence beyond a binary system of pass/fail (Andre, 2000). Grading provides feedback to students above meeting the minimum standard, it allows the students to know how well they are meeting the required standards in practice (Moon, 2002). The student can learn from the grading that their performance is either close to the minimum grade, as with a low score and identify their strengths and weaknesses to plan and maximise opportunities for improvement. It can be applied to a single event, or assessment of continuous practice.

4. Determine the defining attributes

This aspect of the concept analysis offers a chance to differentiate this concept from other similar or related concepts. In their review of the health-related literature, Gray and Donaldson (2009) identified 119 articles across 14 professional groups where grading of practice was undertaken. The focus of their literature review was to explore issues in grading professional practice. They defined grading as 'any scale (numerical, alphabetical or descriptive) which has been used to rate any type of student performance, whether that was during a specific assessment task or continuous assessment' (Gray and Donaldson, 2009: 12). There was no defining attribute from the review, but knowledge and action or performance were noted, going

beyond showing and doing to exploring the underlying thinking (Clouder and Toms, 2005). Assessment tools were often developed, but needed further refinements and were frequently attributed to grade inflation. There was limited correlation between theory and practice grades and triangulation of grades was commonly suggested.

The NMC define six principles for assessment of competency, which must be interpreted in relation to context. An attribute clearly identified in two of these principles is knowledge, for example 'sound, evidence-based knowledge of facilitating the physiology of childbirth and the newborn' and 'a knowledge of physiological, social, emotional and spiritual factors that may positively or adversely influence normal physiology' (NMC, 2009a: 4).

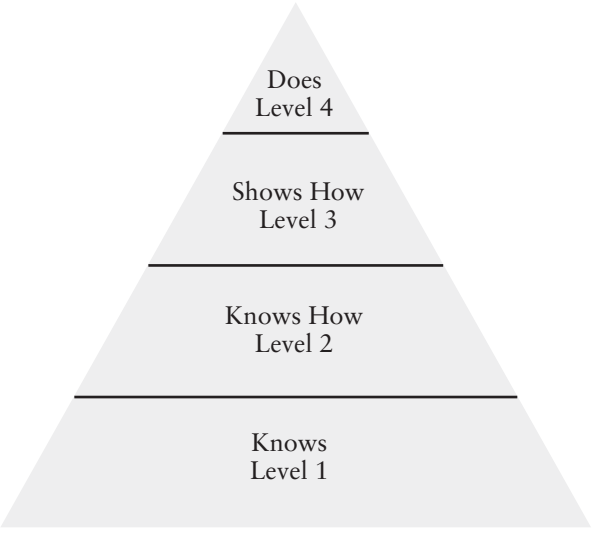
The concept of grading is often confused with competency or proficiency, probably because they are all terms used for assessing practice. Grading is often called performance to differentiate it from these related concepts. In pre-registration midwifery education, the terms competency and proficiency still exist, although less explicitly than previous versions of the standards for pre-registration midwifery education (NMC, 2004). These terms all co-exist within Benner's philosophy of nursing practice (Benner, 1984; Dreyfus and Dreyfus, 1986) and suggest a hierarchy through the development of knowledge and skill acquisition and competency from novice, through advanced beginner, competent, to proficient and expert. The grading of midwifery practice may be a means to measure the expertise or performance of pre-registration midwifery education in practice.

There is considerable confusion between the terms competency and performance (Maxted et al, 2004). In the Gray and Donaldson literature review (2009), many studies tried to differentiate between hierarchies of knowledge. Miller's pyramid was evident in many studies and levels 3 and 4 were assessed (Gray and Donaldson, 2009). See Figure 1 for a diagram of Miller's pyramid.

The lowest level, (level 1), 'knows', assumes the student has the knowledge that underpins their practice. The next level (2), 'knows how', is associated with competency; the student is able to demonstrate they understand practice. Then this is followed by performance, which means they 'show how' they practise – this level equates to assessing simulation of practice. The final level 'does' is what they actually do in practice, the action of their practice, as found in NMC (2009a: 4) 'students must demonstrate competence in' and NMC (2009a: 21): 'Students must be proficient in all standards'. This then equates to grading 'in practice as opposed to 'of practice'. It is what the student does in practice that is the most difficult to measure. This is due to variation among mentor practices, their individual relationship with each student, and the subjectivity of practice assessments.

Rethans et al (2002) argue that these descriptions should move up a level and that 'shows how' is the measure of competency whereas 'does' is the 'performance' of the student in actual practice. They argue that there are two

Figure 1. Miller's pyramid (Miller, 1990)



distinct assessments, competency-based and performance-based assessments and there is no relationship between the two. What students can do in controlled situations bears no resemblance to how they perform in practice. Competency can be measured in controlled representations of practice whereas performance-based assessments measure what is done in practice. While we agree with Rethaus et al (2002) if performance is the pinnacle of the pyramid, as stated by Miller (1990) and a higher level of Benner's philosophy (1984) as expressed by her novice to expert theory, competence and performance must be related, even as lower order skills. Thus the student can demonstrate competency or proficiency in a simulated environment (OSCE), to help them develop the skill to improve their performance in practice.

This is in direct contrast to Bernstein (1996) who differentiates between the same two forms of practice, competency and performance, but with different arguments. Competency, he says, cannot be assessed outside the context in which it occurs, thus you cannot assess competency outside the practice arena. In midwifery, for example, a student's competency in a community setting cannot be measured in a skills laboratory. This concurs with the NMC (2008: 32) document, which explicitly states that competency assessments 'should be undertaken through direct observation in practice'. However, performance requires the transmitter (mentor) to show the student how to perform and acquire the ideal skills of practice (Bernstein, 1996). The student's performance can then be measured against the ideal, with a grade commensurate with pre-determined standards. For Bernstein, performance can be assessed outside the area in which it is learned (Bernstein, 1996). This is grading 'of' practice, not 'in' practice. This might be acceptable in some forms of education, however, in pre-registration midwifery education, the NMC (2009a: 18) have been equally explicit in stating that 'assessment of practice, (which) is direct hands-on care' cannot be graded outside

the practice setting, otherwise it is not direct hands-on care, but a proxy for practice.

Finally, Rowntree (1987) sees assessment 'as occurring when one person, in some kind of interaction, direct or indirect, with another, is conscious of obtaining and interpreting information about the knowledge and understanding, or abilities and attitudes of that other person'. Here, 'direct' seems to imply 'in' practice, whereas 'indirect' seems to be 'of' practice.

The different terminology used by the regulators in setting standards, from mentor, sign-off mentor, or role model, all add to the confusion (Bray and Nettleton, 2007). The NMC documents (2008; 2009a) also confuse the issue with no mention of grading performance within either document and the continued use of competency and proficiency within both documents. While this allows AEIs to interpret the standards, it also adds to the lack of clarity of meaning of grading practice.

Thus, in exploring the published literature, research and professional documentation, the attributes of grading can be stated, which are theoretical underpinning knowledge, a practice environment, at least two people in a relationship, one with knowledge of being a mentor and the performance of practice, who can show the performance of a midwife and the other as a student who learns and practises this performance. At the end of the practice placement, the mentor makes a judgement about the student and this is recorded, numerically, alphabetically or as a description against a pre-defined standard. The NMC (2009a) set the minimum standard, in the form of essential skills clusters (ESC) and four competency domains. It is then up to each AEI to devise a numeric, alphabetic or description of the required performance against which to grade the student.

