

HOUSEHOLD DETERMINANTS OF CHILD HEALTH AMONGST THE FULANI
~~INTRA-HOUSEHOLD VARIATION IN ILLNESS MANAGEMENT AND CHILD CARE IN~~
AND DUGON OF CENTRAL MALI.
~~RURAL MALI.~~

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FOR DIRIMBE.

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INTRODUCTION.

Demographers have given considerable thought to the relationships between women's education and socio-economic status and their effects on fertility and mortality declines within countries or communities, but little attention has been paid to how women's status varies within traditional societies, particularly at the household level (Kritz et al 1992). Much has been written about household variations in mortality and morbidity (DaVanzo 1984, Hill and Thiam 1988, Buvenic 1989, Berman 1989) and on the household/community interface in structuring social relations (Guyer 1989, Bruce 1989). These authors however, focus on individual characteristics which are known to influence child health such as the educational status or age of the mother, and fail to identify the effects of internal household dynamics and social inter-actions. Little research has been carried out to ascertain exactly how a woman profits from, or is denied access to, inter or intra-household consultative or financial resources or support, or how she may be aided or constrained in pursuing effective treatment strategies by her relationships with other members of her marital or natal family. The evidence from recent field research in rural Mali clearly indicates that illness treatment strategies and the daily care of children depend very much upon the household context and support structure within which they take place.

In addition, it is clear that many issues common to educated mothers such as control over household resources, increased feelings of self-worth and personal power (Ware 1984) can also be found amongst some women raising healthy children within uneducated populations, and are often a function of their position within the social structure, or within their household organisation.

The Fulani and Dogon populations under consideration have not yet begun to enter the fertility or mortality transitions and lack access to health or educational facilities which may precipitate health improvements. Environmental conditions, health beliefs and illness taxonomies and the use of health and educational infrastructures vary little between the two groups. It is therefore hypothesized that the main 'ethnic' differences in mortality and morbidity that are observed, are accounted for by contrasting patterns of household form and function, which lead to women occupying different social positions within their family situations.

The thesis will therefore identify differences in women's status and support systems within their households, and the pathways by which these affect their management of childhood illness episodes and their child care practices. 'Women's status' is often ill-defined and results in many terms or concepts having different connotations for different authors, making cross-cultural comparisons difficult and often meaningless (Oppenheim-Mason 1988). In this analysis, status and support categories are defined according to a woman's labor relationships with other female household members, usually based on the power or authority she assumes, or is subject to, when she marries into a household and into what is essentially a work relationship with her mother-in-law. Status here therefore, reflects the way that women differ from each other, rather than from men, in terms of their socio-economic and political power within their home environments. It is suggested that the more women are organisationally, if not physically separate in their own households, the greater their reliance on extra-household resources or on their own knowledge or intuition, and the more important their autonomy and control over their own time and labor if they are to deal with illnesses successfully.

As such status may change during the life time of an individual

woman, or during the life-cycle of an individual household, the effect this has on mothers' resources, knowledge and power for maintaining children's health or for adopting effective treatment procedures will be identified. The data provide therefore, what is essentially a 'snapshot' of individual women in particular households at a particular time. The social forces under consideration may change as marital processes unfold and the dynamics of individual households change with their fission, growth or reproduction. It will be shown however, that there is a need to incorporate intra-household variation into theories of the health transition, as it cannot be assumed that all members of a household have equal access to the social, health and economic resources that have been shown to be influential in triggering fertility and mortality declines elsewhere.

REPUBLIQUE DU MALI

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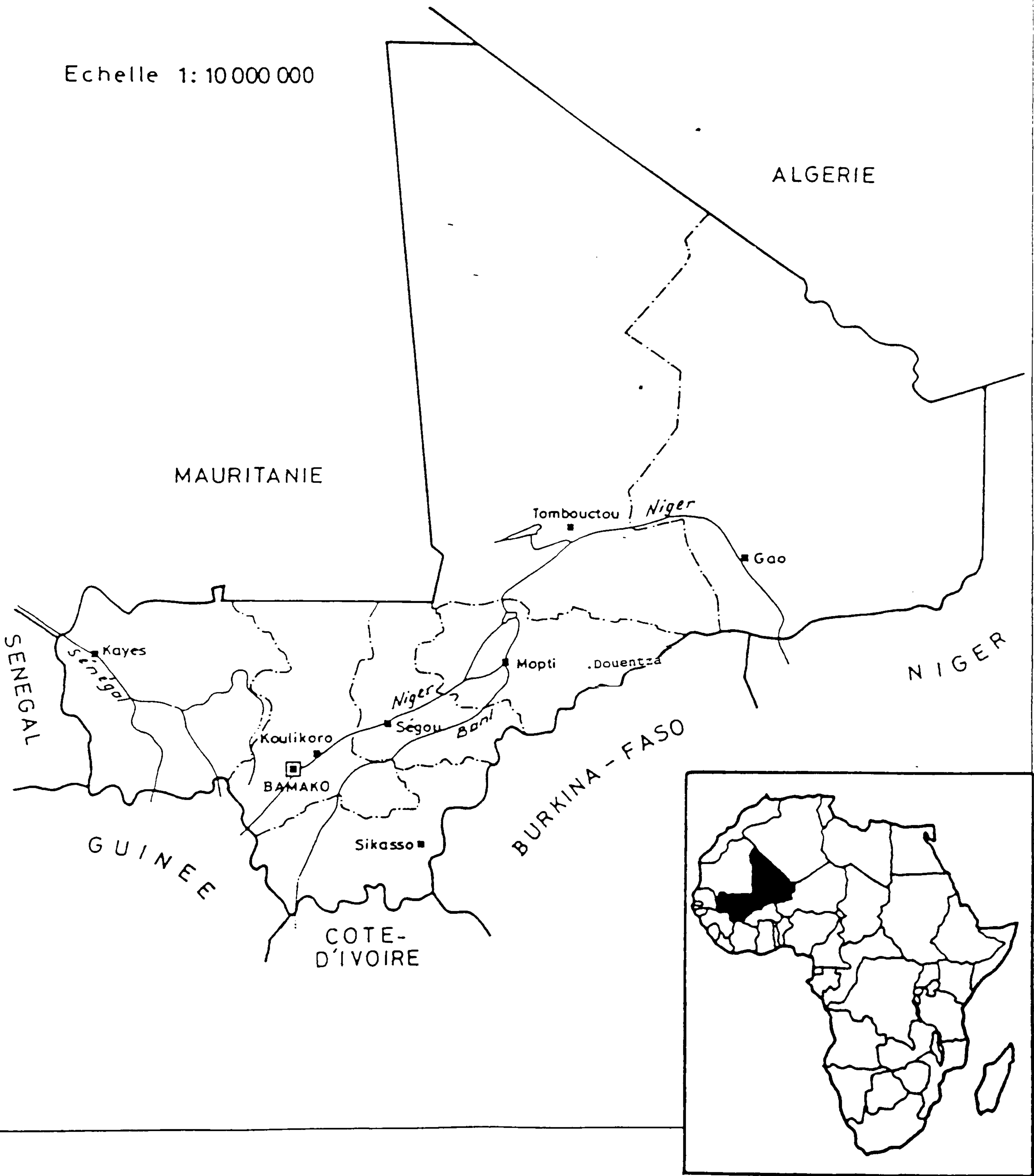
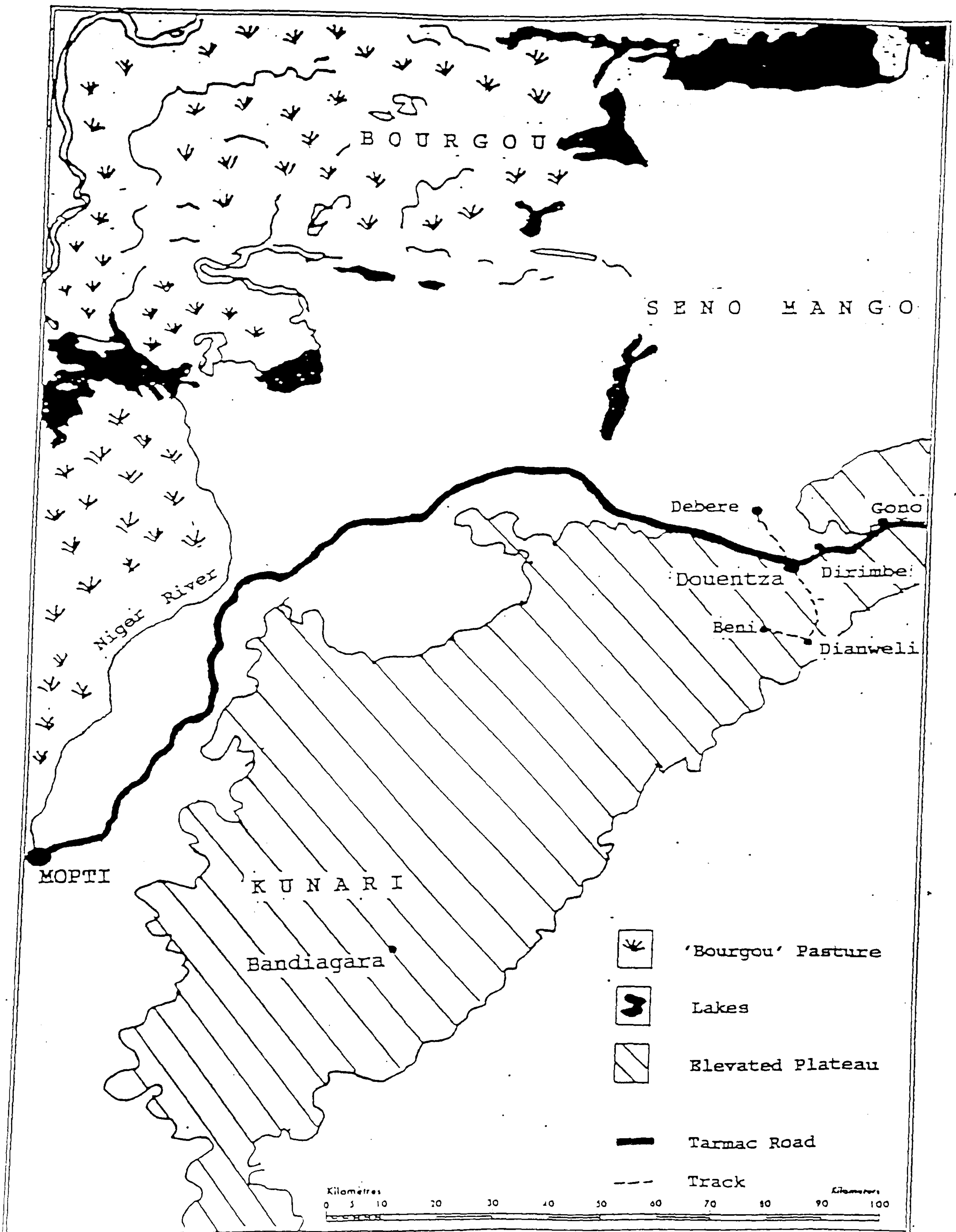


Figure 1.2 LOCATION OF STUDY SITE AND SAMPLE VILLAGES



CHAPTER I: ENVIRONMENTAL AND SOCIO-ECONOMIC DETERMINANTS OF HOUSEHOLD FORM AND FUNCTION.

1.1 ECONOMIC AND ECOLOGICAL BACKGROUND.

1.1.1 Mali.

The landlocked West African country of Mali (Figure 1.1), lies between 10 and 25 degrees north, bordered by Algeria, Niger, Burkina Faso, the Ivory Coast, and Mauritania. Mali has a population of 7,620,000 (1987 census) with a growth rate of 1.7% and covers a geographical area of 1,241,000 km² (UNICEF 1989). The low population density (6.2 per km²) is accounted for by the fact that much of the north of the country is composed of desert areas where rainfall is less than 20mm per year. The semi-arid Mopti region where the research took place, gives way gradually to a lush tropical environment further south towards the Sikasso region where rainfall totals 800-1400mm per annum.

Colonial control by the French from 1852 to 1960 saw the establishing of seven administrative regions each with its own capital, 42 'cercles' which were further divided into smaller 'arrondissements'. The field research took place, as shown in Figure 1.2, in and around the town of Douentza which is the administrative center of the 'cercle' of the same name.

The main characteristic of the Mopti region which has a population of around 1,300,000 (1987 census) is that despite the low annual rainfall totals (200-600mm), many local pastoral, fishing and cultivating communities' activities are orientated around the seasonal flooding of the Niger river which forms an inland delta. Relying on rains from Guinea which feed the river, the area is under water from July to November. As the waters recede, they reveal 'bourgoutières' - shallow basins filled with 'bourgou' (*echinochloa pyramidalis* or *echinochloa stagnina*) a

grass favoured by the Fulani pastoralists for grazing their cattle. Transhumance by the Fulbe (free cattle herding Fulani) from the Seno-Mango into the 'bourgou' or more recently into the pastureland of an area known as the 'Kunari' in the 'cercle' of Bandiagara (see Figure 1.2) is an extremely important feature of the region.

The main ethnic groups in Mali include the Bambara, whose language is the lingua franca of most commercial and political activity. They form about 25% of the population with other sedentary Mandinke millet cultivating groups such as the Malinke. The Fulani (whom the French know as 'Peulh') are primarily agro or transhumant pastoralists and are concentrated in the Mopti region numbering about 400,000 nationally (UNICEF 1989). The Dogon number just 250,000 and are also found in the Mopti region in a comparatively small and isolated geographical area along the Bandiagara plateau. Traditionally, the Dogon do not have contact with the bourgou but practice village-based intensive millet cultivation and some gardening, combined with male and female seasonal labour migration to the Ivory Coast, Burkina Faso or to other towns in Mali. Their former extreme isolation and aggressive defence of their villages often located high in the cliffs, led to the development of many different Dogon communities who, although in close proximity, were extremely endogamous and had very little inter-contact.

Other Malian ethnic groups include the pastoralist Tuareg and Bella and agricultural Songhai of the northern regions, the Bozo fishermen who inhabit the banks of the Bani and Niger rivers, and the Senoufo of the southern areas which border the Ivory Coast.

About three quarters of Mali's population are thought to be Muslim, about 1% Christian and the rest practice traditional religions (Norton 1989). The majority of Mali's Muslims belong to the Tijaniyya and Quadriyya Sufi brotherhoods. A small number of

urban residents and a few rural inhabitants (including the village of Beni in the sample) belong to the Sunni Wahhabiyya sect which practice a more rigid form of Islam involving the veiling and seclusion of women.

On traditional indicators of development Mali does not fare well in relation to other developing countries. 85% of the population live in rural areas, 44% are aged below 15 years, and just 15% of men and 9% of women are literate. Mali has a GNP estimated at \$150 compared with an average of \$256 for other Sahelian countries (UNICEF 1989).

