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EVIDENCE
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On the antiquity of evidence-based midwifery and its discontents

Key words: Evidence, faith, patterns of knowing

At a recent visit to an exhibition at the Staedel Museum, Frankfurt-am-Main (Kemperdick and Sander, 2008), I was astounded to stumble upon a 600-year-old painting of evidence-based midwifery! The painting in question is *Nativity* by the great but anonymous Northern Renaissance painter, the Master of Flémalle. Among a number of websites, an image of the painting can be found on: www.dl.ket.org/web-museum/wm/paint/auth/flemalle/nativity.jpg. The original is located in Dijon at the Musée des Beaux-Arts.

For the most part, the painting consists of the sort of iconography that will be familiar to those brought up in the Christian tradition. In the setting of a stable, we see Mary, Joseph and the baby Jesus, with shepherds, an ox and a donkey in the background, and angels hovering about. However, it also includes two midwives on the right of the picture. The scene is based on an apocryphal gospel that had currency in the Middle Ages which told how, when Mary went into labour in the stable, Joseph went off to seek midwives to assist in the birth. Possibly because of his advanced age, by the time he managed to return with the midwives, Mary had already given birth and can be seen kneeling in worship of the delivered Christ child.

The back story to the scene before us is the Christian belief that Mary gave birth as a virgin. In the painting, the two midwives are being asked to accept on faith that this is the case. The midwife with her back to us has done so. However, the midwife facing us is less prepared to accept such a counter-intuitive claim on faith alone. Her response is recorded on the banderole floating around her head – *[Nullum] credam quin probavero* – ‘I will only believe that which I have verified’; a clear and succinct summation of the tenets of evidence-based practice, albeit from a rather individualistic perspective. And what does she get for her rejection of blind faith in favour of empirical evidence? Divine retribution for her scepticism withers her right hand, at which her left hand clutches. Because of her hubris in using her intellectual skills to rationally and empirically assess the evidence before her, God has stripped her of her manual skills. The angel above her informs her of the only way out – abandon rationality, embrace faith, touch the head of the Christ child, and the withered hand will be healed.

At this point you may be thinking that while the painting might be interesting in a quirky kind of way, it can hardly have anything useful to say concerning contemporary evidence-based midwifery. Well, I’m not so sure. Let us think about a text that might be described as approaching the status of a modern-day gospel within midwifery and nursing – Carper’s (1978) taxonomy of the fundamental patterns of knowing. One of the uses that the author’s model has been put to is to attacking evidence-based practice (EBP). Leading theorists including Jean Watson and Betty Neuman (Fawcett et al, 2001) have accused EBP of privileging a very

narrow form of empirics at grave cost to ethical, personal and aesthetic knowing. Why should this have happened? What appeal do empirics have that the other patterns of knowing lack?

On serendipitously reconsidering Carper at the same time as I was discovering the Master of Flémalle, what struck me as a major difference between the various patterns of knowing was that while empirics were amenable to processes of refutation and verification, the others were not. In Carper’s words: ‘*Knowledge gained by empirical description is discursively formulated and publicly verifiable*’ (1978: 16). In contrast, aesthetic experience ‘*resists projection into the discursive form of language*’ (16); the reciprocity required in personal knowing ‘*cannot be described*’ (18); and even the value judgments intrinsic to ethics are ‘*not amenable to scientific enquiry and validation*’ (20). The problem with forms of knowledge that cannot be tested or even described is that it is very difficult to discover how, or even if, they are being used. So how might we be persuaded that midwifery knowledge includes personal, aesthetic and ethical ‘knowing’. Presumably, we have to take it on faith?

The ineffability of these patterns of knowing may at least in part explain their eclipse by EBP. What has changed in the last 600 years is that the value of claims based on faith has decreased considerably compared to those based on evidence. This is certainly the case in relation to the professions. Can we really expect clients today to take it on faith alone that midwives are animated by authenticity, empathy and ethics? If we can’t, then the issue becomes less about reining in an over-dominant evidence-based midwifery, and more about rethinking our approach to other patterns of knowing to ensure that they too are publicly verifiable, so that clients can clearly see the evidence, in terms of practical and relational effects, that midwives are using these patterns of knowing effectively.

All that said, may I conclude superstitiously by expressing the fervent hope that this rather tendentious attack on ‘faith-based midwifery’ will not lead to the retributive withering of any body parts!

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Professing midwifery

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This is the first paper in a new series that aims to celebrate the contribution of academic midwives to the profession. Professor Lesley Page was the first professor of midwifery in the UK.

Abstract

Professors of midwifery have played an important part in the development of the profession. Midwifery is now mainly evidence based and textbooks are based on research. A number of midwives hold the title of 'Dr' and many have degrees. Midwifery-led care is no longer something we do with stealth, it is the choice of many women and has been made legitimate by government policy and sound research. In many places, midwifery-led care is now the default option. There are common characteristics that define a professor – love of one's subject, great curiosity, being able to work with and help others to give of their best, and the ability to work systematically and rigorously while using creativity and imagination. A professor is the intellectual leader in the field of midwifery. Given the recent development of the academic discipline, this is a pioneering role. The professor of midwifery must also have knowledge and understanding of current practice and might be seen as the mediator between practice, research and education. There are now a number of professors of midwifery, who work to develop midwifery knowledge, bring evidence into practice and bring awareness of issues in practice to academia.

Key words: Professors of midwifery, role of the professor, evidence-based practice, practice-based evidence, clinical experience

Tell a taxi driver that you are a professor of midwifery and the response is likely to be 'You must have delivered hundreds of babies then'! But of course professors of midwifery must also be academics, they must straddle two very different worlds. The first world, the centre of the universe for any professor of midwifery or indeed any academic midwife, is the world of birth, women, babies and families. It is an intense, joyful, emotional, often messy world. Midwives are present at the entry to life and are in touch with intimacy and the forming of relationships. The professor of midwifery must also stand with one foot firmly in the world of academia. This world is characterised by intellectual endeavour, systematic enquiry, the growth of knowledge and teaching and learning. In addition, it is still unusual to have female professors in most academic disciplines as the majority are men.

The academic practitioner

There might rightfully be an expectation that a professor in midwifery has attended the births of many babies, but there is also an expectation that a professor will have earned a number of research grants, have a number of peer-reviewed publications, be able to lecture and teach and be respected as a leader in the profession. A professor is expected to have distinction in their field both nationally and internationally. The aim of a professor of midwifery is to mediate between

these two apparently opposite worlds, bringing them together to advance knowledge and understanding of childbirth so that midwives (and others) might provide the best care, and the best context for care, for childbearing families.

History

I was the first midwife to be appointed to a chair of midwifery. Previously professors of midwifery had always been obstetricians. The chair I took was established in a new university (Thames Valley University previously Queen Charlotte's College) and became named the Queen Charlotte's chair of midwifery practice, with joint responsibilities in Thames Valley University and the Queen Charlotte's and Chelsea and Hammersmith Hospitals Maternity Service. It was established with the leadership of Professor Lois Crooke, the former dean of the faculty of health and human sciences at Thames Valley University who had a vision of academic midwifery and saw this as a key role in moving the profession forward. At that time, midwifery degree programmes were just being developed and there was a concerted move to develop the discipline of midwifery in the UK.

Being affiliated to both a university and the health service enabled me to bridge the worlds of academia and practice. The service I was affiliated to in the 1990s was a large maternity service in London with over 5000 births a year.

The area included affluent and very deprived populations with mixed ethnicity. While midwifery had lost much of its professional autonomy at that time, the intervention rate in the UK was still relatively low. The normal birth rate was over 60% and the caesarean section rate was just over 12%. At the time of my appointment, the first midwifery degree programme had been developed and introduced in Oxford Brooks University two years earlier and Thames Valley University and many others were developing degree programmes. I was centrally involved in these developments.

My career has reflected changes in the profession, moving from a very practically-oriented profession to one that integrates academic and practical aspects. I was trained as a midwife when education and training were mainly practice based. I earned my first degree through the Open University in 1974. I have never taken higher education for granted because for me, experiencing higher education for the first time in later life, it opened up the world. I have always wanted others to have that same opportunity. Degree level education and the research and scholarships that have arisen from academic midwifery have been important to the development of the profession.

I received my professorship by appointment in 1992. Being the first in a field has great advantages and tremendous challenges. There is no established precedent. When I took up my chair, I wanted to understand the expectations of the role of professor while responding to the distinctive characteristics of the midwifery profession I served and loved. I wanted to use the role to make a difference to midwifery. I wanted to create and bring knowledge into practice so that the profession could meet the needs of women and their families and communities in our modern world. Being professor offers great opportunities for doing this. Now there are a number of professors of midwifery, but we need more if we are to continue to gain a deeper understanding of childbirth, advance the development of the science of midwifery, and put evidence into practice and practice into evidence.

The role of the midwifery professoriate

Professors can hold established, personal or honorary chairs. The National Conference of University Professors (NCUP) states: 'Holders of established chairs are appointed principally to provide leadership in a particular academic subject and to bring distinction to activities in this discipline... Personal chairs are in general awarded solely on grounds of high academic merit. The holder of a personal chair will be expected to have international recognition as a scholar and to contribute high-level authority to the university's involvement in an area of scholarship and research. The holders of honorary chairs typically are leading members of research institutes associated with the university, or have positions of authority in industrial or commercial companies that sustain links with the university' (NCUP, 1991).

There are a number of honorary or visiting professors attached to midwifery departments who are midwives or may hold key roles say in user organisations. The NCUP

comments that it remains desirable that the comparable criteria of scholarly accomplishment should always apply in this as in other categories of chairs.

The expectations of professors will vary according to the university. The work may include research, policy development, practice development, education and external and international work. The NCUP described seven standards for the appointment of professors. These are academic standing, research and scholarship, teaching, acquisition of resources, powers of communication, services to the wider university community and services outside the university. The emphasis of the work will vary between professors and may vary for individuals in different time periods.

While there is a traditional understanding of the work of a professor that has remained unchanged, universities and the academic world have changed substantially. There is a heavier burden of audit, reporting and governance in all areas, including education, research and the place of practice. Research governance including ethical approval has meant that research is perhaps more safely implemented, but the process of research itself has become more arduous. Alongside this, the health services where midwifery is practised and where students gain much of their education are more complex.

I doubt that the freedom I had in 1991 to develop my role and to be an effective leader in my own way would be possible now. The more complicated context of the two worlds of professors of midwifery, the university and the health services, and indeed the world we live in, make it increasingly important for professors to be very clear about their focus, goal and remit of their work.

Developing midwifery practice education and research

At the same time, opportunities in midwifery are in some ways better than they have ever been. Academic midwifery has developed substantially over the last two decades. Many midwives are now educated to degree level and there is a substantial body of midwifery and maternity services research. Midwives were among the first of the professions to raise awareness of the importance of evidence in practice, particularly through the *Midwives Information and Resource Service* (MIDIRS) and there are now a number of professors of midwifery. The context of all of this is in a profession that is increasingly autonomous, and has been highlighted in national policy since 1993.

Each professor will bring to their work different ways of meeting the expectations of the role, while being focused on the discipline of midwifery. The life blood of my work has always been drawn from being in and close to practice. This has generated questions and an understanding of the dilemmas and joy as well as frustrations of present day midwifery. My academic work involving research, enquiry, reflection, writing, policy development and teaching have required a close focus on the details of practice, and deeper understanding, while also giving me an overview of the world in which we practice, and from the wider world in which our practice is placed. I have loved the combination of the practical and the intellectual. Other professors

may find different ways of staying in touch with the realities of midwifery.

The emphasis of the work of professors will vary and may be on education and teaching, research, policy development, or academic or health services leadership and management. Whatever the emphasis of the work, it is important to keep at the centre a cohesive strand, a clear idea of what the purpose of the work is. Ultimately, it is to develop an understanding and knowledge of midwifery, to spread and to help that knowledge to be used in practice. A professor may be thought of as an intellectual leader. In the field of midwifery, an old profession with a comparatively short academic history, this role of intellectual leader is still a pioneering one. Although we have taken great strides forward, the academic discipline is still young and in the midst of vibrant development.

The development of knowledge and understanding requires work in different areas, which I will differentiate between, but in reality there is overlap. The development of a science of midwifery requires primary research to develop theories and test them in practice, to pose relevant questions and to start to answer them, to understand not only how midwives may help women, but also to understand their experience of childbirth. Theory and methods may be drawn from a number of other disciplines including physiology, social sciences and psychology. But the questions asked, the way results are used, are from and for midwifery. Professors don't just do this work, they lead and support others, they facilitate and build capacity and awareness.

The research process requires the development of research questions and a research agenda, gaining approval and earning funding, and after the research has been undertaken ensuring that the results or findings have been written up both for local dissemination but also by writing for publication and talking at meetings and conferences. In an era in which the public understanding of science is important, and in a field like midwifery that is fascinating to much of the public, dissemination may also involve using the media, newspapers, magazines, television and radio and the internet.

Developing midwifery research through collaboration

Paradoxically the aims of midwifery research may be best met by collaboration with other disciplines that have a longer tradition and greater access to resources. Over recent years the interdisciplinary Cochrane Collaboration has developed a new paradigm by developing high-quality reviews and synthesis of studies that are relevant to all in the health services. Much of the pioneering work and development was supported by midwives and for many of the professors of midwifery preparing Cochrane Reviews has been a substantial part of their work. The development of such meta-views or metasynthesis uses a scientific approach and has contributed greatly to the science of midwifery.

It is perhaps artificial to separate education from research, but for practical reasons, it may need to be conducted by different people. Education requires curiosity and questioning and challenging as well as the develop-

ment of concepts and frameworks. Education implies the passing on of values and knowledge from one generation to another. It is difficult to imagine a good teacher who does not stay updated through systematic enquiry and maintaining at the very minimum research literacy.

