ASSESSMENT OF MIDWIFERY ROUTINES

Toward a North/South Collaborative Effort

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Abstract

Cooperation in midwifery research between Zambia and Sweden is ongoing. Joint studies on gastric suctioning and maternity routines are used as examples, and breastfeeding is discussed from a global perspective. The midwife, who also interprets responses from mothers, is an important member of an assessment team. Cooperation over cultural boundaries is feasible and mutually rewarding.

Very few areas in the practice of medicine illustrate the complexity of the interactions between culture and science, between the family and the health care system, and between mothers and babies better than pregnancy and childbirth. A search for more effective ways of safeguarding the health of the mother and the newborn has gone on for centuries. Methods that have been handed down through generations, and are now considered traditional, have something in common with the most modern methods: many of them have not been formally assessed.

In a recently published comprehensive book on perinatal care routines, the authors set out to examine the differences of opinion about how to attain the various objectives that are considered important for effective care (7). The justification for the book is the collective uncertainty among caregivers about the effectiveness and safety of many of the elements of care given during pregnancy and childbirth. Globally, the midwife, traditional or modern, is the health care worker who most commonly assists at childbirth, and who applies most procedures both old and new (18). Her experience has only recently begun to be used systematically.

The midwife’s area of responsibility is reproductive health, particularly caring for the mother, fetus, and newborn. The institutionalization of obstetric and pediatric care has meant improved medical safety, but often at the expense of family and community support. Childbirth as a social event was undermined and the fragmentation of the health services imposed a technical approach on the modern trained midwife.

We are grateful to our colleagues in Zambia for letting us participate in their efforts to improve midwifery care.
In the process the holistic view was lost. This situation became apparent in Sweden in the middle of this century when care during pregnancy was divided among professional groups and departments. Furthermore, attitudes and practices favoring technical interventions were often transferred from the northern to the southern hemispheres through graduate and postgraduate professional training of doctors and nurses. A significant development in the North in recent years has been that midwives have started to evaluate the procedures that they employ and the quality of the care that they provide. For example, in Sweden during the 1980s the routine administration of silver nitrate into the newborn’s eyes, early discharge after institutional delivery, and hormonal changes at initiation of breastfeeding have been examined (27;28;29). As with others who enter the field of technology assessment, the midwife researcher needs the scientific knowledge base and skills to conduct a well-designed inquiry. Successfully using the results of a study to accomplish changes in health services is difficult for the midwives, who are dependent on their place in the medical hierarchy and their status in society. Affecting change is particularly difficult because the results of midwifery research are often a threat to clinical practice and basically anti-authoritarian. Although midwives have their own defined area of work, the provision of care should be closely planned in cooperation with other professionals. In many of the least-developed countries, there is such a lack of well-trained obstetricians and pediatricians that they are overwhelmed with clinical duties and find no time for systematic studies. For this reason, midwives should be potentially useful in research. The present economic crisis in southern Africa further demands that only the most cost-effective interventions are applied. Developing countries, with their limited resources, stand to gain even more by systematic assessment of the appropriateness of perinatal technology than do industrialized countries. Noting that a humanistic and holistic view of birth is still prevalent in southern Africa, at least outside of medical institutions, we suggest that the influence of different cultures and technologies on the biological process of childbearing may be better unveiled by comparative studies, such as ethno-obstetrics, and that both sides have a lot to learn from each other. Cooperation toward this end between Zambia and Sweden is described.

**MIDWIFERY TRAINING AND CARE**

Zambia’s government spends about US $20 per capita annually on free health care for its people (18). This postindependence investment in health and education can no longer be sustained, as is also the case in other developing countries (13). Midwifery training began some 20 years ago with the goal of reaching an international standard. Until now, midwifery was supported by British, and later Swedish, development assistance. Due to a lack of experience, local health needs and culture were not well articulated in the syllabus. The midwifery profession has independent status, in contrast to its position in the United States, for example (9). Midwifery students are recruited after 12 years of schooling, go through nursing training, and then go through 1 year of midwifery training. An advanced school of nursing was established in the early 1980s under the faculty of medicine. Through it, a research-based midwifery tutor training program was launched.

