

# A population-based survey of obstetric practices among rural women in the Bizana district, Transkei

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**Objective.** To determine for the Bizana district, Transkei, the proportion of deliveries that occur at home, home delivery practices, the proportion of women with high-risk pregnancies delivered at home, attendance for antenatal care at the health services and at traditional healers, and the reasons why mothers choose to deliver at home or in the health services.

**Design.** Questionnaire survey.

**Setting.** Rural community, South Africa.

**Participants.** Two hundred women from randomly selected clusters, obtained from a multistage random sampling process.

**Main outcome measures.** Place of delivery, home delivery practices and antenatal care for the most recent delivery (within the previous 5 years).

**Results.** Two-thirds had delivered at home and one-third within the health services. Of those who delivered at home, 62 (47%) were alone at the time of delivery while the remainder were assisted by a close relative or neighbour; 38% had one or more risk factors for obstetric complications. Ninety-seven per cent attended at least once for antenatal care. Home delivery practices and reasons for place of delivery are described.

**Conclusions.** Antenatal care should include education about the home management of a normal childbirth. Waiting areas for mothers should be established at hospital level for high-risk pregnant mothers.

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The magisterial district of Bizana, with a *de facto* population of 140 640 (1985 census),<sup>1</sup> is a rural district situated in north-eastern Transkei. Two hospitals and 9 permanent clinics provide obstetric services for approximately 6 000 new antenatal patients and 2 000 deliveries per annum.

It has been reported that only 31% of deliveries in rural Transkei take place within the health services; 86% of women attend at least once for antenatal care provided by

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the health services, and 15% attend traditional providers of antenatal care.<sup>2</sup>

Traditional practices among Pondo,<sup>3</sup> Zulu<sup>4,5</sup> and Pedi<sup>6</sup> women with regard to pregnancy and birth include secrecy about pregnancy, the use of *isihlambezo* (see Appendix for definition of terms) to facilitate delivery, birth in a kneeling or squatting position, and the presence of a traditional birth attendant and close family members. Chalmers,<sup>6</sup> however, states that these practices have almost all been discarded.

In order to optimise maternal and child health, information is needed on obstetric practices and the use of associated health services. For this reason, a study was undertaken in the Bizana district to determine the proportion of deliveries that occur at home, the proportion of high-risk pregnancies delivered at home, practices at home deliveries, the proportion of women who attend for antenatal care at the health services and at traditional healers, and the reasons why mothers choose to deliver at home or in the health services.

## Subjects and methods

From February to April 1988, a questionnaire was administered to a sample of 200 women in the Bizana magisterial district. A multistage random sampling process was used to obtain 25 clusters with 8 respondents each. The study population consisted of all women who delivered (liveborns and stillbirths) in the 5-year period from 1 January 1983 to 31 December 1987. Enquiry was made into the obstetric history and practices of each mother with reference to her last-born.

The methodology for cluster selection was decided upon for the following reasons. Much of the population of the district lives in scattered homesteads and not in villages. It was therefore logically difficult to use aerial photographs as a basis for random household selection.

It was decided that the home of a randomly selected sub A scholar would be the basis of a cluster. The sub A school roll was chosen because of the likelihood that the majority of children attend for this class, thus minimising bias in the method of household selection. A primary school enrolment of 83.9% for the age group 5 - 14 years in the Bizana district was derived from the 1985 census<sup>1</sup> and school enrolment data.<sup>7</sup>

The Bizana district has 25 administrative areas. Of these, thirteen were chosen at random. Two areas were excluded: (i) the Bizana municipality (population 621) because it is non-rural; and (ii) the area containing a large hotel complex because its population comprises many young, single, well-educated people who have immigrated from other regions.

In each area selected, one school was chosen at random. In each school two pupils were selected from the sub A roll (with the exception of one school where only one pupil was chosen) by means of a table of random numbers. Twenty-five pupils were thus selected. The house where each pupil lived was the first household visited. The next nearest household was then visited, and then the next nearest to the latter until 8 women had been interviewed. In each cluster, 1 woman per household (who met the study criteria) was included.