Recent political events however, indicate that progressive reform may be possible. A coup d'état in March 1991 deposed former President Moussa Traore and destabilised his party, the UDPM, after 22 years in power. The new government has made commitments to multi-partyism, and free democratic elections took place in April 1992, but as yet little is known about any constitutional, social or political changes which may take place.

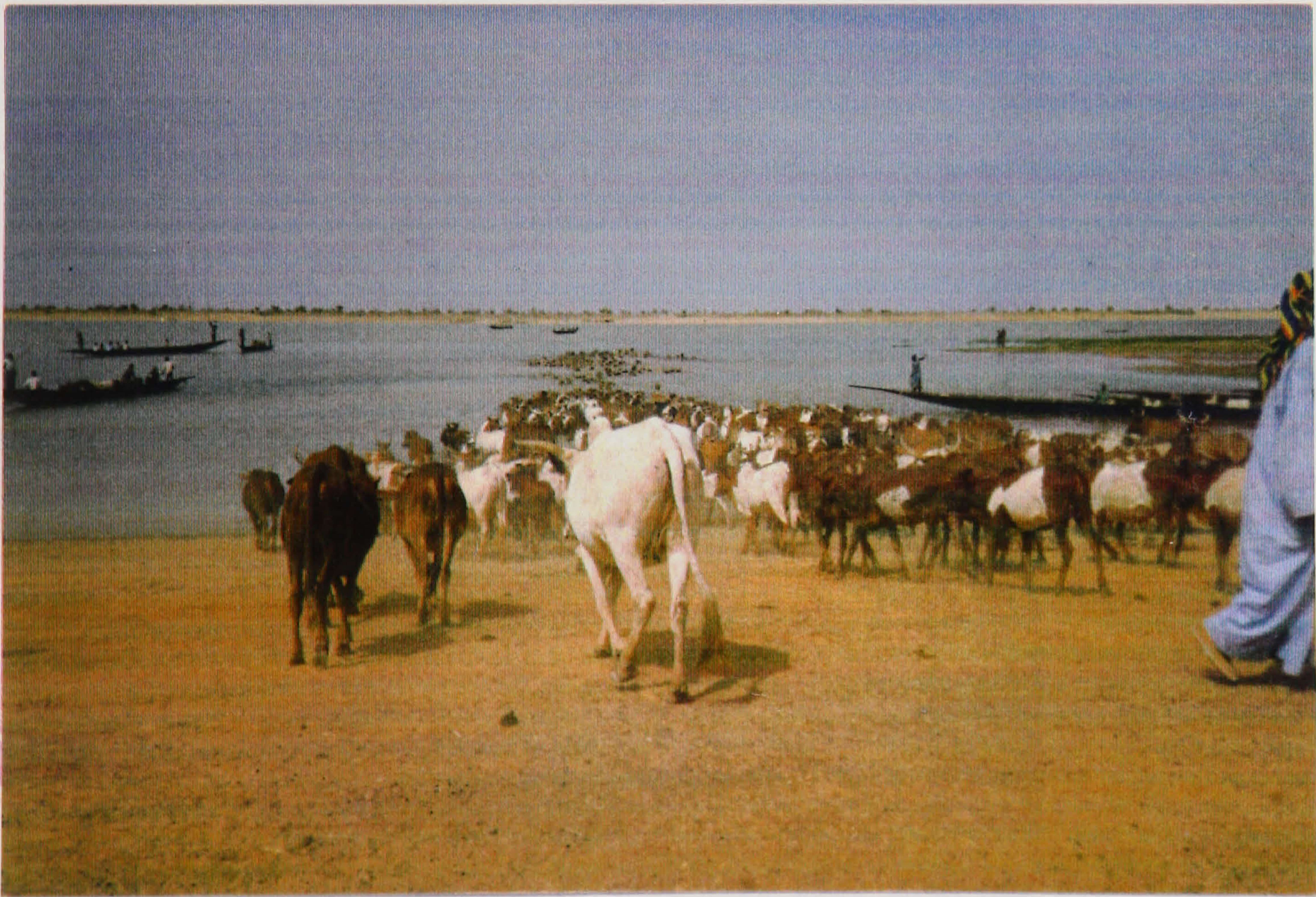
1.1.2 The Ecological Setting of the Sample Area.

The 'cercle' of Douentza has a population of 144,555, (1987 census) and an area of 23,312 km². Part of an zone known locally as the Seno-Mango, literally 'the great dune', Douentza 'cercle' is composed of sandy plains dissected by several cliff escarpments which run from Bandiagara in the south of the region, several hundred kilometers north. Approximately 39% of the population of the 'cercle' are Fulani, 25% Dogon, and the rest consist mainly of Bambara, Songhai and Tamasheq (Hesse and Thiera 1987).

Rainfall in Douentza during 1990 totalled around 450mm which was, as in recent years, concentrated between June and September. Figure 1.3 shows the three main seasonal variations in



(a) The haire (cliffs) surround the small town of Douentza and form an impressive backdrop to many of the sample villages.



(b) Each year during the dry season, the Fulbe leave their villages in the Seno-Mango and cross the Niger river to the lush pasture of the bourgou.



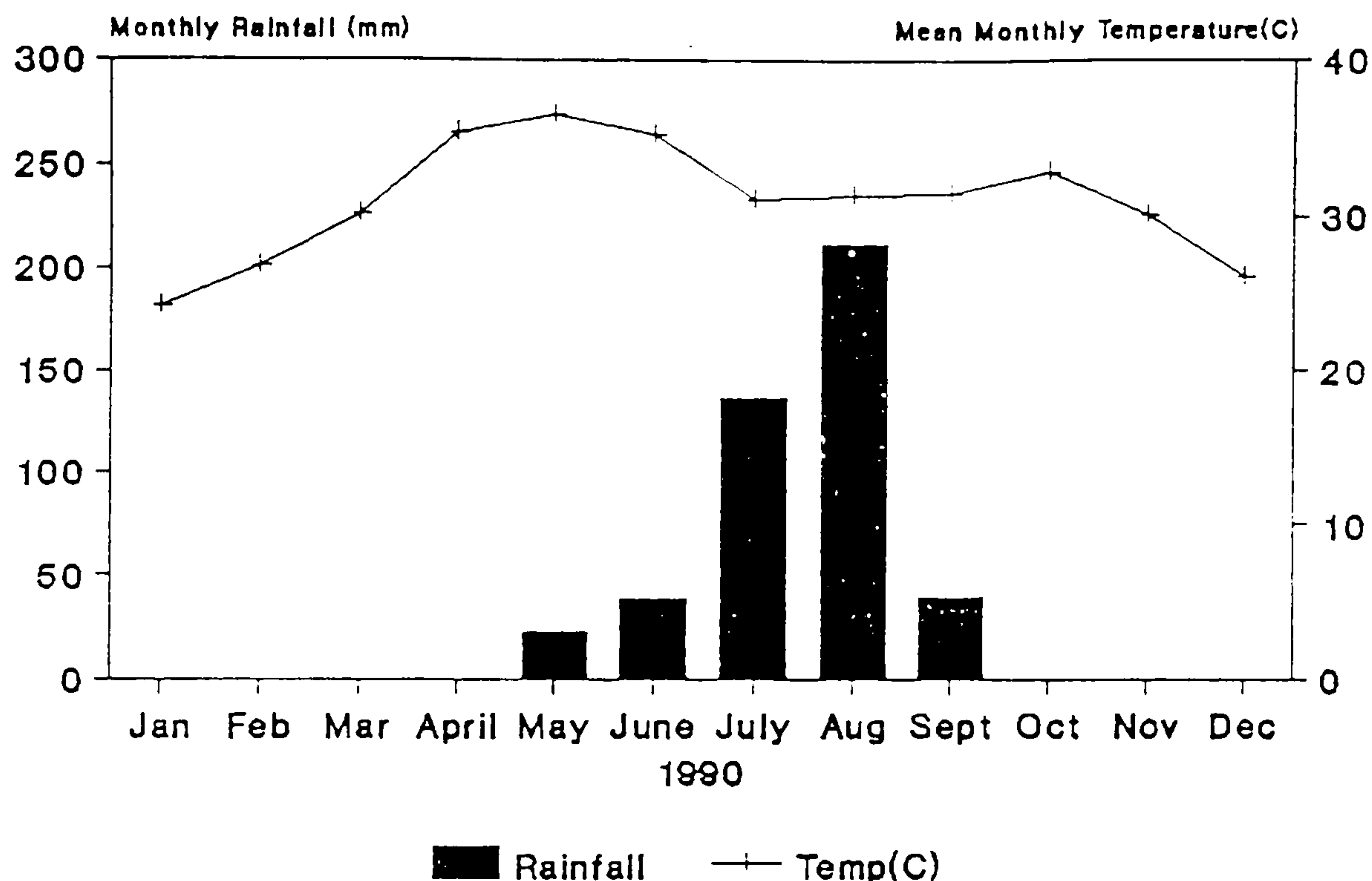
(c) A young daughter helps her mother load up the possessions they will take with them to the bourqou . Chapter VI shows how such young girls of working age are an invaluable source of assistance with child care and household tasks.



(d) A jom kossam (milk seller) is away from home with her breastfeeding child for the most part of the day as she walks around selling milk in the surrounding villages. It will be shown that she frequently relies on her own mother to look after her children who remain behind.

temperature and rainfall which dictate the livelihoods of the pastoral and cultivating populations within the area.

Figure 1.3 Monthly Temperature and Rainfall
(Douentza Central 1990)



The annual cycle begins after the October harvest as the dry season approaches. At this time, pastoral groups move into the grassland areas of the bourgou and male cultivators leave on seasonal labour migration returning to their villages for planting as the rainy season begins. Rainfall is sporadic and erratic and is characterised by its local concentration. That is to say, it can rain in one village and not in another just a couple of kilometers away. Such ecological vulnerability is exacerbated by the increasing drought and desertification of the area, and was compounded in October 1989 by a plague of grasshoppers which all but destroyed the year's millet harvest leaving people with empty granaries by the start of 1990 if not before.

1.2 THE SAMPLE VILLAGES.

Table 1.1: Fulfulde and Djamsai Vocabulary relating to Ethnic Groups and Social Classes.

ETHNIC GROUP	LANGUAGE	SINGULAR	PLURAL	MEANING
FULANI	Fulfulde	Pullo	Fulbe	Fulani Noble(s).
		Dimadjo	Rimaibe	Ex-Slave(s) or Dependent(s).
		Kado	Habe	Non-Fulani (in this case Dogon).
HUMBEBE	Djamsai	Kumbedjo	Humbebe	Name of clan inhabiting sample villages of Dianweli and Gono.
		Troni		Name of clan of people inhabiting sample village of Beni.

NB: For the purposes of this thesis the Hausa term 'Fulani' will be used to refer to the Fulbe and Rimaibe together.

Table 1.1 above defines the specific linguistic terms used by the sample communities themselves¹. Table 1.2 below presents summarised environmental and socio-economic information about the 5 villages which were chosen for the fieldwork. In addition, Appendix I describes the sub-sample villages of Dirimbe and

¹ A further glossary of Fulfulde words used in the discussion is available at the end of the thesis.

Dianweli in more detail. Criteria for choosing the sample was based around the desire to have a mix of Dogon clans and Fulani social classes, and that each village should be fairly accessible. All the villages are within four hours walk of Douentza where there is a secondary school, and more importantly a clinic, and maternity and hospital services. The following discussion however, will show that even local village-based 'western' health and educational institutions are only minimally frequented. Maternal and child health services are organised by the local government health sector and Save the Children Fund (UK) who frequently employ practitioners in the health centres who are of a different ethnic and linguistic background than their patients. Their policies failed to take into account the seasonal movements of specific groups, and numerous socio-cultural reasons detailed below which inhibit the local population's inclination to use modern facilities.

1.3 THE NATURE AND USE OF LOCAL MEDICAL AND EDUCATIONAL INFRA-STRUCTURES.

1.3.1 Local and Central Medical Services.

Health service provision to the villages is based around a system of 'Aide-Soignantes' (trained health workers responsible for several villages) who can deal with minor illnesses and simple health problems. Dirimbe and Debere both had aide-soignantes whilst Beni had an elderly and rather eccentric French-trained nurse who provided chloroquine to all the children during the rainy season, treated minor illnesses including using mud to cure diarrhoea! He however, operated outside the government health service framework and was seen as a 'quack' by the health professionals of the formal sector. His presence nevertheless, appears to have had a rather positive effect on the village according to data presented in the mortality analysis in Chapter III.

Table 1.2: Environmental and Socio-Economic Characteristics of the Sample Villages.

VILLAGE	*DIRIMBE	*DIAHWELI	GONO	DEBERE	BEKI
Clan/ Social Class:	Fulbe/ Rimaibe	Humbebe	Mainly Humbebe, A Few Fulbe.	Mainly Rimaibe, A Few Fulbe.	Troni
Distance from Douentza:	7km	15km	22km	14km	20km
Access to Douentza by:	Tarmac Road	Sandy Path	Tarmac Road	Sandy Path	Rocky Path
Village Market:	None	Thursdays	Mondays	None	None
Water Supply:	Hand dug wells until May 1990 when 2 concrete wells wells constructed. Rainy season ponds.	2 concrete wells, 1 hand-dug well, 2 ponds rarely used.	Concrete Wells	Concrete Wells	Concrete well on other side of valley. Streams nearby.
Modern Health Practitioner?No		Aide- Soignante, Matronne	None	Aide Soignante, Matronne	Nurse trained in France
Trad. Health Practitioner? 2 healers		None	Healers	Healers	Healers
School?	No	Yes since 1985	No	No	At Dianwelli
Male Economic Activity:	Fulbe: Herding Rimaibe: Cultivating/ Weaving	Cultivating/ Labor Migration	Cultivating/ Labor Migration/ Gardening	Rimaibe: Cultivating/ Weaving/ Gardening/ Fulbe: Herding	Labor Migration
Female Economic Activity:	Fulbe:Milk Selling/Mat Weaving. Rimaibe: Cultivating/ Mat Weaving	Cultivating/ Market Trading/ Cotton Spinning	Cultivating/ Market Trading	Rimaibe: Cultivating/ Mat Weaving Fulbe: Milk Selling.	Market Trading.
* Villages in Sub-Sample					

The town of Douentza as described, had a dispensary, maternité and hospital which were run and co-ordinated by the local government health authorities and Save the Children Fund (UK). It will be shown however that the dispensary was generally used only as a last resort after people had tried several home treatments or visited several traditional practitioners. People perceived it as being expensive (which it was compared to the traditional healers) and personal experience of taking sick children revealed that many unnecessary prescriptions were given, and staff were often unsympathetic, particularly to those who only spoke Fulfulde. Medicines and doses were often not adequately explained to non-literate people - especially the concept of anti-biotics where the course had to be finished.

