

East African Medical Journal Vol. 81 No. 11 November 2004

USE OF EDUCATIONAL WORKSHOP TO PROMOTE MOBILITY DURING CHILDBIRTH

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ABSTRACT

Objective: To evaluate the impact of an educational intervention to introduce the principles of evidence based obstetric care and encourage mobility during labour in government hospitals in Dar es Salaam.

Design: An observational study.

Setting: Four government hospitals; two in Dar es Salaam and two in coastal region of Tanzania.

Results: Following implementation of the workshops, practice changed significantly for mobility during labour at the district and regional hospitals; midwives at these hospitals appeared to be aware of the benefits and were willing to encourage women to be mobile during labour. Practice changed little at the referral hospital. Most women delivering at the referral hospital had been transferred from regional or district hospitals with complications.

Conclusion: This small study demonstrates the potential of using educational workshops to change childbirth practice at the district and regional level in Tanzania. Institutionalisation of practice changes involves influencing policy-makers, engaging opinion leaders to disseminate evidence and advocacy for change among their peers, as well as developing mechanisms to overcome barriers to practice change at the hospital level. Results from this study will feed in to a project to develop evidence-based guidelines for childbirth care, involving policy makers, practitioners and hospital managers.

INTRODUCTION

Evidence-based practice is a term now frequently used in all health related disciplines. Practising according to the principles of evidence-based practice assumes ready access to relevant information sources, an understanding of the approach, and skills to use the information. Access to up-to-date health information is improving, especially given the efforts of free-access initiatives(1,2) - but acquiring the skills to understand and use evidence in practice is not so straightforward.

Evidence based health care has become a buzzword across all medical specialities in recent years; clinical decisions are increasingly based on the results of scientific research rather than outdated traditional beliefs or so-called 'expert' opinion(3). Systematic reviews of randomised controlled trials, maintained and updated over time, offer the most up to date evidence on the effectiveness of health care interventions. Despite huge efforts by the Cochrane Collaboration and others to disseminate and implement scientific evidence, there remains a gap between the available evidence and

current practice(4,5). Applying systematic review findings and institutionalising 'best practice' standards is particularly challenging in African settings where physical and human resources are scarce.

Systematic reviews available on the WHO Reproductive Health Library (RHL) provide good evidence of the effects of obstetric practices particularly relevant to developing countries(1,6), and packages such as the Better Births Initiative(7,8) are helping health professionals challenge current practice and use review findings to inform clinical decision-making. The Africa Midwives Research Network (AMRN) believes that evidence-based practice should be given priority so that health care providers in Tanzania are aware of what works best for antenatal, intrapartum, postpartum and infant care. Over the last five years, AMRN has improved midwives' access to current information on good practice by providing regional and in-country evidence-based practice workshops, supported by SIDA and the Rockefeller Foundation(9). To further explore the possibility of implementing evidence in practice, AMRN in collaboration with the Effective Health Care

Alliance Programme at Liverpool School of Tropical Medicine designed a study to focus on encouraging mobility during labour and delivery positions other than supine.

Many interventions to help change health professional's practice exist, effects on practice and patient outcomes vary, and no single approach appears to be superior. Educational outreach(10), audit and feedback mechanisms(11), and opinion leaders(12) demonstrate moderate effects, and it is widely accepted that using multiple strategies that pay attention to different barriers and facilitators is likely to be more successful in initiating change than any one intervention alone(13). Evidence from low and middle-income countries about which interventions work best in helping health professionals practice according to evidence based standards is limited. In this study we used an interactive educational workshop with midwives and doctors to improve current obstetric practice and the quality of care women receive in Government Hospitals in two regions in Tanzania. The study focused on two practices where there is emerging research evidence of benefit - mobility during labour(14) and position for delivery(15). For the purpose of this study, mobility during labour is defined as positions assumed by women during the first stage of labour other than recumbent, for example walking, sitting, standing, or kneeling. In this paper we report on the impact of the educational workshop on mobility during labour. In addition, we explore the barriers and opportunities to implementing evidence-based practice from the provider perspective. Baseline results are described in more detail in another paper(16).

MATERIALS AND METHODS

Study design: The study used a one group before and after design. We documented practice rates for mobility during labour at baseline, conducted educational workshops with labour ward staff from four government hospitals, and followed-up practice rates six to nine months after the workshops.

Study sites: The study was conducted at four Government Hospitals - two in Dar es Salaam and two in the Coast region. The four sites were purposively selected to enable us to detect

practice variation across different levels of care. Table 1 shows key characteristics of the study sites.

