

# Utilisation of maternity services by black women in rural and urban areas of the Orange Free State

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An epidemiological survey was undertaken to evaluate the utilisation of maternal services for black women in the Orange Free State. Two hundred and forty clusters were selected from the rural (farms) and urban (local authorities) black population and eight households were interviewed in each cluster. Information was gathered from 237 rural women (from 959 households) and 168 urban women (from 926 households) who had delivered a baby or aborted during the preceding year. Antenatal care was received by 71% of the rural women and 87% of the urban women. Rural women delivered at home in 60% of cases while 37% delivered in hospitals. Only 23% of urban women delivered at home while 67% of their deliveries were conducted in hospitals. Nurses supervised deliveries in both instances in more than 60% of cases, but in rural areas traditional midwives managed 26% of the confinements.

The conclusions are that the maternity service was largely provided by nurses and was predominantly limited to hospitals and homes. It is recommended that the quality of service be upgraded and more emphasis placed on midwife obstetric units.

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Adequate maternal care is a basic right of every woman. Such care is provided by both trained and lay health care workers, and facilities for providing the service should be distributed equally throughout the community. In many parts of the world, including South Africa, adequate services of this nature are in operation. One example in South Africa is the midwife obstetric unit structure in Cape Town.<sup>1</sup> In the Orange Free State (OFS) a network of hospitals exists throughout the province with a provincial hospital in virtually every major town and city.<sup>2</sup> However, owing to the rural

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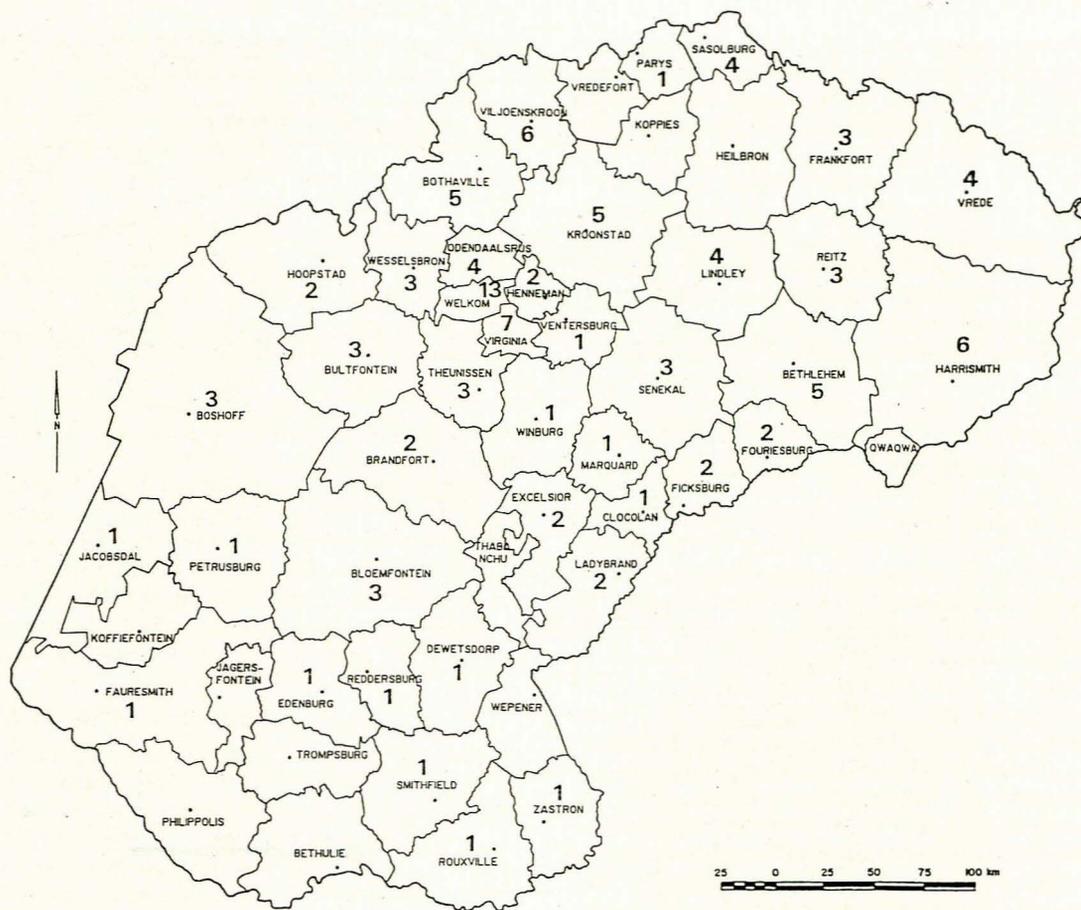