In addition, and more importantly, the two most common fatal illnesses in Fulani and Humbebe (Dogon) taxonomy were 'foundou' (the bird) and hendu (the wind). Hendu actually refers to illnesses caused by sorcerers (sukunyabe) and spirits (bombe) both of whom can make children and adults very sick. Details of the identification, cause and treatments of these illnesses will be discussed in Chapter III. Suffice to say that unlike simple diarrhoea, fever, respiratory infections etc which also had a place in their health belief system, it was thought that these metaphysical illnesses could not be treated with western medicines, but only by traditional healers or marabouts (religious teachers). It will be shown that traditional healers rarely diagnosed simple symptoms such as diarrhoea, but more often a metaphysical disorder such as sukunyabe or bombe. People therefore seldom visited the dispensary with children who had been given such diagnoses, as it was thought that western treatment was inappropriate.

1.3.2 Maternity Services.

'Matrones' are village mid-wives trained by the central health

services to provide ante-natal and post-natal consultations to village women, as well as to cut the umbilical cords of newborn babies and to give advice concerning their care. They also had information about family planning and could refer people to the clinic in Douentza where a selection of methods were available. None of the women in sample however was found to be contracepting and none overtly expressed a desire to do so.

The matronne in Dianweli was seldom used, perhaps partly because like the school teachers, she was from elsewhere and not born in the village. She did however, occasionally cut babies' umbilical cords but her services were under-utilised as people preferred to give birth with the assistance of their families. Local custom amongst the Fulani and the Humbebe dictates that whoever cuts the umbilical cord washes the child, often twice a day at least until the baptism on the eighth day. As the cord was usually cut by another female relative, the matronne's services, even for bathing the child, were not required. She thus had little opportunity for post-natal contact with the new born baby's mother to impart any useful health information concerning its care. None of the sample villages had a system of Traditional Birth Attendants (TBAs) contrary to similar groups described elsewhere in the region (Paulme 1947, van den Eerenbeemt 1985) amongst whom it appears that TBAs did play an active role in assisting women during their births.

Further reticence for using the maternité can also be explained by the fact that in Dirimbe, and to some extent amongst the Fulani in other villages in the survey, women believed that a paternal female relative of the child, usually the grandmother, should cut the umbilical cord. If someone from outside the child's paternal family, such as the matronne, cut the cord, the child would effectively be illegitimate and not 'belong' to his/her father's household.

Most importantly, all women in Dirimbe except during their first birth, prefer to give birth entirely alone. Deliveries are endured in silence by the woman behind a closed door or under a secluded hangar, with no help or assistance. Once the baby and the placenta have come out, the child's grandmother or other paternal female relative, as described above, is called to cut the cord and to wash the infant. All women said they preferred to give birth alone and this stoic preference for isolation, explained within the context of the Fulani social code of behaviour described in Section 1.4.4 below, contributes to understanding their lack use of maternité services.

1.3.3 Vaccination.

Both the formal health sector, MCH (Maternal and Child Health) and vaccination services in Douentza 'cercle' were co-ordinated by SCF(UK) and initiated in 1985. However, contact with the vaccination teams amongst the sample populations varied by village and ethnic group. For example, only 32% of the Fulbe in Dirimbe were vaccinated, against 69% of the Rimaibe and 94% of the Humbebe of Dianweli because the EPI (Expanded Program of Immunisation) teams work seasonally from November-June stopping when the cultivation season starts. Unfortunately this co-incides more or less exactly with the transhumance of the Fulbe who move to the 'bourgou' or 'Kunari' in November and return to the village in July. Even if Fulbe women are resident in the village when the vaccinators visit, they are often out selling milk in Douentza town from early morning to evening, and usually take a breastfeeding child with them on their back, who thereby misses out. Elderly caretakers who often babysit milk sellers' weaned children during the day are either unaware of the importance of vaccination, or unwilling to take the child, or unable to find the CFA 100 (20p) necessary for the purchase of the vaccination card.

Detailed discussions with most women in Dirimbe and Dianweli revealed that they had no idea about the timing or purpose of vaccination - most thought it was to cure malaria (jonte) and were unable to connect it with, for example, the decline of measles (cheode) in some communities. When asked why they took their children if they did not know what purpose it served, they frequently commented "we are afraid of the authorities and the authorities tell us to vaccinate our children so we do it."

1.3.4 Education.

Only 9 men and 5 women in all the five villages surveyed had received any kind of formal education, although the school in Dianweli established in 1985 was attended by many children (mainly boys) and also by those from the surrounding villages (including Beni).

Both Fulbe and Rimaibe are reluctant to recognise the benefits of education, and the former do not have a lifestyle that is compatible with sedentary schooling. Research on opinions of formal education amongst the Fulani in other areas of Africa, especially Nigeria, has indicated more positive attitudes (Ezomiah 1978) particularly amongst women. This, however, may be associated with the fact that in these situations, schooling had made a visible difference to the lives of educated people and brought them rapid advantage. In the sample communities, not only was education seen as something left over from the French colonial legacy, but women articulated that the lives of the few people who had been to school were no different from the lives of the uneducated villagers - ie to them education made no discernable difference. The two men who had been educated in Dirimbe were both Rimaibe, and both cultivated and wove blankets just like the other non-educated Rimaibe.

In general, people considered 'western' education for children to

be incompatible with Koranic education which to them was much more vital and which nearly every male and female child undertook from an early age. In addition, seasonal movements of the Fulbe population meant that schooling would be difficult, and that young girls would not be available for food preparation nor young boys for herding. Fulbe families complained about the difficulty of finding and paying a foster family to look after a school-age child whilst the parents went off to the bourgou indicating that fostering for schooling purposes was very different than fostering which took place for non-educational reasons, and which is discussed at length in Chapter V.

What seemed to be the key factor amongst the Humbebe in people gaining additional health knowledge was the seasonal labour migration of male family members. It was evident that Humbebe men, in particular, were being exposed to health messages in places like Abidjan which they were able to bring back to the village. They were familiar with chloroquine and aspirin and even ORT, and often introduced their wives to these concepts. Subsequently, the women could readily address the *aide-soignante* in the village for these treatments. Rimaibe men, whose labour migration took them less far afield - usually to Mopti where they wove cotton blankets, gained comparatively little equivalent exposure, and Fulbe men who took the cattle to the rural kunari or bourgou had even less. To date, it seems that it was these informal aspects of education which had the greatest impact.

In addition, Section 1.6.2 will describe how many Humbebe women, particularly before marriage, often work as servants in high income households of Mopti or Segou. Although not very lucrative (wages averaged about CFA 3,000 (£6) a month which would not even cover transport), it often made them aware of the health practices and environments of wealthier and educated people. It is very possible that they may observe hygiene practices (such as hand washing before meals) and effective illness treatments (such

as the use of chloroquine and aspirin) which they can attempt to replicate on their return to the village.

Thus although health and education facilities do vary amongst the sample communities, people have little contact with them for the reasons described above. In addition, it became clear during the field research that neither health beliefs, taxonomies of illness nor macro-environmental conditions varied significantly between or among the Fulani and Dogon.

What varied substantially however, amongst the groups in the sample, were different types of household form and function, and in particular, the social support available to woman within their household environments appeared to differ enormously. Household level factors, and particularly intra-household female power relationships, 'enabling' and 'constraining' women to provide adequate child care, together with women's personal ability, motivation or potential to over-ride or exploit them, will therefore become the focus against which the analysis of the morbidity, mortality and nutritional status of children in these villages will be set. The following section will briefly describe characteristics of Fulani and Humbebe household formation and social organisation, and discuss their implications for women's power within their household environments which will ultimately be shown to be linked to their children's health.

1.4 THE FULANI.

1.4.1 Background.

The Islamic Empire of the Dina, (the ancient capital of which, Hamdallaye, is a few kilometers to the south of Mopti town) was established in 1818, by the proselytising leader Cheikh Amadou Barry, whose influence spread as far as Douentza and beyond (Sanankoua 1990). The Dina led to an increased sedentarisation of the Fulbe in permanent village sites and to a profound overall social and economic reorganisation of the area. Before this period, the ardobe or cattle-herding Fulani of the region (which was known as the Macina before the arrival of Islam), had been more or else entirely nomadic, and neither owned fields nor cultivated (Ba and Daget 1962, Gallais 1984). As they were brought under the control of the Dina, they began to live in fixed villages, and dependents or captives known as Rimaibe (sing dimadjo) became necessary. The Rimaibe, spoke Fulfulde and usually took on the family names of their masters, but their ancestors before enslavement were formerly often Dogon or Songhai. Rimaibe were often established in separate cultivation hamlets (saare) and were used by the 'free' Fulbe to cultivate their fields, while they themselves undertook their seasonal transhumance with their cattle to the bourgou.

Slavery was abolished under French colonial rule, and today these former master-slave affiliations have been transformed into more symbolic, yet still dependent gift giving and reciprocal relationships. These involve milk and millet exchanges after the October harvest, or for example, permit Fulbe women to use Rimaibe labour, particularly during ceremonies such as baptisms or weddings, or during the post-partum period when women are exempt from household tasks. Importantly, a Pullo woman only has rights to the labour of the Rimaibe from her own natal family and not to the labour of the Rimaibe of her husband. Moving

to a different village on marriage means that a Pullo woman's potential help from her Rimaibe, is generally lost.

1.4.2 Fulani Social Structure.

A person's broad social allegiance is to a clan, each of which has a distinctive family name (jammore) usually adopted by all clan members regardless of their social class. In addition, this particular Fulani society is characterised by free Fulani (Fulbe) and numerous caste groups including blacksmiths, praise-singers, and woodworkers all of whom have a specific cultural and symbolic significance as well as a functional role. For the purposes of this study however the caste Fulani (who in the survey were mainly praise-singers - see Appendix I) are grouped with the Fulbe as they are of 'free' status. For a discussion of these important caste distinctions as they exist in the Mopti region, the reader is referred to Fagerberg-Diallo (1984), Riesman (1974), Hill (1985), Hill and Thiam (1992).

1.4.3 Fulani Living Units.

The usual unit of communal residence of Fulani society is the wuro which loosely translates as village. There is a great distinction between wuro and saare. Wuro refers to a settlement where the Fulbe (nobles) dominate the social and political order and, if Rimaibe are there at all, they live as former slaves or dependents. Saare, on the other hand, is essentially a cultivation hamlet or Rimaibe village, which may have allegiance to a separate Fulbe wuro but not be geographically, and to some extent socially (due the dependent status of the Rimaibe), part of it. These distinctions are important, as the sample village of Dirimbe for example, was a wuro while Debere was a saare and thus had very different balances of Fulbe/Rimaibe power and political structure.

Each wuro and saare is made up of many chuddi (sing suudu meaning house). A suudu is the physical building where each individual sleeps. One or several suudu may make up a galle or 'household' whose residents usually (but not always) inhabit the same compound, are all patrilinearly related, and all look to the same head (jom galle).

The unit enumerated in the surveys however was foroba (a Bambara word adopted by the Fulani in the sample) which identified people who ate and cultivated together. In many cases a galle may consist of two or three foroba who exist separately in terms of their production and consumption. One of the most common reasons for foroba separating from the original galle was that perhaps several generations ago, brothers or sisters-in-law had argued amongst themselves and found it impossible to live as a cohesive and co-operative unit. However, in the majority of cases and especially with the small nuclear units typical of the Fulbe, galle, suudu and foroba comprised the same individuals. The main difference between the size and internal structure of Fulbe and Rimaibe living units will be one of the main themes of the thesis. To summarise however, the Fulbe tend to live in, and prefer, smaller nuclear family arrangements which are more manageable for their seasonal transhumance, while the Rimaibe have larger households where several generations live together within a more hierarchical structure.

1.4.4 Pulaaku.

What unites the Fulani from the Macina and the Seno-Mango with Fulani from other areas of the Sahel and distinguishes them from the habe (non-Fulani) is the concept of 'Pulaaku'. More than an idea of ethnic identity or social cohesion, pulaaku denotes 'Fulani-ness'. It provides a code of moral behaviour which regulates the conduct of the Fulani in their dealings with people from other races and with each other. In effect it can be

described as a social code or set of behavioural mores (Kirk Greene 1986). Pulaaku is also referred to as 'lawol pulaaku' literally 'the Fulani road' or, more simply, the Fulani way of life.

The main components of pulaaku are munyal, hakkilo and semteende. All three elements are not only relevant to social behaviour but also assist the interpretation of health practices and actions, particularly in relation to an individual's perceived personal power to bear or prevent ill health. Munyal comprises a kind of patience or stoicism in the face of adversity, whether this be physical pain, or emotional insult or trauma. Women in the survey divided munyal into a facet which involved not holding rancor against anyone who insulted you and chusol. Chusol consisted of bravery during bodily pain and discomfort and was much cited especially during female rituals of circumcision (age 4-8), scarification (age 11-13) nose-piercing (age 10-12), mouth tattooing (age 10) or childbirth. Each female rite of passage from childhood to adolescence and again with motherhood, involves a great deal of physical pain which young girls are encouraged to bear with fortitude.

Hakkilo has been described as representing a combination of care, forethought, prudence and personal management (Kirk-Greene 1986) and the sample population described its main feature as being satini (self-discipline). Semteende is composed of modesty and reserve, to the point of a kind of pride in isolation and 'shame' in asking for help and assistance. Elements of semteende are central to women in childbirth. As described above most Fulani women in the sample give birth alone (except during a first birth) without assistance from anyone. Birth is a 'secret' which it is shameful to share with others and help would only be sought in cases of extreme difficulty.

Interestingly, men cited hakkilo as being the qualities of a good

Pullo much more than women. Women in the sample instantly referred to munyal, then semteende but rarely to hakkilo unless prompted. Both the Fulbe and Rimaibe aspire to pulaaku, and in fact, these concepts were often more readily cited by the Rimaibe. They however, can never really achieve the goals of Pulaaku - ie becoming a good Pullo, because of their non-noble or dependent status.

1.5 THE HUMBEBE.

1.5.1 Background.

The sample populations of the villages of Dianweli and Gono belong to a clan of Dogon who are known as the Humbebe (sing Kumbedjo), whilst the population of the sample village of Beni are called Troni (cliff people). Neither consider themselves to be 'habe' (although they are classified as such by the early French anthropological expeditions into this area) (Ouane 1941, Palau Marti 1957). Most ethnographic work has been done with Dogon groups in and around the towns of Bandiagara and Sanga over 200km away (Griaule 1948, 1954, Boujou 1984, Omoluabi 1987) but the social and cultural organisation of the communities in the Douentza sample do not bear much resemblance to these better documented populations, nor to those of the northern reaches of the escarpment who have also been extensively studied, particularly by demographers (Brown 1975, Colliot 1987).

Compared with the Douentza Humbebe, who are allied to the Quadiriyya Islamic brotherhoods due to the proselytising campaigns of Cheikh Amadou Barry during last century, a higher proportion of the Bandiagara Dogon populations are animist, and those who have been converted to Islam, are Tijaniyya rather than Quadiriyya (Brenner 1984). Dogon of these southern areas of the plateau have less contact with the Fulani and in a sense are less

'Fulani-ised'. They also practice more intensive market gardening, particularly of onions, in the production of which women have a greater role.