Curriculum development is the foundation of education and over the last 20 years first degree and graduate degree education have been developed. The graduate programmes include taught and research-based Masters programmes as well as doctoral level programmes, both taught and research based. This has been an essential field for professors of midwifery who have supervised and examined many midwives undertaking doctoral studies.

As we develop midwifery, there are two important issues that require attention. One is the separation of education from practice in midwifery; the other is the practical need to focus either on education or on research. The move of education into universities may have created a greater separation between education and practice than before. It is ironical because, while it seems more difficult for midwifery teachers and professors to stay in practice, in general, medical (including obstetrical) professors usually continue to practice, and also have great power in the health services. This may in part be a reflection of the different status of the two professions. Noll, a professor of mathematics (1997) argued that the professor is the mediator between teaching and research. I would argue that the professor of midwifery is the mediator between practice, research and education. Finding ways not only to bridge but to bring together practice, education and research should be on the agenda of professors of midwifery.

Professor Sinclair, who was appointed to the first chair of midwifery in the Island of Ireland (Sinclair, 2006), described expecting to make a significant contribution in the capacity of her university to advance midwifery scholarship and evidence-informed clinical practice. Professors of midwifery also have a unique opportunity to develop midwifery practice directly through reflexive and reflective practice, by making evidence available and usable in practice, and the development of local and national policy that supports midwifery. My initial work as professor, working with many others, was to develop the introduction of one-to-one midwifery practice in the Queen Charlotte's and Chelsea and Hammersmith Hospitals Maternity Service. This required the introduction and evaluation of a new model of care that created fundamental change. The development of effective continuity of care had been a long-term commitment of mine. As well as direct development and evaluation, my work fed into local and national policy. Change, innovation and development require not only knowledge of practice, change process and political abilities, but also research skills.

One of the difficulties facing professors of midwifery has been the immensity of work in embedding this new academic discipline of midwifery both in the university and the health service, as well as doing the work that is essential in building the capacity for research and scholarly work, with a relatively small group. The development of doctoral

studies, for example, has required a major commitment. I suspect many of the professors of midwifery must have long arms and sore shoulders from carrying large theses on planes and trains, finding any opportunity to read!

Professors as academic and professional leaders

Professors of midwifery are academic and professional leaders in the discipline of midwifery. While the focus of work may vary, I believe that there are common characteristics that define a professor. These are love of one's subject, great curiosity, being able to work with and help others to give of their best, and the ability to work systematically and rigorously while using creativity and imagination. Noll (1997) describes the professor's focus on his subject. In a vivid phrase, he describes what has certainly been my experience of being professor. Noll wrote 'he 'lives' his subject and cannot easily switch it off, even when lying in bed awake or on vacation. He recreates the subject in his mind each time he lectures on it. Similarly, after each time I care for a pregnant woman and her family, or discuss a question or problem with my colleagues, I rethink approaches, theories, and think of more questions. Midwifery is endlessly fascinating.

Midwifery should be proud of its achievements, and professors of midwifery have played an important part in the development of the profession. Evidence-based midwifery is on everyone's lips and we have moved from textbooks that had no references to textbooks and journals that carry high-quality and substantial reports of research findings. A number of midwives hold the title of 'Dr' and many have degrees.

The emphasis on developing a research base and high-level education was required and is important to midwifery in the modern world. Midwifery-led care is no longer something we do with stealth, it is the choice of many women and has been made legitimate by government policy and sound research. In many places, midwifery-led care is now the default option.

Professors in practice

However, in this move to evidence-informed care and the development of a science of midwifery, I believe we have downplayed the importance of experience. Both science and experience of practice need to be held in balance. Recently, I have been practising with a group of highly committed and experienced midwives in a free-standing birth centre. Observing their experience in practice and the clinical judgements and decisions they make reinforces my awareness of the complexity of the work and the high level of skills understanding and knowledge required. This is a frontier that has not been explored adequately.

Learning from midwives in practice can be a rich res-

ervoir of knowledge that professors of midwifery should access. Research using observation, or talking with midwives systematically about how and why they make decisions, and why they do what they do, would deepen our understanding of what makes midwives both sensitive and effective. The creation of chairs of midwifery between universities and health services that are more practice focused would facilitate the understanding, development and improvement of current practice.

I have talked about professors as individuals, but now there is a good group. It is time to bring the midwifery professoriate together to tap into their different perspectives, to use them as a resource and to support the development of more chairs and new professors of midwifery. The opportunity for collaboration will be crucial as it becomes more difficult for smaller departments, especially those in universities without a strong research base, to undertake sound research and scholarship. The RCM might both help and be helped by facilitation of such collaboration.

When I first became professor, it took me a while to stop looking to see who else was in the room when somebody referred to 'prof'! Then I realised it was the best 'job' I have ever had. It is work that is richer, more enjoyable and perhaps more challenging than I could ever have imagined. The opportunities for supporting the development of midwifery and midwives are profound. The two worlds of midwifery practice and academia may be as different as Mars and Venus, but midwifery in today's world needs an academic base. It is important that we have professors who are able to mediate between the different worlds of practice and academia, of education, scholarship and research.

As Noll (1997) said, a professor is constantly 'living' the subject. What could be a more important, fascinating and worthy subject to 'live' than midwifery. The role of professor has allowed me to combine the different aspects of midwifery development, practice, education, scholarship and research as well as policy development. Personally the ability to do both the practical as well as the academic has been a source of great reward. I have worked in collaboration with many others in all parts of the world. For those aspiring to become professor, my advice would be to develop a substantial speciality while also maintaining an overview. Vision and nerve are important, as is the perseverance to disseminate love of the subject as well as knowledge, through speaking as well as publication. The vision needs to be global as well as national, and involvement in the wider world and acknowledgement by the wider world is crucial. At the heart of it, the purpose of the professor of midwifery is to improve midwifery care for women and their families. This is profoundly challenging and important work.

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Midwife sonographer activity in the UK

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Abstract

Aim. To explore the role of the midwife ultrasonographer in the UK.

Method. A two-part cross-sectional survey was conducted via postal questionnaires sent to all UK heads of midwifery, and to all midwife sonographers who were members of the British Medical Ultrasound Society. Issues for exploration included prevalence, scope of practice, education, incentives and barriers to training, job satisfaction and effect on patient services. Ethical approval for the study was obtained from the University of Hertfordshire.

Results. There are at least 197 midwives practising ultrasound in the UK, although not all hold formal postgraduate qualifications. Overall, 56% (n=58) of UK maternity units who responded have midwife sonographers and, of these, 84% (n=49) plan to introduce more. Scotland has a greater proportion than elsewhere, but numbers are low in Northern Ireland. Many perform the full range of obstetric ultrasound examinations and some are involved in interventional procedures. With few exceptions, they report independently. The majority enjoy ultrasound and would encourage other midwives to practise, not just for their own advancement, but also for the perceived benefit to pregnant women. While all actively embrace continuing professional development, few midwife sonographers engage in audit and research. Barriers to midwives training in ultrasound include staff shortages, professional resistance, and a lack of appropriate resources.

Conclusion. The numbers of UK midwife sonographers remain low, but may increase as additional government resources take effect. Resistance to the role from other professions, and from within midwifery must be overcome for the benefit of patient services. Increased research activity among midwife sonographers is likely to raise their profile. Appropriately-accredited ultrasound training courses may attract more midwives.

Key words: Ultrasound, midwives, obstetric, education, training, postal survey

Background

Ultrasound has been used in obstetrics since the 1950s (McNay and Flemming, 1999; Donald et al, 1958) and became commonplace in the 1980s (RCOG, 1984; World Health Organization (WHO), 1998). The majority of obstetric scans are performed by radiographers within antenatal departments and have been for many years

(Twigg et al, 2002; Lovegrove and Price, 2002; RCOG, 1984), however, small numbers of midwives, nurses, obstetricians and radiologists currently contribute to the delivery of the service.

Ultrasound is used more often than any other imaging technique (Sidhu, 2008), and as demand escalates year-on-year, clinical departments have been under

increasing pressure to meet demand and keep waiting lists down (Edwards, 2008). Based on informal audit, obstetric ultrasound examinations account for at least half the workload of radiographer sonographers in many departments. Parturient women cannot remain on waiting lists if they are to be screened as per current guidelines (National Institute for Health and Clinical Excellence (NICE), 2003). If more midwives were to practise ultrasound this could be a way of offering an improved ultrasound service for pregnant women and better continuity of care (National Screening Committee, 2005; Hodgkiss et al, 2004).

In 1992, the United Kingdom Central Council (replaced in 2002 by the NMC) recognised ultrasound within the expanded scope of midwifery practice (UKCC, 1992). There is evidence indicating that pregnant women would receive a more holistic, more responsive service if midwives were to undertake ultrasound imaging (Andrews, 2002; Taylor and Robson, 2003). Others have suggested even wider roles in neonatal ultrasound for midwives or nurses, in a bid to enhance continuity and quality of care (Reeve, 1999). Such practice complements the government's strategy for new ways of working across the professions in order to provide high-quality patient-focused care (Department of Health, 1999; 2000; 2008a). There is a requirement for more midwife-led units and for more midwives to manage their own practice autonomously if women are to receive the service and choices expected (Davis, 2006). This vision of holistic midwife-led care has been mooted for some time (Dimond, 2000) and would undoubtedly be more effective if midwives were to conduct their own ultrasound examinations.

Some midwives have been practising obstetric ultrasound for many years, but they are small in number and there is little formal documentation of their activity. Currently, there is no known central register listing practising midwife sonographers in the UK.

Available statistics and anecdotal evidence indicate that very few midwives are performing ultrasound in the UK. A recent study by Beake and Bick (2007) indicated that less than half of a small sample of maternity units in the south of England had midwife sonographers, although other forms of recognised role development for midwives, including cannulation, perineal suturing and examination of the newborn were identified in all units. Clearly, the latter skills are viewed as more 'core' to midwifery compared with ultrasound. Similarly, when Twigg et al (2002) investigated practice in UK early pregnancy assessment units, less than 3% of the ultrasound examinations were conducted by midwives.

The reasons why so few midwives take up extended midwifery practice in the UK are not fully understood, but are likely to be due to a combination of factors including staff shortages, professional resistance, midwives' perceptions and attitudes to ultrasound, and the complexity and length of current training courses. Recently, it has been well documented by both the press and professional organisations that midwifery services,

like many ultrasound services, are over stretched (RCM, 2008; *The Daily Telegraph*, 2008).

Another probable influencing factor is that, in line with government directives (Department of Health, 1999), midwives may feel their role lies more in promoting and managing normal birth, and would prefer to use less technology during their practice rather than more. However, the government strongly advocates new ways of working across professional boundaries, and this could include the introduction of more midwife sonographers (Department of Health, 2000). While there is evidence that they are taking on roles traditionally associated with junior doctors (Beake and Bick, 2007), they do not appear to consider ultrasound an appealing option. Some midwives do not find the current training courses attractive or accessible and some feel the rewards and support once qualified in ultrasound are not adequate when compared to the increased risk of litigation (Meire, 1996).

The aim of this study was to explore the role of midwife sonographer activity in the UK and investigate their scope of practice and barriers that are preventing more from practising.

Method

To investigate the issues around UK midwife sonographer activity, a cross-sectional survey was conducted via two separate postal questionnaires distributed during February 2008. One questionnaire was sent to 258 heads of midwifery (HOMs) services in the UK identified from addresses of units listed in the *Health and Social Care Year Book 2007 to 2008*. No unit was excluded. There were 196 units in England and, of these 72 (37%) responded. In Northern Ireland, ten units were identified and six (60%) responded. There were 15 (43%) responses from a total of 35 questionnaires sent to Scottish units, and ten out of 17 (59%) Welsh units replied.

In total, 103 (40%) HOMs services returned completed questionnaires and two were returned unopened.

The second questionnaire was distributed by the British Medical Ultrasound Society (BMUS) on behalf of the researcher to 98 midwife members on their database (British Medical Ultrasound Society, 2007). Two-thirds (n=65, 66%) were returned completed. In the absence of any known central register listing midwife sonographers, the midwife members of BMUS were identified as a large convenience sample who were relatively easy to reach.

The questions were developed after an in-depth review of the literature and consultation with midwives, midwife sonographers, and managers of midwifery services. Draft questionnaires were tested for clarity and ease of completion by midwife sonographers and a manager. Although the survey was designed to be totally anonymous, individuals were invited to provide contact details should they wish to contribute to further discussion. Confidentiality was assured since contact details would be stored securely and known only to the researcher. No personal identifiers would be attributable from any of

the quotations used. Issues for exploration in both questionnaires included prevalence, areas of practice, education and training, incentives and barriers to training, job satisfaction and continuing professional development.

Ethical approval for this study was obtained from the University of Hertfordshire's ethics committee. Approval was not required from the National Research Ethics Service since the work was categorised as service evaluation.

Results

According to HOMs services, midwife sonographers were practising in 58 out of 103 (56%) units. Within these units, there were at least 197 midwife sonographers in post, either full or part time. Combined data from both questionnaires revealed that the number of years midwives had been practising ultrasound ranged from zero (still training or about to qualify) to 19 years. The average time was five years. There was no correlation between size of unit and presence of midwife sonographers.

There was no obvious trend regarding geographical location and presence of midwife sonographers, although there appears to be proportionally more in Scotland (ten units (66%) reported having midwife sonographers in post). In Northern Ireland, only one unit claimed to have midwife sonographers. No midwife sonographers were practising in the primary care environment, although four worked for both the NHS and the independent sector. Pay grading ranged from band 6 to 8c, although the majority of midwife sonographers were paid at band 7 (see Figure 1).

