

Post partum haemorrhage in a teaching hospital in Nigeria: a 5-year experience

*Ajenifuja KO, Adepiti CA, Ogunniyi SO

Department of Obstetrics and Gynaecology, Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife. Osun, state Nigeria

Abstract

Objectives: The aim was to determine the incidence, causes and the maternal mortality associated with postpartum haemorrhage in a tertiary centre in Nigeria.

Methods: Case records of all patients that had postpartum haemorrhage after vaginal delivery at Obafemi Awolowo University Teaching Hospital Complex, Ile-Ife unit over a 5-year period (January 1st, 2002 to December 31st, 2006) were reviewed and analysed. Post-partum blood loss was calculated by estimating blood losses in graduated containers and in bed lines and gauze packs.

Results: 112 women had postpartum haemorrhage during the period under review. 76(67.86%) had primary postpartum haemorrhage and 36(32.14%) had secondary postpartum haemorrhage. The commonest cause of post partum haemorrhage was retained products of conception due mismanagement of the third stage of labour, this occurred in 88 women (78.57%) of cases. Other causes were uterine atony 12(10.71%), genital tract laceration 9(8.04%), disseminated intravascular coagulopathy 1(0.8%) puerperal sepsis 1(0.8%) and broken down episiotomy, 1(0.8%). The maternal mortality during the period was 90 out of which 6 were due to postpartum haemorrhage.

Conclusion: Retained products of conception resulting from mismanagement of the third stage of labour is the most common cause of post partum haemorrhage in our centre.

African Health Sciences 2010; 10 (1): 71- 74

Introduction

World wide about half a million women die as results of complications of pregnancy and child birth childbirth¹. Overwhelming proportions of these deaths occur in developing countries of the world where facilities are poorly developed and due to lack of trained attendants at delivery. Majority of these deaths occur within few hours of delivery and in most cases are due to postpartum hemorrhage^{2,3}. Postpartum haemorrhage is a major cause of maternal morbidity and mortality worldwide with the highest incidence in developing countries. According to the World Health Organization obstetrics haemorrhage causes 127,000 deaths annually world wide and is the leading cause of maternal mortality⁴. While in Africa, due to increased prevalence risk factors such as grand-multiparity, no routine use of prophylaxis against obstetrics haemorrhage coupled with poorly developed

obstetrics services, obstetrics haemorrhage is responsible for 30% of the total maternal deaths.⁵

Postpartum haemorrhage is the excessive loss of blood per vaginam after the delivery of the baby and up to forty-two days postpartum. It can either be primary or secondary^{4,5}. Primary postpartum haemorrhage is the loss of more than 500ml of blood within the first twenty-four hours of delivery or loss of any amount that is enough to cause haemodynamic instability in the mother or loss of more than 10% of the total blood volume. It is the most common form of post partum haemorrhage.^{4,5, and 6}. It has been reported that approximately 3% of vaginal deliveries is complicated by severe primary postpartum haemorrhage⁷. Secondary postpartum haemorrhage, on the other hand is defined as bleeding in excess of normal lochia after twenty-four hours and up to six weeks postpartum. In both cases the true blood loss is often underestimated due to the difficulty with visual quantification^{8,9,10}. The risk of dying from postpartum haemorrhage depend not only the amount and rate of blood loss but also the health status of the woman⁸.

*Correspondence author:

Dr Ajenifuja Kayode Olusegun.
Department of Obstetrics and Gynaecology,
Obafemi Awolowo University Teaching Hospitals
Complex,
Ile-Ife. Osun state Nigeria.
E-mail: ajenifujako@yahoo.com
Telephone number +2348053503004

Methods

Objective: The aim was to determine the incidence, causes and the maternal mortality associated with postpartum haemorrhage in a tertiary centre in Nigeria

Method: The case notes of all the patients that were managed for postpartum haemorrhage after vaginal delivery in the Ife unit of the Teaching Hospitals Complex between 2002 and 2006 were retrieved. Socio-demographic data as well as data on booking status, types of postpartum haemorrhage, causes of postpartum haemorrhage, morbidity, mortality from were retrieved and entered into a proforma specially prepared for it. Means and frequencies were calculated using the SPSS11 version.

For the purpose of the study only women who had vaginal delivery and whose blood losses was 500mls or more were considered. Blood losses in our centre are estimated by visual quantification, measurement in graduated containers and estimating losses in the gauze packs.

The exclusion criterion is women who had caesarean delivery.

Results

In the period under review, a total of 6672 vaginal deliveries were conducted, out of which 112 women were managed for post partum haemorrhage (PPH). The mean age of the patients was 31 years (18-47 years). About 20% of the women was primipara while the majority of the women (64%) were multiparous women. Most of the women were literate with close to 75% having at least secondary school education. About 90% of the patients were subsistence farmers or house wives as shown in Table1.