Data collection methods: We conducted exit interviews with postnatal women who had delivered by spontaneous vaginal delivery to determine practice rates and women's views on mobility during labour and position for delivery. The methods are similar to those used in a study conducted in China(17) to explore variation in obstetric practice. Midwives (not working on the labour ward) conducted interviews at each study site - baseline data were collected between March-July 2001, and follow-up between May-July 2003. Interviews were conducted in Kiswahili, and were tape recorded with women's consent. We calculated the sample size using StatsDirect software package(18) based on the number of deliveries and the estimated prevalence of mobility and position other than supine at each site; we allowed for a deviation of 2.5% from the true population rate and 95% confidence that the sample rate did not deviate by more than this. We based the sample size on the largest sample calculated, rounded up to the nearest 50. Table 2 shows the number of women interviewed at each hospital at baseline and follow-up.

We used semi-structured interviews with a convenience sample of doctors (baseline n=5) and focus group discussions (FGDs) (one per hospital at baseline and follow-up) with midwives available and willing to participate, to explore their views about these procedures and barriers and opportunities to implementing them in practice. Researchers from Muhimbili University College of Health Sciences conducted all interviews and FGDs in Kiswahili. Interviews and FGDs were taperecorded with participants' permission.

Analysis: Data from exit interviews were entered and processed using Epi Info(19), and analysed using Epi Info and Stats Direct software(9). Fisher's exact test was used to determine significant differences in practice between baseline and follow-up. Data from the Coast District Hospital were excluded from the analysis due to the high number of non-responses (80%) to questions about mobility during labour recorded in exit interviews during follow-up. Qualitative data were analysed using the framework approach(20). HL and RM independently

Table 1

Study site characteristics

Type	Location	Doctor/ AMO/CO	Midwives	Deliveries/ Month
Referral	Urban, Dar es Salaam	20	25	1,200
District Urban	Dar es Salaam	18	4	1,000
Regional	Peri-urban, Coast region	13	17	500
Coastal district,	Rural Coast region	4	10	250

AMO/CO*= Assistant Medical Officer; C/O= Clinical Officer

identified themes (using topic guides and issues emerging from the data) and coded transcripts; consensus was reached on common themes and outlying responses by discussion among HL, RM and HS.

Planning workshop: Following baseline data collection, we conducted a planning workshop with key personnel (doctors and midwives) from each study site, to feed back findings on current practice for mobility during labour and position for delivery, and raise awareness about evidence based practice standards. Facilitators introduced concepts of evidence based health care and disseminated information about best practice standards in childbirth care. The workshop was interactive, and participants discussed in small groups the opportunities and threats to implementing best practice in their own hospitals. During the workshop we consulted participants on training needs, approaches to use in training other hospital staff, and ways to improve practice; this informed the subsequent development of the educational intervention.

Educational workshop Intervention: The intervention comprised a training manual, which described principles of evidence based practice, and opportunities and threats to implementing mobility and

different positions for delivery (see box 1 for attributes of the intervention). The manual included exercises for participants to complete and provided adequate time for interactive discussion between participants and facilitators. Researchers from MUCHS facilitated workshops with midwives and doctors from the four study sites during November 2002; a total of 69 health professionals participated (Table 2 for characteristics of participants by study site). Participants included midwives working in antenatal care, who would then be able to discuss the benefits of mobility and different positions with women during antenatal sessions. Two doctors (identified during the planning workshop), working in hospitals where mobility is encouraged and health professionals deliver women using left-lateral position, helped to facilitate the workshops and shared their experiences of implementing these procedures. Having doctors from the same peer group (opinion leaders) provide examples of how they have implemented best practices enabled participants to determine feasibility in their own settings, and discuss how best to encourage their use(21). All participants left the training with an action plan for implementation, and reference material for evidence-based practice contained within the manual.

Table 2

Characteristics of workshop participants by study site

	Referral	District	Regional	Coastal District	Total
Doctors	4 (M)	2 (F)	2 (M) 1 (F)	4 (M)	13
Midwives	12	7	18	19	56
Total	16	9	21	23	69

M=Male F=Female

Box 1 - Attributes of the educational intervention

Target population	Doctors and midwives working on labour ward in government maternity units
Facilitation	Research midwives from a teaching hospital; two doctors working in hospitals where mobility is encouraged (opinion leaders identified at the planning workshop)
Timing	Four workshops; each conducted over two days.
Content	Variety of materials- printed training manual; oral presentations; video; and open discussion.
Mode of delivery	Informal and interactive; participation and discussion encouraged throughout.

RESULTS

Table 3 shows the characteristics of women interviewed at each study site. The mean age and age range of women was similar across all study sites at

baseline and follow-up. Slightly fewer women were primipara's at follow-up at the Referral, District and Regional Hospitals; overall 43% of women were primipara's at baseline compared to 40% at follow-up. Almost all women had attended antenatal care.