Figure 1. Pay bandings for midwife sonographers in the UK

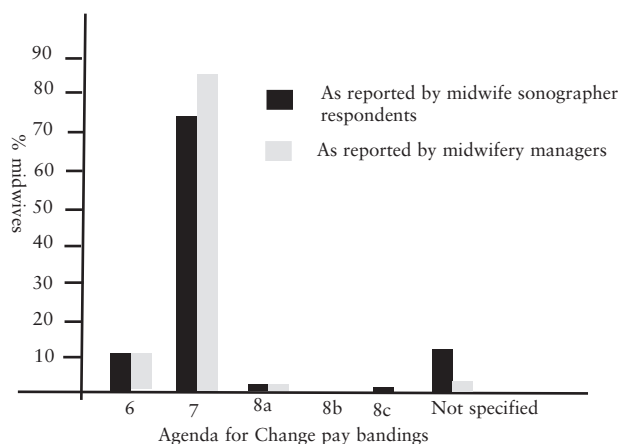


Table 1. Areas of practice

Area of practice	% units with midwife sonographers as reported by managers	% midwife sonographers in this area as reported by midwife sonographers
First trimester	100 n=58	95 n=62
Third trimester	79 n=46	89 n=58
Second trimester	78 n=45	82 n=53
Early pregnancy	74 n=43	86 n=56
Nuchal	47 n=27	52 n=34
Gynaecology	24 n=15	38 n=25
Invasive	10 n=6	<1
Fertility	3 n=2	6 n=4
Other (includes abdominal, vascular, paediatric)	<2	12 n=8

Areas of practice

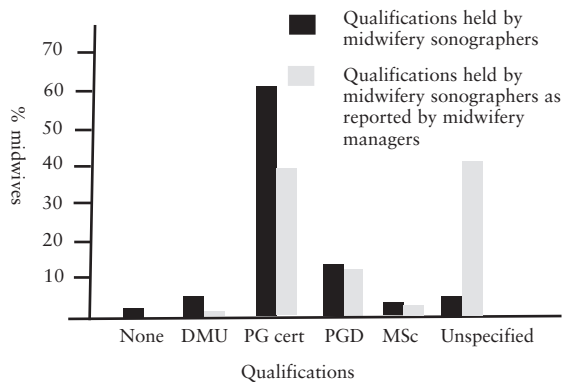
All HOMs services with midwife sonographers stated that they all practised first trimester imaging (n=58, 100%), closely followed by high numbers performing third trimester (n=46, 79%), second trimester (n=45, 78%), and early pregnancy (n=43, 74%) imaging (see Table 1). Nuchal assessment was carried out by midwife sonographers in 47% (n=27) of units, and gynaecological imaging was practised in 14 (24%) units. Six units (10%) had midwife sonographers undertaking invasive procedures including amniocenteses and chorionic villosus sampling. One unit described midwife sonographers as assessing cervical length, but not other aspects of gynaecological ultrasound imaging. Two units had midwife sonographers using ultrasound specifically for infertility.

Most midwife sonographers reported their findings independently and used combinations of methods including free text, templates and electronic systems. Only four BMUS-registered midwife sonographers stated their reports had to be verified by another member of staff and the remainder reported independently.

Education and clinical training

Of the 58 centres with midwife sonographers, 37 (64%) used a Consortium for the Accreditation of Sonographic Education (CASE)-accredited course. The remaining 21 (36%) used in-house training, short non-accredited courses or did not specify. With the exception of four, all BMUS-registered midwife sonographers (n=61, 94%) who responded to the survey held a formal qualification in ultrasound. Of the four without a formal qualification, three were completing their studies and one had withdrawn from the course but continued to practise. One midwife sonographer obtained their qualification in the US. Assuming three midwives undergoing training at the time of the survey had now qualified, this study

Figure 2. Distribution and range of qualifications held by UK midwifery sonographers



indicates 99% of midwife sonographers have an ultrasound qualification, the most common being a postgraduate certificate (see Figure 2).

The majority (n=41, 63%) were trained mainly by radiographers, with midwives providing most of the training for 25% (n=16) of the sample. Five (8%) reported receiving most of their training from obstetricians. None received training from radiologists.

A range of professionals contributed to the training programme, including radiologists, cardiologists, fetal medicine consultants, physicists and specialist nurses based in early pregnancy units and fertility centres.

Incentives and barriers for training midwives in ultrasound

The two greatest incentives for training midwife sonographers were if managers received additional funding (n=47, 46%) and staffing (n=43, 42%). Many managers (n=36, 35%) stated that another strong incentive would be a specific course designed for midwives.

The majority of midwife sonographers (n=46, 71%) agreed with managers that a lack of funding and resources are the greatest barriers to training. Other inhibitors included inadequate support after training (n=23, 35%) and inadequate remuneration after training (n=18, 28%). Issues over grading and pay inequities were encountered frequently by midwife sonographers after completing training. Some were paid at one band for ultrasound sessions and at a lower band when practising midwifery skills. Some described working alongside radiographic colleagues, but earning much less. There were examples of pay disputes lasting several years before parity with radiographers was secured:

“It took me three and a half years to obtain a band 7 that my radiographer ultrasound colleagues obtained in 2004” (midwife sonographer (ms) 88).

Another barrier cited by midwife sonographers was professional resistance. Several commented that radiographers and radiologists showed reluctance to train midwives within the imaging department:

“In my case, sonographers/radiographers did not think

sonography could be carried out by anyone else but radiographers, so there was a lack of support from the x-ray department. I had to go to another hospital for my practical training” (ms03).

“The head of radiography does not believe there is a place for other professions to scan” (midwifery manager (mm) 36).

Resistance from HOMs was described by some midwife sonographers, but usually only due to the fact that managers were left short-staffed when midwives train in ultrasound:

“Our head of midwifery is not keen to train as she does not see sonography as a good use of midwifery skills, especially when we have a shortage of midwives” (ms34).

“Most midwives want to practise ultrasound, but managers tend to put midwifery practice before scanning” (ms41).

Others felt there was myopia on both sides:

“In the UK, midwife sonographers are not supported by their midwife colleagues or by sonographers. The approach in the UK is territorial and short-sighted. Instead of that approach, the disciplines in the UK ought to see it as developing a multidisciplinary work force, which is important for workforce development” (ms30).

Negativity has also been shown by other unspecified clinicians:

“Hospital consultants do not think midwives would be as good as sonographers” (ms23).

Conversely, on a more positive note, in some instances the HOM had been a catalyst in initiating training:

“My head of department was keen for midwives to scan – this made a big difference compared to the previous head who couldn’t see the value at all” (ms02).

“We started to train midwife sonographers because of the national shortage of sonographers and because recruitment and retention of staff is good. It gives midwives an opportunity to develop specialist roles” (mm38).

“Midwife sonographers are expensive at band 7 but very reliable and flexible and provide a responsive service for women” (mm20).

A pragmatic barrier cited by some was that it can be difficult to maintain competency in both areas and maintain midwifery registration:

“It is very difficult to fulfil the requirements to practise as a midwife and to be a sonographer. I am no longer a practising midwife and therefore no longer on the midwives’ register” (ms16).

“Not enough has been done to secure registration as a midwife. I constantly have to argue my case that I am a practising midwife who performs ultrasound” (ms31).

Others believed that the length and difficulty of currently available courses were barriers in themselves, as well as a lack of awareness of eligibility to enrol:

“There is an anxiety that the midwives will not be able to successfully complete the course” (mm101).

“I have tried on two occasions now to train midwives to undertake this skill, the academic requirement is tough but the dexterity required seems to be a problem”

(mm15).

"I think it'll become more commonplace. Not enough information on courses or direction. It took me three years to realise I could learn to scan. I thought it was just for radiographers" (ms32).

A suggestion to try to improve the current situation was that it might help if trainee midwives could work with a sonographer to get some early experience of ultrasound.

Job satisfaction

When asked why they chose to learn ultrasound, some midwife sonographers cited more than one reason, but the majority had very similar incentives. The following represents a small sample of typical comments illustrating why midwives choose to practise ultrasound:

"Fascinated me. Linked well with my job. I was not allowed to learn within the private sector, therefore moved to the NHS" (ms12).

"I was very interested in prenatal diagnosis. It is an integral part of routine care for pregnant women, therefore I believe midwives are best placed to perform it because of our counselling skills and knowledge of pregnant women's psyche" (ms31).

"Because I felt there was too much inappropriate ultrasound used in obstetrics" (ms52).

"I felt ultrasound should be performed by a qualified midwife and sonographer rather than an obstetrician who 'dabbled'" (ms58).

"It provides completeness to practise independently and to support women without necessarily the input of medical staff i.e. breech presentation, if cephalic on scan I send her back to her midwife. No medical involvement unless required" (ms27).

The majority (n=58, 89%) of midwife sonographers would encourage other midwives to practise ultrasound. The two primary reasons stated were beliefs that ultrasound enhances professional practice and provides a better service to women.

"I would encourage them to practise, but to gain experience they need to do at least six sessions a week, otherwise it could be described as 'dabbling'" (ms05).

"I feel a recognised ultrasound qualification is essential and I do not support midwives, obstetricians etc undertaking scans without the required skills" (ms14).

Seven midwife sonographers had negative experiences and would not recommend midwives taking on the role of sonographer. Issues included difficulties working in a hostile, unsupportive environment, pay disputes and lack of appropriate training and resources.

"Would I recommend ultrasound to other midwives? Very much depends if departments can facilitate a midwife to maintain regular ultrasound sessions with access to adequate ultrasound machines" (ms08).

"I found my working environment at times very hostile. Sonographers resented a midwife taking on their role. Saw it as eroding their practice. You don't belong to either group. I was denied access to ultrasound and

midwife updates, couldn't be spared from department. Eventually I resigned. A loss of skills and experience, and a waste of NHS and taxpayers' money" (ms07).

Continuing professional development (CPD)

All midwife sonographers found it easy to maintain their ultrasound CPD and all used multiple sources for CPD. Reading ultrasound journals was the most popular activity (n=56, 86%), closely followed by attendance at study days (n=50, 77%). Regular audit was undertaken by 37% (n=24), but only seven (11%) midwife sonographers participated in research.

Future training

Most (n=64, 62%) units have plans to train midwife sonographers regardless of whether they have any in post at present. Of the 58 units that have midwife sonographers already, 49 (84%) plan to train or employ more. Nine stated that they were unlikely to introduce more midwife sonographers with the main reason being that there were enough in post. However, one or two managers were understandably disillusioned, as these comments illustrate:

"We have trained three midwives altogether but none are practising for us. One midwife has left midwifery to work as a sonographer in order to practise what she learned, two more are trained to do dating scans but can't be released because no back fill has been made available" (mm61).

"I trained a midwife who left to be a full-time sonographer. This was disappointing considering all the effort that had gone into getting her trained for the day assessment unit" (mm96).

Of the 45 units that did not have midwife sonographers, 33% (n=15) planned to introduce them in the future. Both pragmatic and territorial reasons were given by the 30 units who have no plans at all to train or employ midwife sonographers:

"There are other priorities that would come first before midwives scanning if funding was to be found" (mm98).

"It's not their role to scan. If they wanted to scan they would have trained as a sonographer, not a midwife" (mm72).

Discussion

The most common area of ultrasound practice for midwife sonographers is first trimester imaging. This may be as a consequence of the introduction in 2003 of care guidelines for the healthy pregnant woman, which recommend that every woman is offered an ultrasound examination between ten and 13 weeks' gestation (NICE, 2003). Furthermore, compared to other more complex ultrasound examinations, the dating scan is considered in some quarters to be less technically demanding, and therefore lends itself well to those who use ultrasound only as a tool in a limited capacity rather than as a whole time speciality.

Not all midwife sonographers in this study had formal postgraduate ultrasound qualifications. There is a growing opinion that it is not necessary if tasks are focused and clearly defined. Evidence to support this notion includes documentation published by the College of Radiographers (2008). It identifies roles for assistant practitioners in ultrasound and specifies, among other clinical applications, dating scans as being within their scope. If bottlenecks in obstetric ultrasound services are identified as being confined to specific areas, it is likely that some managers and midwives in some cases will find short courses more acceptable than current postgraduate programmes. The National Screening Committee, however, states that the minimum qualification held by any person performing any type of antenatal scan must be a postgraduate certificate (National Screening Committee, 2007). Clearly, some midwife sonographers are breaching this recommendation. Furthermore, it may discourage others from seeking in-house training or short courses for focused obstetric applications. Differing recommendations for training from various professional groups are likely to cause confusion, but this situation is almost certainly set to continue while ultrasound practice remains unrecognised as a speciality and therefore unregulated (Health Act, 1999).

Although dating scans may be considered more elementary than other types of obstetric ultrasound examinations and may be appropriate for those without postgraduate training, the majority of midwives in this study were providing the full range of examinations including those requiring high levels of accuracy and interpretation. At least three midwife sonographers did general abdominal, vascular and paediatric scans.

HOMs services were generally in favour of midwives training in ultrasound, and could see the benefits for both midwives and clients. Almost half of all HOMs services would be willing to send more midwives for ultrasound training were they given additional resources. It has been recognised that many UK maternity units are short-staffed (Department of Health, 2008b; RCM, 2008), but some imply that this is due to restrictions in recruiting rather than a lack of available midwives, some of whom struggle to find employment on qualifying (Silverton, 2007). To compound the situation, births are becoming more medicalised, and the birth rate is escalating, particularly in some areas of the UK, which may be attributable to the rising immigrant population (Silverton, 2007). At the start of 2008, the government pledged substantial additional resources to address the shortfall in the workforce (Department of Health, 2008c), therefore, this is a timely opportunity for midwives to expand their roles to include ultrasound. As recruitment and retention issues resolve, there should be more chances for midwives to begin training in ultrasound. Until then, many managers commented that core midwifery duties must take precedence over learning new skills in ultrasound.