Table 1: Socio-demographic data

Age	Frequency	Percentage
< 19	13	11.6
20-29	54	48.1
30-39	38	34.0
>40	7	6.3
Educational status		
None	6	5.4
Primary education	23	20.5
Secondary	48	42.9
Post secondary	35	31.2
Parity		
Primip	26	23.2
2-4	72	64.3
Para 5 and above	14	12.5
Total	112	100

Post partum haemorrhage represents 1.68% of total vaginal deliveries in that period. Primary post partum haemorrhage (PPPH) constituted 67.87% while secondary postpartum haemorrhage constituted 32.14%. PPH occurred in 12% of booked patients while 88% occurred in unbooked and booked patients that delivered outside that hospital.

The commonest cause of postpartum haemorrhage, in this study was retained placenta and it accounted for 78.57% of all cases of postpartum haemorrhage seen in our centre during the period under review, this was followed uterine atony in only 10.71% as indicated in Tables 2 and 3.

Table 2: Causes of primary postpartum haemorrhage

Causes	Frequency	% 1 ^o of	% of
		Primary PPH	Total PPH
Uterine atony	12	15.79	10.71
Laceration	9	11.84	8.04
Retained Placenta	54	71.05	48.21
Coagulopathy	1	1.32	0.89

Table 3: Causes of secondary postpartum haemorrhage

Causes	Frequency	% of Secondary	% of
		PPH	Total PPH
Retained placenta	34	94.4	30.36
Puerperal Sepsis	1	2.8	0.89
Broken-Down			
Episiotomy	1	2.8	0.89

However, 88% of PPH occurred amongst patients that delivered outside the hospital (un-booked patients and booked patients that delivered elsewhere as shown in Table 4.

Table 4: Booking status and place of delivery

	Frequency	Percentage (%)
No of patients booked patients	34	30.36
No of patients not booked(all delivered elsewhere)	78	69.64
Total no of patients with PPH		
no of patients not booked	112	100.00
No that booked that delivered in our centre	12	35.3
No that booked but delivered elsewhere	22	64.7

The injuries were in form of laceration of the vulva, perineum, vagina, cervix or uterus (rupture) constituted 11.84% of cases. There was only one

patient managed for Disseminated Intravascular Coagulopathy (DIC).

Apart from the basic interventions offered, 2 (1.79) had hysterectomy when attempts at stopping the haemorrhage failed, while 51(45.5%) of the cases had blood transfusion. There were 6 maternal deaths.

Discussion

The exact incidence of PPH is difficult to determine due to the difficulty in accurately measuring the blood losses, most studies quote figures ranging from 5 to 12% of vaginal deliveries^{11, 12}. In this study, however, the incidence of post partum haemorrhage was 1.68% of total vaginal deliveries; this relatively low value may be due to the fact that ours is a tertiary centre where active management of the third stage of labour is routinely done with the use of oxytocics. The use of oxytocics has been associated with a decrease in the incidence of PPH by about 60%¹³.

Most of the patients in this review were those referred from other centres such as traditional birth attendants, faith clinics; primary health centres manned by poorly trained Community Health Workers (CHW) and women who delivered in their homes. Patients that booked in our centre but chose to deliver elsewhere were not spared as they constituted majority of booked patients that had PPH. This was not surprising as expectant management of the third stage of labour is practiced in many traditional institutions due to lack of knowledge and unavailability of oxytocic agents.

Unlike other studies^{14, 15}, also that reported uterine atony as the commonest cause of postpartum haemorrhage, in this study retained placenta was the commonest cause and it accounted for over half of the cases. Uterine atony was the second most common cause seen in our centre. Reason for this observation may be because majority of cases seen were patients that had their delivery outside the hospital where the third stage was poorly managed. The high incidence of retained products of conception is closely related to the poor management of the third stage of labour. The current concept in the management of the third stage of labour is active management^{20, 21}. This consists of interventions designed to facilitate the delivery of the placenta and prevent uterine atony by increasing uterine contractions and thus prevent postpartum haemorrhage^{20, 21}. The components include administration of uterotonic agents, controlled cord traction and uterine massage after the delivery of the placenta²⁰. Most of the deliveries complicated

with postpartum haemorrhage seen in this study were conducted by unskilled attendants that have little or no knowledge of active management of the third stage of labour. The number of patients with genital tract lacerations in this study was less when compared with studies from other parts of the Nigeria^{16, 17, 18}.

Since deaths from PPH are potentially preventable, its management should therefore start with the identification of these risk factors^{6, 7, 18, 19}, though it is known that postpartum haemorrhage can occur in the absence of these risk factors^{5, 7, 15, 18}. The next most important line of management is relief of the precipitating factors, prompt and adequate replacement of intravascular blood volume.

The proportion of women with secondary post partum haemorrhage appears higher, this might be due to delay in seeking care as most of the patients in this study were unbooked patients that whose delivery did not take place at our centre.