Both groups in the Douentza sample appear to have adopted a separate clan-based identity which distinguishes them not only from the Fulani but also from other 'Dogon' and it is felt inappropriate to compare them with the communities described above. Despite being only 5km apart the inhabitants of Beni and Dianweli speak different dialects. Although many Troni speak 'Djamsai' the dialect of the Humbebe, much commercial market activity between the two groups and their neighbours is carried out in Fulfulde.

Chapter II describes how all the fieldwork with the Humbebe and Troni, was carried out in Fulfulde which most women speak fluently, and Fulfulde terms are therefore used to describe their household and social structure. Although it is recognised that this is likely to miss some of the more subtle nuances and linguistic idiosyncracies, the difficulty of the language and small scale of the project precluded any in-depth work being undertaken in Djamsai. The following descriptions refer to the Humbebe with whom the most intensive work was carried out, although it is thought that Troni social structure is not dissimilar.

1.5.2 Humbebe Social Structure.

Community structure and orientation are centered around the fact that many members of both the villages of Gono and Dianweli in the sample are not only from the same clan, but really from the same large extended family and all have the same family name of 'Ongoiba'. The neighbouring 'Ongoiba' villages of Dianweli-Kessel, Petaka, Fombori and Fombori Do (within a 25km radius) form an axis of alliance for the Ongoiba Humbebe within which

they marry, trade and socialise. Despite their large-scale seasonal labour migration, often to neighbouring countries, the Humbebe have a history of endogamy which persists to this day.

Amongst the Humbebe, slavery did apparently exist a long time ago but is now no longer a feature of their social organisation. It was said that today ordinary Humbebe would not know that certain individuals were from slave families unless told, unlike the Rimaibe who are often distinguishable by both their appearance and sometimes their names. Caste differentials amongst the Humbebe, such as blacksmiths and woodworkers, are similar to those found in Fulani society and have the same functional and symbolic purpose. Humbebe society is therefore more egalitarian, and because slave or dependent differentials are not a feature of the daily community structure or inter-action, or even apparent to most people, they will not be considered for the purposes of this study.

1.5.3 Humbebe Living Units.

Like the Fulani, the Humbebe and Troni equivalent of the galle is made up of several chuddi. The main contrasting features however of Humbebe compared with Fulani households, is firstly their size, and secondly their flexibility. Each galle can be made up of over 50 people who, at least for part of the year, all eat together and cultivate the same land. The separate chuddi however may be in entirely different parts of the village, unlike amongst the Fulani where they are usually adjacent to each other.

In times of hardship such as the survey year of 1989-1990, when seasonal male labour migration starts after the October harvest, many large households split up into small, nuclear, female-headed units who all prepare food and eat separately until the return of the menfolk in June. The previous year this had happened was 1984 and it must be stressed that this is not an annual occurrence but

a stress response which coincided with the survey period. In such households, the main family granary is locked until the male members return in time for cultivation and in the mean time all nuclear units operate independently. Typically, a woman whose husband is absent is left in a small sub-unit just with her children, and may rely on her own father for millet and her own mother for money for sauce condiments. In addition, most Humbebe women practice some sort of market trading and so are usually able to remain financially solvent during the period of their husbands' absences.

One of the main consequences of the splitting up of such households is to reduce the amount of social support a woman can expect to receive from other women in her marital family. For example, co-wives and sisters-in-law in the marital household of a woman who had given birth during a period when the household was split, were under no obligation to provide help with household tasks during the immediate post-partum period as they would have been had the household been united.

However despite such fissions, mother-in-law/daughter-in-law labour obligations still prevail. The ethos of a woman having married into a work relationship with her husband's household, and particularly with his mother, is extremely strong amongst the Humbebe. The splitting up of households in this way, not only relieves the remaining and often elderly male household head of the economic burden of supporting his sons' wives, but does so while still enabling his own wife/wives to call on her/their daughter-in-law(s) for labour. Notably, sick or unproductive women (such as one woman in the sample who had had twins and who was constantly occupied with child care) were returned to their natal families if they could not contribute to the labour economy of their marital households.

1.6 BRIDEWEALTH AND DOWRY TRANSACTIONS: DIFFERENTIAL COSTS OF HOUSEHOLD FORMATION.

Both the Fulani and the Humbebe are patrilineal and patrilocal. Both prefer parallel cousin marriage and the following section briefly reviews the costs and processes involved in household formation amongst the two groups. It will be shown that one of the main differences between the Fulani and Humbebe is in the amount of control a woman has over the bridewealth that is paid for her, and over the dowry she accumulates. These variations are significant because they constitute the initial economic and social base a woman starts out from when she begins her life in her marital family.

1.6.1 Fulani Bridewealth and Dowry Transactions.

Fulbe and Rimaibe children in the sample were engaged at, or soon after birth, or even in some cases before birth when the mother was still pregnant! Token sacks of millet or gifts at festivals from the prospective groom's family are given annually to the girl as she grows up. A girl is married to her husband in a ceremony by a marabout when she is about 10 years old. She does not however, take up residence with him until she is 15 or 16 after a further religious ceremony (teegal) and possible registration with the civil authorities.

Fulbe and Rimaibe bridewealth transactions vary in terms of the quantity of cash and number of animals exchanged. The bridewealth usually consists of the safande which represents a cash payment to the father of the bride. In addition, the Fulbe give a futte which consists of animals which are given to the bride by her father-in-law, but are kept in the herd of her husband and his family. Many Fulbe women had no idea how many cattle they had been given as bridewealth - these animals would only be

identified on the death of her husband or on the occasion of his divorcing her, and until then remain in his herd. A woman has no right to sell them and cannot prevent her husband taking possession of them in times of need, and thus they do not constitute a practical asset for her. Rimaibe women's marital families do not give cows, but rather sheep or goats which were either slaughtered at the marriage celebration or kept to be fattened and sold by the husband.

A similar parallel can be drawn with the field (korga) that Rimaibe women are given by their father-in-law at marriage. This field is for their own use but in fact belongs to the marital family and returns to its possession on a woman's death. Thus amongst both Fulani classes, marriage gifts of either animals or land to the bride, are symbolic 'usufruct' rather than real assets for her, as the rights to them, and benefits from them, remain with her husband and his father.

Dowries (gineji or kaarke - literally 'baggage') that women bring with them to their marital households consist of pans, calabashes, buckets, water storage jars, wooden bowls, mats and, in addition for the Fulbe, a carved wooden bed, and are usually paid for by the bride's mother. Many mothers however, for whom the expense was too great, give the dowry items in installments from the day of the marriage, possibly over a period of several years. Both married Fulbe and Rimaibe women who had not yet received their gineji and who were desperate to do so to improve their standing in the husband's household, gave their mothers money from their own milk selling or mat weaving activities to buy these items, and therefore effectively paid for their own dowries.

In addition, most Fulbe and some Rimaibe receive up to CFA 50,000 (£100) worth of gold at their marriage. Although first born daughters get the gold of their mothers, often through pre-

inheritance transactions, the marriage of a daughter is usually tremendously expensive for a mother and often involves her selling an animal to cover the cost.

Divorce is carried out according to Islamic custom amongst both the Fulani and the Humbebe. If the husband divorces his wife she leaves with her bridewealth and her dowry. If she divorces him, she gets nothing. The effect of divorce on child care arrangements will be discussed at length in Chapter V. Similarly, both groups follow Islamic procedures of inheritance, and both practiced the levirate when bridewealth and dowry negotiations were usually waived, and the woman was automatically passed on to her late husband's younger brother.

1.6.2 Humbebe Bridewealth and Dowry Transactions.

Humbebe and Fulani households differ in the timing of their formation and most importantly in the amount of control the individuals brides have over the bridewealth that is paid for them and over the dowries they accumulate. It will be shown that the Humbebe women exhibit a greater independence before marriage and are more frequently the direct recipients of the transacted goods. It appears therefore that from the moment of marriage they actively contribute to, and receive, household resources and can more easily consolidate a firm economic base in their marital household at the beginning of their married lives.

Amongst the Humbebe, marriage used to be arranged at birth as practiced by the Fulani, and bridewealth paid cumulatively as the girl was growing up. Today however, most Humbebe girls are engaged at age 13 or 14 and then married in a formal marriage ceremony with a marabout two or three years later. The main important difference, between the Humbebe and the Fulani, is that there is usually three or four years (but sometimes over five)

between this marriage and the bride actually moving into her husband's home. During this period a woman remains with her natal household and starts to accumulate her dowry.

Men explained this by saying that to get engaged later and to marry earlier was economically beneficial for them as the bridewealth would not have to be paid over such a long period. Whilst remaining at her family's house, a woman's own parents bear the financial responsibility for her, although the husband sends regular gifts and presents, especially when he has been away on labour migration. After the marriage he has the right to begin having sexual relations with his bride, and often a pregnancy hastens the woman's moving in with her marital family where it is expected that she will give birth to her first child.

Humbebe bridewealth has a higher cash value than that of the Fulani but involves less animal transactions. CFA 25,000 (£50) or more is given by the groom's family to the bride's family who, unlike the Fulani, often give all or some of the money directly to the bride. In addition, animals such as a cow, or several sheep and goats, are also given to the bride herself by her new husband's parents. This is very different from the Fulbe system where animals are theoretically given to the bride but are actually kept in the husband's herd where they are inaccessible to her. A Kumbedjo woman, rather than her family, is therefore a direct recipient of much of the wealth that is paid for her, and is thus able to establish herself economically at the beginning of her married life more easily than her Fulani counterparts.

Like the Rimaibe, Humbebe women are given a field as 'usufruct' on marriage by their father-in-law. The millet seed for the field is usually provided by the husband's father, and the harvest kept for use within the woman's small nuclear unit within the extended family. In addition, Humbebe women cultivate polle (a local

condiment) peanuts and beans, buying seeds with their own money, and keeping the profits from its sale for their own use.

Humbebe dowries consist of similar household equipment to those of the Fulani but do not comprise such large amounts of expensive gold and jewelry. An additional important difference is that the burden of paying for these items does not often rest with the bride's mother alone, and on many occasions a man's marital family will help his new bride to pay for these objects which are essential for her to establish her own kitchen. This enables her to carry out household tasks effectively for her own nuclear unit within the extended family, and for her mother-in-law.

In addition, in between the initial marriage and the moving in there may be a period of several years as described above. During this time, most young girls went to towns within Mali, usually to the regional capital of Mopti, where they worked as servants in higher income households. Many women used this opportunity to earn enough money to pay for their dowries themselves.

Alternatively, a woman's mother may, during this interim period, give her daughter money or an animal to fatten up and sell to start up a business such as trading salt or dried fish. In these instances not only is the dowry paid for, but on marriage, the girl is already an established trader, and as such, an asset to her marital family.

1.7 INTER-HOUSEHOLD CO-OPERATION.

1.7.1 Fulani Community Co-operation.

The Fulani pride in self-isolation encompassed by pulaaku, and associated shame in asking for help, results in the fact that inter-dependence between pastoral households and non-Fulani in general is greater than between any two pastoral households

(Hopen 1958). Co-operation, it is said, does not exist in Fulani societies and when Fulani do work together they do so to help specific individuals, not the community as a whole (Riesman 1984). This concentration of resources and mutual aid within rather than between households has been exacerbated by the effect of two major droughts only 11 years apart within the last 20 years.

In 1973 enough animals remained for some inter-family redistribution of milk cows (yairai) which are lent by more fortunate kin and even non-kin individuals for an indefinite period to those who have lost all their livestock (see Hesse and Thiera 1987 and Bovin 1991 for a discussion of these practices). In 1985 however, herds had not been adequately reconstituted and no such cows remained to be distributed between families and individuals where normally reciprocal and social ties would have demanded that loans took place.

In addition, many of the husbands of the women in the fertile age groups in the sample were in early middle-age in 1990. In 1973, however, they had not established their own herds to the full, and through inheritance and pre-inheritance and were able to some extent to recoup losses from their parents. 1985 was much harder because the same men were now the heads of their own households and could not call upon the older generation to assist them. Their response therefore was either to reestablish herds of small ruminants such as sheep and goats or to herd for other people. Many Fulbe now herd cows for Rimaibe and Humbebe, or even for urban based civil servants, and are payed not by cash wages, but by being given the milk of the animals which the women then sell.

The potential for inter-household co-operation amongst the Rimaibe seems to have been affected by the gradual breakdown in dependent-master relations with the Fulbe. It was described by the Rimaibe of Dirimbe how, until recent years, women who

received money for tasks they carried out for the Fulbe, such as for pounding their millet, pooled the cash in a fund to be used for communal Rimaibe benefit. The Rimaibe men had a similar fund where they kept money given to them by the Fulbe for cultivating their fields or for repairing their houses. Many years ago, for example, the women said they had bought several large cooking pots with their money, which were used for communal village celebrations, and the men used to cultivate common millet and rice fields, buying seed with money from their kitty.

Now however, more Fulbe men and women are carrying out such tasks themselves and money which Rimaibe do receive by occasionally working for Fulbe is kept for their own personal benefit. In addition, Rimaibe lack sufficient political power in village life, due to their dependent status, to pursue or instigate further co-operative activities even though they appear to appreciate their benefit. The transhumance and frequent absence of the Fulbe prevents their full participation in, or inclination for, village life. Most interviewees, expressed a psychological orientation and preference for the bourgou which for them epitomised the true Fulbe lifestyle, rather than the village and its associated fixed sedentary existence which they consider rather inferior.

1.7.2 Humbebe Community Co-operation.

By contrast, intense community co-operation and mutual aid has always been an feature of Humbebe life and has been cited by many authors in relation to other Dogon groups living in southern areas of the escarpment (Paulme 1947, Boujou 1984). In Dianweli, as in other Humbebe villages, there is a two tiered system of age-set based male inter-household co-operation which acts both as a production unit and as a method of social support.

Each quarter of the village has an elected set of elders and

several such age-based sets of labour. The quarter has communal fields it cultivates together (using seed donated by each family) and the profits are kept in a communal granary which any individual man can address in a time of crisis to borrow millet to be repaid at a later date. Furthermore, the relevant age group from the quarter will cultivate the field of any family who lacks adult labour because of illness, or absence due to migration.

In addition, the village had an organised 'ton villageois' (village association) which also cultivated communal fields with seed furnished by the whole village. In 1990 the association also traded salt and bought millet from Douentza market which they resold. The profits from this went into a village fund which again could be used by families in difficulty. Examples were given of money from both the village and the separate quarters' funds being used to help men out with the costs of baptisms, weddings or even prescriptions for sick family members, but no incidents were cited of women ever using either communal fund or granary, particularly when their husbands were absent.