In addition to extra resources, managers would be more likely to consider sending midwives for ultrasound training if a specific programme was developed in preference to accessing the traditional postgraduate courses. While plans for such courses are in progress, conflict may arise potentially over the validity and accreditation of such courses since CASE does not currently endorse anything less than a postgraduate certificate, although this position is under review. However, if these short courses included assessments to help prove competency, organisations like the NSC may be more willing to relax its view on minimum qualifications. Considering the rapidly changing ultrasound environment in the UK it is almost a certainty that more discipline-specific modules will emerge, and therefore it is predicted that accreditation may have to be sought from individual professional bodies rather than the consortium of seven stakeholders who currently comprise CASE.

The majority of midwife sonographers relied on radiographers to provide clinical training in obstetric ultrasound, and this is predictable since most obstetric scanning in the UK continues to be performed by radiographers. It is encouraging, however, to see that 25% of this sample were trained by other midwife sonographers. If midwife sonographers continue to train other midwives, this will eventually ease the training responsibilities on radiographers. It will ensure midwife sonographers are better able to sustain their numbers independently, especially since a lack of available clinical training continues to be a national problem (Edwards, 2008).

Another apparent barrier to training is that some midwives fear encroaching on other professions' territory. For example, some feel advice and guidance to women on exercise should come only from a physiotherapist, and advice on nutrition should come only from a dietician (Lavender et al, 2002). Midwives interested in pursuing a role in ultrasound may also think that it is 'not their job', but as professional boundaries continue to blur, these perceptions are outmoded. Similarly, midwives in this study have highlighted repeatedly examples of other clinicians including radiographers, radiologists and obstetricians who think it is 'not a midwife's job' to scan. While there is little evidence to support these attitudes, there is growing evidence to refute them. Several studies indicate that with appropriate training and experience, midwives are effective at detecting abnormalities on obstetric ultrasound (Allan, 2006; Tegnander and Eik-Nes, 2006; Taipale et al, 2003; Eurenus et al, 1999). There are cases where midwives have identified fetal heart defects missed by cardiologists (Tegnander and Eik-nes, 2006). The need for high levels of training applies equally to all users of ultrasound and, undoubtedly, ability improves with experience (Linsdell, 2005; Chudleigh, 1999; Finberg, 2004).

In many Scandinavian countries midwives are the main providers of the service (Tegnander and Eik-Nes, 2006; Ekelin et al, 2004; World Health Organization,

1998). Arguably, they may offer a better ultrasound service than an imaging generalist since they have a more holistic understanding of the pregnant woman. This was the view of many midwives in this survey, and a recent study supports them (Ekelin et al, 2004). Furthermore, the continual drive for health professionals to find new ways of working to enhance the client experience also supports the concept of midwife sonographers (Department of Health, 2008a).

Midwife sonographers also complained of a lack of support and fair remuneration after qualifying, and some have abandoned midwifery practice in favour of full-time employment in ultrasound departments due to the higher wages. This is disappointing for midwifery managers, who will have invested a significant amount of time and resources into training these people. Equal pay is likely to improve retention of these highly-skilled individuals.

All midwife sonographers in this study acknowledged the importance of CPD and used a variety of resources. The most popular activity cited by 86% of BMUS-registered midwife sonographers was reading ultrasound-related journals.

Every aspect of health care requires clinical audit to preserve high standards of effectiveness (Al-Qaisi et al, 2007). Unsupervised ultrasound imaging is no exception (United Kingdom Association of Sonographers, 2001), so it was disappointing that only 37% of midwife sonographers claim to actively participate in audit. All midwife sonographers should be involved in the audit process for evaluating the effectiveness of their skills in scanning against an explicit benchmark. Perhaps more responsibility needs to be taken by midwife sonographers for monitoring their own standards; they may be able to use existing programmes by collaborating with their colleagues in the radiology department, especially if reports and images are archived on a shared electronic system. Professional differences and 'turf wars', however, may stall this activity in some centres. Equally, multidisciplinary team meetings provide a useful opportunity for correlating ultrasound examinations with known outcomes, but again, only half of all midwife sonographers attend these.

A very small percentage of sonographers claim to be involved in research and further work is required to explore this more fully.

In spite of the barriers, results from this study indicate

that midwife sonographers enjoy their role. Many acknowledged also the improved, responsive and holistic care they are able to offer women, which is important since role extension among professionals should always be primarily for the good of the client (Birch, 2001). This is particularly relevant when considering ultrasound practice, since it remains unregulated (Aitken and Thompson, 2006). Many midwife sonographers believe the way forward is for individual professions to take responsibility for applying ultrasound in their own specialist areas since they have a greater knowledge and understanding of the conditions encountered than would a 'general sonographer'.

The response rate for the manager's questionnaire was 40% and caution must be taken before making generalisations to the wider population of maternity units based on these results. The high return from BMUS-registered midwife sonographers (66%) was pleasing, but again it is acknowledged that they are most likely a highly motivated cohort who have a strong ultrasound identity and wish to maintain links with the wider ultrasound community.

Conclusion

The data provided in this survey are incomplete, but give an indication of the level and frequency of current ultrasound practice by UK midwives. There are at least 197 midwife sonographers in the UK and some have been practising for approximately two decades. Actual numbers may be much higher. Many perform the full range of obstetric ultrasound examinations and some are involved in interventional procedures. The majority enjoy practising ultrasound and would strongly encourage other midwives to practise, not just for their own advancement but also for the perceived benefit to pregnant women. However, opportunities to train are likely to remain low until national staffing issues are addressed.

The development of more flexible training courses, focused just on obstetric ultrasound applications, is likely to attract more midwives, however, high standards of care and clinical competency must be maintained.

There is a need for midwife sonographers to engage more in collaborative work to allow their profession to grow and evolve. More active participation in research will further strengthen the identity of the midwife sonographer.

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The impact of the birth of the first child on a couple's relationship

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Abstract

Background. The birth of a first child heralds a major life transition for couples and has an inextricable effect on their relationship as their affiliation transits from an intimate dyad to a dynamic triad. Research suggests that the birth of a first baby has a formidable impact on the couple's relationship, even more so than subsequent progeny.

Aim. This integrative review set out to answer the question: what is the impact of the first baby on the couple's relationship?

Method. The review process comprised determining a question and the inclusion and exclusion criteria, followed by a detailed systematic search of the literature, critical appraisal of retrieved papers and the synthesis of results of the selected studies. The results were discussed within the context of broader literature, drawing conclusions, implications and dissemination plans.

Findings. Seven primary research papers were identified and included in the review, which used qualitative and quantitative approaches for investigation. Five main themes emerged that contributed to the decline of the relationship. There were clear differences between men and women's dissatisfaction and perceptions of the relationship. Couples reported loss of intimacy, difficulties in communication and overall relationship discontentment.

Implications. Use of therapeutic interventions antenatally may ease the transition to parenthood. While marital disharmony impacts greatly on the couple's relationship, it is nonetheless important to note the impact on the child. One-parent families have a psychological and social impact on the child together with negative consequences prior to divorce/separation. Midwives have a role to play in supporting families; they can be the first-line healthcare professional in the antenatal and postnatal period to address these problems and ensure the wellbeing of all members of the family.

Key words: Birth, first baby, first child, couple, spouse, partner, relationships, marital satisfaction, transition to parenthood, adjustment to parenthood, midwifery

Background

The birth of a child affects the dynamic of the couple's relationship as it changes to include a third person, affecting the functioning of parents and the marital family system (Cowan and Cowan, 1999). The birth of the first child as opposed to subsequent progeny is more impactful as the couple's relationship increases in complexity (Raphael Leff, 1991; Belsky and Pensky, 1988). The introduction of a baby into a couple's life demands a reorganisation of the relationship. Couples need to adjust to the transition to parenthood, requiring a move from one state to another and these encompass a change in role, relationship and behavioural patterns (Tomlinson, 1996). The way in which changes are assimilated will affect the quality of the relationship.

In the seminal work by Le Masters (1957), the transition to parenthood has been described as an intense 'crisis' for parents as they adjust to the birth of the first child. Often there is a significant change in a couple's relationship satisfaction during their transition to parenthood, following the birth of a first baby (Tomlinson, 1996; Dalgas-Pelish, 1993; Belsky and Pensky, 1988), with most couples experiencing a noteworthy decline in the quality of their relationship (Schulz et al, 2006; Pacey, 2004). Should the physiological processes of bonding and attachment to the newborn be affected, then the family system may be further disrupted (Perren et al, 2003).

It is, however, noted that the birth of a child affects men and women differently with dissimilar consequences on the

relationship. The majority of men find it difficult to balance time with their partners, and couples develop behaviour 'rules' to ease relationship tensions. Men may feel a sense of loss and rejection when they experience a changing relationship with their partners. They need to re-establish and re-negotiate this as well as developing a father-child dyad (Barclay and Lupton, 1999).

Men also report emotional changes, while much attention is given to maternal postpartum depression, little is mentioned about paternal depression impacting on marital satisfaction (Beck, 2001). Paternal depression is of concern with rates as high as 50% and is closely correlated to maternal depression (Ramchandani et al, 2005; Goodman, 2004). These authors suggest that men tend to become depressed when there is marital discord or changes in maternal personality style after giving birth. Dudley and Roy (2001) found men to be more emotionally dependent on their partners and this is likely to create pressure and cause relationship dissatisfaction in women when they have to care for a needy baby and partner.

Women report dissatisfaction with the relationship when they perceive their partners as unsupportive. Women generally perform more household and child-caring tasks than their partners, even when in full-time employment and express displeasure with this inequitable workload. Prior to the birth of their babies, couples believed that household and childcare roles should be equally shared, however, this was not evidenced postnatally (Cappuccini and Cochrane,

2000; Tomlinson, 1996). Men have argued that this 'balancing act' is difficult especially when combining employment with household tasks and this leads to conflict and tension and ultimately marital dissatisfaction (St John et al, 2005).

Marital dissatisfaction following the birth of the first child can lead to dissolution of the relationship, with 25,000 children in the UK under four with divorced parents (Office for National Statistics, 2006).

Research into transition to first-time parenthood reveals a pinch-point of crisis for the couple's relationship and the wellbeing of parents. The decline in relationship satisfaction is a serious threat to family wellbeing and places a responsibility on healthcare professionals to ease this transition.

Methods

An integrative review was the chosen method for this review as it includes both quantitative and qualitative research studies. Although it has been common to review quantitative and qualitative research studies separately, this is now not always the case. Increasingly, reviews are being published that include both quantitative and qualitative studies (Nicholls and Webb, 2006; Hodnett, 2002).

The importance of a clearly-developed question is well recognised (Centre for Evidence Based Medicine, 2008) and with the use of 'population, intervention, comparison, outcome' (PICO) framework (Centre for Reviews and Dissemination, 2006), the formulated question was: 'What is the impact of the birth of the first baby on a couple's relationship?'

A search strategy was designed to acquire relevant papers that encompassed the richness of the subject of the study. A combination of text words, MeSH (medical subject headings), exploded subject headings, truncation using phrases for example, 'adjacent to' were used together with Boolean logic using the operators 'AND' 'OR' to facilitate the combination of sets (Greenhalgh, 2001). A master template of text words and MeSH headings was compiled and each database was searched using comparable MeSH headings and text words pertinent to individual databases. Key words included 'birth', 'first baby/child/infant', 'relationship', 'marriage', 'marital', 'spouse', 'partner', 'motherhood', 'fatherhood', 'parenthood', 'satisfaction', 'transition', and 'adjustment'.

An extensive search of bibliographical databases and websites was carried out and included the British nursing index, CINAHL, EBM Reviews, EMBASE, MEDLINE, PsychArticles, PsycINFO, MIDIRS, National Research Register, Current Controlled Trials and PubMed. Journal papers were retrieved for review, the rationale being that they contain the most recent information on the subject (Gash, 2000). Duplicates found on several databases/websites were excluded. The websites were searched using explicit search terms, for example, 'transition to parenthood', 'first child/baby', 'marital satisfaction' included in the title or a combination where sets could be combined.

Papers that were not research based, in English or published prior to 2000 were excluded. The date restriction ensured that recent contemporaneous papers were included reflecting the present expectation of postnatal marital satis-

faction, which would differ from expectations in earlier years (Le Masters, 1957). In total, 184 abstracts were read being mindful of the inclusion/exclusion criteria, which comprised married or cohabiting couples experiencing the birth of the first child, but excluded variables that could impact on relationship satisfaction, that is assisted conception, high-risk pregnancies and underlying maternal/paternal psychological pathology. The inclusion and exclusion criteria arose from a dissection of the question using the PICO framework (Centre for Reviews and Dissemination, 2006). A total of 29 papers met the inclusion criteria and were subject to full review. After review, seven papers were selected for in-depth analysis (see Table 1).

Process

The retrieved studies used quantitative and qualitative approaches; and therefore a selection of critiquing tools were utilised to focus the appraisal (Critical Appraisal Skills Framework, 2006; Cormack, 2000; Greenhalgh, 2006). Thus, while using the appraisal tools as a framework, an extensive analysis and thorough reading of the papers has been undertaken to ensure completeness and depth of analysis. Once this was undertaken, the academic supervisor for the study reviewed, reaffirmed, discussed and agreed the analysis. The qualitative studies were Ahlborg and Strandmark (2001) and Ahlborg et al, (2000). The quantitative studies were Schulz et al (2006), Ahlborg et al (2005), Guttman and Lazar (2004), Killoran Ross (2001) and Shapiro et al (2000).

