Routines in facility-based maternity care: Evidence from the Arab World

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Abstract

Objectives: To document facility-based practices for normal labor and delivery in Egypt, Lebanon, the Occupied Palestinian Territory (OPT), and Syria and to categorizes common findings according to evidence-based obstetrics.

Methods: Three studies (Lebanon, OPT and Syria) interviewed a key informant (providers) in maternity facilities. The study in Egypt directly observed individual laboring women. Shared practices were categorized by adapting the World Health Organization's (WHO) 2004 classification of practices for normal birth into: practices known to be beneficial, practices likely to be beneficial, practices unlikely to be beneficial, and practices likely to be ineffective or harmful.

Findings: There was infrequent use of beneficial practices that should be encouraged and an unexpectedly high level of harmful practices that should be eliminated. Some beneficial practices were applied inappropriately and practices of unproven benefit were also documented. Some practices documented are potentially harmful to delivering mothers and their babies.

Conclusion: Facility practices for normal labor were largely not in accordance with the WHO evidence-based classification of practices for normal birth. The findings are worrying given the increasing proportion of facility-based births in the region and the improved but relatively high maternal and neonatal mortality ratios in these countries. Obstacles to following evidence-based protocols for normal labor require examination.

Introduction

Childbirth is a significant event in a woman's life with important implications for her physical and psychosocial well-being. Surprisingly, despite considerable debate and research, facility practices for normal, non-complicated labor are not standardized. In spite of the promotion of evidence-based obstetrics, there are still large gaps between actual practices and scientific evidence both in developed and developing countries (*1*). The uncritical adoption of interventions that have not been evaluated poses risks to the mother and her child as practices may be ineffective or even harmful. Furthermore, practices may yield more negative outcomes in contexts where understaffing and overcrowding pose service delivery challenges, as is often the case in developing countries.

Improving maternal health through ensuring access to skilled attendants at delivery is one of the Millennium Development Goals and one of the priorities for Safe Motherhood Initiative (*2, 3*). In most settings, this means facility births. While it is generally assumed that facility practices for normal labour are unproblematic, data on routine facility normal labour practices in developing countries with high maternal mortality levels are lacking. Most studies of delivery practices in developing countries have understandably concentrated on high-risk pregnancies and emergency obstetric care, in the attempt to reduce maternal mortality. The few that have documented selected practices for normal delivery, in Zambia (*4*), Latin America (*5*), China (*6*), South Africa (*7*) and the Dominican Republic (*8*), have all shown deviations from established best practice.

The limited data available on maternal mortality in most Arab countries suggest levels have declined (*9*). For example, in Egypt, the maternal mortality ratio has declined from 174 per 100,000 live births in 1992-93 (*10*) to 84 /100,000 in 2001 (*11*). The decreases in maternal mortality levels in most of these countries have mirrored increases in the proportion of facility-based births (currently 59% in Egypt (*12)*, 88% in Lebanon (*13*) and 55.4% in Syria (*14*)), and as well as increases in levels of skilled attendants at delivery (currently 70% in Egypt (*12*), 92% in Lebanon (*13*) and 97% in the OPT(*15*), 87% in Syria (*14*)). The health systems in the four countries are differently structured. Lebanon has a highly dominant private sector. In Egypt and Syria both private and public sectors play a role in service delivery. In the OPT, the public sector currently plays a more significant role than either the non-governmental organizations (NGO) or the private sector. The continuous political turmoil in the region also affects the prioritization of health care and the organization of health care systems.

In the Arab region, studies of normal delivery practices have an ethnographic orientation and have concentrated on home births and traditional practices. Little is known of obstetric practices in facilities for normal labor and delivery and of their relationship to evidence-based obstetrics. The lack of data on routine facility practices in these countries is worrying, especially considering examples such as Egypt where 49% of maternal deaths occur within 24 hours of delivery with provider mismanagement being identified as the leading factor contributing to maternal deaths (*11*). This paper presents selected findings from four studies documenting routine obstetric practices in Egypt, Lebanon,

Syria, and the West Bank (part of the OPT), and compares these to evidence-based best practice. Other findings are presented elsewhere (*16-20*).