5. Identify model case

In a model case, a student's practice performance is graded by their sign-off mentor, using a grading tool that has clearly defined performance criteria; these are attitudes, skills and knowledge based on the essential skills clusters (NMC, 2009a). The grading tool or rubric consists of detailed descriptions of the expected performance for each level four, five and six in degree programmes with three or four grade points, such as first, second, third and fail.

The student and the sign-off mentor who has supervised their most recent practice placement sit in a quiet room and discuss/negotiate the practice performance grade. The student has the opportunity to discuss the grade and offer examples to demonstrate achievement of the mark awarded. The sign-off mentor has ultimate responsibility for the practice grade awarded. The process may be within a tripartite framework with the presence of a lecturer, as this has been deemed a robust process (Doughty et al, 2007) and occurs in approximately 50% of student midwifery programmes according to the MINT project (NMC, 2011). The model case exemplifies all the attributes of the concept under examination.

6. Identify additional cases

Additional cases are offered that illustrate how differences in related examples meet some, but not all or none of the requirements of the concept under examination. Three types of additional cases are offered below: the borderline case, which contains some of the critical attributes but not all of them; a related case, which is related to the concept but does not contain the critical attributes; and a contrary case which does not exemplify the concept at all.

Borderline case-simulation assessment

The student practice grading is undertaken at OSCE. Practice and lecturing staff come together to plan, assess and grade the student performance during this examination. The scenario reflects a common event in practice, whether it is an antenatal booking interview or postnatal discharge consultation. The student explores the scenario with the client who is an actor; the lecturer and a sign-off mentor assess the student performance and grade this according to pre-set seen criteria. A rubric may still be used to classify the student grade, but there is not a period of time before the OSCE in which the sign-off mentor and student work together, thus the transmitter of midwifery practice does not assess the performance of the student. This assessment is also a one-off assessment or proxy 'for' or 'of' practice and not an authentic grading of continuous student performance 'in' practice.

Related case-competency assessment

A student and sign-off mentor work through the student's practice assessment documentation and the mentor signs each standard in the ESC. This is an assessment of competency not grading in practice. In this instance, the student meets the required standard and can demonstrate the basic requirements of the role of the midwife, or can not. The student does not know how well the criteria have been met, whether apt at each competency or only meeting the minimum required, but is deemed safe to practise at this point. The requirement here is that the student can demonstrate a skill; but there is no grading. A competency judgement has occurred utilising a binary pass/fail assessment, but no evaluation of how well the student can undertake the skill.

Contrary case – portfolio

A written portfolio of evidence is submitted by the student midwife to the university to demonstrate their practice knowledge and understanding of the assessment criteria. This portfolio is graded by academic staff. Although this assessment may enable the student to demonstrate a link between practice and theory it does not grade their performance 'in' practice, rather it is a grading 'of' practice and a theoretical assessment. Criteria are produced to grade the portfolio. A grade is awarded for the portfolio, but this cannot assess how the student performs in practice, merely how the student perceives they have performed and how articulately they write to demonstrate their knowledge. Inclusion of testimonies

may offer insight to performance in practice, but are subject to selection bias by the student.

7. Identify antecedents and consequents

For the concept of grading pre-registration midwifery students' practice to be applicable practically, the antecedents and consequents need to be explored. An attribute cannot be an antecedent or a consequence. The antecedent is what is necessary to precede the concept and the consequence is what occurs after. Thus, what is necessary for grading to take place and what happens following the grading of midwifery practice?

The NMC set the standard for pre-registration midwifery education (NMC, 2009a). This is an antecedent. As is a university and their partnership trusts constructing an educationally sound curriculum that adheres to the standards. The course combines theory (up to 50%) and practice (up to 60%) (NMC, 2009a). Only midwife teachers and sign-off mentors can assess a student midwife (NMC, 2009a). Usually, midwifery lecturers assess the theoretical assignments and sign-off mentors assess the students' clinical practice.

For this assessment to take place, there must be a sign-off mentor, a student, a period of time that they have both worked together in practice, which constitutes hands-on care of women. The assessment of practice will be measured against a standard or criteria. The mentor has to differentiate between pass, fail and at least one further measurement of merit or excellence; otherwise the assessment is merely a binary pass/fails system as opposed to a score or numeric value of their practice performance that contributes towards their academic award. The assessment should take place in practice, as soon as possible at the end of the continuous period in which they have worked together to be contemporaneous and relevant. In the final placement, an additional antecedent is stipulated that sign-off mentors should be allocated protected time.

Consequences are the events that happen after the concept has occurred. After the grading, the student has a better understanding of their own practice performance and can work on areas where they are less confident or perform less well. Conversely, competency or proficiency assessment means the student has met the minimum requirement, but the student does not necessarily know how well they met this standard or how to improve their practice in future. This is where grade inflation reduces the benefits of consequents and should be ameliorated to add value to the process.

8. Define empirical referents

This final step in the concept analysis is to present the processes by which the concept is to be measured. It is the event that demonstrates the existence of the concept. Thus, the attributes of grading are theoretical underpinning knowledge, skills and attitudes, a practice environment, and two people in a relationship, one who makes a judgement about the other, ascribing a numerical, alphabetic or as a descriptive grade against a pre-defined standard.

Midwives who have completed an additional approved educational programme become sign-off mentors. The sign-off mentor considers: how her practice, teaching and assessing is received by the student; facilitates learning, dependent upon the workload of the day; assesses the student performance. The sign-off mentor should be willing and able to understand the educational terminology within the grading tool and make an educational judgement about the student's clinical performance (Fitzgerald et al, 2010). Annual updates may assist in this process, as might regular contact with link lecturers. The practice grading must be able to distinguish between students, whether they are unsafe, safe, good or excellent in practice (Walsh and Seldomridge, 2005; Weaver et al, 2007). The ongoing support and education of each sign-off mentor is paramount. To enable continued understanding of the complexities of assessing student performance in practice. This assists the sign-off mentor to recognise professional accountability for the student to enter the professional register and is monitored within the triennial review process (NMC, 2008).

Time is required for the sign-off mentor and student to work together to teach and assess the student effectively (Clynes and Raftery, 2008). A professional relationship between the student and sign-off mentor needs time to develop; the mentor needs to demonstrate midwifery practice and the student needs time to practise their craft.

The close working relationship between the sign-off mentor and the student can result in a subjective grading, based on observation and personal values (Stuart, 2007). Smith (2007: 116) reported midwifery mentors used their own belief systems to grade the student as opposed to the set criteria and they found the grading process 'difficult and anxiety provoking'. As a result of this research, Smith (2007) altered the assessment to a pass/fail competency assessment with the student grade derived from a portfolio of evidence because there were issues of inter-rater reliability, thus changing the assessment from grading 'in' practice to grading 'of' practice. As this research was undertaken prior to the mandatory addition of grading student midwifery practice, the portfolio may no longer be used at this university.

Discussion

The use of rubrics, although helpful in reducing grade inflation may be problematic in pre-registration midwifery education as there are no clearly detailed and agreed performance criteria. The ESC detail two periods in the programme, the first progression point and entry onto the register (NMC, 2009a), but it would be impractical to grade the student against each of these ESC, since there are 34 for the first progression point for communication alone. There are four further sections to cover and additional skills the student must demonstrate prior to registration. There is a requirement though that the student demonstrates competency or is proficient in each of the ESC.