Overview of methods used in studies

The studies focused on how the baby creates a tension within the relationship and the decrease in relationship satisfaction. The qualitative studies, Ahlborg and Strandmark (2001) and Ahlborg et al (2000) used a descriptive phenomenological approach focused on 'exploring how human beings make sense of and transfer experience into consciousness' (Patton, 2002). They used in-depth interviews to find the 'essence' to validate the recollection of the lived experience of each couple.

While the qualitative studies examined the lived experience, the quantitative studies examined the changed lived experience using interventions (specialist antenatal classes) and questionnaires (see Table 1). They differed in that they interpreted the experience numerically, but the research was notable in that it revealed a new dynamic that impacted on satisfaction with the relationship.

The quantitative studies used a variety of questionnaires to validate their research and two studies introduced specialist antenatal classes to assess whether this intervention aided postnatal marital satisfaction.

Schultz et al's (2006) randomised controlled trial selected first-time parents who were randomly assigned to an intervention group (specialised couple antenatal classes) or a control group (non-specialised couple antenatal classes). An additional couples' group acted as further control and just completed questionnaires and interviews in the postnatal period. The null hypothesis was that the intervention of specialist classes did not impact on marital satisfaction

Table 1. Summary of studies included in the review

References	Study methodology	Sample size	Sampling strategy	Method of data collection	Method of analysis	Quality assurance
Ahlborg and Strandmark (2001)	Descriptive Phenomenological	Couples family health centres (n=5)	Convenience	Tape-recorded individual interviews at six months and 18 months postnatally	Meaningful units, essence of phenomena	Going back to naïve description, not adding invention to material
Ahlborg et al (2000)	Descriptive Phenomenological	Couples from three welfare centres (n=10)	Convenience	Tape-recorded individual interviews at nine months postnatally	Meaningful units, essence of phenomena	Researcher brackets own presumptions, constant comparison
Ahlborg et al (2005)	Cross-sectional survey	Couples/parents from family health centres (n=1256) Response rate 65% (n=384 couples; n=47 single mothers; n=5 single fathers)	Convenience	Questionnaire six months postnatally	Wilcoxon signed rank test Spearman's rho correlation coefficient Subscale score correlation between mothers and fathers (Spearman's rho)	Pilot study Validated assessment tool
Guttman and Lazar (2004)	Cross-sectional survey	Childless couples and parents (n=200) Response rate 60% (n=60 childless couples; n=60 parents with one child)	Snowball sampling	Postal questionnaires	Factor analysis Cronbach's alpha	Pilot study Use of validated questionnaires
Killoran Ross (2001)	Comparative outcome study	Parentcraft couples (n=123 couples)	Convenience quasi random selection into four groups with differing parentcraft education	Standard questionnaires during antenatal and postnatal period to six months	Assessment of five domains of transition to parenthood	Pilot study Use of validated questionnaires
Schulz et al (2006)	Randomised controlled trial Longitudinal study	Childless couples and parents (n=76) Participation rate 85% 28 intervention/ 38 comparison group; 13 childless couples	Convenience from part of larger study	Marital Adjustment Test (MAT) Standard questionnaires/ interviews during antenatal and postnatal period over 5.75 years	Multivariate hierarchical linear modelling	Use of validated questionnaires Sensitive statistical techniques
Shapiro et al (2000)	Prospective longitudinal study	Couples with/ without children (n=130 couples) Participation rate 63% 43 parents, control; 39 childless	Convenience – two-stage sampling initial cohort newly-weds with no children. Cohort split into couples and childless couples	Audio- and video-taped oral history interview Postal MAT questionnaire	T test results Pearson Correlation Coefficient Growth curve Analysis Descriptive Statistics	Intercoder reliability Use of validated MAT questionnaire

postpartum. As a further control, Schultz et al (2006) assessed the marital satisfaction of childless couples during the same period of research utilising this comparator to add weight to the study. All participants completed a Marital Adjustment Test (MAT) – a validated instrument together

with a battery of questionnaires. This study together with Guttman and Lazar (2004) and Shapiro et al (2000) (included in this review) compared childless and first-time parents to assess whether the baby is the factor in relationship decline or whether relationship decline is related to the

longevity of the relationship.

Killoran Ross (2001) also included an antenatal intervention to assess the impact on marital satisfaction. He used a quasi-experimental approach in a comparative outcome study using four groups in three different models of antenatal education together with a control group. A total of 11 questionnaires were administered pre- and postnatally to assess wellbeing, support and coping. The dependent variable was parental psychological adjustment during the transition to parenthood. Group 1 (enhanced antenatal intervention) reported greater relationship adjustment.

Ahlborg et al (2005) used a cross-sectional survey utilising the results of a modified validated questionnaire, the Dyadic Adjustment Scale (DAS). The authors assessed data on the quality of the intimate and sexual relationship at six months postpartum. Guttmann and Lazar (2004), in a further cross-sectional survey compared marital satisfaction between first-time parents and childless couples. Couples completed two versions of a validated, modified questionnaire. The aim of their study was to assess marital satisfaction determinants between childless couples and parents in relationships of at least two years but less than four.

The final study was Shapiro et al (2000), which is a prospective panel design longitudinal study that collected data from the same cohort at varying time intervals over a period of six years. This study comprised two groups: newly-weds who subsequently became parents and newly-weds who remained childless. Its aim was to establish underlying factors impacting on marital satisfaction. Data analyses from both groups revealed comparisons of marital satisfaction with/without children. The study used the MAT and Oral History Interview (OHI). Both instruments claim to have high predictive validity. This study analysed data over four to six years.

Sampling

The studies used a variety of sampling techniques (see Table 1) with most using a form of convenience sampling. Sample sizes in the two qualitative studies were five and ten couples and the quantitative studies ranged from 13 to 384 couples.

In phenomenological research, participants have experienced the phenomena, and diversity in individual experience is explored, thus the small sample sizes cited above are adequate (Polit and Beck, 2006).

Schultz et al's (2006) quantitative study comprised a subset of a larger study researching family and children's development. Inclusion criteria included cohabitating couples aged 18 or over expecting their first child. Couples were randomised using a random number table. The sample size in all four groups was less than 30. An adequate sample size can reduce sampling error, however, where a condition is common – marital dissatisfaction post delivery – a smaller sample can be studied (Cluett and Bluff, 2000). The study was not blinded or double-blinded. Participants were aware of the hypothesis, participants/researchers knew what was being tested and two of the researchers were facilitators in the intervention group. A lack of blinding may lead to bias and distortion in studies (Greenhalgh, 2006). Given such a

small sample and attrition rate, generalisability may be limited. The sample was a subset of a larger study and therefore its randomness was based on this subset and not a larger, random population.

Killoran Ross (2001) randomly assigned 123 couples to four groups, but there are no data relating to sample size. As a quasi-experimental study, the word 'random' may be used in a different context as true randomisation does not normally occur in quasi-experimental studies (Cluett and Bluff, 2000). However, it is possible that this study was limited by wordage in the selected journal. It is included as it met all inclusion criteria.

Ahlborg et al (2005) surveyed 384 couples from family health centres using convenience sampling. The advantage of this sampling method is that participants are readily available and easy to access. The disadvantages are that they may not be representative of the population as a whole (Cluett and Bluff, 2000). Nonetheless, the authors included detailed baseline characteristics to validate the representativeness of the sample.

Guttmann and Lazar (2004) used convenience snowballing sampling within a university setting. They surveyed 60 childless couples and 60 couples with one child. Polit and Beck (2004) argue that convenience sampling is the weakest form of sampling due to the prevalence of sampling bias and this group may not be representative of the general population.

Shapiro et al (2000) used a convenience two-stage sampling process over four years using a cohort of newly-married couples (n=130) in an area of Seattle which, through attrition reduced to 43 parents and 39 childless couples. The researchers advise that the sample is evenly distributed and representative of the city's population, thus generalisation may be possible even though numbers are small. Clear, valid reasons are given for attrition: divorce, pregnant during data analysis, death, and participants leaving the area.

Data collection

Data collection for the studies varied and comprised in-depth, structured and semi-structured interviews and questionnaires, some which were validated, others modified validated questionnaires (see Table 1). Questionnaires were used in all the quantitative studies with some studies using questionnaires and interviews (Schultz et al, 2006; Shapiro et al, 2000).

The qualitative research collected data using in-depth interviews. Parents were interviewed separately, undisturbed in their own homes and were encouraged, using clarifying questions. Ahlborg and Strandmark (2001) interviewed parents at six and 18 months postpartum and Ahlborg et al (2000) at nine months postpartum. Both studies used audio recordings that were transcribed and analysed.

Participants in Schultz et al's (2006) study completed pre-assessment interviews and validated questionnaires, which were administered ante- and postnatally. The intervention group was split into six subgroups comprising four couples, each of whom discussed the questionnaires, facilitated by coleaders. Each session was audiotaped to ensure the

Table 2. Findings of the included studies

Study	Findings
Ahlborg and Strandmark (2001)	The baby was the focus of attention Baby was focus of mutual concern or focused on at the expense of father Impaired relationships or fostered relationships Mild to severe strain Good or insufficient communication
Ahlborg et al (2000)	Birth of baby impacted on sexual desire Insufficient or defective communication created problematic sexual and partnership relations
Ahlborg et al (2005)	Parents generally happy with relationship, but discontented with dyadic sexuality – 46% men, 36% women (p=.001) Being too tired for sex (p<.0001) Fathers experienced more stress than mothers (p<.001) Good dyadic communication has potential to strengthen dyadic sensual/sexual activity Data clustered into seven subscales and analysed in three stages; the Wilcoxon signed rank test compared mothers and fathers means within the couple, the Spearman rho estimated individual couples' scores correlated with subscales and then correlation of the subscale scores separately for mothers and fathers Item values in the Spearman rho test were significant (p<.001)
Guttman and Lazar (2004)	First-time parents happier with relationship than childless couples Determinants of marital satisfaction for parents different to childless couples. Two out of six factors namely agreement and consideration (p<0.05) together with liaison (p<0.001) are significant for satisfaction in parents
Killoran Ross (2001)	Psychological wellbeing in women differed to partners– women had higher anxiety levels than men Both genders dissatisfied with their partner's role performance Relationship dissatisfaction among women not alleviated by equitable role performance Men report equal dissatisfaction with added responsibility in transition to parenthood
Schulz et al (2006)	Participants in couple's intervention group experienced significantly less relationship decline and divorce in first few years postnatally Couples in intervention group worked harder at their relationship, but divorce rates similar to comparator at 5.5 years Intervention normalised parenting/relationship experience Childless couples as a comparator did not show relationship decline Statistical probability results reported in the intervention group range from p<.001 to p<0.05, which suggest that the results are significant and not due to chance, equally they have used standard error measurements to validate and support results
Shapiro et al (2000)	Factors identified that predicted marital stability or relationship decline Women had higher rates of marital dissatisfaction compared with childless women Quality of marital relationship antenatally impacts on postnatal relationship Prebirth positive/negative relationship factors enhanced/diminished postnatal relationship satisfaction 11 subscales derived from oral history interviews with high correlation coefficient reliability scores range .66-.81

treatment protocol was strictly adhered to. No reference was made to adherence to protocol.

Killoran Ross (2001) clustered and compared five domains from a variety of questionnaires using time series observation at 24 and 26 weeks' gestation and one, two, three, four and six months postpartum.

Ahlborg et al (2005) collected questionnaire data from two groups of first-time parents at six months postpartum and achieved a response rate of 65% and 74% respectively. The questionnaire was a pre-validated modified version of DAS translated into Swedish. The translated DAS was piloted initially with 80 first-time parents to enhance sensitivity and dimension of the subject.

Guttman and Lazar (2004) constructed a validated Marital Satisfaction Questionnaire (MSQ) via a pilot study (n=40) to check content, context and wording suitable for an Israeli

cohort. An 'exhaustive list of items' was compiled from the answers and constituted the basis of two attitude questionnaires (MSS) and (MSS-I). The questionnaires comprised 34 items and used a Likert scale to test the degree of marital satisfaction and the importance of an item's content in terms of marital satisfaction. The questionnaire was posted to respondents and data were collected over several months with a 60% response rate. Having to complete two questionnaires with 34 items could have led to low response rates. Postal questionnaires were self-administered and without the researcher present, it is possible that questions may have been misunderstood and erroneous answers given. Bowling (2002) argues that postal questionnaires are only suitable if the questions are straightforward.

Shapiro et al (2000) collected data from couples in the first year of marriage via the OHI instrument (interviews) when

both partners were present in the home. A subset were videotaped and studied in detail in a laboratory setting (n=50). The OHI coding system relies on the researcher entering scores on a Likert scale, based on researcher's perception of the answers. They utilised a multivariate analysis of variance (MANOVA) to examine differences in researchers OHI coding and did not find any significant differences.

All participants were followed up annually to complete the MAT questionnaire with new parents completing additional MAT questionnaires at six months antenatally and three months postnatally. This rigour of ongoing data collection ensures that attrition rates are kept to a minimum through constant contact, but equally the repetition of the questionnaires can become tiresome to participants and could account for the 37% attrition rate.

Data analysis

The two descriptive phenomenological studies outlined the approach to their analysis, making use of meaning units transforming them into expressed meanings, rather than interpretive, in line with descriptive phenomenology. The quantitative studies produced statistical analyses of their data.

Findings

This section will report on the analysis of the seven papers selected for review (see Table 2).

Synthesis

Five main themes emerged that contributed to the decline of the relationship. There were clear differences between men and women's dissatisfaction and perceptions of the relationship. Couples reported loss of intimacy, difficulties in communication and overall relationship discontentment.