Labour migration has an enormous component of chance with the result that some men can return with lucrative earnings and some with virtually nothing. In recent years men returning from labour migration were expected to contribute CFA 1000-1500 (£2-3) to the fund in their section of the village when they came back regardless of how much they had earned. The age-sets which unite men for communal labour tasks such as field preparation, have been seriously diminished by seasonal labour migration. One young male informant's age-set had been reduced from thirty to five people by labour migration and financial contributions from the returning migrants were seen as reimbursing the age-set for the lack of their labour during the year. It also ensured that the benefits of migration extended to the community as a whole rather than just to more fortunate individuals.

This demonstrates that the Humbebe and Fulani have entirely different channels for, and perceptions of, inter-household co-operation. Whereas Fulani crises are borne by the individual with stoicism, the Humbebe, at least in theory, share the brunt of such misfortune and have the potential to assist the afflicted families with cash or labour. The Fulani on the other hand choose to maximise their individualism and thus their 'Fulani-ness' in the spirit of pulaaku rather than compromising it by co-operating for the common good.

It is clear however that inter-household co-operation, even amongst the Humbebe, is orientated around traditional social security systems that are designed for, and used by, men. It will be shown that women rely more on the internal structure of their marital families, or on their natal households, and only rarely, and as a last resort do they seek assistance from non-kin neighbours.

It is hypothesised therefore that amongst these communities ethnicity or social class do not act directly to affect treatment strategies or child care practices, but rather through the different characteristics of household structure and function. A woman's status position in relation to other women within her marital family dictates her degree of 'empowerment' and autonomy and gives her differential access to social, financial or psychological resources for the treatment and care of her children. Subsequent analysis will show how a woman's social and particularly labour obligations within her household are connected to her management of her children's illness events, their care arrangements and practices, and ultimately to their health outcomes.

CHAPTER II: FIELDWORK METHODOLOGY.

2.1 CHOICE OF METHODOLOGY.

Recent methodological discussions between demographers and anthropologists have recognised the contribution of small-scale in-depth studies to identifying, expanding and explaining issues in what is essentially a quantitative field. Demographers are however, reluctant to engage in research whose methods are unconventional, and whose output cannot be measured in numerical terms (Caldwell and Hill 1988). In addition, issues relating to the validity and replicability of findings at the local level, amongst large-scale or national populations have further complicated the debate.

It is nevertheless, necessary to distinguish what people say they do - ie 'normal' behaviour which can be elicited from cross-sectional surveys, from what people actually do - the reality gained from participation in, and observation of, the daily lives of the communities concerned (Randall 1988). Such in-depth studies are therefore useful to generate hypotheses from such realities, that can then be later tested on a broader population base. The lack of a bi-directional movement of hypothesis testing and formation from the macro level to the micro level and back up again has meant that the 'black boxes' of the Mosely-Chen model have not yet been adequately clarified.

These issues become even more complex in the demography of the 'household'. Often production and consumption characteristics of the household are assumed to apply equally to all household members, whom it is supposed, have equal access to them. Even measures of the size and structure of households fail to capture the immense flexibility and fluidity of their boundaries, as well as internal structural variation. Scrimshaw (1989) usefully

refers to 'soft-bounded' and 'hard-bounded households' and suggests that household boundaries be viewed as a semi-permeable membrane, in and out of which resources and individuals move. It is more appropriate therefore, to examine households as resource systems within which individuals have different contributing and consuming roles, and to study over a prolonged time period how and when their boundaries and internal dynamics shift and change (Walman 1986).

This study is concerned with linking outcomes - ie childhood morbidity and mortality, to their interpretation and management within different household environments, and in particular to intra-household female labour and power relationships. In order to measure the occurrence of births, deaths and sickness which are the fundamental starting points, or dependent variables, traditional demographic cross-sectional and longitudinal techniques were used. To explain and understand the reasons and meanings behind these measured levels, it is necessary to shift the theoretical and analytical framework to an 'emic' rather than an 'etic' perspective (Kay 1982).

Anthropological techniques therefore were chosen as they were sufficiently flexible to pursue these ends, and to follow up new avenues of interest as they occurred in the field, while discarding those which seemed meaningless or inappropriate within the specific cultural setting. The variety of demographic and anthropological methods used and their adaptation to the cultural context are described below. The timetable of different fieldwork activities is illustrated in Figure 2.1.

Figure 2.1

FIELDWORK TIMETABLE.

1989		
Sept		Arrived Bamako - Pre-tested household and women's questionnaires.
Oct		Arrived Douentza - Constructed Local Events Calendar.
Nov		Cross-Sectional Household Surveys: 180 Households in 5 villages: Women's Interviews incl. Birth Histories - 334 Women aged between 15 and 49 (36 never been pregnant).
Dec		Verbal Autopsies (122 Child Deaths under Age Five).
1990		Sub-Sample Chosen: 1 Fulani Village (Dirimbe Fulbe and Rimaibe), 1 Humbebe Village (Dianweli).
Jan	Monthly Morbidity (see Appendix II for Numbers Enumerated Monthly)	Weighing and Measuring (N=100 Children Under Five) Food Consumption (54 Households)
Feb		
March		Focus Group - Breastfeeding, Supplementation and Weaning, Preventive Medicines).
April		Women's Socio-Economic Questions (N=84): Income, Labour Obligations, Gifts, Reciprocity.
May		Weighing and Measuring (N=97 Children Under Five) Food Consumption (45 Households)
June		Women's Life Histories (N=84)
July		
Aug		School Pupils' Essays on 'Family Life'.

Sept	Monthly Morbidity Cont.....	<p>Weighing and Measuring (used to rank children on weight/height and diarrhoeal disease - see score in Appendix III) (N=134 children under 5).</p> <p>Dirimbe Only: (16 mother/father/child units)</p>
Oct		<p>Minute by minute observations of 16 'healthiest' and 'sickest' children: Mother's Time Budgets and Caretaker/Child Interactions, Child Activity and Location.</p> <p>Evaluation of Household Environment (checklist of dangerous, potentially contaminating objects, disposal of trash, faeces, state of child's hair, clothes etc).</p>
Nov		<p>In-depth interviews with 16 mothers: Qualities of a good wife, mother, family and personal socio-economic organisation and income.</p>
Dec		<p>In-depth interviews with 16 husbands Qualities of a good wife, mother, family and personal socio-economic organisation and income.</p> <p>Wealth Ranking (see Grandin 1988) of all households by key informants using indigenous definitions of wealth.</p>

2.2 DESCRIPTION OF FIELDWORK (SEPTEMBER 1989–JANUARY 1991)

2.2.1 The Sample Villages.

From October–September 1989, the five villages within a twenty-five kilometer radius of the town of Douentza described in Chapter I, were chosen for a series of cross-sectional surveys. These were carried out in Fulfulde and French by myself and my principal field assistant.

Table 2.1: Distribution of Sample Households and Women of Reproductive Age.

Village.	HOUSEHOLDS				WOMEN AGED 15–49			
	FULANI		DOGON		FULANI		DOGON	
	Fulbe	Rimaibe	Humbebe	Troni	Fulbe	Rimaibe	Humbebe	Troni
Dianweli	...	...	24	...	...	...	62	...
Beni	...	...	...	21	...	...	...	47
Dirimbe	34	27	...	...	54	47	...	...
Debere	16	22	...	...	21	47	...	...
Gono	15	...	21	...	12	...	44	...
Total Households=180					Total Women=334			

The villages were chosen based on criteria of accessibility, and a need to ensure a mix of the Fulbe, Rimaibe and Dogon populations and their different production systems, preferably, but not always in the same village. As outlined in Chapter I, these villages have a range of basic health and educational facilities.

2.2.2 Household Censuses.

Each of the five villages was visited and a random sample totalling 180 households was selected after obtaining names of all household heads from each chief. 'Households' were defined as groups of people that ate and cultivated the same fields together, ie units of production and consumption known as foroba (a Bambara term adopted by the sample population). This is different from the unit of 'galle' used in many other surveys (Hill 1985) and in the local tax collection system which issues each family with a 'Carnet de Menage' supposedly listing all household members. 'Galle' implies an extended family unit of people who, although united by the patriline, may not all eat or cultivate together. Foroba was chosen because it was the unit around which women's food preparation, and thus time, economic and child care commitments were orientated.

Each head was then questioned about all members of his or her household to gain information about their age, marital, educational and occupational status and numbers of dead and living children born to women in the reproductive age groups. Further information was collected about the whereabouts and occupation of absent household members, and about children under 10 years old who had been fostered into the household.

It must be emphasised however, that the household boundaries were extremely flexible, particularly in relation to the timing and nature of male migration. Chapter I describes how large Humbebe households break up into small independent female-headed units whilst the male members are away from the village. No such changing family dynamics were found amongst the Rimaibe, but larger Fulbe households also occasionally split into smaller sub-units for movement to the bourgou or to the kunari.

Fulbe families, or parts of Fulbe families who stay behind in the village are generally in some way economically disadvantaged - for example, they may have no animals, or lack a young man or boy to look after them, or have a sick or aged family member who needs to be cared for in the village. However, as the first round of cross-sectional surveys amongst the Fulani took place in November 1989, the Fulbe had not yet started their seasonal trans-humance and the number of absent members was minimised.

2.2.3 Women's Interviews.

Once the household censuses were completed, all ever-married women aged between 15 and 49 years (N=334) were interviewed to obtain complete birth histories and marital and socio-economic information, as well as answers to more qualitative questions on health beliefs, birth, breastfeeding, supplementation and weaning practices and the value of children. Dates of births and deaths were elicited using a local events calendar which was carefully constructed in Douentza using information from the local archives and from a retired local school teacher who had taught his classes the history of their area. He was an extremely good source of information about specific local events, and about the names by which particular years were known.

Only two women, both of whom had had over 10 pregnancies, were unable to remember details of the dates, and one woman, most of whose children had died, refused to co-operate saying, understandably, that it would not bring them back to life.

2.2.4 Verbal Autopsies.

Verbal autopsies have recently become more widely used to collect retrospective information about adult and childhood deaths. They are usually effective in areas where a small proportion of deaths occur in medical institutions (Garenne 1986, Gray et al 1990) and

enable a lay interviewer to reconstruct the sequence of clinical symptoms before death with the help of a close relative of the dead person.

122 interviews were carried out with mothers of children who had died under the age of five in the last five years. Some women may have had one or two such deaths, and if so accounts were taken of both. The interview started with a verbal report by the mother of the principal events before the death, with subsequent prompting for specific clinical symptoms and their duration. In addition to the physical nature of the illness, the main interest was in how the illness was 'managed' and what treatments were tried, who was consulted, how much was spent and who payed for the traditional or modern medicine.

It has been found that most projects prefer to wait 9-12 months after the death to conduct the interview, as intense grief during the mourning period may impede accuracy (Gray et al 1990). However in Fulani society, grief at a child's death is never publicly displayed as it is thought that crying would jeopardize the chances of the child's soul (yonki) entering heaven¹. In addition, it is commonly believed that at birth God gives man a finite number of days on earth, and that everyone has a prearranged day of death. Thus the most common 'reason' for death was that the child's time had come (saatu mako wari) and to cry or complain would be contrary to the will of Allah and therefore irreverent. However, in private many women admitted that they had cried and been extremely upset - one even said that the death of her child had 'burnt her heart', but publicly they retain a stoic and unemotional face. Because of this, the verbal autopsies which were carried out for children who died during the course of the

¹ The Fulbe in particular believe that a child of a woman who cried at its death will not be able to speak up for her in front of God on the day of judgement.

longitudinal study seemed to be more successful closer to the death at around twelve weeks when the initial shock was not so intense, but when stoicism and a reluctance to recall events had not yet replaced overt grief as seemed to occur around the 'optimum' 10 months.

As described, the total number of verbal autopsies is 122 but these are distributed differently throughout the communities in the study due to different patterns of mortality. For example, only six women in Beni had experienced such a child death, compared with nearly two thirds of the Fulbe women in Dirimbe.

2.3 THE SUB-SAMPLE POPULATIONS.

The villages of Dianweli (Humbebe) and Dirimbe (Fulani) were chosen as follow up villages as they were easily accessible and it was felt, particularly in Dirimbe, that a sufficiently good rapport had been established which would facilitate the collection of good quality data. The intensive work described below was carried out solely in these communities from January to December 1990. Table 2.2 below shows the division of women and children in this sub-sample in September 1990 when most families were resident.

2.3.1 Monthly Morbidity Follow-ups.

From January-December 1990 each living child under five years old in Dirimbe and Dianweli (including fostered under fives) were followed up monthly. The numbers interviewed each month were not only affected by births and deaths in the two villages, but also by the seasonal trans-humance of the Fulbe, and the seasonal labour migration of the Humbebe women to other urban centers of the Mopti region or further afield to Burkina Faso. Highest numbers of women and children in both villages were found to be present between July and the October harvest. The exact numbers

of children surveyed each month and the numbers reported to be sick are presented in Appendix II. Their variation meant that the time allocated for this part of the survey had to be sufficiently flexible to deal with, for example, the collection of 39 illness profiles in Dirimbe in September and only 15 in May. In general the last week of each month was devoted to collecting illness profiles in the two villages.

Table 2.2: Composition of the Sub-Sample in September 1990.

	DIANWELI		DIRIMBE		TOTAL
	Humbebe	Fulbe	Rimaibe		
Number of Women:	28	27	28		84
Number of Children Under 5:	41	39	45		125

From January-December 1990, every mother who had been pregnant during the cross-sectional survey or who fell pregnant during the year was subsequently monitored and the new born child brought into the sample. During the study period 36 children were born and 10 died. If a child in the sub-sample was seriously ill or malnourished I treated him or her to the best of my ability or took the child to the clinic in Douentza and paid for the medication. Altogether I treated about 22 very sick children (some two or three times) of whom a few subsequently died but most of whom survived. Any researcher has to have a well thought out 'ethical' policy on what to do if a child becomes very sick, and I found I could not live in that environment and constantly ask questions about children's health without intervening in the

more serious cases.

Most of the Rimaibe and Humbebe women and children were present in the village most of the time, although some Humbebe families moved out to their 'bush fields' in July where they stayed until December. In addition, several Fulbe families in Dirimbe 'decamped' for several months to the bush several kilometers from the village in order to graze their animals. Such families' straw huts or shelters were often difficult and time-consuming to reach by mobylette. Most of the Fulbe however moved to the bourgou or kunari in December 1989 and returned in July 1990. Appendix II shows that up until July there were only about 20 Fulbe children in the study, but with their return from trans-humance their number increased to over 40. As described, the Fulbe families who stayed behind displayed some 'weaker' characteristics which may have pre-disposed their children to risk. In particular, many of the Fulbe foster children were living with old ladies now too elderly to make the harsh journey to the delta pastures.

At the end of each month, the mother or principal caretaker was asked about her own health and the health of her child(ren), both on the day of the interview and during the previous two weeks. Questions were asked about whether her husband was present or absent and if he was away, where he was and who looked after her, or who she could turn to in moments of real need or difficulty.

