Recognition of High Risk Pregnancies and Referral Practices among Traditional Birth Attendants in Mkuranga District, Coast Region, Tanzania

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Abstract

A cross-sectional study was carried out in Mkuranga District of Tanzania with the aim of comparing the ability of trained and untrained traditional birth attendants (TBAs) in identifying women with danger signs for developing complications during pregnancy and childbirth as well as their referral practices. Study findings revealed that majority of the TBAs (86.5%) had not received any training. Trained TBAs were more knowledgeable on danger signs during pregnancy and childbirth and were more likely to refer women with complications to a health facility, compared to untrained TBAs. The authors recommend that in resource constrained countries like Tanzania and especially in remote rural areas, TBAs should be trained on early identification of mothers with obstetrical complications and on their prompt referral to health facilities that can provide emergency obstetric care. (Afr J Reprod Health 2005; 9[1]: 113–122)

Résumé

Reconnaissance des grossesses à haut risque et les pratiques d'orientation des malades vers les sages-femmes traditionnelles dans le District de Mkuranga, Coast Région, Tanzanie. Une étude transversale a été menée dans le District de Mkuranga en Tanzanie en vue de comparer le capacité des sages–femmes traditionnelles (SFT) qui ont reçu une formation et celles qui ne l'ont pas reçu, afin de reconnaîte les femmes qui sont en danger de développer des complications pendant la grossesse et l'accouchement aussi bien que leur pratique d'orientation des malades. Les résultats ont montré que la majorité des sages-femmes traditionnelles (SFT) (86,5%) n'ont reçu aucune formation. Les SFTs qui ont reçu une formation étaient plus renseignées sur les indices de danger pendant la grossesse et l'accouchement et elles avaient plus la possibilité d'orienter les femmes qui ont des complications vers un service de santé comparés aux femmes qui n'ont pas reçu de formation. Les auteurs préconisent que dans les pays qui n'ont pas de resources tel la Tanzanie et surtout dans les régions rurales, les SFTs devraient être formées sur la façon d'identifier tôt les mères qui ont des complications obstétriques ainsi que sur la façon d'orienter les malades vers les services de santé qui pourraient assurer des soins obstétriques d'urgence. (Rev Afr Santé Reprod 2005; 9[1]: 113–122)

Key Words: Pregnancy, complications, TBAs, childbirth

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Introduction

The maternal mortality rate in Tanzania is estimated to be 529 per 100,000 live births.[1] However, there are regional variations, and other studies have established maternal mortality to range from 241 to 961 per 100,000 live births.[2-4] It has also been estimated that approximately 355,000 Tanzanian women experience acute obstetric complications annually, and that 177,500 suffer from life-threatening complications.[5]

The government of Tanzania is committed to improving maternal health situation in the country. It was among the first African countries to endorse the global safe motherhood strategy over 15 years ago. It is the intention of the government that all pregnant women attend antenatal care in modern health care facilities and that they get skilled care attendance during delivery.[6] According to a joint WHO/UNFPA/UNICEF/World Bank statement, skilled care attendants during delivery are doctors (specialist or non-specialist) or health workers with midwifery skills who are able to diagnose and manage obstetric complications as well as normal deliveries.[7]

Studies conducted in the country have shown that while most pregnant women (97%) attend at least once at a health facility for antenatal care, a much lower proportion of them (44%) deliver at a health facility.[8] Some of the possible reasons for the large discrepancy between health facility utilisation rates for antenatal care and delivery have been established to be that mothers go to antenatal clinics to learn whether they have a normal pregnancy so as to feel free to deliver at home and to get tetanus toxoid immunization and iron supplements.[9,10] However, it has been well established in international literature that prenatal screening alone does not help in identifying all women with potential risk for developing complications, as most life-threatening maternal complications occur during labour and delivery and are usually unpredictable.[11,12]

The proportion of deliveries that are assisted by skilled personnel in Tanzania is 36%; traditional birth attendants (TBAs) assist about 20% of all the deliveries while relatives and friends assist 29%.[8] TBAs are people who live within the community and are usually close relatives of the women they assist during childbirth. It is however necessary for TBAs to have been trained on safe and hygienic practices during delivery, recognition of women with risk factors, or the so called "danger signs" during pregnancy and childbirth, and on prompt referral for identified risk conditions and complications.

This cross-sectional study was carried out in Mkuranga District, Coast Region, with the aim of comparing the ability of trained and untrained TBAs to identify mothers with risk factors for developing complications during pregnancy and childbirth as well as their referral practices.