Although grading in practice by the sign-off mentor is the concept under examination and an ideal, the NMC (2009a:

18) imply there may be alternatives 'if the assessment of clinical practice involves a variety of components'. This sentence suggests that one method may not be sufficient or rigorous enough to assess all areas of clinical practice, and that grading 'in' practice by sign-off mentors is only one of a range of assessment strategies that could contribute towards the academic award. Triangulation of methods is recommended, as no one single assessment method encompasses all practice (Fotheringham, 2010). Walsh and Seldomridge (2005) suggest laboratory and practice grades contribute towards the academic award. They reported reduced grade inflation and increased quality in the practice assessment of all three domains, affective, psychomotor and cognitive. However, this issue of grading is clouded in the NMC (2009a) documents as they state that the student who fails to meet the required competency in one practice component must fail. As we have argued previously competency is not a mechanism for grading, but a part of the heirarchy of performance. Thus grading 'in' practice, should only happen within practice by the sign-off mentor.

Another comment worthy of consideration is the grading 'of' or grading 'in' practice debate. If students are to be graded 'in' practice, their sign-off mentor must be responsible for this grade, however, if grading 'of' practice is permissible then the OSCE or portfolio are acceptable and appropriate tools with which to grade. They may be superior because they stand up to the rigours of moderation and external verification better than grading 'in' practice. However, if there is no relationship between how a student performs in a simulated environment and how they perform in practice and success in one context cannot be assumed or transferred to the other (Rethans et al, 2002), they can only be used as formative processes.

Because the pre-registration midwifery grade must 'count' towards the academic award, this concept analysis needs to concentrate on summative as opposed to formative assessment strategies. Other forms of innovate assessment techniques have been excluded by this concept analysis as they would not meet the NMC requirements. They include women assessing students' performance and giving feedback on the care they received, peer assessment and student self-assessment. These may all contribute to students' learning and development and occur in practice, but they cannot be used for summative assessments, as the only people permitted to assess that student are the lecturer and sign-off mentor (NMC, 2009a).

The confidence in the grade awarded was lacking in several grading practices (Calman et al, 2002; Cumming, 2010; Fitzgerald et al, 2010). Grade inflation is a commonly cited issue (Donaldson and Gray, 2012). Reasons for grade inflation are four-fold (Gray and Donaldson, 2009; Donaldson and Gray, 2012). The students may exert pressure on their mentor to achieve a high grade; the assessor, who may lack experience or confidence in grading students' performance, may dislike giving negative feedback, or give students lenient grades. There is less distance between the student and the mentor in practice than between a student essay and the lecturer in theory, with no anonymity for the student or assessor and thus a closer relationship forms. This relationship can cause bias within the assessment process. The final cause of grade inflation is under- or over-developed tools to grade practice.

A grading tool is advocated, to measure the student performance (Bourbonnais et al, 2008). The tool needs to be transparent to both the student and the mentor and to be used consistently by all sign-off mentors, for it to have inter-rater reliability. The development of a rubric for measuring or grading students clinical performance has been recommended (Gray and Donaldson, 2009). More explicit grading schemes have been found to reduce grade inflation (Weaver et al, 2007). However, three to five descriptors are commonly used. The tool needs to be evaluated by all parties, the students, sign-off mentors and educationalists, to ensure it encapsulates contemporary midwifery practice performance. Although the tripartite assessment meeting is seen as a frequently used and robust strategy, how the lecturer presence can affect the student grade is unstated (Doughty et al, 2007; NMC, 2011). The lecturer can be used as a moderator for the assessment and assist the process by contextualising examples of performance.

By exploring the concept of grading practice, we have highlighted a variety of assessments used to grade practice. In a study of Scottish nursing and midwifery curricula, the variation in assessment practices was seen to be problematic and may cause inequality in student workloads and experience, especially in practice assessment (NES, 2008). The only method of actually assessing 'in' practice is by the sign-off mentor working with the student in practice. Other methods are proxies of grading practice and do not meet all the requirements of the concept.

Partnership working between AEIs and NHS trusts, with ongoing mentor support and training is required for successful grading of practice. How grading of student midwifery practice adds value to the curriculum needs to be explored by future research. More guidance, to ensure national equity in grading pre-registration midwifery practice, would help clarify this concept in future curriculum development.

Implications for practice

Having a greater understanding of the concepts of grading pre-registration midwifery practice will assist academics in using technical rationality to develop curricula that assigns a grade to students' practice.

A professional and educational dialogue should ensue to develop a shared understanding of the concept to influence future midwifery curricula. The concept has applicability to the whole of the UK in accordance with the regulatory framework. Exploration of a national framework of how practice should or could be graded and how much it contributes towards the academic award could help reduce inequalities in student experiences and practice assessment workloads.

References

Andre K. (2000) Grading student clinical practice performance: the Australian perspective. *Nurse Education Today* **20(8)**: 672-9.

Axley L. (2008) Competency: a concept analysis. *Nursing Forum* **43(4)**: 214-22.

Baulcomb S, Watson R. (2003) The internal consistency and intra-rater reliability of an assessment practice grid for community nurses. *Clinical Effectiveness in Nursing* **7(3/4)**: 168-70.

Benner P. (1984) *From novice to expert*. Addison-Wesley: Menlo Park, CA.

Bernstein B. (1996) *Pedagogy, symbolic control and identity.* Taylor and Francis: London.

Bourbonnais FF, Langford S, Giannantonio L. (2008) Development of a clinical evaluation tool for baccalaureate nursing students. *Nurse Education in Practice* **8(1)**: 62-71.

Bray L, Nettleton P. (2007) Assessor or mentor? Role confusion in professional education. *Nurse Education Today* **27(8)**: 848-55.

Cacamese SM, Elnicki M, Speer AJ. (2007) Grade inflation and the internal medicine subinternship: a national survey of clerkship directors. *Teaching and Learning in Medicine* **19(4)**: 343-6.

Calman L, Watson R, Norman I, Redfern S, Murrells T. (2002) Assessing the practice of student nurses: methods, preparation of assessors and student views. *Journal of Advanced Nursing* **38(5)**: 516-23.

Chenery-Morris S. (2010) Grading midwifery practice: a discourse analysis. *Evidence Based Midwifery* **8(4)**: 122-7.

Clouder L, Toms J. (2005) *An evaluation of the validity of assessment strategies used to grade practice learning in undergraduate physiotherapy students*. See: http://repos.hsap.kcl.ac.uk/content/m10181/latest/06-35_lynnclouder.pdf (accessed 30 May 2012).

Clynes MP, Raftery SEC. (2008) Feedback: an essential element of student learning in clinical practice. *Nurse Education in Practice* **8(6)**: 405-11.

Cumming S. (2010) Fair play on assessment. *Nursing Standard* **24(41)**: 61.

De Haes J, Oort F, Hulsman RL. (2005) Summative assessment of medical students' communication skills and professional attitudes through observation in clinical practice. *Medical Teacher* **27(7)**: 583-9.

Donaldson JH, Gray M. (2012) Systematic review of grading practice: is there evidence of grade inflation? *Nurse Education in Practice* **12(2)**: 101-14.

Doughty R, Harris T, McLean M. (2007) Tripartite assessment of learners during practice placements in midwifery pre-registration programmes. *Education and Training* **49(3)**: 227-35.

Dreyfus H, Dreyfus S. (1986) *Mind over machine: the power of human intuition and expertise in the era of the computer.* Free Press: New York.

Elcock K. (1998) Lecturer practitioner: a concept analysis. *Journal of Advanced Nursing* **28(5)**: 1092-8.

Fisher M, Parolin M. (2000) The reliability of measuring nursing clinical performance using a competency based assessment tool: a pilot study. *Collegian* **7(3)**: 21-7.