The monthly morbidity questions for the sick children identified clinical symptoms and their duration, the cause and name of the illness as perceived by the mother, and the sequence of events leading up to treatment, or the reasons for non-treatment. Detailed descriptions of each medicine were noted together with the cost, who recommended it, how it was paid for, whether it worked (and how they knew it had worked) and whether the same treatment(s) would be repeated in the future. Mothers of children who had been breastfeeding during the previous month were asked

in the following survey whether the child had been weaned. It was hoped to 'catch' these children at the moment of weaning, to see if the reported and actual duration of breastfeeding differed significantly. Each profile took a minimum of about 20 minutes to administer or up to one hour if, as often happened, women talked at length about complicated diagnostic and treatment procedures. In addition, although the questionnaire was structured, tangential topics were usually followed up so that the discussion took on the characteristics of a conversation or chat rather than a more formal 'interview'.

There are many methodological problems associated with collecting this type of morbidity data, particularly when relying on retrospective reporting of illness events by mothers or caretakers. The fact that an 'outsider' was asking questions about health meant that it was often assumed that medicines were going to be given out which could possibly lead to an over-reporting of illnesses. It was very difficult to explain that even though I was asking questions about illnesses, I had no medicines to give, although I freely gave advice about the treatment of minor disorders and treated the more serious ones as described above. I said however that although I was not a doctor, I worked with doctors and my 'people' lacked a knowledge (andal) about Fulani children's illnesses. In particular, they lacked a knowledge about the Fulani 'road' (lawol) - ie ways and customs - (see Chapter I for a discussion of lawol pulaaku). Once they had this 'knowledge', they would be better able to understand and to help in the future. This seemed acceptable as the idea of accumulating knowledge of a people's 'ways', particularly in the context of behavioural aspirations (eg pulaaku) is an important part of Fulani life. Even so, I was not sure how adequate this explanation was until one day I overheard an old lady chastising a man from another village who was about to ask me for medicines and repeating this explanation I had given her many months previously almost verbatim !

It may be that part of the success of this explanation and the close relationships I developed in Dirimbe, were connected to the fact that the village had had little contact with Europeans until my arrival, despite being fairly close to Douentza and the main tarmac road on which they occasionally saw tourists. Dianweli, by contrast, had had substantial contact with a variety of Non-Governmental Organisations from whom they had received either food or technical help. The fact that illness reporting (perhaps as opposed to real prevalence) declined in Dianweli (see Chapter IV) as the year went by may, of course be connected to the fact that women knew that they would not receive medicines from me and thus were reluctant or ambivalent about reporting their children's illnesses. In addition, the 'public' and 'private' spheres of diagnosis and illness management associated with many traditional taxonomies described in Chapter IV, may have meant that certain women were reticent about openly acknowledging that their child was sick.

It became clear after several months that often the same women were reporting their children to be sick at each visit. Whether these children actually were genuinely sicker or whether the mother was more sensitive to their state of health or whether she was more keen to report this to me for whatever reason was not clear. In most cases I asked to see the child in order to accurately ascertain the nature and severity of the illness.

Our field methodology consisted of my field assistant(s) going round briefly questioning each woman and identifying the sick children who would need an 'illness profile'. I then followed up with the longer more detailed questionnaire. Appendix II describes how in 18 cases between the initial identification and the follow up with the longer form, the mother was no longer available for interview as she was either absent from the village (for example having left to sell milk) or was otherwise occupied. Proxy reports of the exact treatment process were not accepted

from surrogate caretakers such as siblings or grandmothers unless the child was said to be formally or informally fostered to them (see Chapter V).

This issue of responsibility for individual children became increasingly important, as it was found that, in many cases, the mother was not the primary caretaker of the child as had been noted during the initial cross-sectional surveys. Chapter V discusses the variety of non-maternal child care arrangements in addition to formal fostering, and describes how children are said to be 'with the arm' with a specific individual, even though their mother may live in the same household. This person is responsible for their daily care and the child eats and sleeps with them. By asking 'whose arm is this child with?', the prevalence of non-maternal caretaking, in addition to formal fostering, was uncovered and is discussed in Chapter V.

2.3.2 Seasonal Anthropometry.

In order to monitor children's growth or growth faltering, the weights and heights of most children in the sub-sample were measured seasonally in January, May and September 1990. Equipment was brought to a central point in the village to which the women and their children were convened. Children under age two or very weak children were measured lying down, and all weights were taken to the nearest 100g. Both villages co-operated enthusiastically with the weighing and on the whole, it passed very smoothly on all three occasions, except for the following two incidents which may have implications for anthropometric measuring amongst similar populations.

In Dirimbe every family except for one, brought their children to the centrally located house for weighing. When I asked people about this, it became clear that this was the richest family in the village (a fact which was confirmed by the wealth ranking

later in the year) and they were not keen for their comparatively plump healthy children to be displayed next to smaller thinner ones. I was told that the comparison would put them under the obligation to give out either money or food to their not so well off neighbors.

In addition, in Dianweli the measuring equipment and scales always had to be taken to the house of the marabout (religious cleric) as the women in his household were secluded, and were not permitted to come to the central weighing point. In September 1990, the marabout was reluctant to let me weigh one of his daughters who had just started to have diarrhoea, but who was not yet seriously ill. Eventually, he begrudgingly let me do so but by the next month the child had died and he 'publicly' blamed me for the death saying it was the weighing that had made the child sick. As this was very upsetting for all concerned, subsequent work with this family was discontinued.

2.3.3 Household Food Consumption.

Each season, when the children were weighed and measured, details of a family's food consumption were gained by talking to the woman who prepared the previous day's meals in each household. The composition of the meal (usually nyiiri oro - pounded and boiled millet of paste-like consistency, eaten with a dried baobab leaf sauce) was noted, as well as the family's consumption of fresh or curdled milk. The number and ages of adults and children who participated in each meal were recorded, as well as whether any meals were sent away or received.

The interviewee was asked who paid for the household's millet and how it was paid for, for example, bowl by bowl, sack by sack, market by market etc. This enabled the identification of the time schedules on which different households operated, together with their seasonal variation. The millet was usually paid for by the

men of the family but the sauce ingredients were often the women's responsibility. Asking who paid for the sauce condiments proved very enlightening as to how women's household budgets functioned, and as to what finances they controlled, or received from other male or female household members.

The mother of each sample child in the household was also asked what the child had eaten in addition to, or instead of, the family meal and whether for example, they had had an extra snack or treat such as peanuts or tamarind. A difficulty with this method of questioning was the high amount of time healthy weaned children in particular, spent away from their mother's marital household and thus out of her eyesight (see Chapter VI). Many such children were constantly in and out of other households where they were often given food. In addition, the observational work noted how many scrounged snacks, including wild foods growing outside the village when they were alone or playing with other children away from adults. Such snacks, which were often surreptitiously consumed, would thus not be reported by direct questioning of the mother.

The seasonal food consumption surveys enabled the cataloguing of nutritional differences in what at first appeared to be a fairly uniform diet, but in reality varied substantially household by household. They also aided the identification of households who were being forced to economise on the quantity and quality of food they consumed.

2.3.4 Semi-Structured Questions about Socio-Economic Resources and Networks.

Each woman in the sub-sample was asked about her occupation and income, and how she spent or saved the money she earned. Gift giving and reciprocal labour relationships were noted particularly those connected with Fulbe/Rimaibe master-dependent

affiliations. Discussions which examined the relationship between health and wealth were also initiated, as well as questions which sought to determine a woman's relative financial dependence on, or independence from, her husband and his household, and her links with her natal family for social or financial support.

2.3.5 Life Histories and Open-Ended Discussions about Women's Natal and Marital Household Environments.

Life histories were taken from each woman about her growing up period (possibly including her own experience of fostering as a child) the arrangement of her marriage, and how she felt about leaving her 'suudu baba' (her own natal household) to move to her husband's home. In addition, her satisfaction with her life in her marital family in comparison to that in her natal family was also discussed, and proved to be extremely revealing. Further semi-structured discussion questions were added, which produced very detailed information about child deaths, including superstitions or practices designed for their prevention. In addition, the relative costs of child rearing particularly relating to boys and girls were also addressed.

2.3.6 Focus Groups on Breastfeeding Supplementation and Weaning.

Two tape-recorded focus group discussions were carried out with the Fulani and Humbebe women on breastfeeding, supplementation and weaning practices. In particular, the conversations focused on the early introduction of preventive medicines which are not considered 'food' and, as such, failed to come to light during the formal questions on supplementation during the cross-sectional surveys. Mixed with milk or karité butter, they do however constitute a major part of the child's early supplementation, with consequences for its nutritional status and potential contamination and infection, as discussed in Chapter IV.

2.4 INTENSIVE WORK IN THE VILLAGE OF DIRIMBE.

My daily contact with Dirimbe meant that I was able to form close and rewarding relationships with my female respondents. I had a house and a 'host' family there, and could informally chat to women, rather than gain information from formal interview situations. It was therefore decided to concentrate the intensive qualitative work, which formed the final part of the study, solely in this village. In addition, the main village-orientated economic activity of both the Fulbe and Rimaibe women (mat weaving) was compatible with sitting and chatting, and my questions did not distract from their daily routine. In Dianweli on the other hand, the Humbebe women were constantly trading, or processing goods to trade, and had no time to sit down individually to talk. The next section therefore refers entirely to the Fulani of Dirimbe.

2.4.1 Minute by Minute Observations.

In October 1990 each child in Dirimbe was ranked according to a score calculated using its observed number of diarrhoeal disease episodes between January and September 1990 and its September weight-for-height measurement. The exact method used to calculate the score is presented in Appendix III. This ranking seemed to indicate that the age of the child was extremely important in determining its health status. The most 'healthy' children according to this score, were either over 3 years old and weaned, or under six months old and breastfeeding. The most 'unhealthy' children were those who were still being breastfed around the age of 12-18 months. Children in Dirimbe were therefore divided into four age groups 1) 0-6 months, 2) breastfeeding children over 6 months, 3) weaned children less than 3 years old, 4) weaned children over 3 years old. In each of these four age groups the two 'healthiest' and the two 'sickest' children (according to this scoring system) were selected.

The main constraints to the logistics of this part of the study were that we were only two in the field - myself and my assistant and thus could not work with a larger sample. I observed each child at least once and many of them twice, but called upon the Peace Corps and several other local expatriates to help carry out additional observations. Thus it is more than possible that there may be some subjective bias in the noting of specific activities but the broad categorisation of the activities observed reduces this in the analysis. For example, the threshing, pounding, sifting, winnowing, washing, cooking and serving of millet is categorised as 'food preparation'. Because some of the additional observers did not understand Fulfulde, the actual detailed content of conversations was only noted by myself and my assistant but is not presented in this analysis.

The main aim of the study was to document maternal activities and to note the age, sex and relationship characteristics of surrogate caretakers of the child and the quantity and quality of care that they provided. Although the numbers of subjects are small, the completeness of the picture of a typical 'day' in their lives was an extremely valuable asset to the study, and one by which I learnt more about children's normative home environments than through simple 'snapshot' visits which could have been done with a larger sample.

Each of the 16 children and their mother (or foster mother) were followed separately from 6am to 12pm and from 12pm to 6pm on two different occasions several days apart. During each minute the child was observed, its caretaker was noted (together with their age, sex and relationship to the child), whether they were being 'active' or 'passive' (defined by a set of rigid definitions presented in Chapter VI), where the child was, what it was on (eg mat, ground, back, bed etc). The child's main activity was noted, for example, whether it was breastfeeding, eating or drinking, playing, crying or sleeping (noting the activity of longest



duration if several activities took place in the same minute). In addition, ample space was left on the form (each recording unit of which was a minute) for remarks about the inter-actions including their initiation and for noting general characteristics of the household environment. Concurrently, my assistant, using a synchronized watch, followed the mother/foster mother noting her main activity each minute even if she was, as was often the case, in a different location from her child. As weaned children in particular, were rarely with their mothers, it was possible to note which maternal activities were compatible with active child care, and how the quality and quantity of care given by substitute caretakers varied according to their age, gender or relationship to the child's mother.

There were no real problems with following either the mothers or the children and it is felt that the heavy labour demands of the former meant that there was little way in which they would or could change the use of their time. Admittedly some 'normative' and socially required activities which were ignored in daily life were probably carried out for our benefit. For example, on several occasions, it was noted that women who had never before been observed praying, suddenly began to do so! On another occasion, sugar was added to a bowl of cobal given to a young boy and it was considered that this was due to the fact the family was being observed. In general, however, particularly after the first hour or so of observation, it was felt that people did not seem to change their normal routine.

At first, not surprisingly, the village was a little skeptical as to the purpose of the exercise. As with the research in general however, I explained it in the context of gaining a knowledge of the 'ways' or 'road' of the women of Dirimbe (andal lawol reorbe Dirimbe) and in particular of their 'work' as 'my people did not know what their work consisted of' which seemed to be a satisfactory justification.

Even the children were aware that wherever they went, they would be followed and at first considered it to be a game, often of hide and seek, but soon settled down and appeared to be unconcerned, especially if the observer kept a discreet distance. After the first few observations some people actually requested to be followed, even though they were not from the 16 chosen families, but we usually got round this by a joke and by 'mock' observations done for fun. Although we tried to merely watch women at work and not to initiate conversations, not chatting to them would have appeared extremely rude, and we often discussed specific labour tasks or questioned activities they were doing which was both sociable and informative. There is no doubt that much of this inter-action introduced biases which would not have been present if we had been truly outsiders and unable to speak Fulfulde. Our partial participation whilst still noting behaviour however enabled us to gain information, including gossip and scandal ! Whispered confidences often shed light on the behaviour and social position of several key families in the community and facilitated the construction of a broader picture of what social behaviour and boundaries were important in this society, and how individuals who overstepped them were perceived.

Two additional day long observations were made of 'jom kossam' (milk sellers) selected from amongst the 16 pairs, as milk selling is the main activity of most of the Fulbe women. These women usually go into Douentza (a 7km walk) and spend most of the day away from their families, which has significant implications for the care of their children. Both were followed from the village, into and around town for a whole day, and minute by minute observations were recorded of their inter-actions with the breastfeeding child that they took with them. This not only enable a detailed documentation of child care outside the home and village environment, but also led to a deeper understanding of the economic and social constraints associated with milk selling.

In retrospect it may have been better to choose a larger number of subjects and observe them for shorter time periods to facilitate statistical analysis (see Chapter VI). The completeness however of the information gained for each family, when put together with the illness profiles, verbal autopsies, birth histories etc for women in the same household enables a complete 'package' of information to be collated for each of the 16 families. This provides a valuable overview of the household and its members in its entirety.