Impact on women

Killoran Ross (2001) noted that women had higher levels of anxiety than men postnatally. Shapiro et al (2000) found a systematic decline in marital relationships, with a greater impact on women compared with men. They found that women who became mothers had more marital dissatisfaction than childless women and this decline was noted for up to two years post delivery. If the husband expressed fondness and affection towards his wife in the antenatal period, the trend towards decline was halted. Women whose partners expressed disappointment in the relationship during pregnancy reported being dissatisfied postpartum. It appeared that if couples had a strong sense of the other in the relationship – the expansiveness index – this enabled mutual support between the husband and wife before and post delivery.

Impact on men

Killoran Ross (2001) found that men and women report equal dissatisfaction with the relationship. He questioned the concept of the 'new man' who, in supporting his female partner does not help in reducing her relationship dissatisfaction. He too becomes dissatisfied with the increased demands of a new infant. Ahlborg et al (2005) found that men were more stressed than women due to the additional demands at home

and outside the home. They also reported greater sexual desire than women (Ahlborg et al, 2000) and were more satisfied with their intimate relationship, their relationship in general and more optimistic about the future of the relationship when compared with women (Ahlborg et al, 2005).

Relationship contentment

It needs to be stated that not all couples experienced the transition to parenthood as having a negative impact on their relationship. Guttman and Lazar (2004) reported increased marital satisfaction in first-time parents compared with childless couples. They found six factors with importance within the childless couples and parents' relationships. Parents had higher scores than childless couples, notably in 'agreement and consideration', which enhanced relationship satisfaction. They do, however, note that the study had sampling limitations. Additionally, they are mindful that this Israeli study may have impacted on the results as the Jewish religion and culture place a high value on having children. Equally two of the couples in Ahlborg and Strandmark (2001) reported increased relationship solidarity although they did report more fatigue and irritation in their relationship. Most of the couples in Ahlborg et al (2005) study were happy with their relationship per se, while expressing discontent with intimacy. The couples in Schulz et al (2006) intervention study had significantly reduced marital decline in the first few years postnatally. However, by five-and-a-half years, the divorce rate was similar in the intervention and non-intervention groups. Nonetheless, they state that the opportunity for couples to normalise their experience with other group members was helpful. Additionally it may have enhanced the relationship by reducing the likelihood of blaming their partner for the stresses experienced postpartum.

Loss of intimacy

Raphael-Leff (1991) states that couples in the transition to parenthood may experience potential dangers to their relationship due to loss of sexual and intimate relationships, a reduction in the time spent with each other and less mutual nurturing. Ahlborg and Strandmark (2001) found that couples reported a loss of intimacy that resulted in parents reporting 'missing tenderness' and 'yearning' for affection. Ahlborg et al (2005) noted that both parents were often too tired for sexual activity and reported this as a relationship problem. Couples who experienced a mutual, simultaneous loss of desire and need for sexual intimacy reported low relationship conflict (Ahlborg et al, 2000). A conflict in sexual desire created relationship disharmony where the man's interest was stronger than the woman's. Women who breastfed reported a loss of sexual desire and libido (Ahlborg et al, 2005; Ahlborg et al, 2000).

Several studies have found that men perceive a loss of their intimate sexual partner to the baby, especially when the woman is breastfeeding (Cohen et al, 2002; Jackson, 2000; Read, 1996). Studies into breastfeeding and sexuality have noted that women find breastfeeding 'erotic' and have less need of erotic satisfaction from their partners (von Sydow,

1999). These factors can contribute to a loss of relationship satisfaction. Sexual desire was seen as positive when it created feelings of tenderness and acceptance, but defective when perceived as longing or a need for self-control. Some women reported the desire for intimacy without vaginal penetration and were fearful of approaching their partner in case their interest in them was misunderstood.

Communication

Ahlborg and Strandmark (2001) noted that a lack of communication prevailed in parents expressing dissatisfaction with the relationship. Indeed one of the couple's only form of communication related to the baby. The baby became the focus of attention to the detriment of the relationship. The intervention in Schulz et al (2006) enabled couples to communicate more fully and express their feelings, which aided relationship satisfaction. Ahlborg et al (2005) found that positive dyadic communication was associated with satisfaction within the relationship and that it enhanced the couple's intimate relationship. Shapiro et al (2000) found that a buffer against relationship decline was a positive relationship, where spouses communicated their respect and friendship for each other and formed a strong bond to support them through periods of transition. Communication is an important factor within any relationship and is a complex skill that many couples fail to develop.

Validity and reliability

For any evidence to inform change of practice, we need to ensure that the data is valid and reliable (Hamer and Collison, 2003). The research processes described in the qualitative studies relating to the quality of the intimate and sexual relationship can indicate results that are trustworthy. Ahlborg et al's (2005) quantitative data on the loss of intimate and sexual relationships had significant results. Killoran Ross (2001) did not have the data to support their findings. Schulz et al (2006), while using a complicated statistical process, did nonetheless show a decline in relationship dissatisfaction with less in the group with ante- and postnatal intervention. Guttman and Lazar's (2004) results albeit positive, may be due to the limited sample size with bias and cultural factors influencing results, which they acknowledge. Finally, Shapiro et al (2000) had clear, simple well-described statistical analysis that produced significant results indicating that marital dissatisfaction increases following the birth of the first child.

There are limitations in all these studies; all the quantitative studies had small sample sizes (with the exception of Ahlborg et al, 2005) and additional research with larger sample sizes could produce more reliable conclusions. Schulz et al (2006) and Killoran Ross (2001) used interventions to affect relationship satisfaction, but results from Killoran Ross (2001) could not be validated. Nonetheless, the results evidenced overall that there was relationship dissatisfaction in one form or another following the birth of the first child.

Implications for practice and recommendations

Midwives have an important role in the wellbeing of the family and need to be cognisant of current research. Disseminating information gives women and practitioners choice,

it is important therefore to disseminate information to colleagues. Foy and Crilly (2004) describe the gap that exists between evidence and practice and the necessity of disseminating evidence into practice.

The decline in marital satisfaction following the birth of a child has important public health and social implications. The main focus postnatally tends to be on the physical health of the woman and infant, with limited attention paid to emotional and psychological wellbeing unless the woman displays (or discloses) signs of postnatal distress (Perren et al, 2003; Morse et al, 2000). One of the themes running through these studies was the importance of good communication to enhance the relationship. Schulz et al's (2006) research on the effect of therapeutic relationship support to enhance marital satisfaction is an important finding and warrants further research to establish the efficacy of therapeutic relationship interventions on couples. This intervention focused on resolution of relationship difficulties, utilising communication and conflict-resolving skills and has implications for practice when considering education for expectant and delivered couples.

On a practical level, midwives can support couples to make conscious decisions on how they wish to conduct their relationship postnatally, especially in the early weeks when new patterns of behaviour emerge within the relationship. The introduction of a baby into a couple's life demands a reorganisation of the relationship. The way in which changes are assimilated can affect the quality of the relationship. Midwives can facilitate parents to discuss the development of their parenting roles and how they incorporate this new dynamic into their relationship. Increased use of therapeutic interventions, such as psychotherapy and couple counselling could facilitate the transition to parenthood and create healthier, happier parents and families.

Conclusion

This integrative review sought to bring together qualitative and quantitative research to examine the impact of the birth of the baby on a couple's relationship.

The overall conclusion is weighted towards relationship dissatisfaction following the birth of a first child and this review confirms previous findings. The studies critiqued document the negative aspects of relationship problems on the emotional and psychological health of couples following the birth of their first child and reveal the extent of relationship difficulties in the transition to parenthood together with the dissatisfaction and hardships experienced.

There are, however, factors that can strengthen and enhance a relationship and these are good couple communication and relationship interventions. Guttman and Lazar (2004) found no significant relationship dissatisfaction although, as discussed above, the sample was limited and cultural factors may have influenced the results.

Critiquing research in this depth provides much needed knowledge of the limitations of research and it facilitates researchers in designing better research protocols.

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Are student midwives influenced by the 'traditional' (non-evidence-based) practices of their clinical mentors?

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Abstract

Aim. This paper provides a descriptive account of a structured review of literature undertaken as part of an investigation into whether pre-registered final-year midwifery students who were based at five universities in the north of England were influenced by the 'traditional' (non-evidence-based) practices of their clinical mentors.

Key questions. Do pre-registration midwifery educational programmes incorporate and advocate students to use evidence-based practice? Do students utilise their evidence-based knowledge in the practice environment? Do student midwives witness their clinical mentors using practices that are not based on current evidence?

Method. Electronic databases were used to access midwifery, nursing and educational journals. Textbooks and governing health professional websites were also accessed. Key words were typed into the search engines. Data that matched the inclusion criteria were scanned and, where relevant, the evidence was critically appraised to assess the study's validity. In total, 122 studies were retrieved for detailed evaluation.

Findings. The literature review demonstrated that both professional and organisational constraints prevent students and practitioners from using evidence in practice. Some studies identified inconsistencies between what students were taught in the university and what was taught in practice and this may have contributed to widening the theory practice gap. However, there is limited published data making specific reference to the influence of clinical mentors or student midwives' practice.

Implications. Further research is needed that specifically explores the experiences of pre-registered midwifery students in relation to this subject.

Key words: Structured literature review, evidence for practice, students and mentors, educational and professional conflicts, theory-practice gap, midwifery

Introduction

This review was undertaken as part of a study that investigated whether pre-registered final year midwifery students were influenced by the 'traditional' (non-evidence-based) practices of their clinical mentors.

Evidence-based practice (EBP) is defined as an approach to health care that uses the best evidence: '*The most appropriate information available, to make clinical decisions for individual patients... It involves complex and conscientious decision-making based not only on the available evidence, but also on patient characteristics, situations, and preference*' (McKibbin, 1998: 396).

Standards for the preparation of teachers of midwifery and nursing emphasise that where students are allocated to a clinical placement, the workplace should ensure that the provision of care is based on relevant research-based and evidence-based (EB) findings (NMC, 2002). More recently, these standards have been reinforced by the NMC (2008), and the Department of Health (DH) (2007) document *Maternity Matters*.

Standards of proficiency for preregistration midwifery education also stress that this philosophy must be reflected throughout programmes of education (NMC, 2004a). These standards reinforce the importance of students

being exposed to a culture that encourages them to search the EB, analyse, critique and use evidence in practice and to disseminate research findings.

However, it is not possible to monitor and know with any real certainty that individual practitioners, who may be involved with mentoring students, employ practices that are based on best evidence. While the ethos of health care should be striving to ensure practitioners utilise EB care, this may not be as easy as it appears in that, it can be difficult and time-consuming for practitioners to keep abreast of the most recent research, which may or may not provide sufficient evidence to warrant its implementation. Additionally, there are a number of practices in midwifery that remain under-researched and as such, practitioners may have little else to refer to other than to adopt the 'tried and trusted' traditional practices. Indeed, in the context of clinical practice, the term 'traditional practice' has been loosely used to describe the handing down from generation to generation of customs, rituals and beliefs or, following customs or ways of behaving that have continued in a group of people or society for a long time without changing. As such, some of these practices may be of no benefit to service users or may even be detrimental.

While the purpose of this review was to find out if student midwives were influenced by the traditional practices of their mentors, this is a relatively broad concept, necessitating wider exploration of factors influencing practice.

Search strategy

The electronic databases, Blackwell Synergy/Blackwell Science, CINAHL and Science Direct were used to access midwifery, nursing and educational journals. Electronic textbooks that focused on adult teaching and learning theories were also accessed. Other databases included the NMC, Quality Assurance Agencies for Higher Education, the Department of Health and the National Institute for Health and Clinical Excellence (NICE, 2006; 2003).

The key search questions were formulated to find out what might influence student midwives to adopt the traditional practices of their clinical mentors:

- Do pre-registration midwifery educational programmes incorporate and advocate students to use EBP?
- Do students utilise their EB knowledge in the practice environment?
- Do student midwives witness their clinical mentors using practices that are not based on current evidence?

Key words were typed into the selected midwifery, nursing and educational databases: 'professional standards', 'educational standards', 'students learning', 'ritualistic/traditional practices', the 'clinical setting', 'ward culture', 'nursing/midwifery' 'students experiences', 'theory-practice gap', 'employing EBP in practice,' 'barriers to learning'.

Inclusion criteria

All studies published in English from 1997 to 2007 were included on the basis that within the last decade there has been an increased awareness and advocacy towards the

use of EBP. Studies that explored specialist disciplines other than midwifery and nursing such as psychiatry, dentistry, physiotherapy and or focused on patient care pathways for specific diseases were excluded.

The search strategy for 'using EBP – nurses and midwives' identified a total of 5115 citations. According to the title of the papers, and in the order of relevancy, 425 papers were scanned and 125 abstracts were read. Of this number, 90 papers made reference to some of the barriers to employing EBP within the clinical setting, four of which included the use of traditional practices as being a barrier. In total, 60 papers were retrieved for detailed evaluation and, of these, 28 were used in the review.

Some 1001 citations were identified in the search for the 'theory-practice gap – student nurses/midwives'. According to the title and relevance, 140 papers were scanned and 40 abstracts were read. Of this number, 47 papers made reference to students' clinical learning experiences from a students' perspective, and 76 papers were identified from a mentors/lecturers perspective. In total, 62 papers were retrieved for detailed evaluation and 17 were included in the review.

To assess the validity and rigour of the studies' results and its relevance, the NHS Critical Appraisal Skills Programme (CASP) was employed.

Table 1 provides a summary of some of the main studies selected for review. Papers meeting the criteria for inclusion were classified according to subject, theory or outcome. Where studies explored more than one concept, these papers were duplicated and assigned to the relevant file. By including a brief summary of the study's findings or theories on the appraisal tool, this system of filing not only enabled retrieval of the data, but allowed comparison of the findings of studies that had investigated similar concepts. This process led to the emergence of a number of themes and these will now be discussed.