## Results

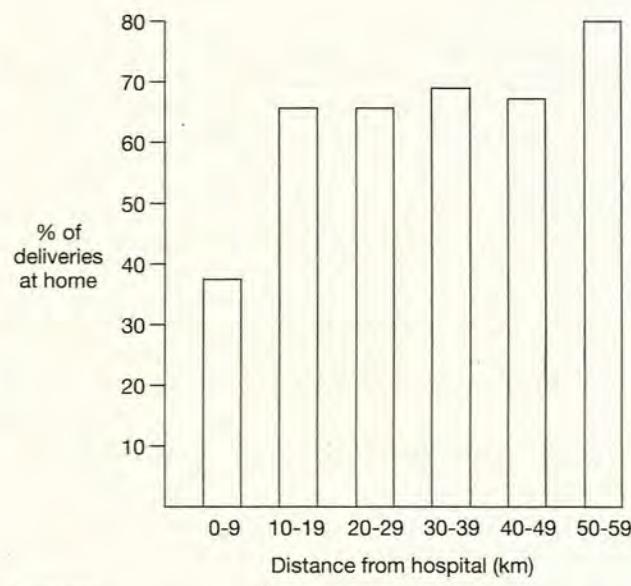
The study sample was 200. All women selected agreed to be interviewed. Table I shows the age, occupation and educational status of the study sample.

**Table I. Age, education and occupation of study sample (N = 200)**

Age (yrs)*	Education	Occupation
< 20 —	Never schooled — 39 (19.5%)	At home — 179 (89.5%)
20 (10%)		
20 - 29 —	Sub A - Std 1 — 21 (10.5%)	Working — 17 (8.5%)
30 (46%)		
30 - 39 —	Std 2 - Std 4 — 67 (33.5%)	Scholar — 4 (2%)
65 (32.5%)		
≥ 40 —	Std 5 - Std 7 — 54 (27%)	
18 (9%)	Std 8 - Std 10 — 16 (8%)	
	Higher degree — 3 (1.5%)	

\* Age was not recorded for 5 (2.5%) of the sample.

One hundred and thirty-two (66%) delivered at home, 61 (30.5%) in hospital, 5 (2.5%) in clinics and 2 (1%) on the way to hospital. The nearer they were to hospital, the greater the chance of delivery there. Fig. 1 shows the percentage of home deliveries relative to the distance from hospital.



Graph points						
Distance from hospital (km):	0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59
No. of deliveries:	16	56	40	40	16	32
No. of home deliveries:	6	36	26	28	11	25
% of home deliveries:	37.5	64.3	65	70	68.8	78.1

**Fig. 1. Home deliveries and distance from hospital.**

A total of 86 (43%) had one or more risk factors (Table II). Of these, 50 delivered at home. The most common risk factor was grand multiparity (28%) which was defined as 5 or more previous deliveries of 8 months' gestation or more.

None gave a history of confirmed diabetes or renal disease. Premature labour as a risk factor was not included, as mothers' knowledge of dates and birth weights could not be relied upon. Premature rupture of membranes was also excluded because of the difficulty in differentiating liquor

amnii from vaginal discharge. A past history of antepartum haemorrhage, postpartum haemorrhage and/or retained placenta was excluded from analysis as working definitions were difficult to define for the study.

**Table II. Risk factors and place of delivery**

Risk factor	Place of delivery		
	Home (N = 132)	Health services* (N = 68)	Total (N = 200)
Past medical history	7 (5%)	2 (3%)	9 (5%)
Past obstetric history			
Grand multiparity	38 (29%)	17 (25%)	55 (28%)
Caesarean section	2 (2%)	11 (16%)	13 (7%)
Forceps or vacuum delivery	1 (1%)	2 (3%)	3 (2%)
Stillbirth	7 (5%)	3 (4%)	10 (5%)
Early neonatal death	4 (3%)	2 (3%)	6 (3%)
Last pregnancy			
Multiple pregnancy	5 (4%)	3 (4%)	8 (4%)
Hypertension	2 (2%)	6 (9%)	8 (4%)
Abnormal lie (in the last month of pregnancy)	2 (2%)	3 (4.5%)	7 (4%)

\* Health services deliveries include deliveries in hospitals, clinics and on the way to hospital.

There were 7 sets of twins and 1 set of triplets. There were 4 stillbirths (2 were from a twin pregnancy) and 4 early neonatal deaths (2 were from the triplet pregnancy). The perinatal mortality rate was 38 per 1 000.

### Antenatal care

Antenatal care provided by the health services was attended at least once by 194 (97%) women.

A total of 101 (50.5%) women attended one or more traditional health care providers during pregnancy. These carers included herbalists, patent medicine vendors, *amaggira* (diviners) and faith healers.

