



## Ethnic Variation of Twinning Rates in Malawi

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**Abstract.** Malawi is a country in South-East Africa with a population of approximately 10 million, over 95% of whom are negro of Bantu origin. The country is divided into 24 administrative districts, each of which provides details of births which are compiled centrally at the Ministry of Health. Using data reported annually by health facilities from 1987-1990, most districts had twinning rates in the range 16 to 24 per 1000 maternities, figures consistent with those of other negro populations in Africa. Two adjoining districts (Rumphu and Mzimba) had rates which were considerably higher, almost 30 per 1000. Although ethnic origin is not recorded in the latest Malawi census, language spoken in the home, which was last recorded in 1966, can be used as a proxy. Rumphu and Mzimba are the only districts with an overwhelming majority of Tumbuka speaking population. These people, who are of both Tumbuka and Ngoni ethnic origin, therefore have an unusually high twinning rate (29.57 per 1000 maternities). The rate for the main ethnic group in Malawi, the Chewa people, was 21.21 per 1000. The district of Thyolo, with a mixed ethnic population, had by far the lowest rate (13.75 per 1000).

**Key words:** Twinning rates, Ethnic variation, Africa

### INTRODUCTION

Negro twinning rates are known to be generally higher than those from Caucasian and Mongoloid populations. However, only in Nigeria has the incidence of twins been extensively studied for different Negro ethnic groups within a single country. The Yoruba of Nigeria have a twinning rate of well over 40 per 1000, the highest reliably recorded rate in the world, and above other ethnic groups in Nigeria [6].

Malawi is located in South-East Africa, a country of approximately 10 million people spread over a land area of 94,000 square km. The population is of Bantu origin, within which a number of distinct ethnic groups can be distinguished. Information on births, including twins, is collated centrally and it is therefore possible to investigate the extent

to which twinning rates vary between the ethnic groups. Bantu twinning rates in the 1950s and 1960s in Central and Southern Africa were estimated to average around 20 to 25 per 1000 maternities [1], but there is an absence of reliable recent information.

## MATERIALS AND METHODS

The availability and quality of data relating to births and ethnic group need first to be assessed. The Ministry of Health in Malawi obtains data on births from two main sources; those occurring in hospitals and health centres and those taking place at home, assisted by a traditional birth attendant or a relative. Data from the two sources are collated separately, but only the health facility data contains information on multiple births. In 1992, 42.6% of births in Malawi were estimated to have taken place at home with 55.5% in health facilities [2]. According to the 1987 census, 312,412 women gave birth in the 12-month period prior to the census. Assuming the 1992 percentages also apply to 1987, then approximately 173,000 deliveries took place in health facilities in the 12 months prior to the census. In 1987, 153,864 such deliveries (89%) were notified to the Ministry of Health. In other words, although about 43% of births took place at home, the notification of those occurring in health facilities was reasonably complete. Twin pregnancies are usually transferred to hospital only if complications are anticipated. Thus, twinning rates may be inflated through hospital bias, though probably only slightly. This bias should operate throughout the country and should therefore have minimal influence on a comparison between ethnic groups.

The data on live and still births, including twin births, was made available by the Ministry of Health Statistics Unit. These data were tabulated for each of the 24 administrative districts of Malawi and relate only to the births occurring in hospitals and health centres. The four most recent years for which data was available were selected for analysis. These years, 1987-1990, provided information on over 500,000 births, enough to give reliable twinning rates. The four years were combined and twinning rates were calculated for each district, together with standard errors. The data was not available by age of mother, nor the number of previous maternities and the rates could not, therefore, be standardized for maternal age or parity. The 24 districts are grouped into three regions which subdivide the country both ethnically and politically. Table 1 is based on the 1987 census and shows that there is little difference between the maternal age distributions of the three regions [4]. This suggests that standardization of the twinning rates by maternal age would have had little effect.

No data on ethnic or tribal origin was collected in the Malawi censuses of 1977 and 1987. In the 1966 census, however, Question 9 asked for information on the language usually spoken at home. The rationale for this question was that it "helps separate the population into groups on the basis of the cultural characteristics of the families" [3]. Although data relates to 1966, twenty years prior to the calculated twinning rates, many districts were dominated by a single language group. Significant population shifts, other than to the main urban centres, have not occurred during the intervening period. The major languages of each district were extracted from Table 20 of the 1966 census. These were then compared with the overall twinning rates of each district in order to investigate possible variations in relation to ethnic origin.