Postpartum haemorrhage accounted for 6.67% of maternal mortality in this study whereas on the worldwide basis postpartum haemorrhage is implicated in 25% of maternal mortality especially from the developing countries^{1,1}. This low figure was probably due to the prompt and appropriate intervention given to the patients in order to prevent mortality due to haemorrhage in a tertiary setting such as ours with ready availability of emergency obstetric services. Apart from the mortality, PPH is associated with maternal morbidities such as increased risk of blood transfusion with its attendant complications, renal failure due to hypovolaemia, disseminated intravascular coagulopathy, failure of lactation and infertility. Over a half of the patients in this study had blood transfusion.

Conclusion

Post partum haemorrhage constitutes a significant cause of maternal morbidity and mortality. Most of the deliveries complicated with postpartum haemorrhage seen in this study were conducted by unskilled attendants that have little or no knowledge of active management of the third stage of labour. In order to reduce the morbidity and mortality from postpartum haemorrhage, every attendant at delivery needs to have knowledge, skills and critical judgment required to carry out active management of the third stage of labour and have access to appropriate supplies and equipment. Women should be encouraged to make use of existing health facilities by booking and receiving ante natal care.

References

1. World Health Organization. The World Report 2005. Attending to 136million births, every year. 2005. Make every mother and child count: Geneva: the World Health Organization, 2005:62-63.
2. AbouZahr C. Ante partum and postpartum haemorrhage. In: Murray CJ, AD Lopez. Editors. Health dimensions of sex and reproduction. Harvard Uni Press, Boston; 1998: 172;4.3
3. Ripley DL. Uterine emergencies: atony, inversion, and rupture. *Obstet Gynecol Clin North Am* 1999; 26:419-434.
4. World Health organization. Reducing the global burden: Postpartum haemorrhage. 2008. Available http://www.who.int/making_pregnancy_safer/documents/newsletter/mps_newsletter_issue4.pdf (last accessed 5 December 2008).
5. Khan KSW. WHO analysis of causes of maternal death: a systematic review. *Lancet* 2006;367:1066-1074.
6. The Prevention and Management of postpartum Haemorrhage: Report of Technical Working Group, Geneva 3-6 July 1989. Geneva: World Health Organisation, 1990.
7. Elbourn DR, Pendriville WJ, Carroli G, Wood J, McDonald S. Prophylactic use of oxytocin in third stage of labour. *Cochrane Database syst Rev* 2001 ;(4):CD001808.
8. Bias JM, EskesM, Bonsel GJ, Bleker OP. Postpartum haemorrhage in nulliparous women: incidence and risk factors in low and high risk women. A Dutch population-based cohort study on standard (≥ 500 ml) and severe (≥ 1000 ml) postpartum haemorrhage. *Eur J Obstet Gynecol Reprod Biol* 2004; 115:166-72.
9. Magnann EF, Evans S, Chauhan SP, Lanneau G, Fisk AD, Morrison JC. The length of third stage of labor and the risk of postpartum haemorrhage. *Obstet Gynecol* 2005; 105:2903.
10. Corwin EJ, Murray-Kolb LE, Beard JL. Low haemoglobin level is a risk factor for postpartum depression. *J Nutr* 2003; 133:4139-42.
11. Ekeroma AJ, Ansari A, Stirrat GM. Blood transfusion in obstetrics and gynaecology. *Br J Obstet Gynaecol* 1997; 104:278-84.
12. Willis CE, Livingstone V. Infant insufficient milk syndrome associated with maternal postpartum haemorrhage. *J Hum Lact* 1995; 11:123-6.
13. Magann EF, Evans S, Hutchinson M et al Postpartum hemorrhage after vaginal birth: an analysis of risk factors. *South Med J*. 2005 Apr;98(4):419-22.
14. Henry A, Birch MR, Sullivan EA, et al Primary postpartum haemorrhage in an Australian tertiary hospital: a case-control study. *Aust N Z J Obstet Gynaecol*. 2005 Jun; 45(3):233-6.
15. Soriano D, Dulitzki M, Schiff E, et al A prospective cohort study of oxytocin plus ergometrine compared with oxytocin alone for prevention of postpartum haemorrhage. *Br J Obstet Gynaecol*. 1996 Nov;103(11):1068-73.
16. Anderson J, Etches D, Smith D. Postpartum haemorrhage in Damos JR, Eisiger SH,, Eds. Advanced life support in obstetrics (ALSO) provider course manual. Kansas; American Academy of family Physicians, 2000:1-15.
17. Shitu OS, Otubu JAM. Postpartum haemorrhage. In Textbook of Obstetrics and Gynaecology for Medical Students. Second Ed (Ed. Agboola A) Heinemann Educational Books (Nigeria) PLC Jericho Ibadan. 2006; pg 481-488.
18. Selo-Ojeme DO, Okonufua FE. Risk factors for primary postpartum haemorrhage. A case control study. *Arch Gynecol Obstet* 1997; 259:179-87.
19. Ijaiya MA, Aboyeji AP, Abubakar D. Analysis of 348 consecutive cases of primary postpartum haemorrhage at a tertiary hospital in Nigeria. *J Obstet Gynaecol* 2003; 23:374-7.
20. Stones RW, Paterson CM, Saunders NJ Risk factors for major obstetric haemorrhage *Eur J Obstet Gynecol Reprod Biol* 1993; 48:15-8.
21. Sherman SJ, Greenspoon JS, Nelson JM Paul RH. Identifying the obstetric patients at high risk of multiple-unit blood transfusions *J Reprod Med* 1992; 37:649-52.
22. Pendiville JM, Elbourne D, MacDonald S. Active versus expectant management in the third stage of labour. *Cochrane Data base syst Rev* 2000 ;(3):CD000007
23. Jackson KW Jr. Allbert JR, Schemmer GK, Elliot M, Humphrey A, Taylor J. A randomized controlled trial comparing oxytocin administration before and after placental delivery in the prevention of postpartum haemorrhage. *Am J Obstet Gynecol* 2001; 185:873-877.

