Evidence-based obstetric care in South Africa — influencing practice through the 'Better Births Initiative'

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Ensuring that health professionals practise according to evidence-based standards is important since it affects the quality and cost of care patients receive. The purpose of this research was to use a focused change programme (the Better Births Initiative) to influence obstetric practice at 10 hospitals in Gauteng, South Africa. The findings show some important improvements in practice following the implementation of the BBI; providers at some sites reduced the use of enemas, shaving and episiotomy, and increased use of oral fluids and companionship during labour. Qualitative data suggest that an interactive approach to implementing evidence-based practice can influence health professionals' decisions to change practice, and that good working relationships and enthusiastic staff are central to effective change.

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Evidence-based medicine integrates clinical expertise with the best available evidence from robust research.[1] However, clinicians are often reluctant to change the way they practise, even when rigorous evidence of effectiveness exists.[2] Disparities between clinical practice and research evidence are well documented in obstetric care. Practices of unknown effectiveness have been used for decades, while those that potentially harm women and their infants continue to be used in many settings.[3] For example, research synthesis provides clear evidence that restrictive episiotomy policies have a number of benefits over routine policies,[4] but episiotomy continues to be practised routinely in many low- and middle-income settings.[5,6]

Interventions to promote use of systematic review findings in practice, and to help health professionals implement best practice have been tried and tested with varying degrees of success. Strategies based on traditional approaches — printed educational materials or continuing medical education — appear to have limited effects, while systematic reviews of the effects of audit and feedback, use of opinion leaders, and continuous quality improvement programmes suggest mixed effects.[7] There is growing recognition that many factors influence the change process, and that using multiple strategies or combining several interventions is more likely to effect change in health professional behaviour and practice.[7,8] What remains unclear is which combination of interventions is effective, why, and in what settings; there is a need to explore the 'black box' of change.[9]

The Better Births Initiative

The Better Births Initiative (BBI) developed from observational studies of obstetric practice conducted in China, South Africa and Zimbabwe,[10,11] which demonstrated a gap between actual practice and research evidence. The studies indicated that obstetric practice and quality of care could be improved if changes were made to some routine practices. Drawing on reliable research evidence available in the World Health Organisation Reproductive Health Library (RHL),[12] the BBI aims to ensure that clinical practices used in essential obstetric services are grounded in reliable research evidence. The BBI targets practices where there is good evidence from systematic reviews of benefit or harm, and where the RHL provides guidance on best practice. To help promote best practice in labour wards in South Africa, an international network of researchers developed a focused educational change programme to communicate evidence-based approaches to midwives and doctors engaged in obstetric care. The programme uses specific examples to help health professionals compare their current practice with evidence-based standards, and identify ways to change practice. Further details can be found at: **http://www.liv.ac.uk/lstm/ehcap/BBI/bbimainpage.htm.**

The aim of this study was to use the focused change programme (BBI) to influence obstetric practice; the primary objectives were to evaluate the impact of the change programme on provider behaviour, and to explore and understand the critical factors that influenced diffusion of knowledge into changed health provider behaviour.

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Methods

Design and data collection methods

The study was conducted at 10 purposefully selected government maternity units in Gauteng, South Africa, and used a single group pre-post test design. Pre-test observations were made between September and October 2000 at all 10 sites to determine current practice for 7 marker practices (mobility, oral fluids, companionship during labour, enema, shaving, episiotomy, and supine positions for delivery). An educational workshop intervention was conducted at all study sites from October to November 2000, and post-test observations were made from March to April 2001. Five sites were randomly allocated to receive a self-audit mechanism in addition to the workshop, to help staff monitor changes in their practice.

Exit interviews with postnatal women were used at baseline (N = 247) and follow-up (N = 215) to document practice rates; focus group discussions (N = 8) with labour ward staff prompted discussion around how practice changes had been implemented and experiences of the change programme; and individual experiences of the change programme, and barriers to implementing change were explored using in-depth interviews with key labour ward staff at each site (N = 14). Qualitative data were analysed manually using principles of grounded theory[13] and the framework approach.[14] Transcripts were coded and managed using WinMax, a qualitative data analysis software package.[15]

Characteristics of the change programme

A single workshop, usually between 2 ½ and 3 hours in duration, was conducted at each study site. In a middle-income setting such as this, resources are scarce, and cost effectiveness is important. The importance of number of outreach visits remains unclear,[16] but if this intervention proved effective as a single educational visit, the feasibility of using the programme in other provinces would be greatly enhanced.