Fitzgerald M, Gibson F, Gunn K. (2010) Contemporary issues relating to assessment of pre-registration nursing students in practice. *Nurse Education in Practice* **10(3)**: 158-63.

Fotheringham D. (2010) Triangulation for the assessment of clinical nursing skills: a review of theory, use and methodology. *International Journal of Nursing Studies* **47(3)**: 386-91.

Gill F, Leslie G, Southerland K. (2006) Evaluation of a clinical perfromance assessment tool (CPAT) within a critical care context. *Australian Critical Care* **19(3)**: 105-13.

Gomm R. (2009) *Key concepts in social research methods*. Palgrave Macmillan: Basingstoke.

Gray MA, Donaldson J. (2009) *Exploring issues in the use of grading in practice: literature review.* Edinburgh Napier University: Edinburgh.

Hart C. (2009) *Doing a literature review releasing the social science research imagination.* Sage: London.

Lanphear J. (1999) In support of grading systems. *Education for Health* **12(1)**: 78-83.

Maxted M, Grant J, Wooding K, Norcini J. (2004) *Assessing healthcare students in practice placements: an overview of the literature*. Sage: London.

Meleis AI. (2007) *Theoretical nursing: development and progress*. Lippincott, Williams and Wilkins: Philadelphia.

Miller G. (1990) The assessment of clinical skills/competence/performance. *Acad Med* **65(9)**: s63-7.

Moon J. (2002) *The module and programme development handbook*. Kogan Page: London.

NES. (2008) *Nursing and midwifery in Scotland: being fit for practice*. NHS Education for Scotland: Edinburgh.

NMC. (2004) *Standards of proficiency for pre-registration midwifery education*. NMC: London.

NMC. (2006) *NMC consultation on a review of pre-registration midwifery education.* NMC: London.

NMC. (2008) *Standards to support learning and assessment in practice*. NMC: London.

NMC. (2009a) *Standards for pre-registration midwifery eduction*. NMC: London.

NMC. (2009b) Lead midwife for education personal communication, NMC Strategic Reference Group special meeting London, September.

NMC. (2011) *MINT (Midwives in Teaching) final report 2011*. NMC: London.

Rethans JJ, Norcini JJ, Barón-Maldonado M, Blackmore D, Jolly BC, LaDuca T, Lew S, Page GG, Southgate LH. (2002) The relationship between competence and performance: implications for assessing practice performance. *Medical Education* **36**: 901-9.

Rowntree D. (1987) *Assessing students: how shall we know them*. Kogan Page: London.

Scanlan JM, Care WD. (2008) Issues with grading and grade inflation in nursing education. *Annual Review of Nursing Education* **6**: 173-88.

Smith J. (2007) Assessing and grading students' clinical practice: midwives' lived experience. *Evidence Based Midwifery* **5(4)**: 112-8.

Stuart C. (2007) *Assessment, supervision and support in clinical practice: a guide for nurses, midwives and other health professionals*. Churchill Livingstone: London.

Tilley S. (2008) Competency in nursing: a concept analysis. *Journal of Continuing Education in Nursing* **39(2)**: 58-64.

Verboven T. (2010) Five common words and their chilling meanings. *The Class Struggle*: Canada. See: http://tinyurl.com/c4rv4v9 (accessed 31 May 2012)

Walker L, Avant K. (2011) *Strategies for theory construction in nursing*. Pearson Education: New Jersey.

Walsh CM, Seldomridge LA. (2005) Clinical grades: upward bound. *Journal of Nursing Education* **44(4)**: 162-8.

Watson R, Calman L, Norman I, Redfern S, Murrells T. (2002) Assessing clinical competence in student nurses. *Journal of Clinical Nursing* **11(4)**: 554-5.

Weaver CS, Humbert AJ, Besinger BR, Graber JA, Brizendine EJ. (2007) A more explicit grading scale decreases grade inflation in a clinical clerkship. *Academic Emergency Medicine* **14(3)**: 283-6.

Wilson J. (1963) *Thinking with concepts*. Cambridge University Press: New York.

Assessment strategies for teaching empathy, intuition and sensitivity on the labour ward

***Anna Brown** PhD, MSc, SRN, RM, PGCEA.*
Pathway leader for post-registration midwifery programmes, University of Surrey, School of Health and Social Care, Stag Hill Campus, Guildford, Surrey, GU2 7TE. Email: am.brown@surrey.ac.uk

Funded by the Iolanthe Trust and Dame Rosalind Paget Awards.

Abstract

Aim. This research sought to explore how the skills of non-verbal communication are taught, learnt and assessed on a labour ward.

Method. An ethnographic approach was used to explore the relationship between mentors and students during focus group discussions across a number of trusts. The object was to ascertain, through discussion, how students learn and mentors assess the skills of empathy, intuition and sensitivity in being 'with woman' in a labour ward setting. An etic view of relationships between the mentor and the student in a labour ward culture was explored through the facilitation of focus group discussion. Ethical approval was obtained from Integrated Research Application System and the University of Surrey Ethics Committee.

Sample. A total of 56 participants across eight sites took part in the project including mentors and third-year students on midwifery programmes.

Findings. Three main themes were identified from the data analysis: being 'with woman', teaching and learning strategies, and assessment.

Implications. The findings implied that most participants agreed on a definition of being 'with woman' and used role modelling to teach and learn these skills. Mentors however implied that assessing such skills was difficult and concluded that continuous assessment of communication skills and the 'soft skills' of empathy, sensitivity and intuition were required.

Key words: Teaching, skills assessment, labour ward, empathy, sensitivity mentors, student evidence-based midwifery

Introduction

This research was carried out as a result of a review of examination records for three 12- and 18-month midwifery programmes. It seemed that a number of students were failing to achieve a number of learning outcomes and in particular the NMC (2009) requirements of communication skills deemed to be a necessary element in becoming a qualified midwife. It is unclear why some students fail to complete these learning outcomes and consequently, either require extended periods in practice or fail at the penultimate or final portfolio assessment. Mentors generally document that students are not able to demonstrate effective communication skills (Webb and Shakespeare, 2008), but this is of especial importance to midwives (Butler et al, 2008).

Inevitably, the issues of articulating parameters of communication skills are discussed and mentors suggest that students are not able to be 'with woman' at this crucial time in the childbearing experience. Anecdotal evidence by mentors suggest that although they have an intrinsic ability to deem a student unfit to practise, they find difficulty in articulating exactly what the students have failed to achieve. Understandably students become very distressed when they have failed to achieve these outcomes and question how they may learn and demonstrate these skills.

The aim of this research was to explore these issues and understand how mentors teach, articulate and assess aspects of communication to include empathy, intuition and sensitivity and how students learn, develop and demonstrate such skills.

It is generally believed that communication skills are the skills by which practitioners are 'with woman' in their daily contact with childbearing women. The difficulties involved in assessing such skills have been observed in practice and commented on by mentors when attempting to articulate what and how they assess such skills (Smith, 2007). This research explored these issues to gain some understanding of how communication skills are learnt by students and assessed by mentors. Communication is more than just words and, according to Gibbons' (2010) observation and experience, begins by creating the right environment for women ensuring privacy and comfort so that nothing inhibits dialogue. In addition, the impact of communication on positive first impressions has been well researched (Mehrabian, 1971, 1972) and could influence the quality of rapport and relationship between woman and midwife. Raynor and England (2010) support the elements identified by the NMC for effective communication (NMC, 2009) and believe that attitudes of acceptance and warmth (positive regards towards the mother by midwives), genuineness (congruence by presenting one's thoughts and feelings in a transparent verbal and non-verbal approach by the midwife) and attitudes of empathetic understanding (the midwife listening carefully and shifting from thinking to feeling by putting oneself in the woman's place) are part of the humanistic approach to therapeutic communication. Systematic reviews by Nicholls and Webb (2006) and Bryom and Downe (2010) concluded that being a good midwife

required good communication skills, compassion, kindness knowledge and skill. The affective domain of attitudes and feelings created this being 'with woman' and 'made a good midwife', while having knowledge ensured competence (Carolan, 2011). These findings concurred with Pope et al's (1998) conclusion in identifying the continuing educational needs of students in becoming a 'good' midwife. However, midwives' behaviour and attitudes towards women in labour, will impact on the midwife-woman relationship (Thomas, 2006; Hunter et al, 2008; Broderick, 2008).