Methodology

Description of the Study Area

Mkuranga District is one of the six districts that form the Coast Region. It is divided into four administrative divisions that are further subdivided into 15 wards and 101 villages. Mkuranga District covers an area of 2,432km^2 and has an estimated population of 155,679 people, who belong mainly to three major ethnic groups — the Zaramo, Ndengereko, Matumbi and Makonde. Most of the population are peasants and they are engaged in subsistence agriculture. The cash crops are cashew, coconut, pineapple and orange, while the food crops are cassava, rice and beans. Mkuranga District has two government health centres, fifteen government and ten private dispensaries. Traditional health care systems that operate in the district include traditional healers and TBAs who belong to four major ethnic groups, namely, Zaramo, Ndengereko, Matumbi and Makonde.

Study Instruments

TBAs were interviewed using a questionnaire that contained both close and open-ended questions.

The questionnaire was pre-tested prior to field application. Data were collected on socio-demographic characteristics of the TBAs, their training status and duration of practice; knowledge of danger signs during pregnancy and childbirth; and referral practices.

Data Collection Procedures

Data were collected by a research team consisting of two researchers and three research assistants. The research assistants were trained for three days to acquaint them with the aims of the study and to make them conversant with the data collection procedures. A total of 11 wards and 50 villages of Mkuranga District were randomly selected and included in the study. A list of all TBAs living in the villages visited was made with the help of village leaders and dispensary workers.

Ethical Considerations

Research clearance was obtained from the Muhimbili University College of Health Sciences Research and Ethical Review Committee. Permission to carry out the study was sought from all relevant authorities from the district to village level. The main objective of the study was explained to all the TBAs who were included in the study and their consent sought prior to interview.

Study Limitations

It was not possible to interview all the TBAs listed in a particular village, as some of them had gone outside the village on social visits. Some of the selected villages were inaccessible due to bad roads. In such situations a nearby village was selected to replace them.

Data Management and Analysis

At the end of each working day, completed copies of the questionnaire were checked for consistency of responses. Any irregularities noted were brought to the attention of the interviewer. The data was then entered into computer using EPI-INFO version 6.0 and analysed using the same computer software. Data were presented in the form of frequency distributions and cross-tabulations. Where appropriate chi-square tests were performed to assess for statistical significance, p values of less than 0.05 were considered significant.

Results

A total of 504 TBAs were interviewed (Table 1). Only 13.5% of them reported that they were trained. Majority of them (75%) were above 50 years old and 78% had no formal education. Their duration of practice ranged from one to 60 years, with a median of 15 years. About 63% had learnt their skills from a female relative, while a quarter were self-taught.

Respondents were asked to spontaneously mention all the danger signs during pregnancy that they knew. Table 2 shows that their overall level of knowledge of danger signs during pregnancy was low. The three most frequently mentioned danger signs were anaemia (35.0%), vaginal bleeding (17.3%) and swelling of the feet (13.9%). Over a quarter (27.2%) of the respondents reported that they did not know of any danger sign during pregnancy.

For all signs, a higher proportion of the trained TBAs reported danger signs than non-trained ones. However, the difference was not statistically significant except on the proportion of trained TBAs who mentioned abnormal presentation and vaginal bleeding ($p < 0.05$).

TBAs were also asked to mention all the danger signs during delivery that they knew. Table 3 shows that overall knowledge of danger signs during delivery was low amongst the TBAs interviewed, with maternal exhaustion being the most commonly reported sign (28.2%), followed by prolonged labour (21.6%) and heavy vaginal bleeding (18.1%). Higher proportions of trained, compared to the untrained, TBAs reported the various danger signs with the exception of prolonged labour and early rupture of membranes.

Table 3 also shows that a higher proportion of untrained TBAs reported that they did not observe any danger sign compared to trained TBAs (19.8% vs. 8.8%).

Almost similar proportions of the respondents reported that they refer women with complications during pregnancy and delivery (54.6% and 52.9% respectively). A higher proportion of trained TBAs refer women with complications during pregnancy compared to the untrained (64.7% vs. 53%) (Figure 1). This finding is not statistically significant ($p > 0.05$). Figure 1 also shows that a slightly higher proportion of trained TBAs (58.8%) refer women with complications associated with delivery compared to untrained TBAs (52%), but the difference was not statistically significant ($p > 0.05$).