Discussion of findings

Employment of traditional practice

Studies undertaken by Perez-Botella and Downe (2006), Cloherty et al (2004), Baxter et al (2003), Begley (2001a) and Bick (2000) demonstrate similar outcomes regarding the value that some practitioners place on traditional physical aspects of care over and above current research evidence.

Application of theory to practice among qualified practitioners

Studies undertaken by Banning (2005), Rycroft-Malone et al (2004), Parahoo (1999) and McSherry (1997) report similar findings in that some practitioners lack knowledge of what is meant by EB or as MacGuire (2006) and Rodgers (2000) say, they may be unaware of which practices are EB. Alternatively, studies by Thompson et al (2005), Glacken and Chaney (2004), and Parahoo (2000) revealed that some practitioners were uncertain of how to use evidence to change practice.

According to Leeman et al (2006), this latter concept

Table 1. Summary of main studies

Author(s), date published	Research interest	Research method(s)	No. of participants	Key findings
Begley CM. (2002)	Student midwives' views of the hierarchy in midwifery and views of their working role and relationships with qualified midwives and obstetricians	Individual and group interviews, diary-keeping, questionnaires	125	<ul style="list-style-type: none"> • Negative perception of hierarchical structure; work environment not conducive to learning • Fear of bullying • Tension between traditional and EB practice
Camiah S. (1997)	Use of nursing research in practice and application	In-depth individual and group interviews	100	<ul style="list-style-type: none"> • Poor knowledge • Resistance to change • Lack of research training
Closs SJ, Baum G, Bryar RM, Griffiths J, Knight S. (2000)	Barriers to research implementation in two Yorkshire hospitals	Survey (Funk et al, 1991)	712	<ul style="list-style-type: none"> • Lack of resources and training • Negatively disposed
Corlett J. (2000)	Theory-practice gap in nurse education	Semi-structured interviews	23	<ul style="list-style-type: none"> • Lack of collaboration between clinical areas and higher education institute
Crawford P, Brown B, Anthony P, Hicks C. (2002)	Community mental health nurses views of EBP and Barrier scale UK and US comparison	Semi-structured interviews and focus group	Ten	<ul style="list-style-type: none"> • Lack of knowledge and resources • Conflicting information
Dunn V, Crichton N, Roe B, Seers K, Williams K. (1997)	Using research in practice: using the Barrier scale	Survey (Funk et al, 1991)	316	<ul style="list-style-type: none"> • Lack of support and resources • Lack of leadership
French B. (2005)	Nurses role in translating evidence into policy	Participant observation	3 clinical work groups	<ul style="list-style-type: none"> • Prescriptive models of research are inadequate • Tension between theory and practice
Hutchinson AM, Johnston L. (2004)	Nurses' barriers to research use in practice	Survey (Funk et al, 1991)	317	<ul style="list-style-type: none"> • Lack of resources and critical appraisal skills
Kajermo KN, Nordstrom G, Krusebrant A, Bjovell H. (1998)	Nurses barriers to and facilitators of research utilisation	Survey (Funk et al, 1991)	237	<ul style="list-style-type: none"> • Lack of authority and knowledge and resources
Koh LC. (2002)	Student nurses views of teaching by link lecturers	3 focus group interviews	24	<ul style="list-style-type: none"> • Positive outcome – enhanced integration of theory to practice
Kyrkjebo JM, Hage I. (2005)	Nursing students' experiences of improvement knowledge in clinical practice	Six focus groups	27	<ul style="list-style-type: none"> • There were gaps between what students learnt in HEI and what they observe – they would do things differently when qualified
Le May A, Mulhall A, Alexander C. (1998)	Exploring the research cultures of practitioners and managers	Semi-structured face-to-face interviews and telephone interviews	30	<ul style="list-style-type: none"> • Individual and organisational factors affect research • Practitioners and managers having differing perceptions
Maben J, Latter S, Macleod Clark J. (2006)	Impact of professional-bureaucratic work conflict on newly-qualified nurses	Longitudinal study in three HEIs between 1997 and 2000. Questionnaires and interviews	72 students	<ul style="list-style-type: none"> • Barriers included obeying covert rules, lack of support, poor role models, lack of resource

Table 1 continued. Summary of main studies

Author(s), date published	Research interest	Research method(s)	No. of participants	Key findings
Mantzoukas S, Jasper MA. (2004)	Relationships and organisational culture	Observation and analysis of reflective narrative	16 qualified nurses	<ul style="list-style-type: none"> Practice dominated by powerful individuals
May N, Veitch L. (1998)	Placement experience of Project 2000 students	Observation interviews and analysis of programme documents	228 tutors; 498 students; 210 mentors	<ul style="list-style-type: none"> Mismatch between practice and HEI
McSherry R. (1997)	Nurses and midwives perceptions about research	Questionnaire	275	<ul style="list-style-type: none"> Consensus on value of research Lack of research knowledge
Oranta O, Routasalo P, Huple M. (2002)	Identify and describe barriers to and facilitators of research use from the point of view of Finnish nurses	Survey (Funk et al, 1991)	253	<ul style="list-style-type: none"> Most research was published in a foreign language Poor research knowledge Lack of collaboration
Parahoo K. (1999)	Comparing pre-Project 2000 and Project 2000 nurses' perceptions of their research needs and of their use in clinical areas	Hand-distributed questionnaires	1368	<ul style="list-style-type: none"> Pre-Project 2000 nurses did not feel prepared for using research While Project 2000 nurses reported receiving more training, they did not report higher rates of research use than pre-Project 2000 nurses
Parahoo K, McCaughan EM. (2001)	Research use among medical and surgical nurses	Survey (Funk et al, 1991)	479	<ul style="list-style-type: none"> Managers in control nurses unable to change practice
Pearcey PA, Elliott BE. (2004)	Student impressions of clinical nursing	Two focus group interviews	14	<ul style="list-style-type: none"> Students learned role behaviour by observation
Phillips T, Schostak J, Tyler J, Allen L. (2000)	Evaluation of how assessors, assess students practice within the clinical setting	Multi-methods: <ul style="list-style-type: none"> Field Case studies In-depth interviews. 	One site	<ul style="list-style-type: none"> Assessors perceived assessment criteria failed to recognise the real world of practice
Pulsford D, Boit K, Owen S. (2002)	Mentors' attitudes toward nurse education	Postal questionnaire	198	<ul style="list-style-type: none"> Lack of communication between HEI and clinical providers
Ramage C. (2004)	Negotiating multiple roles: link teachers in clinical nursing practice	In-depth interviews	28	<ul style="list-style-type: none"> Link lecturers experienced problems with: <ul style="list-style-type: none"> Gaining access Influencing or changing practices negotiating credibility
Randle J. (2003)	Exploring students' self-esteem	<ul style="list-style-type: none"> Interviews Field notes 	56	<ul style="list-style-type: none"> Bullying was commonplace and the 'norm' Students' self-esteem was low
Retsas A. (2000)	Barriers to using research evidence in nursing practice	Survey (Funk et al, 1991)	400	<ul style="list-style-type: none"> Barriers were: <ul style="list-style-type: none"> Lack of resources and training Training critical appraisal skills
Ring N, Malcolm C, Coull A, Murphy-Black T, Watterson A. (2005)	Exploring implementation of best practice statements in clinical practice	Semi-structured interviews	15	<ul style="list-style-type: none"> Barriers and drivers to use EBP depended on benefits to: <ul style="list-style-type: none"> Patients, practitioners, individuals and team

Table 1 continued. Summary of main studies

Author(s), date published	Research interest	Research method(s)	No. of participants	Key findings
Rodgers SE. (2000)	To find out the extent nurses use 14 research-based practices in their area of work	Postal questionnaire	680	<ul style="list-style-type: none"> • Scores on individual practices ranged from 60% of nurses never having heard of a practice to 85% always using a practice
Swain J, Pufahl E, Williamson G. (2003)	Do students practise what we teach? Manual handling practice among student nurses	Hand-distributed questionnaires	139	<ul style="list-style-type: none"> • Students unable to use recommended techniques in practice, due to the influences of other nurses • Male students and younger students were more susceptible to socialisation
Thompson C, McCaughan D, Cullum N, Sheldon T, Mulhall A, Thompson D. (2001)	The accessibility of research-based knowledge for nurses in acute settings	Mixed method case site, using interview, observational, Q sort and documentary audit data	108 nurses	<ul style="list-style-type: none"> • Nurses value face-to-face knowledge over textbook
Veeramah V. (1999)	Use of research findings by graduate nurses and midwives	Cross-sectional survey using postal questionnaire	184	<ul style="list-style-type: none"> • Lack of resources and critical appraisal skills
Williamson G R, Webb C. (2001)	The effectiveness of clinical nurses employed in joint posts	Focus groups and telephone interviews	25 clinical support nurses; 6 managers; 34 pre- and post-registered nursing students	<ul style="list-style-type: none"> • Positive outcome – theory-practice gap reduced
Yearley C. (1999)	The clinical experiences of student midwives	<ul style="list-style-type: none"> • Field notes • Interviews 	8	<ul style="list-style-type: none"> • Students learnt how to function and behave in order to 'fit in'

may be due to the fact that many research publications fail to provide practitioners with information on 'how to apply' the research in practice. In contrast, where practitioners are knowledgeable of the EBP and know how to apply the evidence, they may choose to discount it if it does not correspond with their own beliefs (Furber and Thomson, 2006; French, 2005; Ring et al, 2005; Crawford et al, 2002; Thompson et al, 2001a, 2001b), or the beliefs and practices of their colleagues (Maben et al, 2006; Wilson et al, 2005; Veeramah, 2004; Nutley et al, 2003; Rodgers, 2000; Retsas, 2000) or their managers (Parsons, 2004; Parahoo and McCaughan, 2001, Parsons, 2004).

Similarly, Veeramah (2004) revealed that some practitioners felt they were pressurised to conform to ritualistic practice and that other team members were not supportive, were resistant to change or, were unwilling to try out new ideas. Much of these theories correspond with findings of surveys undertaken by Hutchinson and Johnston (2004), Oranta et al (2002), Parahoo and McCaughan (2001), Parahoo (2000), Retsas (2000), Closs et al (2000), Kajermo et al (1998) and Dunn et al (1997). These studies utilised a 29-item 'BARRIERS Scale', which was originally designed and utilised by Funk et al (1991) to identify the barriers to research utilisation among registered nurses. While these studies were un-

dertaken between 1991 and 2004 and had geographical difference and investigated varied nurse professions, the research findings revealed notable similarities. The most frequently cited barriers were:

- Nurses did not feel they had authority to implement research findings
- There was insufficient time on the job to implement new ideas and/or to read research articles
- Management and/or doctors would not allow and/or cooperate with implementations
- Statistical analyses were not understandable
- Facilities were inadequate for implementation
- Other staff were not supportive of implementation.

Educational and organisational standards

The NMC (2004a) contain standards of proficiency for preregistration midwifery education, and a number of educational standards and proficiency statements that students are expected to achieve. The majority of these outcomes contain elements that require students to demonstrate their knowledge and application of EB findings into practice. The NMC (2008) also recommends that where students are allocated to clinical placements, the workplace should ensure the provision of care is based on relevant research. The NMC (2004a) and the RCM (2003) also emphasised that preregistration midwifery

should prepare midwives to be critical of the environment in which they practise.

Applying theory to practice

Finding out whether students utilise their EB knowledge in their practice environment, requires insight into students' clinical learning experiences. While it is advocated that students should be critical of their environment and challenge practices that are not beneficial, Morrall (2005) argues this practice is highly improbable due to the fact that 'the process of socialisation insidiously teaches students to conform to a set of pre-set norms, values, attitudes and behaviours which are difficult (if not possible) for the student to influence, and in those incidences where students dare to challenge such practices, they may run the risk of being labelled as 'deviant' and their 'creativity, innovation and free-expression would be stifled' (Morrall, 2005).

Swain et al's (2003) study explored students' knowledge of manual handling techniques and identified that most students were knowledgeable of the recommended practices. However, in practice where the students worked with mentors and/or other staff members who demonstrated bad manual handling techniques, the students would adopt those behaviours.

Similar perceptions were identified in studies undertaken by Kyrkjebo and Hage (2005), Begley (2001a, 2001b). They contend that, within the clinical hierarchy, students are often seen as being 'at the bottom of the barrel', and the students lack of power and desire to be accepted can outweigh students challenging and declining the adoption of bad behaviours. According to Begley (2002), the negative issues associated with clinical hierarchy are far more evident in midwifery than nursing.

Spouse (2003) and Welsh and Swann (2002) concur that students are not only powerless, but they are particularly vulnerable and Koh (2002) and Yearley (1999) state it is for this reason they are more likely to imitate the behaviours of their mentors.

Aspiring to change

The students in Kyrkjebo and Hage's (2005) study and Pearcey and Elliott's (2004) study believed that when they graduated, they would do things differently from what they had observed. However, the desire to 'fit in' and behave like others might be more compelling when students qualify and become part of the workforce. Indeed, Wilson et al's (2005), and Mantzoukas and Jasper's (2004) studies suggested that some qualified staff felt the need to comply with the 'way things were always done', regardless of whether that practice was believed to be good or bad. Randle's (2003) and Begley's (2002) studies, highlighted that, where students were subjected to bullying by qualified staff, the students themselves also engaged in bullying activities.

While there are a limited number of studies that have explored this concept, such findings appear to contest Bandura's (1977) theories of social and behavioural

learning, whereby he maintained if someone witnesses a behaviour that violates their moral principles, or if it is socially unacceptable that person will not adopt that behaviour. Freire (2000) suggests there is an increased likelihood people will adopt bad behaviours if the culture is oppressive and discourages liberal thinking, creativity and self-determination. In these situations, the oppressed begin to deny their own identity and accept the attributes and qualities of those who are dominant.