2.4.2 Desired Personal Qualities in Spouses and Children.

The 16 women who were followed were then given a series of questions on 'good mothering' and asked to identify the qualities which make a good mother and a good wife. Their replies were usually couched in the context of pulaaku, the social code for Fulani behaviour described in detail in Chapter I, together with the implications for health. These mothers were also asked how, or when, their children make them happy or sad/displeased and how they view their children's lives in the future.

In addition, each husband of these 16 women was asked a series of socio-economic questions, in particular about the effects of the 1973 and 1985 droughts on his livelihood. He was also asked about any habits he indulged in such as cigarette smoking, tea drinking, taking snuff or chewing kola nuts, and where the money for this came from. Open-ended discussions were also instigated about his attitude to family life, the qualities he expected in his wife/wives and children and the difficulties he perceived them to face.

2.4.3 Evaluation of Household Environment.

For each of the 16 households visited, a checklist was made of potentially dangerous or contaminating circumstances which may

affect the health of the child. The state of the cooking area was detailed together with whether food and drinking water were covered when stored, which gave an indication of the 'organisation' of the household. In addition, the woman was asked whether she possessed a mosquito net and whether they drank well or pond water. The child's eating and sleeping arrangements were noted as well as the state of its skin and hair, and clothes and shoes (if any).

2.4.4 Wealth Ranking.

8 key Fulbe and Rimaibe household heads who were considered to be 'average' and 'representative' were carefully chosen using the knowledge of the village that I had accumulated having been there for over a year. These informants were then asked to rank the other 26 Rimaibe and 34 Fulbe households in the sub-sample according to their relative wealth, using a technique developed within other African pastoral communities by Grandin (1988).

The name of each head is written on a card and read out to the informant who places each card read to him in a series of piles of people of equal prosperity according to their 'wealth' - the definition of which he is asked for. The names are read back to him to ensure his agreement and thus a ranking, which proved to be amazingly consistent, was created by the community itself using indigenous classifications that are more sensitive and accurate than any constructed by an outsider.

Interestingly, it became very clear that children, fields and cattle constituted different forms of wealth. In addition, poor people were divided into those who had once been fairly well off but had lost their wealth (for example in the droughts of 1973 and 1985), and those who had always been poor. Similarly, clear distinctions were made between families that had always been wealthy through inheritance, and those that had only recently

become so, and who constituted a type of Fulani 'nouveau riche'!

2.4.5 Work with School Pupils in Douentza.

Each child attending the secondary school in Douentza town was required to write an essay on 'family life'. This included recounting their own family life and their house, the games they played, and their household tasks as well as describing how they imagined their own family to be in the future. In addition, they were asked to depict someone in good health and to write about the way they looked and their behaviour. They were also required to discuss what they were afraid of in the future, and what good health depended on, as well as to say what had been the happiest and saddest moments of their lives so far! This provoked thoughtful and lively discussion amongst the pupils and many interesting and extra-ordinary answers!

CHAPTER III: CHILDHOOD MORTALITY AND THE MANAGEMENT OF CHILDREN'S FATAL ILLNESSES.

3.1 Childhood Mortality amongst the Sample Populations.

Rates of neo-natal, infant, and childhood mortality found amongst the Douentza sample populations were calculated using life table methods and are shown in Table 3.1 below.

Table 3.1: Douentza Sample: Probabilities of Dying between Selected Ages (in months) and Total Fertility Rates (TFRs).

	DOGON		FULANI	
	Humbebe	Troni	Fulbe	Rimaibe
1q0	60	89	92	70
12q0	158	137	257	193
48q12	257	83	415	319
60q0	375	209	566	450
Number of Live Births at Start:				
	300	114	215	184
TFR	8.4	7.8	6.7	8.1
(Calculated from Births in the Last Five years)				
			<u>Odds Ratio of Survival Function (60q0) (Mantel Haenzel)</u>	<u>Confidence Intervals.</u>
	<u>Significance</u>			
Humbebe v. Troni	P<0.002		1.89	3.08 - 1.16
Fulbe v. Rimaibe	P<0.1		.33	1.85 - 0.96
Fulbe v. Humbebe	P<0.001		1.843	2.52 - 1.35
Rimaibe v. Humbebe	P<0.1		.376	1.89 - 1.00
Fulbe v. Troni	P<0.001		3.45	2.05 - 5.91
Rimaibe v. Troni	P<0.001		2.52	1.51 - 4.38

Figure 3.1 Malian and Senegalese Fulani Infant and Childhood Mortality.

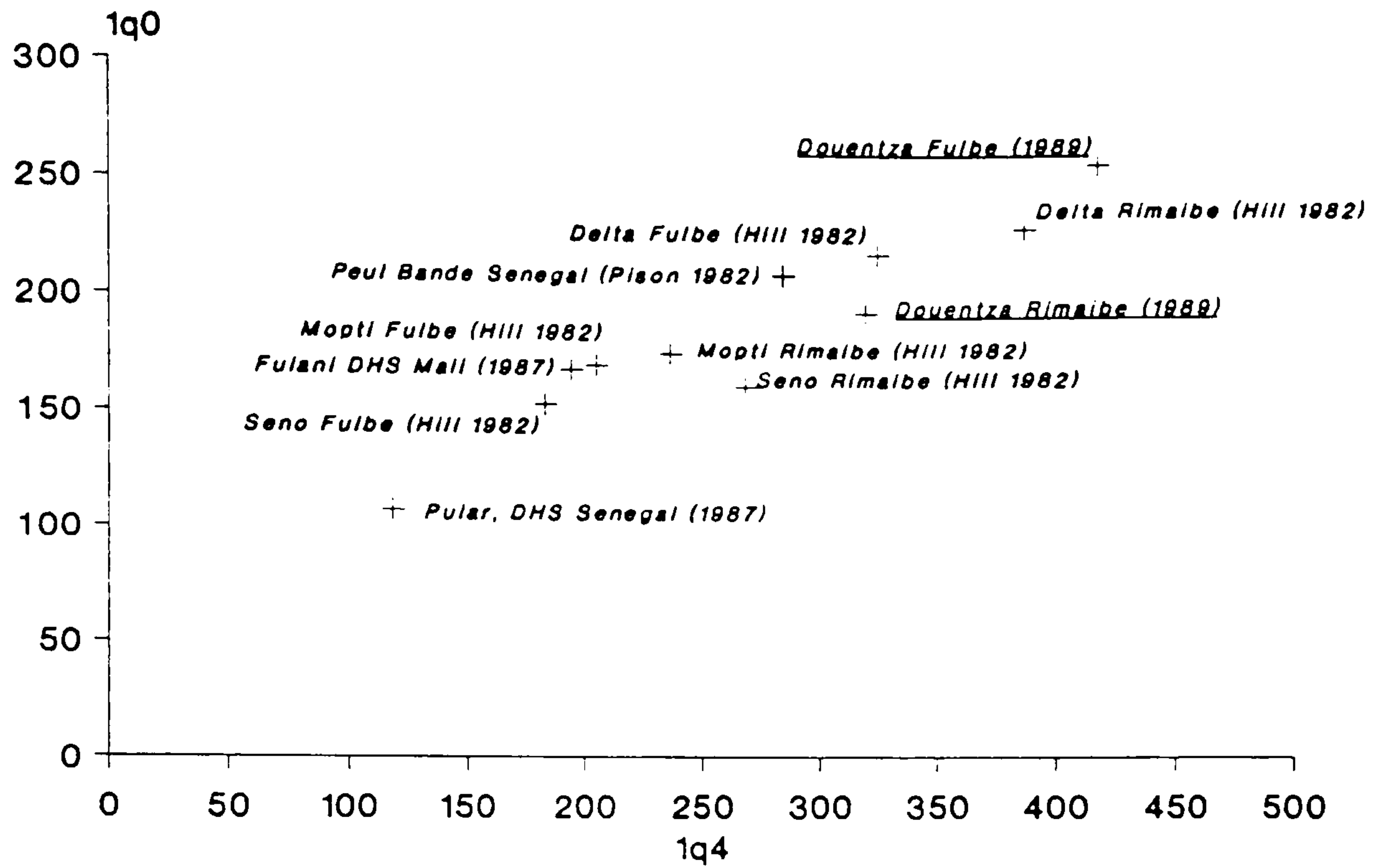


Figure 3.2 Dogon Infant and Childhood Mortality



It should be re-emphasised that the Humbebe/Troni division is one of clan whilst the Fulbe/Rimaibe difference is one of social class. Rates were calculated using birth histories from the ten years previous to the survey. Although there is some heaping on age one (probably because much of the cross-sectional surveys coincided with the harvest period - the standard marker for completed 'years'), it is not too severe.

As can be seen, the lowest rates of mortality are found amongst the Troni and the highest amongst the Fulbe. Amongst the Humbebe over one third of children die before age five whilst amongst the Fulbe less than half survive until their fifth birthday. Lower Rimaibe mortality compared with that of the 'free' Fulbe is significant, but not as significant as differences between the Fulbe and the Humbebe or between the Fulani and the Troni. Fertility varies slightly between the two Dogon clans and substantially between the two Fulani social classes. Research from other areas of the region and indeed from other areas of Africa, confirm that pastoralists tend to have lower fertility than agriculturalists, although the reasons are complex and not entirely understood (Hill 1985).

Figures 3.1 and 3.2 show corresponding rates for similar groups surveyed in other parts of Mali and elsewhere in West Africa. All show typical West African patterns of mortality with higher proportions of deaths between one and four years of age than in infancy (Blacker et al 1986). The Douentza Fulbe rates in particular, are higher than other groups surveyed but may be accounted for by the fact that this is the only rural population surveyed after the drought of 1984 which had a devastating effect on many Fulbe families' livelihoods. Dogon groups exhibit no clearly consistent patterns, but the Douentza populations display comparatively higher rates than the population of Sangha to the south of the plateau. Sangha has been a center of Protestant missionary activity for over fifty years, and associated health

interventions may account for the lower mortality of the surrounding villages. Tabi and Sarnyere to the north exhibit higher levels of mortality but the extreme heterogeneity of social, cultural and economic organisation amongst the Dogon described in Chapter I, precludes direct comparison.

Table 3.2: Mortality and Fertility of Other Malian Fulani.

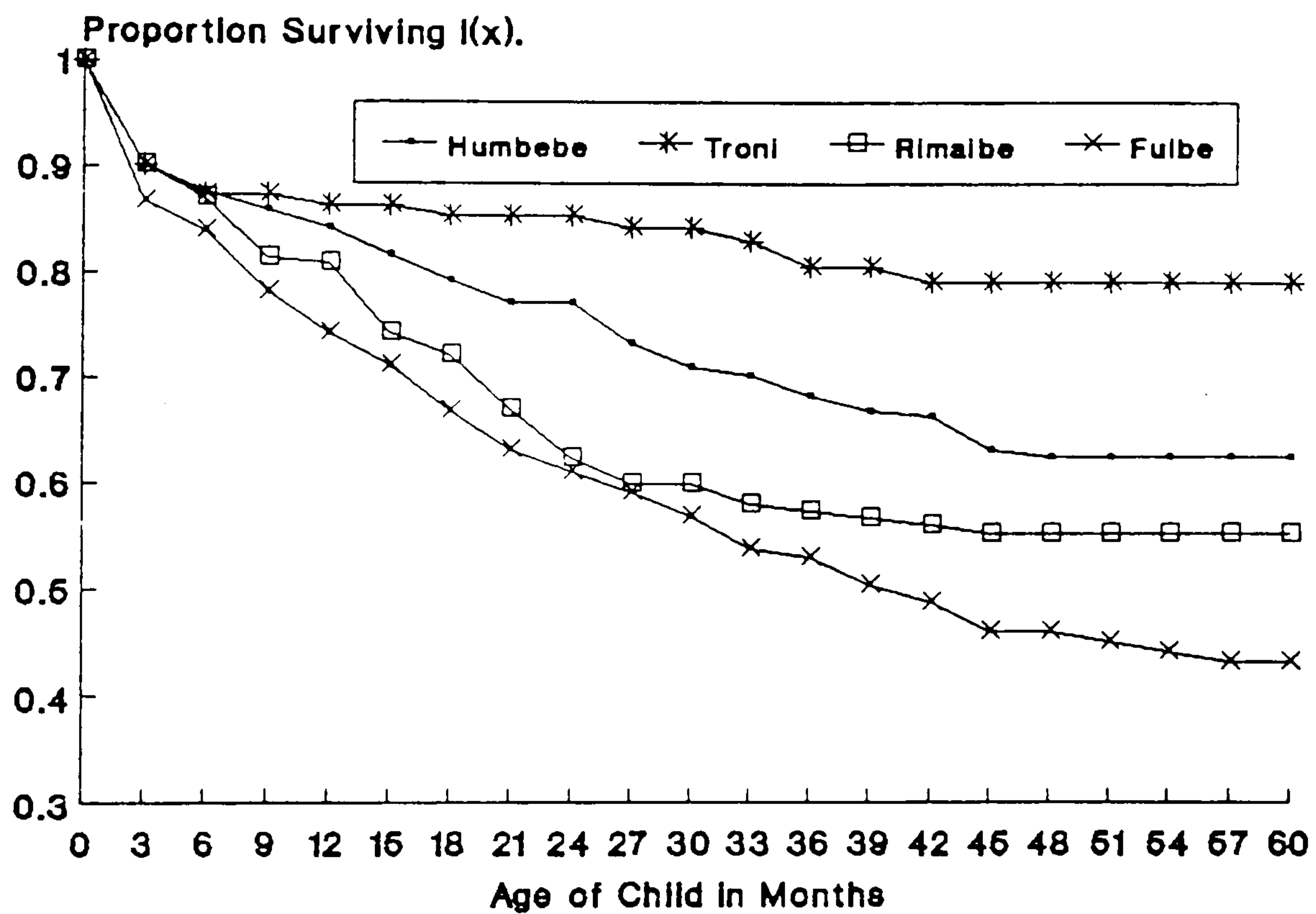
	*Seno-Mango Fulbe (1982)	*Seno-Mango Rimaibe (1982)	*Delta Fulbe (1982)	*Delta Rimaibe (1982)	**Mopti Fulbe (1985)	**Mopti Rimaibe (1985)	DHS Fulani (1989)
12q0	152	151	217	227	170	175	169
60q0	305	377	469	522	340	369	353
Total Fertility Rate (TFR):							
	6.9	5.7	7.9	6.4	...	...	6.2
* From van den Eerenbeemt (1991).							
**Calculated directly from birth histories from a survey of Mopti town carried out by Hill in 1985.							