Other ways of knowing

In addition to identifying knowledge and skills necessary for midwives to demonstrate their competence in being 'with woman', it was necessary to develop strategies that ensure learning and assessment approaches that would support both students and mentors to be 'with woman'. It has been suggested that one aspect of this knowledge development is through the reflection process either through discussion or story-telling or through written reflections. Johns and Freshwater (1998) suggest that reflection is not centred on the practice and actions taken, but on the practitioners' own experiences. The authors believe that past and concrete experiences inform actions taken and embodied knowledge becomes intuitive knowledge. Qualitative data from an unpublished study (Brown, 2006) coincides with this perspective, but suggests that maturity and life experience are additional factors that contribute to the development of intuitive knowledge.

Brown (2006) identified that the relationship between self-development and one's practice is complementary in transforming perceptions, beliefs and practice. Such knowledge is viewed as the 'truth', one's personal 'truth', and creates intuitive or tacit knowledge developed through experience. People change their views and beliefs when they reflect on new experience or seek knowledge that will confirm their point of view. Dilemmas, however, arise from a dichotomy between one's newly formed concepts and perceptions and existing dominant practices (Darra, 2006). One focus of this research was therefore to gain an understanding of how communication and reflection among students and mentors may enable teaching and assessment of specific skills. These included skills of empathy, intuition and sensitivity while caring for labouring women and employing a 'being with woman' approach.

Empathic and intuitive knowing

Little is written about empathic knowing as being different from intuitive knowledge. Intuitive knowledge most likely has its origins in survival and adaptation instincts honed and refined in our ancestors (Cappon, 2004). It is often defined as 'the power of knowing' or knowledge obtained without reasoning (Robinson, 2001). It is, therefore, reasonable to suggest that everyone has intuitive capability, but not everyone is aware of this element in his or her make up. Cappon (2004) suggests that, although there is no evidence that particular personalities favour intuition, elements in one's personality influence it or can help further its development. Intuitive thinking grows out of practice and experience, which is processed unconsciously and eventually becomes explicit tacit knowing. It is, therefore, not an irrational process, but arises from a quest for meaning, which does not conform to a linear reasoning process (Rew, 2001; McCutcheon and Pincombe, 2001). Limited research exists on how the artistry of midwifery, such as intuition and embodied knowledge, is used and transferred in the care midwives provide for women (Kennedy, 2000; Davis-Floyd and Davis, 1996). However, Davis (1995) and Siddiqui (2005) suggest that the relationship between women and midwives is a key element in intuitive knowing. Women have been reported to believe that midwives 'just know' and that midwives believe in and use intuitive knowledge during the birth process (Kennedy, 2000). However, measuring intuition is complex, but it is possible and Smith et al (2004) have proposed ways to measure intuition in students.

Empathy is defined as the intellectual identification with or vicarious experiencing of the feeling, thoughts or attitudes of others (Oxford University, 2002). Empathy is the ability to tune into the beliefs of others and seek a oneness with them, in a struggle to confront contradictions, resorting to hindsight and finding alternative ways of knowing. Empathy and intuitive knowledge are not easily articulated, but are an integral component of what experts define as 'creating competence'. This may imply that intuitive capability could be enhanced through learning in a client-led environment and analysis of practice situations. Sharing this exploration with others validates one's knowledge. Accepting feedback from others and facilitators is important in learning to trust oneself, one's instincts and judgement and results in effective decision-making (Chamberlain, 1997; Robinson, 2001).

Hall (2001) argues further that those midwives who are perceived to be empathetic serve as role models for others. In addition, the author suggests that an essential element of effective midwifery care, and one of the ways in which empathy is demonstrated, is through touch. Kitzinger (1997), however, warns that how touch is perceived by the woman can have an impact on the spiritual experience of her birth and such an intimate gesture can only be bestowed by the experienced professional in establishing a rapport or relationship.

Teaching and assessing 'soft skills'

A practitioner may demonstrate confidence in carrying out a skill, but this may not necessarily be synonymous with being competent. In addition, increased confidence does not necessarily increase competence (Carlisle, 2000). However, increased self-confidence increases a student's ability to understand, learn and improve knowledge and competence. Richmond (2006), Bluff and Holloway (2008) and Armstrong (2008) suggest that mentors who are confident role models enable students to develop midwifery skills and Finnerty et al (2006), in an earlier study, identified the wide range of support offered by mentors, which translates into confidence and competent students.

In addition to this, students' own experiences and abilities are integral to assessment in an environment of

learning and development. An interaction between learner and experts, both in the clinical and academic field, facilitates learning through reflection and feedback. Rather than taking on a reductionist approach by categorising professional effectiveness into key competencies that are clinically assessed, a holistic approach in which theory and practice are integrated is desirable (Butler et al, 2008).

Assessment implies the sampling of a person's activity or ability at a moment in time. It is therefore an inference about that person's ability, which may not be a true reflection of the capabilities or failings of that person in the long term. Assessment of a student however, is a powerful influence in directing the learning performance of students (Brewer and Chen, 2000). Therefore, the content of assessment should include the competencies that it aims to achieve. Such an approach could focus on communication competencies in particular *'provide care that is delivered in a warm, sensitive and compassionate way'* (NMC, 2009: 36). It has been previously argued that communication skills are difficult to articulate and assess. However, students need to be assessed before they are deemed competent and proficient practitioners at the end of their programme.

One approach that has been suggested in developing these 'soft skills' of empathy, intuition and sensitivity is Heron's (2001) six category intervention analysis. This is a framework created for use in helping relationships with women through authoritative or facilitative interventions by the midwife (Tennant and Butler, 2007).

Authoritative approaches include prescriptive communication, information giving or confrontation or challenging intervention to empower women to understand and promote self-discovery. In addition, facilitative or cathartic interventions enable emotional expression and supportive approaches to acknowledge the woman's worth and demonstrate respect. The facilitative interventions appear to be more in keeping with the philosophy of being 'with woman' and could be useful aids in facilitating student learning in developing the seventh domain of communication skills as recommended by the NMC (2009). The problem still remains, however, in assessing these skills. Heron (2001: 8) states that *'all the categories depend for their validity in action on a supportive attitude of mind and being in the practitioner'*.

Tennant and Butler (2007: 128) conclude that *'emotional competence and self awareness are essential to [an] effective use'* of Heron's approach but *'midwives and students need support to develop expertise in the use of interventions in practice'*. In other words, the practitioner must learn to be emotionally competent through self-analysis and self-awareness to be able to develop being 'with woman' skills. The authors however failed to identify how these interventions for developing good communication skills could be assessed.