Referral practices and perceived barriers to timely obstetric care among Ugandan traditional birth attendants (TBA)

Keri L¹, Kaye D², Sibylle K¹

¹Department of Epidemiology, University of Alabama at Birmingham [UAB], USA

²Department of Obstetrics and Gynecology, Makerere University, Kampala, Uganda

Abstract

Objectives: To assess current beliefs, knowledge and practices of Ugandan traditional birth attendants (TBAs) and their pregnant patients regarding referral of obstructed labors and fistula cases.

Methods: Six focus groups were held in rural areas surrounding Kampala, the capital city of Uganda.

Results: While TBAs, particularly those with previous training, appear willing to refer problematic pregnancies and labors, more serious problems exist that could lessen any positive effects of training. These problems include reported abuse by doctors and nurses, and seeing fistula as a disease caused by hospitals.

Conclusions: Training of TBAs can be helpful to standardize knowledge about and encourage timely emergency obstetric referrals, as well as increase knowledge about the causes and preventions of obstetric fistula. However, for full efficacy, training must be accompanied by greater collaboration between biomedical and traditional health personnel, and increased infrastructure to prevent mistreatment of pregnant patients by medical staff.

Key words: Obstetric fistula, Uganda, TBA, qualitative methods, training

African Health Sciences 2010; 10 (1): 75 - 81

Introduction

Obstetric fistula (OF) is an unnatural hole between the birth canal and the bladder and/or the rectum, causing fecal and urinary incontinence, as well as a host of other physical ailments, labeled the “obstetric fistula complex”¹. In rural Uganda, OF is usually caused by obstetric trauma, particularly unrelieved obstructed labor, where the pressure of the fetal head on the area around the birth canal causes loss of circulation to these delicate tissues, which later die and rot away². Fistula rates are highest in areas where women are married very young (sometimes before menarche), where women are small and thin because of malnutrition, illness or genetics, or where women have little or no bargaining power in financial or health care decisions^{3,4}. This injury can be prevented by recognition of potentially obstructed labors and trained medical assistance before, during, or directly after an obstructed labor⁵. In East Africa, fistula surgeries have a 75% cure rate, although up to 80% of women with fistula never seek treatment, primarily because of lack of knowledge of such surgery or of the location of fistula clinics^{1,8}.

Rural Sub-Saharan Africa currently stands as the location of the highest obstetric fistula prevalence globally². The incidence of obstetric fistula in this region has been estimated to be about 124 cases per 100,000 deliveries². The incidence rate could be as high as 200 – 500 cases per 100,000 deliveries in the most rural areas⁴. The UNPF and Engender Health Organization estimate that 2 million women are living with O.F. worldwide, most of them in Sub-Saharan Africa. This estimate is generally regarded a great underestimation, due to the problematic collection of epidemiological data in rural areas, which are usually the areas of highest incidence⁶. The lifetime risk that a woman will die as a direct result of complications during pregnancy and delivery in Africa is estimated at 1:16 mothers compared to 1 in 8700, in North America or Europe⁷.

Uganda specifically has a very high maternal mortality rate (880/100,000)⁸. Around 80% of Uganda is considered rural, where there is little or no access to emergency obstetric care⁹. Around 60% of childbirth is handled by traditional birth attendants (TBA), relatives, and friends⁹, although only 20% of births to mothers with little education or money were attended by a trained or skilled birth attendant⁸. With 80% of the population below the poverty line, and a female literacy rate of roughly 59%¹, many rural Ugandan women are either ignorant about proper maternal care, or are unable to visit a hospital during an obstructed labor due to poverty.

* Corresponding author:

Keri Lawrence
UAB, Department of Epidemiology
RPHB, 1530, 3rd Ave South Birmingham AL 35294-0022
Email: keri.deanna.lawrence@uab.edu
Phone: 423-653-9967 Fax: 205-934-7154

A vital tool in fighting fistula in sub-Saharan Africa is the traditional birth attendant, as they outnumber biomedical health practitioners by a hundred-fold or more¹⁰. Previous studies of TBA practices, knowledge and beliefs showed high rates of dangerous vaginal cutting (which can lead to fistula) and lack of knowledge of when obstructed or dangerous labors should be referred to nearby health clinics, as well as low rates of referral in practice²⁻⁴. This study used qualitative focus groups with Ugandan traditional birth attendants to research current beliefs, knowledge and practices of TBAs and their pregnant patients regarding referral of obstructed labors and fistula cases. This study also researched existing barriers to a quality recognition and referral system, and suggested interventions that may increase referral occurrence and efficacy.