### Use of traditional medicines during pregnancy

*Ishlambezo* was used by 45 (22.5%) women during pregnancy. Forty-one used it from the 7th month of pregnancy onwards. *Imbelikisane* was used by 64 (32%). Fifty (78%) women used it to accelerate labour while 12 (19%) used it to induce labour. They did not know the composition of these medicines.

### Home delivery practices

Table III lists the type and frequency of home delivery practices. In the 70 deliveries where birth attendants were present, 37 (53%) were mothers or mothers-in-law while the remainder were close relatives or neighbours.

In 46 cases where placental delivery was not spontaneous, 24 women (18%) blew into a bottle and 19 (14%) had the placenta pulled out. The instruments used to cut the umbilical cord were most often razors, but grass reeds, scissors and in 1 instance a piece of wood were also used.

**Table III. Type and frequency of home delivery practices (N = 132)**

Type of practice	Frequency (%)
Ambulation during first stage	67 (51)
Intrapartum palpation	12 (9)
Fundal pressure during labour	5 (4)
Per vaginal examination	—
Episiotomy	—
Alone at delivery	62 (47)
Kneeling position at delivery	121 (92)
Spontaneous placental delivery	86 (65)
Cord severed after placental delivery	128 (97)
Cord left untied	59 (45)
Soil/rodent faeces applied to cord	13 (10)
Burial of placenta	122 (92)

Antiseptics and solutions presumed to be non-toxic (water and breast-milk) were applied to the umbilical cord in 33 (25%) cases. Mice and rat faeces, potentially tetanogenic, were applied in 13 (10%) cases. Traditional medicines of unknown composition were applied in a further 48 (36%) cases.

Of the 132 women who delivered at home, 76 (58%) stated that they had intended to deliver in hospital. However, 64 said that the onset of labour had prevented this.

### Deliveries in the health services

Only 69 (34.5%) of the 200 women sampled gave reasons for why so few deliver in clinics. These reasons included the absence of doctors, deficiencies in equipment and medicines, and poor lodging facilities.

### Discussion

The study shows that most deliveries in the Bizana district take place at home and that most women attend the health services at least once for antenatal care. These findings corroborate those of Irwig and Ingle<sup>2</sup> for the whole of Transkei.<sup>2</sup> The percentage of home deliveries in the Bizana district is high compared with other districts in southern Africa. In the Mosvold health ward of KwaZulu<sup>8</sup> and the Hewu district of Ciskei,<sup>9</sup> 46% and 20% of deliveries respectively took place at home.

Only 2.5% of deliveries took place in clinics. Reasons given included previously identified material constraints that exist at many clinics.<sup>10</sup> It is important to improve these so as to reduce pressure on hospitals.

While most women stated that they intended to deliver in hospital, the majority of deliveries took place at home. The main reason given was that they waited at home until labour began and then decided to deliver there as they would not have had time to get to hospital. This is supported by the greater proportion of hospital deliveries the nearer the mothers were to hospital.

Many of those who delivered at home were at high risk of obstetric complications. This highlights the need for education at antenatal clinics that emphasises obstetric risk factors and encourages women at risk to deliver in hospital.

Waiting areas for mothers should be developed at the two district hospitals so that all mothers, particularly those at high risk, can deliver at the hospitals. The rationale for waiting mothers' areas is well accepted.<sup>11</sup> Many obstetric problems arise *de novo* in pregnancies classified antenatally as low-risk, and the infrastructural constraints in rural Transkei (poor roads, dispersed homesteads, few telephones and scarcity of transport) may delay transfer to hospital and result in maternal deaths. While there are no reliable maternal mortality figures for Transkei, 5 maternal deaths per year were notified in the Bizana district from 1985 until 1988 for an estimated 6 000 deliveries per annum. This gives a minimum crude maternal mortality rate of 83 per 100 000, which is comparable with the figure of 83 per 100 000 obtained by Boes<sup>12</sup> for the southern African region in the period 1980 - 1982.

Almost half of all home deliveries were unattended. Where birth attendants were present, they were relatives or neighbours. These facts suggest that home births, unlike births in the health services, are not perceived to require skilled assistance. It is recommended therefore that antenatal care include education about the home management of a normal childbirth.<sup>13</sup>

Traditional medicines were used predominantly in the third trimester, i.e. outside of the critical period of fetal organogenesis. However, the induction and augmentation effects of *imbelikisane* may induce uterine hypertonus<sup>4</sup> and its use should be discouraged pending further local research into its effects.