Research approach

An ethnographic approach was used to explore the relationship between mentors and students in a labour ward setting during focus group discussions across a number of trusts. The object was to examine how students learn and mentors assess the skills of empathy, intuition and sensitivity in being 'with woman' on a labour ward. An etic view of relationships between mentor and student in a labour ward culture was explored through an observer-participant role. This facilitated focus group discussion (Polit and Beck, 2008) to enable change and development of assessment strategies for communication skills on the labour ward. An etic perspective is obtained when the researcher attempts to make sense of what is observed from an outsider's view.

However, because the researcher is socialised into the profession this is seen as an insider view (Cluett and Bluff, 2006). An observer/participant role was adopted because, although the researcher was known to the participants, there was a limited amount of interaction, due to the once-only data collection process through focus group discussion (Cluett and Bluff, 2006).

The research was funded jointly by the Iolanthe Trust and Dame Rosalind Paget Awards after a favourable ethical opinion was granted by both the Integrated Research Application System (IRAS) through a local trust and the University of Surrey Ethics Committee. Informed consent was gained from each participant prior to the start of focus group discussions.

Research methods and data collection

An interpretative process was best suited to an ethnographic approach to answer the questions raised. Punch (2005) purports that to use words in examining or creating a common concept or theme is an acceptable approach and its strength is dependent on its embeddedness in a culture. This suited exploring the labour ward culture and the interaction between women, midwives and students. The limitations of this approach can be the interpretation by the researcher of the events as they unfold between the participants (Cluett and Bluff, 2006). Therefore researcher notes on observation of participants during focus group discussion were taken to support data collection and a midwife colleague reviewed the researcher's interpretation of the raw data to ensure corroboration of analysis of data and thus minimise bias. This ensured confirmability and reliability of the data generated (Punch, 2005).

Focus group discussions between mentors and students were facilitated at each trust taking part in this research. These interviews were generally unstructured, that is the topic was normally introduced by the researcher and the participants discussed and came to some agreement about their responses. The researcher ensured that questions were relatively unstructured and participants were reassured that they were free to explore issues. They had the advantage of making use of group dynamics to explore in-depth issues of concern through discussion and insight, and generate ideas to address these issues (Dowling, 2000; Streubert and Carpenter, 1999). This approach produced large amounts of data efficiently and created much dialogue. The focus group allowed the researcher to observe participants in an interactive setting. It has an advantage over one-to-one

interviews (Steene and Roberts, 2011). A disadvantage was that some participants may have been inhibited from expressing themselves in large groups (Polit and Beck, 2008). To minimise this and ensure all participants were allowed time to contribute to the discussion, a set of ground rules was outlined prior to the focus group interviews. There are no guidelines that state what is the most appropriate number of people who should be participating in focus groups, but most investigators aim for between six and 12 participants depending on the focus of the issues to be explored (Dowling, 2000). Therefore, no more than four pairs of mentor/students were invited to each focus group lasting up to an hour. The focus group discussions were tape-recorded and then transcribed verbatim.

Participants

The participants in this study were midwives and students working on the labour ward and therefore ethnographic research suited this focus which has an intrinsic interest and observations of particular situations in which midwives teach and assess students communicating with women in labour (Hammersley and Atkinson, 1995). Participants were selected from lists of mentor/student pairs provided by the trusts. The researcher who facilitated the focus group discussions is a midwifery academic and practitioner.

Data analysis

An interpretative paradigm was used so that meanings, beliefs, attitudes and behaviours were explored and interpreted collaboratively with midwives and students (Parahoo, 2006; Rees, 2003). After each focus group, data were analysed and constantly revisited to inform and refine the research process, but required considerable interpretation by the investigator. Therefore, there was a need for an independent colleague to review the transcripts and determine credibility and confirmability. The process of categorising and coding data to identify emerging themes may be a weakness of the approach in that the interactive nature of the focus groups and nuances during this dialogue may be lost (Dowling, 2000). However, researcher field notes ensured contextual illustrations of the conversations and dependability of findings.

Overview and discussion

A total of 56 participants across eight sites took part in the project to include mentors and third-year midwifery students. The findings after transcribing and analysis of data were as follows under three main themes and several minor themes within these:

Defining being 'with woman'
- The relationship between women and midwives
- Identifying and supporting women's needs, unbiased judgements of situations
- Ensuring a positive experience
- Giving women time to adjust, watching and waiting
- Recognising emotional cues
- Being culturally sensitive.

Teaching and learning
- Mentors
- Watching students' performance, letting students carry out skills
- Giving students time to learn
- Giving timely feedback
- Changing strategies to suit student needs.

Students
- Role modelling from different mentors, recognising good and bad attributes
- Needing time to learn and getting feedback
- Watching and waiting – learning the cues from women
- Using own experiences – knowing what to do – gaining confidence
- Knowing the person you are.

Assessment
- Defining the qualities and attributes of good communication and 'soft skills'
- Designing a tripartite assessment tool (timing and structure)
- Onus on students to seek opportunity to develop these skills
- Mentors' confirmation of achievement of skills through observation and providing examples of students' performance
- Involving women in assessment and feedback
- Using an ongoing assessment document – not snapshot assessments.

The findings were very similar across the participants from various trusts and indicated that mentors agreed that there were no standardised documents that enabled mentors to assess students in the same manner and through the same process across trusts.

Definition of being 'with woman'

Participants generally agreed about their perception and definition of being 'with woman', but were not always too sure about how best they could assess students demonstrating the skills that indicated an appropriate or relevant approach to fulfil this essential element of 'being a midwife'. Some mentors suggested that this meant building *"a relationship with them [women] and understanding what they want"*, building a relationship with a woman in a therapeutic kind of sense, *"being perceptive to their needs"* and *"responding to things that she [the woman] says by nodding to acknowledge you've heard what she said"*, *"it's about what her [woman's] body is doing and what your body is doing in response really"* and *"you can show presence, a supporting presence, it's watching and waiting, it's not just doing"*. Another mentor implied that *"you just need the women to get used to their surroundings and to me, they need to get used to my voice"* and it is *"not just being there, but exploring everything that will make labour time and delivery bring pleasure to them, something they will always remember"* and *"make her [the woman] feel empowered"* while *"being an advocate for her"*. One mentor concluded: *"A good midwife achieves an awful lot*

by doing nothing and that is what it's all about."

Students agreed with the above comments and one student further suggested being 'with woman' was *"being in tune with their [women] emotional state"* and *"being sensitive to when some parents don't want you with them"* and *"being trusted"*.

Teaching and learning skills

Mentors discussed how the skills of being 'with woman' were taught and they indicated that generally students observed their mentors and role-modelled behaviour. Students needed time to adjust to this new role and mentors implied that *"allowing"* students to carry out skills ensured that they *"observe and then practise"* under guidance and supervision, but developed their own style of facilitation and that *"everyone is different and comes from very different places... we need to embrace that as a positive"*. One mentor suggested that women also teach midwives and stated that she encourages students to listen to women: *"Women are great teachers and so always use them as a resource as well, be good listeners and if you listen to women, then very often they're very, very, intuitive to their own bodies so they can teach us a lot and we can learn a lot from them."*

Giving students timely and relevant feedback ensured development and support towards achievement of these skills. Examples of these were as follows: *"Oh that is a really lovely way of putting it"* or: *"Actually you handled that situation really well"*, and then how to make improvements: *"You did that well but actually try and think of how you would have done it differently…"*

Another mentor suggested that they could also learn from students and learning was a two-way process stating: *"I think over the years I've learned that it takes all sorts to make a team and my approach might not necessarily be the right one so you know, I've sometimes had to stand back and maybe even learn from how they've (the students) dealt with things."*

Students agreed that they needed time to learn and took their cues from mentors by watching *"some of the ways they communicate with the women... put things across to them"*, *"body language"* and waiting for opportune moments when they could demonstrate their learning, *"learning by doing"*, *"participating"*. They also learnt how to take cues from women such that a relationship and partnership developed allowing the woman time to adjust to the situation. Students also thought that reflecting and self-assessment on the situation enhanced the learning process, but that using their experiences and knowing who they are as a person may have a bearing on the learning process: *"Part of it is your own personality... an innate kind of thing… your own belief… a self awareness"*.