Methods

Study setting

Our study was held in the Wakiso and Mukono Districts, which surround Ugandan's capital city of Kampala. Wakiso District, the second largest district in Uganda, has a population of 950,000 people and lies to the west of Kampala. Mukono District lies to the east of Kampala and has a population of 808,000 (according to the 2002 census). These districts are primarily rural outside of the Kampala city limits. These areas were chosen because of their proximity to Mulago Hospital in Kampala, where emergency obstetric cases could be referred.

Study design

Qualitative methods were used in this study to capture and understand beliefs, attitudes and practices of birth attendants about referral of obstetric cases. We also were interested in the attitudes and opinions of birth attendants' pregnant clients in their community. Using a focus group method allowed participants to engage each other with examples from their own experience, and is particularly helpful when attempting to discover and analyze underlying factors that affect behaviors, beliefs, and motivations¹¹. A focus group guide was developed that included 27 questions regarding common types of problems seen during pregnancy and labor, any formal training received, experiences with obstructed labors and fistula, and their own referral practice of problematic pregnancies and labors. These questions attempted to give a broad qualitative picture of the TBA's recognition and referrals of labor problems, particularly obstructed

labor, and attitudes, knowledge, and practices of TBAs and their clients that may prevent proper referral of cases that lead to obstetric fistula. Each TBA was asked to sign a written informed consent form before the start of the focus group discussion. *Recruitment:* TBA participants were recruited using two local district mobilizers who worked for the Ugandan government and had some previous organized contact with local TBAs. Mobilizers invited TBA in their area to attend focus groups and gave information about the meeting times and locations of the focus groups.

Data collection

Basic demographic data such as age and number of years working as a TBA, were collected from each study participant before the start of each focus group. All focus groups were held in Luganda, the local language familiar to all research participants. The six focus groups, which ranged in size from 5 to 12 participants, were held in secluded outdoor settings at locations that were central for local TBAs, including near district administrative offices and midwife training centers. Study participants were compensated \$3 (5,000 UgS) for travel and time, and snacks were provided for everyone. The focus groups lasted about two hours each; they were tape-recorded with the participants' consent, and conversations were guided using a focus group guide. Two local research assistants moderated the focus group discussions and used open ended questions and probes to encourage all participants to contribute.

Data management and analysis

The resulting data was translated from Luganda to English and transcribed verbatim using tape recorded data and supplemented by field notes. Data in the transcripts was analyzed by weighting data using several factors. These factors included *frequency* – themes that were commonly mentioned throughout and between each focus group, *specificity* – comments where specific examples were used to provide details, *emotion* – comments where participants exhibited passion, enthusiasm or intensity, and *extensiveness* – how many different people mentioned the same idea¹¹. After looking at responses to each question separately, we compared and contrasted common responses and themes across all areas.

Results

Socio-demographic data

61 TBAs participated in our study. Of these, 27 were from the Wakiso District and 34 from the Mukono District. All participants were current TBA in their communities. The length of time they had spent working as TBA ranged from 1 year to over 50 years. All participants were female, with ages ranging from 23 to over 80. No participants reported having any formal medical training as a clinician, nurse or midwife.

Problems commonly seen during pregnancy and labor

The participants listed several problems that they commonly identified among their pregnant patients. The most common of these included: vomiting, pain, anemia, malaria, high blood pressure, fever, vaginal itching and vaginal bleeding. When asked about problems reported during labor, the two most common were related to obstructed labor. These were mostly due to poor or breech positioning of the baby and the mother's pelvis being too small. Other common problems included "too much bleeding," the placenta coming too early or not at all, maternal fever, and umbilical cord around the fetal neck.

Believed causes of obstructed labor

TBAs were asked what they believed were the causes of, or the risk factors for delayed or obstructed labor. The most common responses included young women whose pelvis was too small, women pregnant with their first child, those with anemia, those with a genetic history of problematic pregnancies, and women who did not take "pelvic bone weakening" herbs.

Referral practices/criteria for referral

When asked about their referral practices, participants listed a large number of symptoms or situations in which they would refer pregnant women to health facilities. The most commonly reported situations included when labor is delayed or contractions are too far apart or too close together and contractions occurred without the water breaking. Other problems in labor that participants saw as needed to be referred included poorly positioned fetuses and twins.

Risk factors where birth attendants referred mothers included when the fetus' head was too big or the pelvis too small, or when the pregnant woman was

very young or pregnant with her first child. Other risk factors listed by participants included pregnant women with high blood pressure, those who had had a caesarean section in the past, the epileptic, the "mad," the lame, and women who have had many births. Several participants mentioned that they encouraged their pregnant clients to attend prenatal sessions at a local health clinic or hospital. One stated, "We should make sure that the women who come to us here have attended antenatal at least three times. At the hospital they will have learnt a lot and this will ease our work."