Sweden has an advanced health care system and spends about US $1,000 annually on health per capita. The country has a 300-year-old tradition of midwifery training and its perinatal service coverage is almost 100%. The midwife is independently responsible for prenatal care and delivery is almost completely institutionalized, with spe-
cially employed midwives. Some 10 years ago midwifery training became part of the university structure; research was encouraged, as was internationalization of education.

Health institutions and health practices differ between countries from the industrialized and the developing world. What we see today in the South is the promulgation of practices abandoned a decade or two ago in the North. But we also see routines still applied in our own situation that look extremely out of place in another setting. The University Teaching Hospital (UTH) in Lusaka has sometimes had more than 20,000 deliveries annually, a total that is in sharp contrast to that of the university hospitals in Sweden, around 3,000. The load on the staff at the UTH is heavy, patients have long waits, and resources are extremely limited. To safeguard the rights of patients and practice high quality care under such circumstances is a great challenge to the modern trained Zambian midwife.

TECHNOLOGY TRANSFER AND METHODOLOGY

Technology transfer between countries of different development levels is a delicate enterprise. Preferably, technology should be actively adapted rather than passively adopted. Therefore, the transfer of knowledge of a technology is not enough; the transfer of skills to use it might be more relevant. An assessment of the appropriateness of the technology to people and situations provides scientists from both the North and South with an opportunity to work together (23).

Recommendations on single maternity technologies are abundant, made both by individual investigators (10;24) and by consensus statements (2;15). In order to communicate optimally, such messages should be simple. We have in the past worked towards this end by advocating “birth weight distribution as a social indicator” (21); dealing with the ABCs of resuscitating newborns, that is, airway, breathing, and circulation (22); and emphasizing three cornerstones in the prevention of neonatal hypothermia—a newborn baby should be dried, wrapped, and given to the mother (8). However, we have no proof that these or similar recommendations lead to improvement in the quality of care. Active participation in technology assessment might be a better means to accomplish change.

A health technology can be assessed for its safety and efficacy anywhere in the world, but the sociocultural, economic, and ethical assessment must be done locally. At the moment, assessing the social impact of a technology should be given priority in most developing countries (3). We also advocate a problem- and system-oriented approach, as opposed to the evaluation of single techniques that is prevalent in many industrialized nations. However, the methodologies for such an assessment are not yet available anywhere. In order to illustrate both types of evaluation, we will give examples from studies recently carried out, mainly by midwives, in Sweden and in Zambia.

ASSESSMENT OF EFFICACY—GASTRIC SUCTION IN SWEDEN

The routine gastric suctioning of healthy newborns seems to have been introduced in Sweden during the early 1960s. One reason for its introduction was the fear that the newborn child would aspirate gastric content into the lungs soon after birth, although no such evidence for this problem in normal newborns had been described. One other reason might have been to exclude esophageal atresia. Midwives in Sweden applied gastric suction with or without the assistance of such devices as a labor ward routine. However, there were potential risks associated with the procedure and the need for it had never been established (7).
A study was carried out on 21 randomly selected mother-infant pairs, divided by whether gastric juice was aspirated or not, and gastric content was analyzed for pH and hormonal levels. The infant, placed skin to skin on the mother's chest, was assessed according to established behavioral scales (5). There was clear evidence that the insertion of the catheter caused a drop in heart rate and an increase in blood pressure. Furthermore it was observed in both groups that there was a special early sequence of instinctive infant behavior that was disrupted by the insertion of the catheter (30).

It had not been possible to observe this instinctive infant behavior in Sweden before, because newborns were not left undisturbed with their mothers immediately following birth. The observation could not be made in Zambia for similar reasons. However, in validating the universality of this phenomenon, we were able to demonstrate in an Ethiopian setting the same pattern of sequential behavior leading to the first suckling at the breast (Figure 1). The satisfaction with the infant's behavior is clearly expressed by both the mother and the health workers. Mothers participating in the Swedish study had shown similar satisfaction. This may be the ultimate method in "health technology assessment with a human face," to paraphrase a prevalent international slogan.