Assessment

Mentors indicated that they mainly observed students during their placements on labour ward when assessing achievement of skills such as carrying out appropriate midwifery skills and communicated effectively with women and their families through their (the mentors) perception of delivery of such skills. Many mentors found it difficult to articulate how they judged skills of empathy, intuition and sensitivity: *"We judge students differently, there is no standard of anything"*, but indicated that when students correctly and confidently role-modelled their mentors, mentors deemed them to have achieved and facilitated these skills through performance. Mentors also identified that there were no grades or levels by which they could measure achieving these skills, but that students were either demonstrating these 'soft skills' of empathy, sensitivity and intuition or they were not. One mentor commented: *"Kindness is so hard to measure. It is a caring attitude… it is an attitude rather than approach"*. Another said: *"You almost have to understand what it is that you [the mentor] want from them [the students]."* They also implied that some students already possessed these skills before starting their midwifery programme and that they could be enhanced through their placements: *"It has to be an element that you've already naturally got a good awareness."* One mentor suggested that when a student starts to talk to a woman, she *"will immediately form an impression… and it is a sixth sense, they [the students] have this sense… I think it's sensitivity… there's something there you cannot explain but you have a feeling…"* and *"reading the situation … and knowing when you should shut up and when you shouldn't"*. Those students who did not demonstrate such skills found it much more difficult to learn and facilitate as part of their midwifery skills. They suggested that intuition develops from experience agreeing with the mentors.

Mentors explained that demonstration of the above skills was judged as having been achieved when students had used appropriate language (verbal) and physical responses, including body language, eye contact and tactile gestures (non-verbal): *"The way they talk to women"*; *"the language you use because you have to adapt to their [the women's] ability to understand the language you're using"*; *"recognising when it's good not to say anything"*. Another mentor stated: *"They [the students] need to be self aware"* and *"make eye contact"* and *"just keeping her [the woman] the focus"*. In other words, their behaviour and approach towards women was deemed to be effective when women responded well to such support.

Students also agreed that observing and role-modelling their mentors was key. One mentor said: *"I think they [students] need to observe a good midwife"*. A student commented: *"I see something and I think, 'oh I really like the way she [the mentor] said that or the way she handled that' and I would then adopt that myself"*, *"you would do it by role-modelling"*, *"being in practice and watching mentors and how they've done it"*. It appeared that students generally act out what was accepted of them to ensure that they had achieved these required skills. One student suggested: *"You are just like a chameleon… you have to learn to change because of your mentor"* and another said: *"You might not feel very sympathetic or empathetic towards someone and a lot of it is about being a good actress a lot of the time, isn't it…"* They also implied

that using their own experiences and knowing who they were as a person improved their confidence in fulfilling these expected attributes of 'being a midwife'. One student expressed her thoughts on 'intuition': *"You're intuitive based on previous experiences… it is because you have experienced it before you react as a learnt behaviour."* Another suggested: *"If you don't have that empathy you don't build up that rapport with women… pick up cues from the women."*

Implication for practice

The findings implied that continuous assessment of communication skills and the 'soft skills' of empathy, sensitivity and intuition were required. This was agreed across participants from the eight sites in which focus group discussions were held and therefore ensured transferability of data (Polit and Beck, 2008). A surprising outcome from this research was that mentors exceeded the remit of the focus group discussions and made suggestions for creating a new assessment document. This document needed to be structured in a manner that assessment of the relevant essential skills, could be carried out through the same documentation across trusts. Ideas were put forward by both mentors and students that such a document could be used to indicate standardised abilities and achievement of being 'with woman' wherever the students worked. Mentors implied that such an assessment should be of a tripartite nature to include team mentor assessment and feedback, student self-assessment and evaluation and feedback on student performance by women receiving the care.

Limitations of the study

There was a potential risk that the participants in the focus group discussions from the various sites would disagree about teaching and assessment strategies and perceptions of assessment of 'soft skills'. However, most agreed on the various strategies employed and also came to an agreement about the content and shape of the assessment document to be designed. A disadvantage of focus group discussion is that some participants may feel inhibited in honestly expressing their thoughts. Another limitation of focus group discussion is the researcher involvement in maintaining an observer-participant role and ensuring objectivity during data analysis. This was discussed in the methods section and was addressed to some extent by involving a colleague to review the interview transcripts.

Conclusion

An assessment document is currently being designed to include all the attributes and expectations of the mentors and students in providing continuous assessment of demonstrating skills of empathy, intuition and sensitivity towards women in labour. This will be piloted across a number of trusts to ensure a tool or framework for mentors is developed that could objectively and fairly assess students. In addition, the tripartite assessment to include women's feedback would ensure an honest and integrated approach to an assessment of empathy, intuition and sensitivity skills demonstrated by midwives and of such importance to childbearing women.

References

Armstrong N. (2008) Role modelling in the clinical placement. *British Journal of Midwifery* **16(9)**: 596-603.

Bluff R, Holloway I. (2008) The efficacy of midwifery role models. *Midwifery* **24(3)**: 301-9.

Brewer G, Chen SE. (2000) *Experience, empowerment and evidence in assessment: a model of practice*. University of Newcastle: Newcastle.

Broderick A. (2008) Exploring women's pre-birth expectations of labour and the role of the midwife. *Evidenced Based Midwifery* **6(2)**: 65-70.

Brown AM. (2006) *A case study approach to a process and outcome evaluation of a midwifery curriculum using enquiry based teaching and learning strategies*. Unpublished PhD thesis. University of Surrey: Guildford.

Bryom S, Downe S. (2010) 'She sort of shines': midwives' accounts of 'good' midwifery and 'good' leadership. *Midwifery* **26**: 126-37.

Butler M, Fraser D, Murphy R. (2008) What are the essential competencies required of a midwife at the point of registration? *Midwifery* **24**: 260-9.

Cappon D. (2004) *The anatomy of intuition. What's your intuition quotient?* See: psychologytoday.com/articles/199305/the-anatomy-intuition (accessed 31 May 2012).

Carolan M. (2011) The good midwife: commencing students' views. *Midwifery* **27(4)**: 503-8.

Carlisle C. (2000) Reflecting on levels of confidence and competence in skills acquisition. *Medical Education* **34(11)**: 886-902.

Chamberlain M. (1997) Challenges of clinical learning for student midwives. *Midwifery* **13**: 85-91.

Cluett E, Bluff R. (2006) *Principles and practice of research in midwifery (second edition)*. Balliere Tindall: London.

Darra S. (2006) Assessing midwifery practice from the mentor's perspective. *British Journal of Midwifery* **14(8)**: 458-61.

Davis D. (1995) Ways of knowing in midwifery. *Australian College of Midwives Incorporated Journal* **30**: 2.

Davis-Floyd R, Davis E. (1996) Intuition as authoritative knowledge in midwifery and home birth. *Medical Anthropology Quarterly* **10**: 237-69.

Dowling A. (2000) *Research methods in health*. Open University Press: Buckingham.