Methods

The four studies were carried out separately by multidisciplinary research teams based in different institutions and affiliated with the Choices and Challenges in Changing Childbirth initiative, a regional research network based at the Faculty of Health Sciences, American University of Beirut. Data collection approaches differed according to local circumstances. In Lebanon, Syria and the West Bank, key informants (providers) were interviewed and data collected from hospital records regarding routine normal labor practices in a selection of maternity hospitals. These studies findings reflect the application of particular practices during intrapartum care, as reported by providers. The response rate was 100% in Lebanon and Syria. In the West Bank, problems of access meant 12 of a total of 37 maternity facilities (mostly small private hospitals) could not be studies.

The Egyptian study conducted direct individual observations of 172 laboring women from admission to discharge over 28 consecutive days and nights in Egypt's largest obstetric teaching hospital. Observations were done by non-staff female obstetricians using a 200-item checklist covering 537 variables (*17, 21*). Ward practices were also recorded and delivered women were interviewed postpartum. This study documented actual obstetric practices, and explored women's and providers' perspectives as well as obstacles to adopting standardized protocols.

All four studies analyzed data using SPSS. Content analysis according to themes was done for open-ended questions. Table 1 shows the data collection approaches used. Methodological details are published elsewhere (*17-21*). The results presented here were selected from a long list of practices documented by each study. Only practices measured in at least two of the four studies are included here.

Findings were shared within the Choices and Challenges in Changing Childbirth network during the process and disseminated at local, national, regional and international levels. Sixteen individuals from the four country teams participated in a workshop to outline and draft this paper.

Results

To compare with best evidence, the WHO categorization of practices is followed (*22*), and adapted into four categories classifying practices as those known to be beneficial (Table 2), practices likely to be beneficial (Table 3), practices unlikely to be beneficial (Table 4), and practices likely to be ineffective or harmful (Table 5).

Discussion

This paper documents the policies and routines of normal labor and delivery practiced in maternity wards of hospitals in Egypt, Lebanon, Syria and the West Bank. We were unable to identify other published studies documenting facility practices for normal births in the Arab region in the literature, except for few describing specific aspects of the care, such as the effect of psychosocial support in labor or content of antenatal care (*23, 24*);

therefore the findings presented here address a gap in knowledge regarding routine childbirth practices not previously explored in the region.

The findings reveal that a number of practices with known beneficial effects or those that are likely to be beneficial are not widely used. Systematic reviews show clear evidence of the benefit of social support during childbirth on women's physical and emotional wellbeing (*25*). However, provision of caregiver support during labor and delivery is not universal and the majority of women delivering in hospitals in these countries are not given a choice for a companion during labor or during delivery. This is all the more distressing given the frequent conditions of inadequate numbers of health providers and women's preference for not laboring alone (*23, 26*). Active management of the 3rd stage of labor, another form of care proven to be beneficial (*27*), is very rarely applied in Syria (12.5%) but more frequently in the West Bank (71%). However, observation in Egypt showed that active management was appropriately applied in only 15% of cases. Rooming-in practices were shown to be common except in Lebanon (26%). Nevertheless, this practice does not seem help successful initiation of breastfeeding as only 26% of hospitals studied in Lebanon and 48% in Syria reported giving help to initiate breastfeeding, and only 6% of women observed in Egypt were encouraged to initiate early breastfeeding. By contrast 88% of the West Bank facilities reported initiation of breastfeeding during the first 1-2 hours.

The studies also revealed that many common practices routinely followed are not evidence-based. A number of practices known to be unnecessary, harmful or unlikely to

be beneficial are often routinely performed in hospitals in this region. Routine use of IV infusions, routine suctioning of newborns as well as too frequent vaginal examinations during labor were found to be frequently applied in all four studies. Other unnecessary or uncomfortable practices are routinely applied in the absence of scientific evidence of their benefit. Enemas during labor (*28*) were reported in Lebanon and the West Bank. Pubic shaving (*29*) was common to all countries except Egypt, where women typically remove pubic hair prior to coming to hospital. Other practices known to be ineffective or harmful that were frequently documented by the studies are routine episiotomies for primiparas (*30*) and delivering in lithotomy position (*31*).

The Lebanese, Syrian and the West Bank study findings represent reported rather than actual practices. If anything, we would expect key informants to over report practices they consider to be beneficial. For this reason it is especially worrying that a substantial number of practices that diverge from scientific evidence are reported by providers as routinely applied. Observation overcomes theses problems of reporting. In the Egypt study, the high prevalence of inappropriate practices directly observed suggests that the effect of observation bias was minimal.