Table 3

Characteristics of women by study site

Characteristic	Referral		District		Regional		Coastal district [†]		Total	
	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up	Baseline	Follow-up
No*	419	402	333	350	250	256	149	145	1151	1153
Mean age (± SD)	25.4 (±5.7)	24.9 (±6.0)	25.1 (±4.7)	25.4 (±8.8)	23.9 (±5.8)	24.6 (±8.4)	23.7 (±5.6)	23.7 (±5.7)	24.8 (±5.4)	24.8 (±7.5)
Age range	(14-40)	(14-45)	(16-40)	(16-44)	(15-45)	(15-38)	(15-40)	(15-40)	(14-45)	(14-45)
First delivery (%)	44.4	42.3	38.4	35.7	46.4	40.2	40.9	41.4	42.7	39.7
Attended ANC (%)	99.8	99.0	100	98.3	99.6	100	100	97.2	99.8	98.8

* Sample size differs from original number for some variables due to missing data/non-responses, Source: Exit interviews, + Excluded from analysis due to high non-response rate for questions on mobility at follow-up

Table 4

Percentage of women mobile during labour (in labour ward) by study site

Variable	Referral			District			Regional		
	Baseline	Follow-up	P-value ¹	Baseline	Follow-up	P-value ¹	Baseline	Follow-up	P-value ¹
No*	419	402		333	350		250	256	
Mobile	3.1	1.2	0.093	4.5	17.7	<0.0001	2.0	15.2	<0.0001
Stayed in bed	67.5	75.9	0.003	47.3	47.4	0.443	64.7	37.5	<0.0001
Rested little movement	28.8	22.9	0.066	48.2	34.3	0.001	33.3	44.9	0.008

* Sample size differs from original number for some variables due to missing data/non-responses Source: Exit interviews ¹Fisher's exact test

Mobility in labour ward: Table 4 shows some significant changes in the percentage of women who were mobile in the labour ward after the educational intervention. At the District Hospital 4.5% of women were mobile at baseline compared to 17.7% at follow-up ($P < 0.0001$); similarly at the Regional Hospital there was a significant increase in women being mobile in the labour ward (2.0% baseline, 15.2% follow-up, $P < 0.0001$). Practice changed little at the Referral Hospital.

Midwives' views of mobility during labour: During focus group discussions with midwives at follow-up we explored the barriers and opportunities to implementing mobility during labour. Key themes that emerged from the analysis of focus group transcripts included discussion around the benefits of mobility during labour; risk factors related to implementing mobility during labour; and methods to implement mobility in practice. Provider opinions remained similar to those expressed at baseline(15).

Midwives at all four study sites commented on the benefits of women being mobile during labour; many midwives regarded faster delivery as an important

benefit of mobility during labour. The following narratives are typical comments from focus group discussions:

"Women who walk around during labour experience less pain and the process of labour takes a shorter period. This is because as the woman moves about, the uterus is also working in that contractions become stronger and the descent of the presenting part becomes faster..." (Midwife, FGD, Referral hospital)

"Women who have been mobile during labour become more active during the process of delivery than those who were lying down throughout the first stage of labour" (Midwife, FGD, Regional hospital)

Many midwives who commented on the benefits of mobility during labour made a connection between faster delivery and reducing overcrowding in the labour ward. For example, midwives at the District hospital suggested:

"If we encourage women to be mobile they will deliver in a shorter period and this has got benefits to both the mother and the health facility. For the health facility it reduces hospital stay and overcrowding." (Midwife, FGD, District hospital)

"Mobility during labour is related to the reduction of overcrowding in the labour ward. Women who actively move about deliver really quickly." (Midwife, FGD, District hospital)

Midwives at another hospital made similar comments:

"Moving around especially in the early stage of labour is helpful because such exercises hasten the descent of the presenting part and consequently shorten the duration of labour. This in turn reduces the crowding in the labour ward because after delivery the women get discharged. Also if the woman lies in bed quietly, it makes her and the staff feel that she is very sick, while in actual fact she is not. When she walks around it makes her not focus on the pain." (Midwife, FGD, Regional hospital)

Many midwives commented on the risks associated with encouraging women to be mobile during labour. Their remarks were similar to those raised during group discussions and interviews at baseline, which suggests midwives' fears about the safety of women being ambulant during labour was still an important issue for them. Midwives at the regional hospital suggested the woman's condition dictated whether or not she could be encouraged to walk around during labour.