Several participants mentioned how they had been taught in previous trainings to refer if they sensed any problems. TBAs with some previous training were more likely to suggest referral of both pregnant women with many risk factors (high blood pressure, epileptic, previous C-section, etc.) and women during problematic labors to health clinics. Some mentioned previous training where dangerous practices, such as vaginal cutting to relieve obstructed labor, were discouraged – "We were told that if that part is tightening, get a warm cloth and wet the place instead of cutting." However, there were still several mentions of vaginal cutting as a method to relieve obstructed labor. One older woman said, "Me, I just cut and get out the baby – I can't kill the mother and the baby."

Practices for referring obstructed labors varied between participants. One TBA said, "We get them, but only give them two days in labor, if more than two days, we send them to health centers." Another said "Me, when I get one at night, I only help during the night, if by morning she has not delivered, I refer to the health centre."

Attitudes of local pregnant women about medical doctors or clinics

Participants were asked about the attitudes of local pregnant women towards medical doctors or clinics. Their responses were for the most part, very negative. Some reported that pregnant patients had experienced verbal and physical abuse from doctors and nurses. One birth attendant stated, "The health workers are abusive and arrogant; they shout at mothers to go and bring their husbands who made them pregnant." Another said, "They [health workers] at times slap these mothers, for them they prefer protecting their jobs than people's lives." Some referred to nepotism in hospitals - "You find that the director has recruited only his relatives and these

cannot manage the situation most of the time.” Two birth attendants stated that when they took a mother for delivery at a health center, they themselves were verbally abused by health workers and the mother eventually died.

Several participants reported that pregnant women were unwilling to be referred to health clinics or hospitals because they were nervous about learning their HIV status. “We have discovered that mothers who have been tested and found positive don’t go back to health centers but resort to TBAs,” stated one birth attendants.

A consistent theme among responses was that pregnant mothers found the care of TBAs to be of higher quality than at the health center. Some birth attendants mentioned that they provided some food and drink for their clients, as well as some clothes and massages – something not provided in the hospitals. Local pregnant women preferred the personal knowledge and treatment provided by the TBA, as well as their location in the community and cheaper price, as compared with hospitals. One birth attended stated, “Our working relationship with the mothers is so good, to the extent that when we refer mothers, they refuse to go.”

Other reported barriers of pregnant women to go to local health clinics include lack of money, both for surgery and the necessary supplies, such as gloves, cotton, etc. Women feel shame about a lack of supplies or clothing such as underwear, and are unwilling to go to health clinics without these. A birth attendant said, “A mother came in to deliver in a skirt and blouse and nothing else for the baby. Such a situation cannot be tolerated at the health center.” A few participants mentioned that husbands of expectant mothers were not willing to give their wives the money for health clinics or the supplies they needed, and sent them to birth attendants to save money. One focus group agreed that when referring complicated cases, transportation was a big problem, particularly making husbands pay for transportation.

Believed causes of obstetric fistula

Almost all TBAs personally knew someone who had had a fistula; interestingly, most TBAs saw obstetric surgery or labor at the hospital as one of the primary *causes* of obstetric fistula, rather than a means to prevent fistula. One participant said that “Most people {who go to hospitals for labor} get scratched on the bladder in hospitals and that result in fistula (at times the baby dies).” Another said, when asked

about what she believed was the cause of fistula, “At times, we the TBAs delay some mothers. But even the doctors take long to operate the mothers and it has been found that most women who go to the [surgical] theater end up failing to hold urine.” One participant stated, “[Fistula] usually happens to women who deliver from health centers,” and said it was due to the use of metal forceps to pull out the baby, and nurses’ carelessness, particularly those with long fingernails. Another said that fistula “usually happens to women who deliver in hospitals and are operated.”

The second most common believed cause of fistula was pregnant women having full bladders during labor. Several mentioned cases they knew of full bladders or rectums being pushed against during birth, which resulted in a tear and urinary and fecal incontinence. One participant said, “As a TBA, it is our responsibility to encourage mothers to pass out urine most of the times during labor.” Another referred to a previous training where she was taught to “endeavor to have the bladder and rectum [of their pregnant clients] emptied.”

Other common believed causes of fistula included the long nails of birth attendants, and someone assisting the birth without gloves, resulting in an injured bladder. Participants also believed that large babies can cause problems. “When a woman has a big baby and in case of failure to push, they are usually forced out, and the baby can injure the bladder,” stated one participant.

Beliefs about whether fistula can be fixed

Participants had mixed responses about whether fistula could be fixed or healed. Some mentioned a quick referral to a hospital as a way to prevent or fix fistula. Others mentioned a radio ad for the fistula clinic at Mulago Hospital in Kampala. About half of participants who spoke about the clinic at Mulago said that they knew people who went and were not helped. One woman noted that the cost of fistula surgery at Mulago was 60,000 USH (~\$40), a large price for many rural women. A few participants mentioned alternative methods, including prayers and herbs, as having healed fistula in the past. Most participants said that they were unsure whether fistula could be healed, partially because they didn’t see enough cases in their communities to know for sure.