Fig. 1. Distribution of the 120 clusters in rural OFS. The number in each district indicates the number of clusters per magisterial district.

nature of this province, with people often living far from the nearest hospital, the question arose as to what the availability and utilisation of maternal services were in the OFS. This study was undertaken to determine where and how mothers receive their care, and to make recommendations for future planning.

## Patients and methods

Black women living in rural areas (farms) as well as in urban areas (local authorities) formed the study population. A multi-stage sampling method was used to select 120 rural (Fig. 1) and 120 urban (Fig. 2) clusters. Eight adjacent households had to be interviewed in each cluster. One adult capable of providing information about the rest of the household was considered the household respondent and used as a proxy to collect the required information.

For the rural part of the study, a list containing the black rural population size for each district in the OFS according to the 1985 Census was compiled. After the districts had been weighted for population size, 120 clusters were systematically selected from the magisterial district population list.

To identify a starting point in each cluster, a 1:250 000 map outlining all the farms in the selected district was obtained. A point in millimetres was selected using simple random selection on each of the X and Y axes.

Perpendicular lines were drawn from the selected X and Y points and the farm on which the lines intersected was the starting point of that cluster. This procedure was repeated if more than one cluster needed to be selected for a specific magisterial district.

The black household nearest to the farmhouse (or the farmhouse belonging to the oldest farmer if there was more than one farmhouse) was the starting point within the cluster. The next household to be interviewed was the one nearest to the first one. If there were two households equidistant from the first, the interviewer faced the front door and selected the household nearest to her left. If the selected farm consisted of less than eight households, the next farm, nearest by road, was visited.

To increase the response rate, farmers had been contacted beforehand to ensure that respondents were at home during the visit. If there was no adult at a dwelling during a visit, the next nearest household was selected for interviewing.

For the urban section of the study, the study population was the black population living in towns and cities, including squatter areas, under the jurisdiction of local authorities. A similar method of multi-stage cluster sampling, using health authority estimates of the population, was applied as described above for the rural section of the study. The starting point within each town was selected similarly, using a map of the town. The house nearest to the starting point was approached first for interview, followed each time by