Thomas' (2006) study supports this concept, in that some midwives described situations where their moral principles were violated by the actions and commands of senior midwives and doctors. Instead of challenging these decisions, they opted to comply, but at the same time this resulted in them feeling 'frustrated, powerless and angry'.

The oppressive environment

The idea that some practitioners perceived their work environment as 'oppressive' appeared to be evident in those studies that utilised Funk et al's (1991) 'BARRIERS Scale'. These studies suggested the clinical environment rarely offered practitioners the opportunity to use research in practice. While the rationale concerning this concept is broad, it suggests that if newly-qualified professionals attempt to challenge or adopt new ways of working, it is likely to induce conflict (Seymour et al, 2003).

As a means to demonstrate to nurses the potential risks of being overly righteous and challenging, Fielding and Llewelyn (1987) used the myth of the 'hero-innovator, who stormed the 'Castle of Doom' to free its inhabitants from the evil governance'. They warned nurses that organisations such as hospitals, 'are like dragons, and will eat hero-innovators for breakfast'.

Likewise, Begley's (2001b) study revealed that some students described their negative encounters with senior midwives as 'being eaten from a great height'. Students in Pearcey and Elliott's (2004) study also learned the need to either, restrain their thoughts or apply a judicious approach to questioning negative practices. For example: '*The culture is to keep your mouth shut or you are seen as that bloody upstart of a degree nurse, so you have got to be careful, you have got to handle it very carefully*' (Pearcey and Elliott, 2004: 385).

Maben et al's (2006) study highlighted the fact that, despite newly-qualified nurses emerging from their programmes with a strong set of nursing values, professional and organisational factors disabled them from utilising their knowledge of EB research in practice. Professional barriers included obeying covert rules, lack of support and poor role models. Organisational barriers included constraints such as time pressures, staff shortages, work overload and role constraints, such as their desire to 'fit in'.

Macleod Clark (2006) asserts that the reality of an over-stretched workforce is an inherent barrier preventing practitioners from changing practice and if this continues

to escalate, it will create a widening gap between theoretically-sound best practice and actual care delivery.

For the past ten years, researchers such as Russell (2007), Perez-Botella and Downe (2006), Symon (2003; 1998), Upton (1999) and Ashcroft (1998) have reported contradictions. Midwives can be torn between the need to adhere to their Trust policies, which may or may not be EB, and the use of their own professional judgement. Symon (2003) believes that abiding by the former can deny one the ability to act autonomously, to exercise power, and to support client choice. Ashcroft (1998) also believes that midwives maybe 'expected' to abide by a consultant's preferences. In these situations Kirkham (2000) perceived the provision of EB client choice within an organisation that contains a strong hierarchical framework can be problematic, because institutional structures do not allow midwives to use a sound theoretical basis and their clinical judgement. Instead, 'guidelines come to be interpreted as 'rules', and any non-compliance has to be defended' (Kirkham, 2000: 231).

Symon (2003) adds that many midwives hold the assumption that adhering to a policy will provide a defence mechanism against litigation. However, he points out that midwives need to recognise the difference between a policy that, for instance, insists on two-hourly vaginal examinations and one that prescribes a care pathway for a defined situation. This concept is shared by Benner (1984), who claimed that novices, in particular, cope with their insecurity by adhering strictly to rules, allowing policies to govern their practice. According to Reid et al (1989), what students learn from their clinical placements has the most powerful and lasting impact on their learning. If the culture is to abide by the policies, the students will inevitably follow this line of practice.

The power of the hidden curriculum

Gordon (2003), Hinchliff (2001), Neary (2000), Charters (2000) and Taylor (1997) claim that in the clinical setting most of a student's learning is acquired informally through role modelling and this has a very powerful influence on how students practice. According to Bruner (1966), role modelling is not just about imitating a model's actions, it is where a model becomes part of a student's internal dialogue and the model's standards of style and clarity become part of their own standard.

This suggests whether a model's standard is 'good' or 'bad', it will become part of a student's standard (Armstrong, 2008). The hidden curriculum is imposed upon students and the nature of socialisation is such that a student's... '*actual experience is one of control and coercion that is internalised and eventually reproduced*' (Pitts, 1985: 39). This statement appears to echo Paulo Freire's theories advocating the need to promote liberation and empowerment as a means to transform the conditions that lead to an oppressive, coercive educational environment (Freire, 2000).

The NMC (2008) recognises the need for students to be exposed to high-quality role models who can not only demonstrate best practice, but can empower stu-

dents to be critical and challenging of the work environment. However, the application of empowerment is by no means straightforward, as those who seek to empower, must first become empowered (Jamieson, 1994; Chavasse, 1992).

Within the clinical environment, students are not only expected to abide by NMC (2004b) standards, they are also expected to abide by the cultural codes of their clinical mentors and ward managers. Lewis (1998) argues these cultural codes may not only conflict with the higher education institute's (HEI's) intentions, but more importantly, they can disempower students from thinking critically and voicing their opinions. While there is a need to take into account the ideologies of individual stakeholders (Higher Education Academy, 2006) this will always create tensions and generate debate between the different stakeholders. Moreover, these differences of opinion can be detrimental to students learning in that they may abandon their HEI's recommendations of practice in favour of what their mentors believe to be more appropriate.

Preference and credibility

In line with this latter concept, there are number of explanations as to why students employ the practices of their mentors in favour of those recommended by the HEI. Studies undertaken by Richmond (2006), Pulsford et al (2002) and Neary (2001) suggested some practitioners believed that the students' HEI competency tests were incomprehensible and unrealistic, and as such they elected to adopt their own ways of assessing students. The students in Calman et al's (2002) study also felt that their assessors, despite attending an assessor's training course, still had great difficulty understanding the assessment documentation and felt that if their tutors participated in the clinical assessment, it might be more objective. Interestingly, this was because the students perceived their tutors had more up-to-date knowledge of clinical treatments and procedures than many of their practice assessors. All of the students in this study believed that their clinical competence assessment tools were open to bias, and how it was completed depended on the assessor's personality and knowledge of the student. The overriding comment was their assessment outcomes depended on how well they 'fitted in'.

Correspondingly, Begley (2001b) and May and Veitch (1998) studies suggested that students learned to employ a variety of behavioural strategies that would increase their chances of acceptance. They also used these strategies as a means to achieve favourable assessments. In the short term, students admitted to 'pulling their weight', conforming, 'keeping their heads down', not asking questions, and forfeiting their learning opportunities to please their mentors for the medium, and/or long-term gains of achieving acceptance and appraisal. While the students were aware of the consequences of omitting valuable learning experiences, they perceived their mentors were not just 'gatekeepers' to learning, but more importantly, they were 'gatekeepers' to the profession.

Similarly, Calman et al's (2002) study found assessors appeared to have valued a student's socialisation dexterity in preference to their ability to perform tasks competently. Neary (2001; 2000) and Phillips et al (2000) stated practitioners perceived the students' assessment criteria failed to recognise the 'real' world of practice. Watson et al (2002), Fraser (2000), May and Veitch (1998) suggested the students themselves perceived there was a mismatch between their HEI curriculum intentions and their practitioners' expectations.

Morgan (2006), Bendall (2006) and Corlett (2000) claim that one of the common complaints made by students is what they were taught in the school was not practised in the wards and vice versa. Kyrkjebo and Hage's (2005) study supports this finding in that, when the students asked their mentors why they did not practice in a way they had been led to expect they were told, 'You may have learned one way in school, but it's not the way we do it here' (Kyrkjebo and Hage, 2005: 172).

Corlett's (2000) study also highlighted the disparity of the HEI intentions with that of the workplace in that some students believed their teachers were out of date and of questionable credibility. As a result, the students gave credence to what they saw and learned in the clinical setting.

While much of these studies and opinions reveal comparable findings and assertions, these issues echo the opinions of the NHS Executive (1998) report a decade ago, when they announced there existed some inconsistency between what was taught in the HEI and what was taught in practice.

There have been a number of recommendations made to rectify this problem. These included the need to improve linkage and collaboration between the HEI and service-providers, by means of employing link lecturers or practice educators to work alongside students and practitioners in the practice setting (NMC, 2008; 2002). Studies have shown that the employment of link lecturers and clinical educators/facilitators, not only has a positive influence on students learning, but they were also perceived as providing support and guidance to mentors (Brown et al, 2005; Ellis and Hogard, 2003; Clarke et al, 2003; Koh, 2002; Williamson and Webb, 2001). These studies reported this role facilitated practitioners and students to use best practice within the clinical setting. Clarke et al's (2003) study revealed a degree of conflict between the educationalists and practitioners, and the placement facilitators who felt both their authority and credibility were marginalised to the point they were unable to influence or change practice. Ramage's (2004) study explored the perceptions of link lecturers working alongside students and practitioners and showed comparable findings.

Two sectors: two different ideas

Morgan's (2006) and Lander's (2001) study identified that when students attended their clinical placements, the skills students had learned in the HEI were threat-

ened when they observed the different and sometimes imperfect practices of qualified practitioners. Morgan (2006) acknowledged that the students were novices, but argued they would be the professional graduates of the future and would be responsible for teaching others.

Le May et al's (1998) study reported that individual and organisational barriers are closely entwined. Nurse managers considered that if they applied research to practice, it would induce the negative consequences that are associated with constant change, such as resistance and 'destabilising even the most committed staff'. In this study, some nurses perceived those who occupied senior clinical positions created the principal barriers to using EBP. Dunn et al (1997) and Camiah (1997) believe the problem may be due to the fact many senior nurses may not have research training and therefore have limited experience of finding and evaluating research. Seymour et al (2003) reported that it can be difficult for senior nurses to support and guide less experienced nurses who, although they are more likely to be educated in research, they are less likely to be able to change practice due to their clinical inexperience and hierarchical position.

Being at odds with EB practices

Kitson (2002), Benner (2001), Coyler and Kamah (1999), Upton (1999) and Berragan (1998) consistently draw attention to the fact that midwifery and nursing practice is not solely informed by EB research, but practitioners draw upon several different ways of knowing. They suggest that practitioners often exercise their clinical judgment, intuition, and person-centred, humanist approaches to their delivery of care, and while these do not readily lend themselves to scientific measurement, these models of care can often be at odds with that of EBP. Similarly, Sackett et al (1996) point out that practitioners need to draw on their clinical experiential knowledge when making decisions about the care they give to their individual clients and while it is important to be aware of the best external evidence, neither is enough on its own. Muir Gray (1997) points out that there are areas of care that are under researched and to advocate a change in practice based on limited evidence is unjustified. Moreover, the decisions made should take on board the wishes of their clients, which may well be at odds with the evidence, limited or otherwise. Enkin and Jadad (1998) reports that anecdotal information has an important role to play in healthcare decisions and Seymour et al (2003) contend that, to view EB research as the end product of nursing suggests nurses who are not research-aware are not good nurses. However, the NMC (2008) appears to imply that practitioners who do not utilise EBP may not be good role models.

Upton (1999) claims that the educational curriculum exposes students to two different models: the ideal versus reality, or 'nursing as it ought to be', versus 'nursing as it is' (Upton, 1999: 552). With educationalists advocating the former and practitioners the latter, they are often at odds with one another, Maben et al (2006)

agrees claiming that this contributes to the theory-practice gap, which in turn creates difficulties with applying EB research into practice.

This latter concept, alongside those studies that have highlighted the underpinning barriers to using EBP, collectively account for the widening research-practice gap. The findings of these studies provide some insight as to why students may adopt or be persuaded to employ the traditional beliefs and practices of their mentors. However, given the complexity of this research subject, it is not possible to ascertain that students are influenced by the traditional practices of their mentors.

Conclusion

While much of the data provides an awareness of the key issues that might influence students to adopt the

traditional practices of their mentors, most of the studies investigated the experiences of pre-registered nursing students and nurse practitioners and many used a qualitative approach. Therefore it is not possible to make generalisations of how the midwives may behave.

Our midwifery students are our professional graduates of the future and will eventually be responsible for mentoring others, and where there is an embedded use of traditional practices and a strong hierarchical structure that opposes the use of liberal thinking, these behaviours may be passed on to the next generation.

It is hoped this literature review may incite researchers to explore whether some of these issues are pertinent to midwifery students in terms of mentorship, educational and professional conflicts and that of organisational constraints.

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News and resources

New midwifery and nursing academy

A new academy that aims to bring together all aspects of midwifery, nursing and health visiting research in the UK has been launched.

The Academy of Nursing, Midwifery and Health Visiting Research will be responsible for establishing effective mentoring and leadership schemes to benefit research. It has been formed from a number of healthcare professional and clinical research organisations, including the RCM, RCN and the Community Practitioners' and Health Visitors' Association.

The general secretary of the RCM Cathy Warwick said: 'This is a significant and positive move for midwives and their colleagues in the other health professions. Research is not just about ideas in academic ivory towers, it is about raising standards of care. Research leads to improvements in practice and a higher quality service.'

Further information about the Academy is available at: www.researchacademy.co.uk

Research excellence framework

Piloting of the new research excellence framework (REF) has begun as the research assessment exercise (RAE) era draws to a close.

The REF will build on the experience of the RAE and aims to make greater use of quantitative indicators, such as bibliometrics – a set of methods to measure and study publications. It is currently piloting bibliometric indicators such as citation analysis.

On behalf of the other funding bodies, the Higher Education Funding Council for England is developing the exercise and envisages full implementation of the process for all subjects from 2014 onwards.

Next meeting of DMRS in June

The next meeting of the Doctoral Midwifery Research Society, which EBM is the official journal, will be held in Cardiff on 4 June. Further information can be obtained by visiting the website at: www.doctoralmidwiferysociety.org/index.html

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