Table 1 Description of Study Respondents by Training Status and Selected Variables

Variable	Trained (n = 68)		Untrained (n = 436)		Total (n = 504)	
	No.	%	No.	%	No.	%
Age (years)						
□40	8	12.3	37	9.0	45	9.4
41–50	13	20.0	63	15.3	76	15.9
51–60	24	36.9	97	23.5	121	25.4
61–70	13	20.0	142	34.5	155	32.5
71–80	5	7.7	61	14.8	66	13.8
> 81	2	3.1	12	2.9	14	2.9
Education level						
No formal education	42	61.8	348	80.6	390	78.0
Madrasa	5	7.4	27	6.3	32	6.4
Incomplete primary education	9	13.2	29	6.7	38	7.6
Completed primary education	10	14.7	22	5.1	32	6.4
Others	2	2.9	6	1.4	8	1.6
Duration of practice (years)						
Up to 10	37	58.2	178	41.0	217	43.2
11–20	9	13.5	87	20.0	96	19.0
19.2						
21-30	11	16.5	87	20.5	100	20.0
> 31	8	11.9	80	18.4	88	17.6
	Range = 1–60 years, median = 15 years					
How TBAs learnt delivery skills						
Other TBAs	8	11.8	21	4.8	29	5.8
Female relative	26	38.2	290	66.7	316	62.8
Self taught	13	19.1	11.0	25.3	123	24.5
Health worker	21	30.9	9	2.1	30	6.0
Others	0	0.0	5	1.1	5	1.8

Table 2 TBAs' Knowledge of Danger Signs during Pregnancy by Training Status

Danger sign	Trained (n = 68)		Untrained (n = 436)		p value	Total (n = 504)	
	No.	%	No.	%		No.	%
Anaemia	30	44.1	146	33.5	0.08	176	35.0
Pedal oedema	14	20.6	56	12.8	0.088	70	13.9
Eclampsia	4	5.9	32	7.3	0.84	36	7.1
Abnormal presentation	13	19.1	36	8.3	0.005*	49	9.7
Absent fetal movements	3	4.4	27	6.2	0.76	30	6.0
Vaginal bleeding	24	35.3	63	14.4	0.0001*	87	17.3
Others	7	10.2	25	5.7	0.243	32	6.3
Don't know	13	19.1	124	28.4	0.111	137	27.2

NB: Multiple responses. Others included multiple pregnancy, first pregnancy and previous caesarean section.

Table 3 TBAs' Knowledge of Danger Signs during Delivery by Training Status

Danger sign	Trained (n = 68)		Untrained (n = 436)		p value	Total (n = 504)	
	No.	%	No.	(%)		No.	(%)
Maternal exhaustion	23	33.8	120	27.5	0.2837	143	28.4
Prolonged labour	6	8.8	103	23.6	0.0058	109	21.6
Heavy vaginal bleeding	23	33.8	68	15.6	0.00027	91	18.1
Abnormal presentation	18	26.5	53	12.2	0.0016	71	14.1
Early rupture of membranes	3	4.4	40	9.2	0.191	43	8.5
Eclampsia	5	7.4	23	5.3	0.681	28	5.6
Obstructed labour	3	4.4	17	3.9	0.8945	20	4.0
Don't know	6	8.8	100	19.8	0.030	106	21.0

Table 4 Conditions during Pregnancy that TBAs Refer by Training Status

Condition	Trained (n = 44)		Untrained (n = 231)		p value	Total (n = 275)	
	No.	%	No.	%		No.	%
Anaemia	23	52.3	107	46.3	0.31	130	47.3
Vaginal bleeding	24	54.5	46	19.9	0.00001	70	25.5
Pedal oedema	11	25.0	25	10.8	0.001	36	13.1
Abnormal presentation	8	18.2	27	11.7	0.17	35	12.7
Palpitations	10	22.7	22	9.5	0.002	32	11.6
Absent fetal movements	3	6.8	26	11.3	0.329	29	10.5
Eclampsia	4	10.0	17	7.4	0.40	21	7.6
First pregnancy	3	6.8	15	6.5	0.987	18	6.5
Multiple pregnancy	1	2.3	6	2.6	0.83	7	2.5
Others	3	6.8	7	3.1	0.429	10	3.6

NB: Others include history of stillbirth/neonatal death, history of three consecutive abortions, previous caesarean section, prolonged labour and premature rupture of membranes

Table 5 Conditions during Delivery that TBAs Refer by Training Status

Condition	Trained (n = 40)		Untrained (n = 225)		p value	Total (n = 265)	
	No.	%	No.	%		No.	%
Prolonged labour	13	32.5	86	38.2	0.490	99	37.4
Heavy vaginal bleeding	11	27.5	43	19.1	0.220	54	20.4
Retained placenta	5	12.5	29	12.8	0.950	34	12.8
Maternal exhaustion	5	12.5	20	8.8	0.669	25	9.4
Abnormal presentation	4	10.0	12	5.3	0.434	16	6.0
Abnormal lie	4	10.0	12	5.3	0.434	16	6.0
Anaemia	2	5.0	11	4.9	0.710	13	4.9
Others	2	5.0	26	11.6	0.335	28	10.6

NB: Others include vaginal tear, severe abdominal pain, vaginal prolapse, early rupture of membranes, big baby and first baby.