"A midwife might assess cervical dilation and find it is about 3cms, then she allows the woman to walk around. But as she walks, the contractions may become too strong to the extent that she falls and hurts herself." (Midwife, FGD, Regional hospital)

"Movement of the mother during labour depends on how she is feeling. Sometimes dilation of the cervix does not correspond to the amount of pain and discomfort the mother may be having. . .the midwife has to consider this." (Midwife, FGD, Regional hospital)

"For safe mobility during labour a careful assessment is done to make sure that she (the woman) is not in the second stage of labour and that her vital signs are OK, because if she falls or drops the baby the midwife will be in big trouble. The midwife must feel that it is safe for the woman to be mobile." (Midwife, FGD, Regional hospital)

At some hospitals it was evident from focus group discussion findings, as well as exit interviews (Table 4), that providers had started to encourage women to be mobile during labour. At the District hospital, where the number of women being mobile increased significantly between baseline and follow-up, midwives explained how they teach and encourage women to be mobile, although this does not encourage all women:

"Women are generally mobile in our ward, but not all. Some women even request it themselves because they know that mobility helps in the progress of labour. For those who do not know the importance, we teach and encourage them to be mobile but some do not comply." (Midwife, FGD, District hospital)

"There are some women who we tell the advantages of mobility during labour but they seem not to

understand. Some are reluctant to walk, instead they just want to lie down and wait to be told to push. We have to sit with them, literally teaching them about mobility until they understand and become mobile." (Midwife, FGD, District hospital)

At the referral hospital, exit interview data show little change in mobility and midwives comments during focus group discussions provided some possible explanations for the lack of change:

"The truth is we do not say that it is a must that women move about in the labour ward because sometimes we have very few midwives per shift with too many women in labour. They might only walk a short distance but not as desired because one cannot be sure whether a woman will fall down or disappear when they are out of sight." (Midwife, FGD, Referral hospital)

"We want women to walk about during labour, but some of them would not move. They say that they are not able to get up and be mobile." (Midwife, FGD, Referral hospital)

DISCUSSION

This study has shown that a simple baseline audit of practice combined with feedback in an interactive workshop with labour ward and antenatal staff can lead to practice changes. The sample size used is small and the design not rigorous enough for statistical analysis, but the results illustrate the potential of this approach to changing health provider behaviour.

Practice changed significantly for mobility during labour at the district and regional hospitals; midwives at these hospitals appeared to be aware of the benefits and were willing to encourage women to be mobile during labour. However, most midwives appeared to support mobility because of the potential benefits to the health facility rather than to the woman; most mentioned shorter labour, faster delivery, reductions in length of hospital stay and overcrowding as the main benefits. The qualitative data suggest that some midwives had started to disseminate information about the benefits of mobility to women, and this had encouraged them to be mobile. From this small study we cannot determine the motivation behind this, but given the other findings it seems reasonable that the enthusiasm for teaching women about mobility was driven by the potential for reduced labour length and overcrowding. An important barrier to encouraging mobility among women on labour ward was midwives' fear for the safety of women, which was also a key finding in the baseline study; the educational intervention might not have addressed this issue adequately.

There was little change in practice at the referral hospital, but there are several possible explanations for this. The qualitative findings suggest that staff shortages, overcrowding and lack of confidence in allowing women to move about are the main reasons for the lack

of change. In addition, this is a referral hospital that mainly receives women with complications from a wide catchment area; the high proportion of women unable to be mobile should therefore be considered when interpreting these results.

Next steps: Ensuring best practice in obstetric care involves influencing policy as well as developing mechanisms to change practice at hospital level. Engaging key stakeholders including policy makers and clinicians at global, national and local levels ensures that the principles are understood before projects to support implementation of evidence are initiated. In this study we identified influential clinicians from the four study sites, presented the findings from our study of baseline practice to them, and solicited their opinions on barriers and opportunities for changing practice. This was an essential first step, which provided an enabling environment and commitment from key personnel before developing the training intervention and encouraging wider participation of doctors and midwives practising at different levels of government care.

Interactive educational workshops are just one approach that can be used to encourage change in health professional behaviour; it is a complex process that often requires a combination of interventions to influence individuals at all levels in the health care system and institutionalise change. To encourage more evidence based-decision making and practice in obstetric care, we plan work with the Ministry of Health in Tanzania (Centre for Educational Development in Health Arusha) to train more health personnel in the use of the WHO Reproductive Health Library and equip them with necessary skills to implement evidence in practice; this will include a project to develop evidence based clinical guidelines.

ACKNOWLEDGEMENTS

To the Department for International Development funded Effective Health Care Alliance Programme for providing financial support for the study; the midwives and doctors who participated in the educational workshop; the women we interviewed; and the administration of the four hospitals for allowing us access to health workers and postnatal women.

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