Interest in future training sessions for TBAs

All participants in our study expressed a strong interest in receiving more skills training. Reasons for their interest included desiring to renew their memory of techniques, desiring to learn new things, such as how to deal with fistula, HIV, and lack of spousal support during pregnancy, and needing to know what to teach the mothers in their community. Birth attendants also wanted to learn more modern methods and skills and learn from other birth attendants.

When asked what methods of training they would find acceptable and helpful, participants mentioned training that was facilitated with transportation, organized at the parish or sub-county level (versus the district level), and training that is very hands-on and practice oriented (versus lectures). Several attendants wanted the chance for clinical observation and practice at local health centers, and several mentioned certificates and community recognition at the end of training.

Other requests by participants included more supplies, as scales, bikes for transportation, gloves and other tools for assisting labors in a clean manner. Because attendants can spend some time without any clients, they asked for some kind of consistent financial support from the government. In addition to community wide recognition after training, several birth attendants in our study mentioned wanting improved relationships between medical personnel and birth attendants. One stated, "If we can be helped here at the health center and the midwife cooperates with us it would save many lives."

Discussion

One of the most important findings of our study was the verbal and physical abuse reportedly suffered by both TBAs and pregnant women at the hands of local doctors and nurses. Other serious problems reported by this study included health personnel negligence and inexperienced care. Another study in the Wakiso District reported that pregnant adolescents found health workers harsh and abusive, and used blame and intimidation¹². After experiencing such negative treatment, the pregnant teenagers were more likely to avoid health services, and sought care instead from untrained TBAs¹². A study set in the Rakai district of Uganda reported that pregnant women found midwives or health workers at public hospitals or clinics sometime "rude, proud, negligent and vulgar," and sometimes verbally abusive of pregnant women, while in comparison TBAs were

reportedly much kinder and flexible about payment¹³. Clearly, these factors might discourage pregnant women from visiting a health care facility, and could potentially be the last straw for a woman already dealing with day-to-day difficulties such as high cost of transportation, lack of supplies, lack of finances, lack of food, and lack of spousal support.

However, Amooti-Kaguna and Nuwanda found that pregnant women in their study saw health care workers as more knowledgeable about how to deal with problematic pregnancies and labor¹³. The pregnant women in this study also reported problems with the quality of care offered by TBAs, such as late referrals, lack of knowledge about how to deal with some deliveries, and the development of fistula after being assisted by some TBAs¹³. These views, which would not have been reported by the TBAs in our study, also play an important role in a pregnant woman's decision about where to deliver her child.

Our research found that another major detractor to proper referral practices to prevent fistula is the TBA's belief that hospital deliveries were one of the primary causes of obstetric fistula, rather than a means to prevent them. These beliefs and perceptions are a significant barrier to TBAs naturally encouraging timely referrals, and could potentially exacerbate already present tendencies to deliver high-risk cases themselves. Naturally, these beliefs would also have a strong negative role in pregnant women's desire to be referred to clinics or hospitals, and their subsequent compliance with referrals.

In this same line, of the TBAs that mentioned that fistulas could be healed at the local hospital, about half mentioned that they had known women with fistula who had not been helped at these "fistula clinics". This lack of confidence in the established system could significantly discourage women suffering from fistula from seeking curative care at the local hospital, particularly in the light of other existing barriers such as lack of transportation and money for fistula curative surgery.

Even in light of these negative attitudes and beliefs about the Ugandan health care system, the majority of our participants seemed very willing to refer cases they felt were too high-risk or challenging to manage. Our TBA study participants appeared to have a fairly good and broad understanding of when pregnancies or labors were high-risk. This is compelling in light of the fact that our participants

seemed relatively willing to admit areas in which they lacked knowledge.

The focus group design proved to be strength for our study because participants, who were all TBAs, felt comfortable to share their impressions and attitudes about this particular topic. It has been shown that people in focus groups are more willing to disclose information or feelings when they are with others who have something in common¹¹. Our study had a 100% participation rate, and this eagerness translated into a high willingness among TBAs to talk, as well as a large amount of enthusiasm about the study.

However, within the focus group design, there remain several negative factors that could detract from the validity of our findings. When one participant's opinion or role is overwhelming, other participants may not have enough time to speak, or may be swayed or biased into changing their opinion¹¹. Our study attempted to counteract this situation by using research assistants who had not only worked with TBAs previously, but also had experience moderating large focus groups of birth attendants. Secondly, there was a potential that the presence of the American researcher would distort answers, if participants felt that there were certain answers they were expected to give. To ensure that this was not a confounder, the researcher did not attend one focus group, and there no difference was found in the results from this group. Finally, as some of our focus groups contained more than 10 TBAs, there was the possibility that not all participants had enough time to express their opinions. This risk was controlled for by holding the focus group for over two hours, thus allowing enough time for everyone to speak. As with all research methods based in self-reporting of practices, there was the risk that participants were not honest about what their true activities were.