Table 6 Reasons Referred Women do not go to Referral Facility

Condition	No.	%
High cost of transport	21	46.7
Bad roads	8	17.8
Long distance to health facility	6	13.3
High cost of care	6	13.3
Onset of labour at night	3	6.7
Don't know	3	6.7
Leaving it to God	2	4.4
Lack of reliable transport	1	2.2

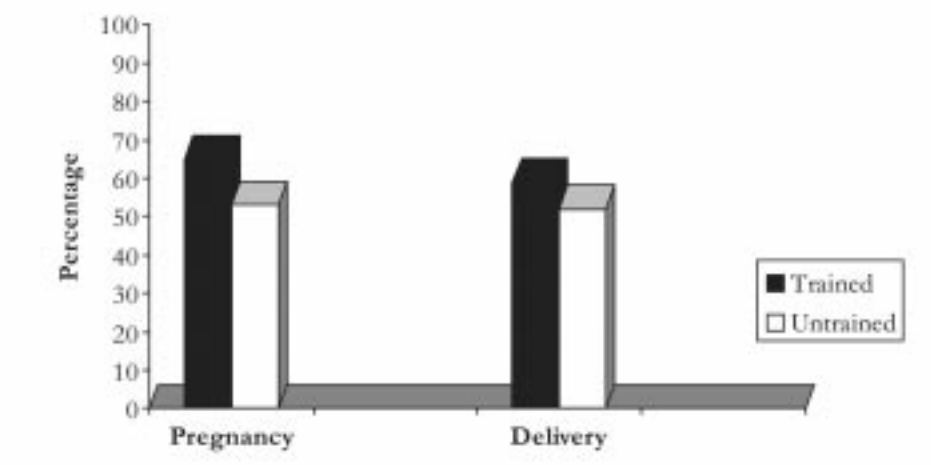

Figure 1 Proportions of TBAs who refer Women with Complications during Pregnancy and Delivery by Training Status

NB: Three responses missing for untrained TBAs

Almost similar proportions of the respondents reported that they refer women with complications during pregnancy and delivery (54.6% and 52.9% respectively). A higher proportion of trained TBAs refer women with complications during pregnancy, compared to the untrained (64.7% vs. 53%) (Figure 1). This finding is not statistically significant ($p > 0.05$). Figure 1 also shows that a slightly higher proportion of trained TBAs (58.8%) refer women with complications associated with delivery compared to untrained TBAs (52%), but the difference was not statistically significant ($p > 0.05$).

Table 4 shows that the top three conditions during pregnancy that TBAs in Mkuranga District refer are anaemia, vaginal bleeding and pedal oedema. Significantly higher proportions of trained TBAs mentioned vaginal bleeding, pedal oedema and palpitations as conditions that they refer.

As in Table 5, more than a third of TBAs interviewed reported that they refer women with prolonged labour, and one fifth refer mothers with heavy vaginal bleeding. Only 13% of TBAs reported retained placenta as a condition for referral. Other conditions were reported by less than 10% of TBAs. Proportions were similar among trained and untrained TBAs. The most frequently mentioned place to which TBAs refer pregnant women was a health facility (87.6%).

A total of 45 TBAs reported that not all the women they refer to a health facility go there. Table 6 shows that the major reasons mentioned for non-compliance with referral advice include high cost of transport to facility (46.7%), bad roads (17.8%), long distance to facility (13.3%) and high cost of care in the health facilities.

Discussion

The majority of TBAs in Mkuranga District (86.5%) had not received any training on care of women during pregnancy and childbirth from a government or non-governmental organisation. Study findings show that the most recent TBA training was conducted eight years ago. Some TBAs reported that they had undergone training in other parts of the country and then moved into the study area. Research work conducted in Lindi Region in southern Tanzania revealed a similar finding, with 61% of the TBAs practicing without having undergone any training.[13]

It is not surprising that the overall level of knowledge of danger signs during pregnancy and delivery among TBAs in Mkuranga was found to be low. This finding could be attributed to the fact that there have been minimal TBA training activities conducted in this district. Trained TBAs were, however, found to be more knowledgeable on danger signs than untrained TBAs. Twaha et al established similar results among TBAs in Tanga Region of Tanzania.[14] Dehne et al also established that illiterate TBAs were able to retain considerable knowledge about high-risk pregnancies and hygienic deliveries two years after training.[15]