Finnerty G, Graham G, Magnusson C, Pope R. (2006) Empowering midwifery mentors with adequate training and support. *British Journal of Midwifery* 14(4): 187-90.

Gibbons K. (2010) It's more than just talking. *Midwives* **13(1)**: 36-7.

Hammersley M, Atkinson P. (1995) *Ethnography: principles in practice*. Tavistock Publications: London.

Hall J. (2001) *Midwifery mind and spirit*. Books for Midwives: Oxford.

Heron J. (2001) *Helping the client: a creative practical guide (fifth edition)*. Sage: London.

Hunter B, Berg M, Lundgren I, Olafsdottir OA, Kirkham M. (2008) Relationships: the hidden threads in the tapestry of maternity care.

References continued

Midwifery **24**: 132-7.

Johns C, Freshwatern D. (1998) Transforming nursing through reflective practice. Blackwell Science: Oxford.

Kennedy H. (2000) A model of exemplary midwifery practice: results of a Delphi study. *Journal of Midwifery and Women's Health* **45**: 4-19.

Kitzinger J. (1997) *Authoritative touch in childbirth: a cross-cultural approach*: In: Davies-Floyd RE, Sargent CF. (Eds.). *Childbirth and authoritative knowledge*. University of California Press: London.

McCutcheon H, Pincombe J. (2001) Intuition: an important toll in the practice of nursing. *Journal of Advanced Nursing* **35**: 242-348.

Mehrabian A. (1971) *Silent witness*. Wadsworth: Belmont, California.

Mehrabian A .(1972) *Non-verbal communication*. Aldine: Chicago.

Nicholls L, Webb C. (2006) What makes a good midwife? Implications for midwifery practice. *Evidence Based Midwifery* **4(2)**: 65-70.

NMC. (2009) *Standards for pre-registration midwifery education*. NMC: London: 31-7.

Oxford University. (2002) *The Oxford English Dictionary*. Oxford University Press: Oxford.

Parahoo K. (2006) *Nursing research: principles, process and issues (second edition)*. Palgrave: Basingstoke.

Polit DF, Beck C. (2008) *Nursing research: generating and assessing evidence for nursing practice (eighth edition)*. Lippincott, Williams and Wilkins: Philadelphia.

Pope R, Cooney M, Graham L, Holliday M, Patel S. (1998) Aspects and care 4: views of professionals and mothers. *British Journal of Midwifery* **6(3)**: 144-7.

Punch KF. (2005) *Introduction to social research: quantitative and qualitative approaches*. Sage: London.

Raynor M, England C. (2010) *Psychology for midwives: pregnancy, birth and puerperum*. Open University Press: London.

Rees C. (2003) *Introduction to research for midwives (second edition)*. Elsevier Science: Philadelphia.

Rew L. (2001) Acknowledging intuition in clinical decision-making. *Journal of Holistic Nursing* **18**: 94-108.

Richmond H. (2006) Mentoring in midwifery. *Midwives* 9(11): 434-7.

Robinson W. (2001) Listening to your inner voice: the art of intuition. *Mothering* **105**. See: mothering.com/health/listening-to-your-inner-voice (accessed 31 May 2012).

Siddiqui J. (2005) *The role of knowledge in midwifery decision-making*: In: Raynor M, Marshall J, Sullivan A. (Eds.). *Decision-making in midwifery practice*. Churchill Livingstone: London.

Smith AJ, Thurkettle MA, de la Cruz FA. (2004) Use of intuition by nursing students: instrumental development and testing. *Journal of Advanced Nursing* **47(6)**: 614-22.

Smith J. (2007) Assessing and grading students' clinical practice: midwives' lived experience. *Evidence Based Midwifery* **5(4)**: 112-8.

Steen M, Roberts T. (2011) *The handbook of midwifery research*. Wiley-Blackwell: London.

Streubert H, Carpenter DR. (1999) *Qualitative research in nursing: advancing the humanistic imperative (second edition)*. Lippincott: Philadelphia.

Tennant JA, Butler MS. (2007) Helping women: the use of Heron's framework in midwifery practice. *British Journal of Midwifery* **15(7)**: 425-8.

Thomas GB. (2006) Making a difference: midwives' experience of caring for women. *Evidence Based Midwifery* **4(3)**: 83-8.

Information for authors

Evidence Based Midwifery is published quarterly and aims to promote the dissemination, implementation and evaluation of midwifery evidence at local, national and international levels. Papers on qualitative research, quantitative research, philosophical research, action research, systematic reviews and meta-analyses of qualitative or quantitative data are welcome. Papers of no longer than 5000 words in length, including references, should be sent to: rob@midwives.co.uk in MS Word, and receipt will be acknowledged. Suitable papers are subject to double-blinded peer review of academic rigour, quality and relevance. Subject area and/or methodology experts provide structured critical reviews that are forwarded to authors with editorial comments. Expert opinion on matters such as statistical accuracy, professional relevance or legal ramifications may also be sought. Major changes are agreed with authors, but editors reserve the right to make modifications in accordance with house style and demands for space and layout. Authors should refer to further guidance (RCM, 2007; Sinclair and Ratnaike, 2007). Authorship must be attributed fully and fairly, along with funding sources, commercial affiliations and due acknowledgements. Papers that are not original or that have been submitted elsewhere cannot be considered. Authors transfer copyright of their paper to the RCM, effective on acceptance for publication and covering exclusive and unlimited rights to reproduce and distribute it in any form. Papers should be preceded by a structured abstract and key words. Figures and tables must be cited in the text, and authors must obtain approval for and credit reproduction or modification of others' material. Artwork on paper is submitted at the owner's risk and the publisher accepts no liability for loss or damage while in possession of the material. All work referred to in the manuscript should be fully cited using the Harvard system of referencing. All sources must be published or publicly accessible.

References

RCM. (2007) Guidelines for authors. *Evidence Based Midwifery* **5(1)**: 35.

Sinclair M, Ratnaike D. (2007) Writing for *Evidence Based Midwifery*. *Evidence Based Midwifery* **5(2)**: 66-70.

News and resources

Apply for foundation scholarships

Midwives can now apply for travel and leadership scholarships from the Florence Nightingale Foundation. Last year, the foundation awarded 23 travel scholarships and 21 leadership scholarships. It is now accepting applications for its funds allocated for 2012-13. The foundation is particularly interested in proposals for travel scholarships to study best practice in any aspect of dignified care, nutrition and hydration, and long-term conditions. It is also keen to hear from applicants who want to study any clinical practice issues to enhance client experience. For further details on the criteria for application, and to apply for a scholarship, please visit the foundation's website.

Funding for three new projects

More than half-a-million pounds has been awarded by a children's charity for three new research projects. Action Medical Research, the leading UK-wide medical research charity dedicated to helping babies and children, is behind the research training fellowships. They include studies into how babies are affected by diabetes during pregnancy, the chances of children developing disabilities due to being flat footed and effective treatments for manganese toxicity. Caroline Johnston, the charity's research evaluation manager, said: 'The research training fellowship scheme is the cornerstone of Action Medical Research's commitment to develop the research expertise and skills of the future.' The charity funds medical research for the benefit of babies, children and young people and supports promising researchers early in their careers.

Fellowship third round now open

The third round of the National Institute for Clinical Research Clinical Doctoral Research Fellowship scheme has opened. It is inviting applications from post-degree midwives and allied health professionals for the Clinical Doctoral Research Fellowship award. The award and funding covers salary costs, PhD tuition fees and costs of an appropriate research project and training and development programme. Applicants must be based in England and have a contract with their employer for the duration of the fellowship.

CONTENTS