In conclusion, our study found that TBA training about referral is helpful, particularly for standardizing knowledge about what is considered a high risk pregnancy or labor, and under which circumstances and time periods to refer pregnant women. These results agree with a recent meta-analysis about the efficacy of TBA training^{14,15}. This study by Sibley and Sipe showed that training produced small yet significant increases in women's use of antenatal care and emergency obstetric care¹⁶.

However, our results also showed that there are larger and more serious health care problems that could potentially lessen or even neutralize any

positive effects due to TBA training. These include abuse of patients and TBAs by health care personnel, and lack of infrastructure to ensure quality and timely treatment of emergency obstetric cases.

To ensure that the full positive effects of TBA training on referral rates are reached, a holistic focus should be on developing more collaboration between TBAs and biomedical health professionals with the ultimate goal of reducing maternal and child mortality. A study from rural Cambodia shows that training of traditional health workers is most effective when included in a "chain of survival" of complicated deliveries, which included not only TBAs, but also midwives, paramedics, and the existing emergency obstetric network at nearby hospitals or health care clinics¹⁷. This method treats each rural delivery as a potential trauma, and merges midwives and TBAs with an already present and successful rural trauma rescue system.

References

1. United Nations Population Fund and EngenderHealth. Obstetric fistula needs assessment report: Findings from nine African countries. 2003. Available at <http://www.unfpa.org/fistula/docs>. Accessed October 10, 2006.
2. Lewis G, de Bernis L. Obstetric fistula: Guiding Principles for clinical management and programme development. *WHO Integrated Management of Pregnancy and Childbirth*. 2006. Available at http://www.who.int/making_pregnancy_safer/publications/obstetric_fistula.pdf. Accessed October 2, 2006.
3. Accessed October 2, 2006.
4. Wall LL, Karshima JA, Kirschner C, Arrowsmith SD. The Obstetric Vesicovaginal Fistula: Characteristics of 899 patients from Jos, Nigeria. *American Journal of Obstetrics and Gynecology* 2004; 190: 1011-9.
5. Donnay F, Ramsey K. Eliminating obstetric fistula: Progress in partnerships. *International Journal of Gynecology and Obstetrics* 2006; 94: 254-261.
6. Miller S, Lester F, Webster M, Cowan B. Obstetric Fistula: A Preventable Tragedy. *Journal of Midwifery & Women's Health* 2005; 50: 4.
7. Lassey AT, Ghosh TS. Vesico-vaginal fistula in Ghana. Unpublished report for the Ministry of Health of Ghana and non-governmental

- organizations interested in the care of women in Ghana. 1993.
8. Walley RL, Kelly J, Matthews KM, Pilkington B. Obstetric fistulae: A practical review. *Reviews in Gynaecological Practice* 2004; 4: 73-81.
 9. World Health Organization. Core Health Indicators for Uganda. 2004. Available at http://www3.who.int/whosis/core/core_select_process.cfm.
 10. Accessed November 11, 2006.
 11. Koomson G. Telemedicine in rural Uganda. *Africa Recovery Online* 1999; 13: 4.
 12. Homby J, King R, Balaba D, and Kabatesi D. Traditional health practitioners are key to scaling up comprehensive care for HIV/AIDS in sub-Saharan Africa. *AIDS* 2004; 18: 1723-1725.
 13. 11. Krueger RA, Casey MA. *Focus Groups: A Practical Guide for Applied Research*. California: Sage Publications, Inc; 2000.
 14. 12. Atuyambe L, Mirembe F, Johanasson A, Kirumira E, Faxelid E. Experiences of pregnant adolescents – voices from Wakiso district, Uganda. *African Health Sciences* 2005; 5: 304-309.
 15. 13. Amooti-Kaguna, B, Nuwaha F. Factors influencing choice of delivery sites in Rakai district of Uganda. *Social Science and Medicine* 2000; 50: 203-213.
 16. 14. Akpala CO. An evaluation of the knowledge and practices of trained traditional birth attendants in Bodinga, Sokoto State, Nigeria. *Tropical Medicine and Hygiene* 1994; 97: 46-50.
 17. de Vaate A, Coleman R, Manneh H, Walraven G. Knowledge, attitudes and practices of trained traditional birth attendants in the Gambia in the prevention, recognition and management of postpartum hemorrhage. *Midwifery* 2002; 18: 3-11.
 18. Sibley LM, Sipe, TA. Transition to Skilled Birth Attendance: Is There a Future Role for Trained Traditional Birth Attendants? *Journal of Health, Population and Nutrition* 2006; 24: 472-478.
 19. 17. Chandy H, MidwifCert, Steinholt M, Husum, H. Delivery Life Support: A preliminary report on the chain of survival for complicated deliveries in rural Cambodia. *Nursing and Health Sciences* 2007; 9: 263-269.
 20. Holme A, Breen M, MacArthur C. Obstetric fistulae: a study of women managed at the Monze Mission Hospital, Zambia. *BJOG*. 2007;114:1010–1017.