At UTH in Lusaka, gastric suctioning never became a routine, due mainly to a sporadic supply of catheters. On the other hand, the 15% of newborns in our study (8) on whom the method was applied were not compromised or in any way different from those babies on whom the procedure was not done. Chalmers et al. (7) conclude that there is no justification for routine gastric suctioning in the delivery room and that this form of care should be abandoned everywhere. Thus, lack of resources might help prevent the unnecessary introduction of a technology. However, its appropriate use when called for might not have been fully understood.

**ASSESSMENT OF EFFECTIVENESS—DELIVERY CARE IN ZAMBIA**

The magnitudes of maternal morbidity and mortality are the variables that show the greatest disparity between rich and poor countries (20). The evidence primarily measures those socioeconomic factors that affect perinatal and maternal mortality, but health care also plays a significant role. Postpartum complications, such as infections and hemorrhage in the mother and hypothermia in the newborn, might be prevented by following simple maternity care routines. In order to delineate the role of health care, a descriptive study of ongoing midwifery routines at the UTH in Lusaka was undertaken.

Fifty-nine consecutive mothers, whose pregnancy and labor were assessed as normal by the attending staff, were included in the study (19). Information was collected from prenatal and labor records, by direct observations of midwifery routines, and through interviews with mothers. Criteria for the assessment of quality of care were established before the study. These included, for example, full antitetanus immunization of the mother, the midwife washing her hands before assisting in the labor ward, and wiping and wrapping the newborn. The mother's socioeconomic status was determined using number of years of schooling as a proxy.

There was an average of more than five prenatal visits, an unusually high number for developing countries, which suggests that there was a sufficient demand for health care. Women with a higher level of education made more prenatal visits. Also, midwives gave better quality prenatal and delivery care to well-educated mothers. The midwives applying the routines had two different types of midwifery training. A higher level of training did not, however, result in a better quality of care.

The evaluation of a package of care has hardly been done anywhere in the world,
Figure 1. Newborn instinct behavior. This Ethiopian baby, born at a small maternity clinic, had been separated from the mother but was returned to her after less than 1 hour. The newborn was put between the mother's breasts (skin-to-skin contact) (upper left). Immediately the infant started its high rooting, searching and crawling to the nipple (upper right), finding it (center left), and starting to suckle (center right). This was the mother's eighth child, but it was the first time she became aware of the newborn's strong instincts (lower left). The staff observing this capacity of the infant said “We will give support to this in the future” (lower right). Photos: A.-B. Ransjö-Arvidson.
but the need for such an evaluation of prenatal care programs is being felt in Sweden and the methodologies for an assessment are being discussed (4). In this climate, even our small study in Lusaka should have policy implications. The absence of a positive effect of midwifery training on the application of procedures calls for scrutiny of the curriculum. With scarce resources it is also worrisome that the socioeconomic level of the mother, and not her health status, determined the quality of care. This situation is far from a “health for all” strategy, which gives something to all and more to those who are in need.

GLOBAL ASSESSMENT—BREASTFEEDING

No care routine is better adapted to the needs of the mother and the baby than breastfeeding (12). It is the most appropriate technology for infant care, and its social importance is demonstrated by historical evidence. So-called modernization, institutionalization of birth, and the rise of health care technology have resulted in the separation of mothers and infants immediately after birth, the establishment of nurseries, and the introduction of the use of breast-milk substitutes, which are given to healthy babies by bottle at scheduled times. The latter procedure has been called the largest uncontrolled in-vivo experiment in human history.

The burden of proof to defend the rights of mothers and babies to breastfeeding has been forced on those who believe in its advantage and not on those who interfere. Two aspects of this situation are relevant to the Swedish–Zambian cooperation in midwifery research.