Workshops were interactive and comprised a variety of materials including a workbook with exercises, video material, oral presentations and visual aids, with some traditional printed materials. All levels of staff available on the day of the workshop were encouraged to attend; on average, 10 - 12 midwives and doctors participated in each workshop. Other studies have used interventions that target senior staff only on the basis that they are likely to be, or were identified as, opinion leaders able to influence the practice of their colleagues.[17,18] This study did not attempt to identify opinion leaders in each labour ward, since their influence would not be sustained throughout the study; high turnover of staff in this setting means senior professionals do not remain in any one hospital for more than a few months.

A locally respected consultant obstetrician with detailed knowledge of evidence-based standards (opinion leader) acted as workshop facilitator, and used a series of exercises with participants to examine their current obstetric practice and identify ways to make changes. It was assumed that health professionals would be more likely to accept and use information introduced by a member of their social and professional group than by an outsider; this corresponds with principles of social influence theory.[19]

Obstetric topics covered during the workshop were largely determined by participants and prompted by the workbook exercises. Summaries of the available evidence were provided, and participants discussed with the facilitator benefits and harms of each practice for women and providers, and the consequences of changing practice. This enabled participants to identify where their practice needed to change and to set realistic targets for change. At intervention sites, self-audit was introduced to help staff monitor changes in their practice. The facilitator suggested that staff conduct an audit of selected procedures once a month, and provided wall charts to record the changes. The rationale for this was that enabling labour ward staff to take responsibility for auditing their own practice could encourage them to reflect on their practice, and institutionalise a culture of quality improvement.

Results

Impact on provider behaviour

Table I shows the number of study sites demonstrating good practice at baseline and follow-up. For procedures that should be routine or at least used moderately, there was a trend towards an increase in the number of hospitals with good practice at follow-up for oral fluids (2 hospitals at baseline, 4 at follow-up) and companionship (2 to 4), but not for mobility (10 to 9). For practices that should have low use, practice improved for enemas (3 hospitals with low use at baseline, 7 at follow-up), for shaving (8 to 10), and for episiotomy (3 to 4), but supine position remained widely practised.

Table I. Number of study sites demonstrating good practice at baseline and follow-up (based on complete data from 10 study sites)

Good practice	Baseline (N/10)	Follow-up (N/10)	p-value*
Appropriate routine (80%+) or moderate (20 - 80%) use			
Mobility	10	9	> 0.99
Oral fluids	2	4	0.63
Companionship	2	4	0.63
Appropriate low use (< 20%)			
Enema	3	7	0.18
Perineal shaving	8	10	0.47
Episiotomy	3	4	> 0.99
Supine position	0	0	N/A

*Fisher's exact test. Source: Based on analysis of exit interview data

Critical success factors

The qualitative data indicate that attributes of the change programme had both positive and negative influences on the adoption and diffusion of information within the change programme, and on provider decisions to change practice. Participants described the workshop as educational and empowering, and said that the informal environment provided the opportunity for interaction, discussion and sharing of ideas about changing practice. Narrative data also suggest that presenting information in bright, attractive materials helped to effect changes in practice. Participants reported that the concise format of materials was appealing to them as busy health professionals and contributed to successful uptake of ideas.

Qualitative data from 8 focus group discussions and 14 in-depth interviews suggest that the change programme influenced providers' decisions to change their practice, but revealed that behaviour change was more likely at hospitals where motivation among staff was high and social structures existed to support and maintain changes to practice. Providers at some hospitals displayed positive attitudes and viewed change as feasible, even if a long process; these factors seemed to trigger experimentation and comparison of practice with the evidence to bring about changes. Good working relationships between staff helped to initiate change in practice, and by involving all levels of staff, changes were more easily adopted. At other study sites providers were reluctant to change; cautious attitudes resulted in contemplation rather than action. In addition, some providers thought that the proposed changes to practice were externally imposed and unnecessary, which could have contributed to their lack of motivation to attempt change.

Three of the 5 sites allocated to receive the self-audit mechanism in addition to the workshop actually used it to help track changes in practice over time. At hospitals where it was used, qualitative data from in-depth interviews with providers suggest that the audit was motivating and useful for highlighting progress over time, and helped staff to communicate evidence-based standards to colleagues. Staff shortages and lack of support from the research team were mentioned as barriers to use at hospitals where the audit was not utilised.