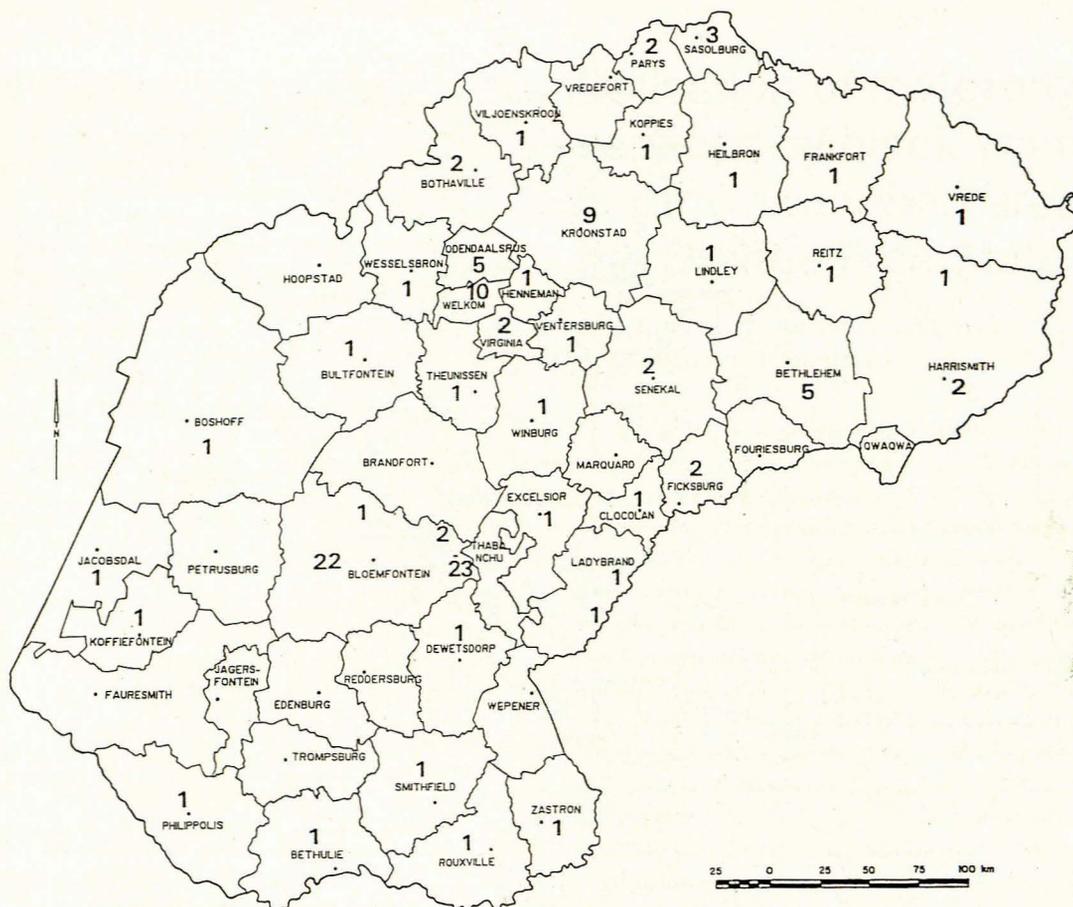


Fig. 2. Distribution of the 120 clusters in urban OFS. The number in each district indicates the number of clusters per magisterial district.

the house or dwelling physically closest to the previous one. If the next nearest houses were equidistant from the house just visited, the interviewer faced the midpoint between the next two nearest houses and selected the house on her left. When a map was not available (e.g. in squatter areas) a random starting point was selected by standing at the centre of the area, selecting a direction at random, counting the houses from the centre to the boundary and choosing a house at random.

The interviewers were professional nurses, thoroughly trained both in the method of interviewing and in the use of the questionnaire. A structured questionnaire was used and the respondents were addressed in their native language. This study, conducted in 1991, was approved by the Ethics Review Board of the Faculty of Medicine, University of the Orange Free State.

## Results

### Results in rural areas

Information was gathered from 959 households out of an expected total of 960. The respondents who answered the questionnaire on behalf of the households were mainly women (98%). Their median age was 33,5 years with a minimum of 14 years and a maximum of 87 years. The median education level was Std 2.

Of the 237 women who gave birth in the preceding year 24% were teenage mothers (under 20 years of age). Their age distribution is given in Table I. The crude birth rate was 41/1 000 (the number of live births per 1 000 of the population) and the fertility rate was 163/1 000 with the denominator all women aged 15 - 49 years in the surveyed households. Antenatal care had been provided to 169 (72%) of them. The median number of antenatal visits was 3 with a range of 1 to 10 (this information was gained from 83% of women who had received antenatal care where the household respondents could provide accurate information). Antenatal care was provided by a private doctor in 28% of cases, at a hospital in 25%, at a fixed clinic in 24%, at a mobile clinic in 22%, and in 1% of cases by a traditional midwife.

Table I. Age distribution of rural and urban women who had delivered during the preceding year

Age (yrs)	Rural		Urban	
	No.	%	No.	%
< 20	55	23,2	23	13,7
20 - 29	126	53,2	85	50,6
30 - 39	46	19,4	52	30,9
40 - 49	5	2,1	6	3,6
Unknown	5	2,1	2	1,2
Total	237	100,0	168	100,0

Table II. Crude birth rates for selected southern African countries in 1991

Country	Crude birth rate (annual births per 1 000 population)
Botswana	47
Kenya	54
Lesotho	41
Malawi	53
Mozambique	45
Namibia	44
South Africa	32
Swaziland	47
Zaire	44
Zimbabwe	42

The majority of deliveries took place either at home (60%) or at a hospital (37%), with only 2% in a clinic ('unknown' in 1%). A family member was responsible for supervising the delivery in 32% of cases, a nurse in 31%, a traditional midwife in 26% and a doctor in only 9% ('other' in 2%). Seven women had either a miscarriage or a stillbirth. The stillbirth rate was therefore 74/1 000 deliveries per year.