A lower proportion of the study respondents were aware of at least one danger sign during pregnancy, compared to TBAs from Tanga (35% vs. 53%).[14] The most commonly known danger signs reported by TBAs in this study were the same as those reported by Lindi TBAs but in reverse order, i.e., anaemia and vaginal bleeding. Among Tanga TBAs pedal oedema was most commonly reported, followed by vaginal bleeding.[13,14] Urassa et al, in a community-based survey, established that abortion, haemorrhage, hypertension and anaemia were the most common causes of maternal deaths.[4] It is therefore not surprising that the study respondents mentioned anaemia and vaginal bleeding as danger signs, as these are common maternal complications that could result in maternal death.

When TBAs experience complications during delivery, which they feel they cannot manage, they usually seek assistance from other TBAs, traditional healers, health workers resident in their communities, or they refer to a health care facility. Where TBAs refer mothers for the management of complicated deliveries has been found to be

influenced, among other things, by their training status and perceived cause of the problem.

In this study we established that in case of a complicated delivery, the TBA would first hold discussions with older women in the household, after which they both consult with the woman's husband and other older close male relatives who have the ultimate power to decide what further action should be taken. Over half of the TBAs in Mkuranga reported that they do refer mothers with complications to modern health facilities, with a higher proportion of trained TBAs reporting this than the untrained. While we cannot exclude the "Hawthorne effect", this finding is contrary to what has been established by other researchers who argue that training TBAs does not make a difference in their referral practices or their management of women during labour.[16] Findings from this study, however, show that not all referred mothers/and their families comply with referral advice given by TBAs. The commonest reasons for non-compliance was related to transport — high cost of transport, bad roads and long distances to health facilities. In Gambia, researchers have also established that there was an increase in timely referral of pregnant women following training of TBAs. It should, however, be noted that other factors could have contributed to the increase in timely referral in Gambia. For example, a health centre in the study area had been upgraded to provide emergency obstetric care and emergency transport options had also been provided.[12]

To enable TBAs to conduct safe deliveries and promptly refer mothers and newborns with complications to a health facility, they need to be trained to recognise mothers with high risk of developing complications and to receive follow-up supervision to determine whether they practice what they had been taught.[17] Opponents of TBA training argue that in general TBAs have low literacy levels, making them unlikely candidates for traditional classroom training and that it is much easier for them to forget what they have been taught. It has been argued elsewhere that once TBAs receive training, their communities feel that they have received official recognition and the blessings of government to manage both normal and complicated deliveries.[13] It has also been reported that some trained TBAs refrain from referring mothers with complications until the very last minute, because they are afraid of losing status in the communities that they serve, and that assisting a particularly difficult delivery where both the mother and baby survive is a credit to them.[9,13] However, it cannot be argued that TBAs have no role at all in preventing the prevailing high levels of maternal morbidity and mortality especially in underserved rural communities with poor access to health facilities that provide maternal health care services. A study conducted in Zimbabwe, for example, established that training TBAs resulted in 32% reduction of maternal deaths in rural areas and 28% in urban areas.[12]

The findings of this study show that training does make a difference in TBAs' awareness of high-risk pregnancies and referral practices. Training TBAs should therefore continue to be one of the strategies used in Tanzania to reduce the first delay in the three delays model developed by the Prevention of Maternal Mortality Network, to explain factors of maternal death focusing on the interval between the onset of an obstetric complication and its outcome, i.e., reduction in the delay to seek care.[18] While we lay emphasis on training TBAs, we do not undermine the importance of having well equipped and well staffed health facilities that are capable of providing emergency and comprehensive obstetric care, so that all high-risk mothers identified by TBAs can receive the appropriate care that they need.

Conclusion

Majority of the TBAs in Mkuranga have not participated in any organised TBA training programme and their level of knowledge of

danger signs during pregnancy and delivery is very low. Trained TBAs were, however, more knowledgeable on danger signs and were more likely to refer mothers with complications to a health facility than untrained TBAs.

Recommendations

- There is need to provide training to all TBAs in Mkuranga District on the recognition of danger signs during pregnancy and delivery, the importance of prompt referral and first aid in case a complication occurs while transporting the mother to a health care facility.
- Frequent supportive supervision should be provided to all trained TBAs to ensure that they adhere to training guidelines.
- Training and supervision of TBAs should be in tandem with strengthening of the referral system and ensuring that all women have close access to a referral facility capable of providing emergency obstetric care.

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