Harmful practices at home deliveries should be discouraged. These include application of mice and rat faeces and red soil to the umbilical cord, fundal pressure during labour and not tying off the umbilical cord. Helpful practices that should be encouraged include walking around in the first stage of labour, delivering in a kneeling position<sup>14</sup> and blowing into a bottle (Valsalva manoeuvre) for delivery of the placenta.

Some women who delivered in hospital expressed dissatisfaction with certain practices. It is important for hospitals to address traditional values and demands of patients, particularly delivery in a kneeling position.

Limitations of the study included the use of nurses as interviewers; mothers may therefore not have disclosed their traditional practices and perceptions of the health services fully. Birth attendants were not interviewed, so an in-depth appraisal of their skills and practices was not made. The study was based in one magisterial district and the results may therefore not be generalisable to Transkei as a whole. Finally, the sampling method did not conform to the standard methodology of the World Health Organisation's Expanded Programme on Immunisation<sup>15</sup> because of logistic constraints. Hence, confidence limits have not been defined for the various estimates provided.

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#### REFERENCES

- Transkei Population Census 1985. Vol. 2. Umtata: Department of Commerce, Industry & Tourism, 1987: 98.
- Iwig LM, Ingle RF. Childhood mortality rates, infant feeding and use of health services in rural Transkei. *S Afr Med J* 1984; **66**: 608-613.
- Hunter M. *Reaction to Conquest*. Abridged ed. Cape Town: David Philip, 1979: 150-159.
- Larsen JV, Msane CL, Monkhe MC. The Zulu traditional birth attendant. *S Afr Med J* 1983; **63**: 540-542.
- Gumede MV. Traditional Zulu practitioners and obstetric medicine. *S Afr Med J* 1978; **53**: 823-825.
- Chalmers B. Cross-cultural obstetrics. Black women's birth experiences: changing traditions. *J Psychosom Obstet Gynaecol* 1987; **6**: 211-224.
- Transkei Development Information. Section 10 — Community and Social Services. Johannesburg: Data Bank, Development Bank of Southern Africa, 1987: 37.
- Buchmann E, Kritzinger M, Tembe E, Berry D. Home births in the Mosvold health ward of KwaZulu. *S Afr Med J* 1989; **76**: 29-31.
- Yach D, Katzenellenbogen J, Conradie H. Ciskei infant mortality study: Hewu district. *S Afr J Sci* 1987; **83**: 416-421.
- Solleder G. Material constraints at rural clinics in Transkei. *S Afr Med J* 1987; **72**: 140-143.
- Larsen JV. Obstetrics in a rural community. In: Philpott RH, Ross SM, Axton JHM, eds. *Obstetrics, Family Planning and Paediatrics*. Pietermaritzburg: University of Natal Press, 1986: 11-17.
- Boes EGM. Maternal mortality in southern Africa, 1980-1982. *S Afr Med J* 1987; **71**: 158-160.
- Self-Help in Health*. Pretoria: Department of National Health and Population Development, 1981: 28-34.
- Hofmeyr GJ, Sonnendecker EWW. The place of 'active birth' in present-day obstetric practice. *S Afr Med J* 1985; **68**: 473-475.
- Henderson RH, Sundaresan T. Cluster sampling to assess immunisation coverage: a review of experience with a simplified sampling method. *Bull World Health Organ* 1982; **60**: 253-260.

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## Appendix. Definition of terms

**A. High-risk pregnancy.** When classified as at high risk, a woman is expected to deliver in hospital. Women with one or more of the following criteria were defined as at high risk:  
*(i) Non-obstetric complications* — cardiac disease, chronic renal disease, diabetes, epilepsy, chronic chest disease (especially tuberculosis and asthma), physical handicap (e.g. kyphosis, limp or paraplegia), and hypertension;  
*(ii) past obstetric history (prior to the last delivery)* — grand multiparity, hypertension or eclampsia, forceps or vacuum delivery, caesarean section, postpartum haemorrhage, retained placenta, stillbirth, and early neonatal death;  
*(iii) obstetric history (with reference to the last delivery)* — antepartum haemorrhage, preterm labour, preterm rupture of membranes, malpresentation in the last month of pregnancy, and multiple pregnancy.

**B. Traditional birth attendant.** This was defined as a person who is not medically qualified and who assists at home deliveries. She or he may provide antenatal care. *Isihlambezo* is a traditional medicine, the constituents of which vary, and which is taken specifically during pregnancy to improve the health of the mother and/or baby.<sup>3</sup> *Imbelikisane* is a traditional medicine, made from various roots or herbs, or the body parts of a monkey; it stimulates contractions to induce or accelerate labour.<sup>4</sup>