Implications

Implications for practice

Our qualitative research highlights some important changes in practice following the implementation of a focused change programme. The quantitative results support these findings, although the number of sites included (10) is too small for meaningful statistical analysis.

Following the successful implementation of the BBI in the pilot study, maternity units in several other provinces have adopted the package with support from the Provincial Departments of Health. The BBI has been introduced at maternity units in 5 districts in Gauteng, it was accepted by the Provincial Maternal and Child Health Sub-Directorates as a provincial project for both the Eastern Cape and KwaZulu-Natal, and it has been implemented in a maternity hospital and associated Midwife Obstetric Units in the Western Cape.

This pilot study showed that a focused change programme can influence health professional behaviour, but many factors — individual, social and organisational — play an important role in effective change and therefore have important implications for wider implementation in similar settings. At the organisational level, change in health professional behaviour happens within a complex human environment where good working relationships and enthusiastic staff can be central to the implementation of practice changes. Where possible, existing interactions between staff should be observed, and opinion leaders and health care workers who are seen to be motivators of change should be identified before the programme is implemented.

The context within which the change programme is implemented will affect motivation and likelihood of change. In low- and middle-income settings staff shortages and rotations, access to information and training opportunities, and time available to devote to new or additional tasks, all influence feasibility of practice change since they affect motivation and individual capability.

At the individual level, changing behaviour requires internalisation of the need to change practice, and motivation to move from contemplation to action. Not everyone will implement the changes intended by a change programme; decisions to change behaviour depend on individual readiness and attitude, and on motivation levels among groups of professionals within health care facilities. Strategies for change should therefore focus on challenging rationales for current practice, and on creating a social and organisational environment that will encourage motivation and therefore the probability of behaviour change. For example, if locally respected managers, leaders and practitioners endorse the principles of the programme, and are responsible for setting realistic targets for change that take account of barriers to change, this might help other practitioners to envisage modifications to practice as an ongoing goal, rather than a sudden 'radical' change.

Implications for research

Those attempting to influence health professional behaviour should consider that change is an unpredictable process that requires time and sustained effort. Implementation trials with short follow-up for primary outcomes are unlikely to achieve the expected impact given the complexity of the change

process. Therefore, those engaged in implementation research should consider using qualitative methods to clarify critical success factors before conducting larger pragmatic trials to determine the size of the effect on practice and behaviour.

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IN BRIEF

Lp(a) lipoprotein as a predictor of cardiovascular disease in the elderly

Less is known about predictors of cardiovascular events among the elderly than in younger people. Lp(a) lipoprotein is a low-density lipoprotein particle which basic research indicates has a vital role in atherothrombogenesis. Data on the relation between Lp(a) lipoprotein and the risk of vascular disease in the elderly are unavailable. However, emerging evidence suggests that the atherogenic effects of Lp(a) lipoprotein may be age- and sex-specific. In order to clarify this relationship, a study was conducted in 3 972 older adults (65 years of age or older) in the USA. The 2 375 women and 1 597 men were free of vascular disease. The subjects were followed up for a median of 7.4 years to evaluate the development of stroke, and to track deaths from vascular causes and all causes. The men and women were divided into quintile groups according to Lp(a) lipoprotein level at baseline.

The researchers determined risk associated with each quintile level of Lp(a) lipoprotein with the lowest quintile serving as the reference group. The quintile levels were: quintile 1: 0.1 - 1.2 mg/dl, quintile 2: 1.3 - 3.0 mg/dl, quintile 3: 3.1 - 5.5 mg/dl, quintile 4: 5.6 - 8.1 mg/dl, and quintile 5: 8.2 - 47.5 mg/dl (mmol/l = mg/dl × 0.0259).

As compared with those in the lowest quintile, men in the highest quintile had three times the unadjusted risk of stroke, almost three times the risk of death associated with vascular events, and nearly twice the risk of death from all causes. Adjustments for age, sex, the levels of total cholesterol, low-density lipoprotein cholesterol and triglycerides, carotid wall thickness, smoking status, diabetes presence or absence, and systolic and diastolic hypertension, body mass index, and other traditional risk factors had little effect on the final assessments. In women, there was no relation between Lp(a) lipoprotein and vascular disease.

The results support the use of Lp(a) lipoprotein levels in predicting the risk of stroke, death from vascular disease and all-cause deaths in older men.

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