**Table 1 - Maternal age distribution in Malawi, 1987**

Maternal age distribution	Region		
	Northern	Central	Southern
Maternal age			
10-19	15.4%	13.3%	15.7%
20-29	52.1%	50.6%	48.6%
30-39	23.8%	26.7%	26.1%
40 +	8.6%	9.4%	9.5%
Median age	26.0	26.1	26.8

**Table 2 - Twinning rates in Malawi by district, 1987-1990**

Region and district	Maternities		Twinning rate per 1000	S.E.	Main language groups (1966)
	Total	Twin			
<b>Northern</b>					
Chitipa	8946	182	20.34	1.49	Lambya (37%), Sukwa (32%)
Karonga	11583	255	22.02	1.36	Nkonde (46%), Tumbuka (36%)
Nkhatabay	14512	263	18.12	1.11	Tonga (70%)
Rumphi	13881	414	29.82	1.44	Tumbuka (97%)
Mzimba	35766	1054	29.47	0.89	Tumbuka (95%)
<b>Central</b>					
Kasungu	24012	637	26.53	1.04	Chewa (62%), Tumbuka (37%)
Nkhotakota	14873	388	26.09	1.31	Chewa (82%)
Ntchisi	6343	122	19.23	1.72	Chewa 98%
Dowa	20118	471	23.41	1.07	Chewa (98%)
Salima	14333	314	21.91	1.22	Chewa (83%)
Lilongwe	74343	1526	20.53	0.52	Chewa (96%)
Mchinji	19594	411	20.98	1.02	Chewa (90%)
Dedza	34043	709	20.83	0.77	Chewa (89%)
Ntcheu	25171	489	19.43	0.87	Chewa (95%)
<b>Southern</b>					
Mangochi	27985	645	23.05	0.90	Yao (80%)
Machinga	37657	844	22.41	0.76	Yao (51%), Lomwe (24%)
Zomba	35515	747	21.03	0.76	Chewa (41%), Lomwe (29%), Yao (26%)
Chiradzulu	15332	305	19.89	1.13	Lomwe (38%), Chewa (36%), Yao (23%)
Blantyre	28605	475	16.61	0.76	Chewa (57%), Yao (23%)
Mwanza	11434	271	23.70	1.42	*
Thyolo	28367	390	13.75	0.69	Chewa (34%), Lomwe (32%), Kokola (24%)
Mulanje	48358	971	20.08	0.64	Lomwe (67%), Chewa (21%)
Chikwawa	18822	370	19.66	1.01	Chewa (52%), Sena (34%)
Nsanje	19176	410	21.38	1.04	Sena (73%)

\* Mwanza combined with Blantyre for language figures.

## RESULTS

Table 2 shows the twinning rates for the 24 districts as well as the main language spoken at home as recorded in the 1966 census. The two districts with the highest twinning rates (Rumphu and Mzimba) are the only two districts with an overwhelming Tumbuka speaking majority. The combined twinning rate of these two districts is 29.57 per 1000 with a standard error of 0.76 per 1000. A Tumbuka twinning rate for this area would thus have a 95% confidence interval of 28.08 to 31.06 per 1,000. It should also be noted that the district with the third highest twinning rate (Kasungu) also has a significant Tumbuka speaking population.

There are eight districts, all in the Central region, with a Chewa majority of at least 80%. The combined twinning rate for these districts is 21.21 per 1000 with a standard error of 0.32 per 1000. With the exception of Nkhotakota district, there is very little variation between the rates of these districts. The twinning rate for the remainder of Malawi comprising districts of mixed ethnic origin is 20.48 per 1000. Again there is little variation between districts, the exception being Thyolo which has by far the lowest rate in Malawi (13.75 per 1000).

## DISCUSSION

Throughout most of Malawi, the twinning rate is approximately 20 per 1000 maternities. This is in broad agreement with Bantu rates summarized by Bulmer and based on information obtained over 30 years ago. The main exception is in the districts of Rumphu and Mzimba where the twinning rates are much higher, nearly 30 per 1000. These two districts adjoin each other and are the only two districts in Malawi with an overwhelming majority (over 95%) of Tumbuka speaking inhabitants. Although not as high as for the Yoruba in Nigeria, Tumbuka speaking people have an unusually high twinning rate which is about 50% higher than neighbouring districts of Bantu origin.

The Tumbuka speaking population of Rumphu and Mzimba are descendents of two distinct tribal groups. In the middle of the 19th century, the invading Ngoni settled in the area, now part of Northern Malawi, occupied by the Tumbuka. The intermingling of the two groups brought about significant cultural changes for both. By 1900, the Ngoni had assimilated much of the Tumbuka lifestyle, including language, to the extent that the Ngoni language was "effectively dead" [5]. It is thus impossible to determine whether the high twinning rate is due to a genetic characteristic of one or both of the two ethnic groups, or to a factor determined by their lifestyle.

Rumphu and Mzimba are in the Northern district which has a slightly younger maternal age distribution than the rest of the country. Thus standardization of the twinning rate by maternal age would, if anything, increase the difference between the Tumbuka-speaking districts and the rest of Malawi.

The other main ethnic group, the Chewa, had a twinning rate similar to the remainder of the country. The only exception was the district of Thyolo, a tea-growing area in the Southern region, with a mixed ethnic population. There is no obvious explanation for the low twinning rate of Thyolo.

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