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"Midwives' Readiness to Use High Technology in the Labour Ward: Implications for Education and Training"

Electronic technologies are an increasingly common aspect of the work of midwives. Developments in professional accountability and the pursuit of efficient medical provision may cause increased usage of technological aides and there is a need to assess the extent to which midwives are competent to embrace responsibilities in technology management.
This study was designed to explore midwives' perceptions of the use of such technology in childbirth and the extent to which they are competent to use it. Underlying the study is the perceived tension between the so-called technocratic model of childbirth, where events and midwives' reactions may be largely guided by electronic and other devices, and the natural model in which the midwives role is to provide security and support for the mother as she delivers according to her own body's timetable. An observation programme, comprising seventeen case studies was conducted across almost all of the midwifery units in Northern Ireland. The outcomes helped to establish the context of technology usage and provided a basis for designing a questionnaire to collect data on attitudes to, competence with and patterns of usage of electronic birth technologies. This was accomplished by a postal survey targeting all practising midwives in Northern Ireland (1086 with a 60% response rate). Complementary fieldwork involved the survey of computer competence among new entrants to nursing/midwifery courses in Northern Ireland (731 with a 100% response rate) and in depth interviews with midwifery managers (10 in total). Observation and interview data was subject to thematic content analysis and descriptive and inferential statistics were carried out on the objective data with factor analysis of the attitudes.

The results confirm that midwives see the need for increased training in the technical aspects of the use of such machines as the CTG and they are keen to embark on multidisciplinary education for their technological role. The main findings in relation to each phase of the study were:

- The observation studies confirmed the midwife as being in a key position in relation to exercising judgement and assuming responsibility for a woman and her baby's welfare when technology is used – the technology did not undermine the midwife's position, rather it appeared to focus and strengthen it. Women and their partners used the CTG machine as an electronic window to provide them with evidence of the wellbeing of their baby and the machinery aided them in the processes of delivery.

- Midwives willingness to use technology is affected by their level of training, perceived competence, and confidence.

- New entrants to the profession perceive computers and technology to be an important aspect of their work and they are motivated to use them. Those who had no training in

computers scored signifigantly lower on confidence (p<0.001) and motivation (p <0.001).

Midwifery managers considered midwives ought to be assessed for technical competence as part of their undergraduate education. There was a belief that midwives who were very proficient in technology usage would enable labouring women to be more independent and less dependent on the midwife as "t*ruly competent midwives use machines as tools and allies to support and enhance decision making skills"*.

The results would indicate the need for a structured programme of technological education and training to operate at undergraduate and postgraduate levels. The role of the midwife in the high tech environment of the modern labour ward demands specialist skills in technology per se. Midwives need to be highly competent in the use of induction technologies 'hardware' as well as the natural or 'software' required to support women in the natural childbirth. These skills need to be clearly identified and appropriately addressed through curriculum development.

There is a need for more research to be conducted to identify more clearly the factors affecting the safe and efficient usage of technology, the desirable involvement of midwives and women in the interactive triangle with technology.