### Results in urban areas

Information was gathered from 926 households out of an expected total of 960. Again, the majority of household respondents (95%) were women. Their median age was 32 years, with a minimum of 15 years and a maximum of 97 years. The median education level was Std 5.

Of the 168 women who gave birth in the preceding year 14% were teenagers (Table I). The crude birth rate was 34/1 000 and the fertility rate 117/1 000. One hundred and forty-six women (87%) received antenatal care on at least one occasion. The median number of antenatal visits was 4 with a range of 1 to 18 (this information was gathered from 51% of the women who could provide accurate information). The antenatal care was provided at a hospital in 33% of cases, at a fixed clinic in 36%, at a mobile clinic in 18%, by a private doctor in 12% and by a traditional midwife in 1%.

The majority of deliveries took place in a hospital, namely 67%, while 23% took place at home and 9% in a clinic (1% 'other unspecified'). Nurses were responsible for supervising the deliveries in 66% of cases, family members in 14%, doctors in 12% and traditional midwives in 5% ('other' in 3%).

Eight women (38%) had miscarriages and 13 had stillbirths. The stillbirth rate was therefore 67/1 000 deliveries per year.

### Discussion

This was the first epidemiological survey of maternity services for black women encompassing the entire OFS. Important results that evolved from this survey were the provision of antenatal care, the conducting of deliveries, the crude birth rate and the stillbirth rate. Another important aspect was the proportion of teenage pregnancies.

The proportion of pregnant women under the age of 20 years in this study was large (24% rural and 14% urban). A similar survey on general health aspects was conducted in 1989.<sup>3,4</sup> In that study the proportion of pregnant teenagers in rural areas was 18% and 11% in urban areas. The young

mean age of the black population, particularly in the rural north-western, north-eastern and eastern OFS, which is about 15 years at present, can lead to an increase in teenage pregnancies in the future as significantly more young females enter the 16 - 19-year interval.<sup>5</sup>

It was encouraging that more than 70% of the rural and almost 90% of urban women in this study received antenatal care, although the median number of attendances was low. Nurses accounted for more than 70% of the instances of antenatal attention to pregnant black women, which is not surprising as more than 70% of doctors in South Africa are in private practice.<sup>6</sup> Traditional midwives played an insignificant role in this respect.

A striking finding was the very small proportion (less than 10%) of deliveries that took place in clinics (midwife obstetric units). This is a clear reflection of the fact that maternity services in the OFS are overwhelmingly hospital-based.<sup>2</sup> The large proportion of home deliveries (60%) in rural areas is not unexpected if one considers the vast distance to the hospitals. However, only two-thirds of deliveries in urban areas took place in clinics, demonstrating the need for midwife obstetric units in these areas as well.

Deliveries were managed by nurses in almost a third of cases in rural areas and two-thirds in urban areas. In rural areas, the attending family member (32%) and traditional midwife (26%) played significant roles, but in urban areas their role was insignificant. The stillbirth rate was extremely high in both rural and urban populations. Although recall bias and proxy reporting could have attributed to inflated figures, it can be assumed that these figures revealed a need for upgrading maternal services in the OFS.

What are the challenges for the future? Unless there is a radical change in the medical policy in this country, doctors will not become significantly involved in maternal services for the black population, as the majority of these women cannot afford private medical services. The professional nurse will remain the cornerstone of maternity services in the foreseeable future. There is an urgent need to upgrade the service provided by the professional nurses. In addition, the establishment of more midwife obstetric units, particularly in rural areas, is urgently needed. The provincial administration and municipalities, in co-operation with the University of the Orange Free State, should plan and work together in achieving these goals.

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