First, the recent observations on spontaneous feeding behavior in humans immediately following birth, as discussed earlier, indicate that the healthy fullterm baby exhibits an inborn sequential behavior of searching for the breast, finding it, and starting to suckle within 1 hour of birth (30). The simultaneous maternal behavior is as yet less documented, but evidence from animal studies indicates that specific maternal behavior exists, regulated by hormones and neurogenic mechanisms (18;26). At UTH the majority of babies are separated from their mothers, and there is no systematic support by the health staff for breastfeeding (8;19). The latter situation is also prevalent in the North, where health institutions are said to be stumbling blocks for breastfeeding (33). This is very much in contrast to the practice of traditional midwives (1), as has been observed in a number of African countries. To create an atmosphere encouraging breastfeeding in all maternity institutions is a challenge both in Zambia and Sweden.

Second, over the last decade, studies on the nutritive composition and immunological properties of breast milk have been complemented by studies on the effects of breast milk and breastfeeding on the prevention of diarrhea (6;11) and respiratory diseases (17) and on spacing of children (25). We are now in a position to explain, using modern scientific terminology, many of these effects, which seem to be related to exclusive breastfeeding and feeding on demand (33). Also, evaluation of programs to protect, promote, and support breastfeeding are being conducted (31). These types of studies are needed in all countries and call for international cooperation. Preliminary data from a small study in Lusaka show that only 25% of mothers practice exclusive breastfeeding at 1 month, whereas the figures for Sweden show that around 80–85% of babies are fully breastfed at 2 months. A study evaluating the effects of health education by midwives that encourages mothers to breastfeed exclusively is being launched.
STRENGTHENING ASSESSMENT CAPABILITY

Nursing research is an important part of health systems research. As such, it also aspires to accomplish change for the better, and to improve the quality of care. Through health technology assessment, problems can be highlighted and new knowledge made available for use, at least theoretically, in future planning and resource allocation.

The skills that are needed to assess midwifery technologies have to be acquired by local people. Here cooperation with a northern institution might be of some value. The experience of the Zambian–Swedish midwifery collaboration in nursing research implies that such cooperation is feasible and beneficial. The cooperation was built on the long-term involvement of Swedish tutors in Zambia’s midwifery training, and was stimulated by the launching, almost simultaneously in the two countries, of research-based training. The similar status of midwives in the two countries was helpful. The joint efforts did not get off the ground, however, until there was an official agreement between their two faculties of medicine. Problems of a cultural nature have generally been overcome by mutual respect, but the very different statuses of women in the two societies are difficult to reconcile. Swedish midwives have learned to respect the strong influence of socioeconomic factors that are not as visible in Sweden today. All of the midwives who have participated in the research claim that their practices have improved.

The diffusion of assessment results, the involvement of other health care providers, and the creation of demand for assessment by decision makers will depend on the sociocultural and health structures of each country. Accomplishing change in a health service is a difficult task anywhere, and the best means for doing so have not yet been determined (15). So far, we have only some experience of one determinant, namely the educational system.

Our studies and those of others have shown that the educational status of women patients influences their health outcomes (14). Health needs, and not socioeconomic status, should determine the provision of health care, particularly if social equity is a goal. Here, collaboration with the North can function to support initiatives from the local community. Another type of education that should also concern us is midwifery training and its impact on the health care that is given to the mother and child. As observed in our studies (8;19), there was no clear-cut benefit, in the form of improved quality of care, from increased midwifery training. Here, too, it should be within the prerogative of training institutions to foster the inquisitive minds of its students (32). This goal would encompass making changes in curricula, a formidable task anywhere.

CONCLUSION

It is highly rewarding to work in two cultural settings and our experience proves that the attendant problems can be overcome if they are given time. Transfer of technology must be matched by a national capacity to assess that technology and judge its appropriateness. We suggest that the North has two major roles in the future development of the skills to assess perinatal care technology. First, it should evaluate its own practices in terms of effectiveness, and communicate the results. Second, it should promote careful and long-term cooperation with the South to build a national capacity for evaluation. We suggest that the midwife is ideally suited for involvement in such a process as, for example, has been successfully done in Botswana (16). Midwives are the main caregivers and the ones who are most sensitive to the views of the pregnant mothers and to their cultural needs. The participation of staff in assessment studies is also promising because it reduces the time it takes to implement the results. Furthermore, the involvement of the patient will strengthen the scope of the assessment.
REFERENCES