The studies in the four countries were not conducted during the same time period (*16 – 20*). The first, in Lebanon, completed data collection in 1997 and the last, conducted in the West Bank, was completed in 2003. However, the results from the earlier studies remain for the most part unchanged.

Another limitation stems from the differences in the four studies in selecting hospitals or maternity wards. While the studies in Lebanon and Syria were based on a nationally representative sample of hospitals, in the West Bank a convenience sample was taken. The study in Egypt was conducted in one hospital, chosen for its leading role in shaping obstetric practices in the country through the large number of deliveries conducted and number of junior providers trained annually. Both private and public facilities or wards are included in the description of practices in these four studies, following the different roles played by each type of facility in the delivery of maternity care in these respective settings.

In addition to these studies' contribution in drawing attention to the divergence of routine obstetric practices from evidence-based care and the implications this has for maternal and neonatal mortality and morbidity, the studies have also contributed to development of tools (*21*) and approaches to document and quantify childbirth practices. The interview approach is a quick and relatively low-cost data collection method and is probably used more efficiently to provide information on the type of delivered care in settings where providers of services are not highly sensitized to evidence-based medicine. The observational approach, on the other hand, while constituting a thorough assessment of care as actually delivered, entails labor-intensive data collection procedures with commensurate higher cost.

While the methods and settings in the four country studies differ, the shared similarities, as well as the variations, in maternity care documented in the region for the first time constitute a valuable contribution to the debate on how to translate evidence into practice. The similarities include lack of continuous caregiver support, lack of companion in labor and delivery, lithotomy position for second stage of labor, routine use of episiotomy for primigravidae and early initiation of breastfeeding but little skin-to-skin contact. However, we also know that the context is also similar for many of the settings and includes overcrowding of hospitals, high workload, limited resources, These issues raise the challenge of creating an enabling environment receptive to the use of evidence-based approach for normal birth with limited resources.

The variations in the delivery of care documented may stem from the differences in the organization of services. Whereas main caregivers in the West Bank and Syria are midwives, obstetricians attend most, if not all, facility-based normal births in Egypt and Lebanon. Differences in the health sectors providing maternity care in each setting also influence the management of labor and birth. Private health care institutions dominate the provision of care in Lebanon, whereas a mix of private and public institutions is active in Syria. These factors among others influence maternity care patterns in the region.

Conclusions

There are a number of challenges that need to be overcome in order to change practices and implement evidence-based provision of care in these settings. The high workload and the understaffing in hospitals, the contribution of physician's convenience factor in

shaping the followed routines, the organization of services on maternity wards, the lack or inappropriate application of standard protocols and guidelines, lack of medical training of health providers in evidence-based care for normal physiological childbirth, as well as the inappropriateness of physical structures constitute major challenges and barriers to change. For example, some facilities do not have the physical space to accommodate newborns with their mothers in postpartum wards, or to allow companions in labor and delivery rooms. Another important challenge is to find ways to sensitize providers towards evidence-based medicine, especially in settings with limited access to scientific literature.

Generally speaking, normal childbirth tends to be less medicalized in developing country settings, providing more opportunity for introducing and implementing certain beneficial practices. Effective practices such as female relative support during labor and birth, movement during the first stage, eating and drinking during labor and birth, restricted use of episiotomy, and choice of position for second stage of labor, could be conceivably implemented with limited resources. Unnecessary practices, even when not harmful waste resources. Work in Argentina showed unnecessary episiotomy cost provinces in excess of US dollar 150,000 each year when doctors' time, suture materials and costs of degraded sutures were factored in (*32*). The flexibility in patterns of care can be used to adapt evidence-based approaches if the commitment to best practices exists. It is all the more important in the context of developing countries to support physiological uncomplicated childbirth and to avoid harmful practices, since the infrastructure and human resources for medicalized interventions are often not available, increasing the

risks for women and newborns from routine application of such interventions in the normal process of labor and birth.

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Table 1: Data collection approaches used in the four studies

	Egypt	Lebanon	Syria	West Bank
Number of hospitals selected / hospitals with maternities	1	39 /140	57 /235	25 /37
Sampling method	Chosen because is largest teaching hospital delivering 20,000 women annually	Random stratified by: geographic area, type of hospital, hospital classification	Random stratified by: geographic area, type of hospital, affiliation, level	Convenience sample
Total interviews	172 laboring women interviewed; 188 laboring women observed	39	57	55
Data collection tools	Observation checklist; semi structured interview; qualitative diary of ward events	Structured questionnaire with scale for frequency of implementing a specific practice	Structured questionnaire with scale for frequency of implementing a specific practice	Semi structured questionnaire
Number of questionnaire items	200	84	122	101
Practices covered	44	42	78	31

Interviewees	Delivered women and providers	Head obstetrician or owner /director or head nurse /midwife	Chief physician/ midwife and/or general manager	Chief obstetrician and one midwife from each hospital
Interviewers	12 female obstetricians, not on facility's staff	2 graduates in public health & one medical student	Obstetricians and public health specialists	Physician or midwife or graduate student
Time conducted	Oct – Nov 2001	Oct – Dec 1997	Jun – Aug 2000	Apr 2002 – Jun 2003

Table 2: Percent distribution of practices classified as beneficial forms of care

Practices	Egypt	Lebanon	Syria	West Bank
Physical, emotional and psychological support Caregiver support	Data NA	Doctor /midwife /nurse present 100%	Labor: always 47%; never 35% Delivery: always 11%; never 79%	Midwife /doctor present 88%; never 4%
Administration of antiD immunoglobulin to Rh-negative woman	100%	Data NA	98%	Data NA
Prophylactic oxytocin in the 3rd stage of labor	84%	Data NA	Always 19%; never 58%	96%
Active management of 3rd stage of labor	15% appropriate management	Data NA	12.5%	71%
Rooming-in	100%	26%	91%	84%

Table 3: Percent distribution of forms of practices that are likely to be beneficial

Practices	Egypt	Lebanon	Syria	West Bank
Respecting women's choice of companion during labor & birth	0%	Labor: 74% always; 10% never Delivery: 33% always; 46% never	16% always; 21% never	60% always ; 40% never
Giving women as much information as they desire	Sharing vaginal exam findings: labor 17%; delivery 31%	Policy to discuss contraceptive methods: 59% yes; 33% some women. Provide family planning: 23%.	88% always	Routine information: 76% always; 4% when asked; 16% no; 4% if available time. Breastfeeding advice: 92% yes; 8% no Contraceptive advice: 16% yes; 16% when asked; 68% no
Freedom of movement	62% allowed if asked	82% all allowed; 18% some in labor	73% always	96% in labor

Choice of position in labor	0%	38% as desired	75%	96% as desired
Respecting women's choice of position in the 2nd stage	0%	0%	96% lithotomy with or without stirrups	54%
Keeping newborn babies warm	34%:radiant warmer	Data NA	80%: radiant warmer 16%: dry towel 4%: putting on mother's abdomen	100%
Vitamin k injection	1%	Data NA	96%	Data NA
Presence of skilled person for neonatal resuscitation	Pediatrician 13%; Nurse 79%	Data NA	Data NA	42% always
Encouraging early breastfeeding	6%	20% directly after delivery; 51% 1-3 hours	68% within half hour; 20% 1-2 hours; 4% 4-6 hours.	62% within 1 hour
Providing skilled help with the first	0%	23% all; 10% some.	Data NA	48%

breastfeed

Table 4: Percent distribution of forms of care unlikely to be beneficial

Practices	Egypt	Lebanon	Syria	West Bank
Obstetrician managing birth	100%	Data NA	70%	Data NA
Withdraw food & drink from women during labor	99%	18% not allowed water; 59% allowed sips of water /wetting lips	68%	28%
Routine IV infusion in labor	99%	79%	64%	56%
Frequent vaginal examination in labor	42%	7.7%	79%	60%
Routine directed pushing during the 2nd stage of labor	36%	Data NA	9%	Data NA
Routine manual exploration of the uterus after vaginal birth	routine 11%	Data NA	9.9%	Data NA
Use of sedatives and tranquilizers	14%	98%	30%	96%
Routine suctioning of newborns	97%	Data NA	100%	72%
Routine measurement of fundal height postpartum	72% at least once	Data NA	98%	Data NA

Table 5: Percent distribution of forms of care likely to be ineffective or harmful

Practices	Egypt	Lebanon	Syria	West Bank
Routine enema	3%	77% empty lower bowel	9%	50% 8% sometimes
Routine pubic shaving	1%	92%	56%	32%
Routine lithotomy position	100%	100%	93%	96%
Ergometrin instead of oxytocin prophylactic in the 3rd stage	1%	Data NA	Data NA	4%
Routine or liberal episiotomy	93% for primiparous	56% routine; 44% doctor decides	95%	78% for primiparous