Table 3.2 above shows comparative rates for other Fulani surveyed in the Mopti region in 1981 and 1982, and from the DHS of 1987 which did not differentiate between Fulbe and Rimaibe. These indicate that the Douentza Fulbe have a similar mortality to the Fulbe of the Delta and a similar fertility to the Fulbe of the Seno-Mango. Given that the Douentza Fulbe spend over six months of the year in the Delta or Kunari and away from their Seno-Mango villages, this is not entirely unexpected. The Douentza Rimaibe have a mortality and fertility in between that of the corresponding Seno-Mango and Delta groups. Their fertility is surprisingly high, but not as high as that of the Humbebe and Troni who were only enumerated in the Douentza sample. As described, the drought of 1984-5 had a devastating impact on many

Rimaibe, and in particular, Fulbe livelihoods, which may result in increased mortality during and after these years. In general however, the fact that the Douentza Fulbe are more like the Fulbe of the Delta than those of the Seno-Mango, where they actually live, can be attributed to the nature and duration of their transhumance. Urban Fulani exhibit substantially lower mortality with smaller differentials between the two social classes.

3.2 Age Pattern of Mortality.

Figure 3.3



Proportions Surviving from 0 to 5 years.

Figure 3.3 shows periods of differential risk for the four groups considered. Within no group were there significant differences by sex or social class (using the wealth ranking data) nor by season of birth. Differentials by ethnic group and village are shown in Appendix IV and were also found not to be significant.

These $l(x)$ curves demonstrate that for the Troni, for whom much

of the infant mortality is made up of deaths during the neonatal period, proportions surviving decline only very slightly after 6 months. Dogon declines are fairly constant, whilst Fulbe/Rimaibe differences up to 24 months are largely a result of variations in mortality during the neonatal period. After 24 months proportions of Fulbe children surviving continue to decline steeply, whilst the Rimaibe rates level out substantially.

3.3 Factors Explaining the Improved Health of the Troni of Beni.

The following section will seek to identify what community and household level factors could account for the significantly lower mortality of the Troni of Beni compared with the other three groups despite their high degree of inaccessibility and geographical isolation and their poor water supply (Chapter I Table 1.2) and given the fact that macro-environmental and ecological characteristics are no different from those of the other sample villages.

3.3.1 Community Level Factors.

One possible explanation lies in the population's perception of man's personal power over illness and ability to change what are accepted by the other groups as God given situations. The population of Beni are allied to the Islamic Wahhabiyya sect rather than to the Sufi Quadiriyya like the other three sample communities. The Suni Wahhabiyya movement is more fundamentalist and originated from Saudi Arabia only becoming popular after the second world war when more people made the pilgrimage to Mecca (Brenner 1983). The identification of Wahhabiyya by non-Wahhabiyya generally alludes to their avoidance of marabouts as Wahhabiyya men and women believe that they can communicate directly with God. They also can be identified by their style of praying which involves crossing their arms, their non-use of

prayer beads and the fact the women are veiled and often secluded. Most importantly, at the root of their faith is the belief that 'material security determines the quality of one's faith and that passivity and resignation are contrary to the spirit of Islam' (Kaba 1974).

In relation to health and illness, this contrasts sharply with the Humbebe and Fulani view under the Sufi Quadiriyya, which leaves responsibility very much with God and not with the individual, and which for the Fulani is exacerbated by the stoicism and increased individual isolation and acceptance of physical hardship encompassed in pulaaku.

It must be noted that rural and urban practices of the Wahhabiyya may differ, as in many cultures only higher socio-economic status can enable the true seclusion of women which then serves to be as much of a status symbol as well as a religious tenet (Walker 1977). The Troni women of Beni, although secluded in principle, are still able to carry on their market trading, as this is vital to their household economies. The commercial livelihoods of Wahhabbi women are so crucial to their families, that to some extent they over-ride both men's and women's adherence to true notions of seclusion, and encourage trading activity as a means to material, and thereby spiritual security.

Furthermore, a great number of the older men of Beni had been to Mecca or had been 'ancien combatants' (soldiers in the French army) which had taken them as far as Indo-China during the last war. Thus a large proportion of influential people in the village had had extensive experience of the outside world and other customs and lifestyles, including a knowledge of French. One man even kept a vital registration of the dates of all births and deaths in the village. In addition, a new generation of young children are being educated at the school at Dianweli where health messages form a frequent part of classroom teaching.

As described in Chapter I, Beni also has the advantage of a resident nurse for part of the year. An elderly man from the village who was trained in France where he lived for nine years, gives chloroquine to all the children during the rainy season and treats minor illnesses, often paying for treatments himself. He was consulted extremely frequently by the population of Beni and the surrounding villages for whom he could write prescriptions to be cashed in at the dispensary in Douentza.

One of the most important community level factors influencing the better health of the children of Beni was the fact that all men and most women in this village used entirely 'western' taxonomies of illness based on recognisable clinical symptoms such as diarrhoea and fever, whereas the other communities had complex traditional aetiologies of disease relating to foundou (the bird) and hendu (the wind). Both these illnesses, which are described in detail in Section 3.6 can only be recognised and treated by old people, traditional healers and marabouts, and a lay person is usually unable to identify the symptoms successfully. Importantly none of the western taxonomies of illness diagnosed by the Beni population precluded treatment at the dispensary. Whether this lack of traditional explanations of illness was because of the high numbers of men who had worked in western or educated environments perhaps in Abidjan or Bamako, or because of the presence of the French educated nurse was unclear. People did believe that these traditional illnesses existed, but said that they were not present in Beni. The one woman whose child died of foundou (the bird) according to the verbal autopsy said that she had been to visit her parents in Douentza and the child had caught it there. The child who was described as having had hendu by its mother was confirmed as actually having died from measles by its father. No traditional cures for foundou or hendu are available in Beni because for most people the illnesses just do not exist in the village.

3.3.2 Household Level Factors.

There are several household level factors which serve to distinguish the Troni from the three other sample populations and which may go some way to explaining their better overall mortality performance. Firstly, Table 3.3 indicates that Troni households are much bigger, although they do not have a higher dependency ratio of children and old people. In this way they can probably spread peaks and troughs of difficulty through this larger, less dependent household structure.

Table 3.3 : Mean Household Size and Dependency Ratio.

	Mean Household Size	Mean Dependency Ratio.
Humbebe	11.6	1.6
Troni	13.1	1.4
Fulbe	6.4	1.2
Rimaibe	9.3	1.4

Dependency Ratio = $\frac{\text{Number of Children under 15} + \text{Adults over 60}}{\text{Number of Adults between 15 and 60}}$

Table 3.4 below also shows that the four groups exhibit fundamental differences not only in their household size but also in their household structure. 57% of the Fulbe households were of a nuclear type - that is to say a man and his wife lived with their children in their own self-contained family unit. 20% of the Fulbe and 28% of the Rimaibe households were of a small hierarchical structure meaning that the head of household lived with his wife, their son(s) and his/their wife/wives and children. These households therefore contained two generations living in the same unit. The laterally extended households consist of the head and his wife/wives and his brother(s) and

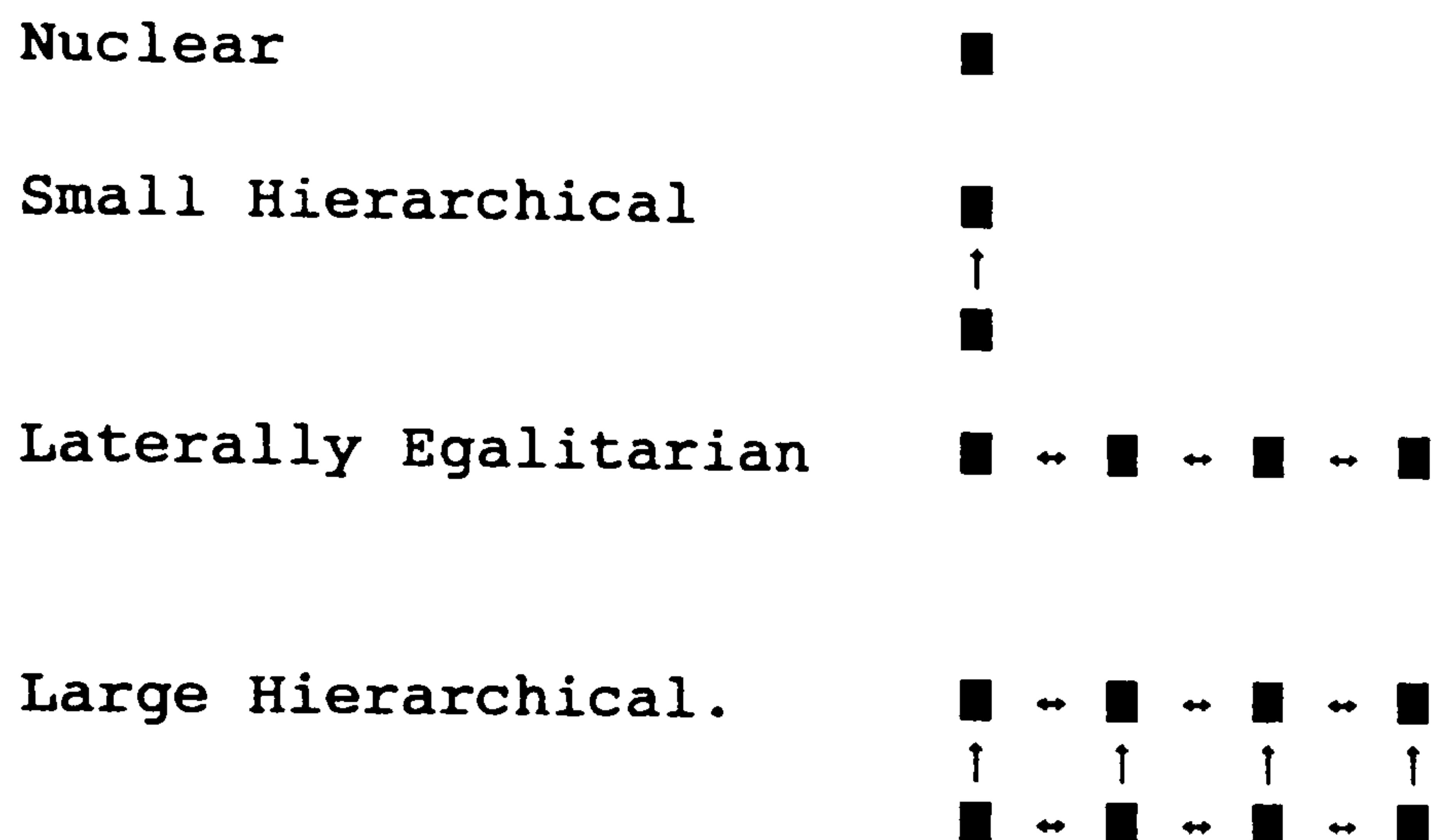
Table 3.4: Structure of Sample Households (N=180).

HOUSEHOLD TYPE:	Humbebe (N=45)	Troni (N=21)	Fulbe (N=65)	Rimaibe. (N=49)
Nuclear	30	38	57	25
Small Hierarchical	7	9	20	28
Laterally Extended/ 'Egalitarian'.	30	24	13	21
Large Hierarchical	33	29	10	25
(Column Percentages)				
$\chi^2=32.64, DF=9, P<0.005$				

his/their wife/wives and unmarried children. In these households, unlike the hierarchical units, there is no father/son or mother-in-law/daughter-in-law division, but a more lateral egalitarian extension. The large hierarchical households consist of a head and his wife/wives and his brothers and their wives and his married sons and nephews and are thus both 'vertically and 'horizontally' extended.

A schematic diagram of these household types is shown in Figure 3.4 below. These differing household structures lead to women occupying different status positions within them, depending where they are placed in the hierarchy and how many peers, if any, they have of equal status, and whose assistance are entitled to call upon for communal household tasks. The implications of these status differentials for fatal illness management and their links with childhood mortality will be discussed in Section 3.8.

Figure 3.4: Diagrammatic Representation of Household Types.



In addition, Table 3.5 indicates that more of the women in Beni are in polygynous unions which may account for their longer duration of post-partum abstinence after a birth compared with that of the Humbebe or Fulani. Many Troni women were able to spend over a year after the birth without resuming sexual relations, for the benefit, they said, of the health of the child.

Table 3.5 : Percentage of Women in Polygynous Unions and Mean Duration of Post-Partum Abstinence.

	% Women in Polygynous Unions	Mean Duration of Post-Partum Abstinence (months).	SD	Cases
Humbebe	52	3.3	12.2	87
Troni	61	8.8	14.7	38
Fulbe	23	5.1	10.2	77
Rimaibe	29	3.1	5.0	73

3.4 Breastfeeding and Supplementation.

The mean duration of breastfeeding for each group was calculated for each 'last birth' if it had been weaned and is presented

Table 3.6 : Mean Duration of Breastfeeding.

		SD
Humbebe	29.6 months	6.1
Troni	29.5 months	6.0
Fulbe	24.3 months	3.8
Rimaibe	22.4 months	5.1

in Table 3.6 above. The reported mean duration obtained from focus group interviews with the Fulani was 23 months for a boy and 24 months for a girl (the concept of a male equalling '3' and a female equalling '4' appears to be widespread in West Africa - Murray Last, personal communication 1990). These durations of breastfeeding are similar to those found for the Fulani of the Seno-Mango in 1982 and to reported durations for Fulani in Senegal (Cantrelle et al 1980).

As in many other societies where natural fertility prevails and where breastfeeding whilst pregnant is taboo, pregnancy often determines the duration of lactation rather than the other way around (Dettwyler 1987). Although only 12% women said the reason for weaning their last child was that they were pregnant, it was probably the most common reason for stopping breastfeeding. Other studies in West Africa have shown that 10% of women were still breastfeeding while four months pregnant (Cantrelle et al 1980). Focus group discussions established that it was normal to miss two menstrual periods to confirm the pregnancy, and then to wean the child. Evidence from the longitudinal study however, indicated that women were still breastfeeding four or five months into their pregnancies especially if the birth interval was excessively short.

The introduction of supplementary food to breastfeeding children also plays an important role in explaining the variations in

proportions surviving by ethnic group, and relates in particular to the differences in the timing of mortality amongst the two Fulani social classes illustrated in Figure 3.3. In Fulani and Dogon society there are no special weaning foods and children are gradually supplemented with the staple adult diet - usually either nyiiiri oro (the staple millet dish with dried baobab leaf sauce) or cobal a watery millet gruel to which soured milk (kadam) is sometimes added. Nyiiiri oro like many other staple foods in other parts of Africa is very low in protein and energy and very bulky, thus making the child feel 'full' very quickly (King et al, 1978). Table 3.7 below presents supplementation information for the 135 'last births' who were being breastfed at the time of the cross-sectional surveys. This is based on response to the question 'what did you feed this child in the

Table 3.7 : Patterns of Supplementation by Six Month Intervals (Principal Food Supplemented).

	Age of Child in Months.				
	0-6 (N=63)	7-12 (N=25)	13-18 (N=22)	19-24 (N=20)	25+ (N=5)
Supplemented With:					
Nothing	94	32	4	25	40
Animal Milk	5	20	9	...	...
Cobal	...	12	27	...	...
Nyiiiri Oro	1	36	59	75	60
(Column percentages)					

last 24 hours ?' The table indicates that during the first six

months very few breastfed children were being given supplementary food, but from seven to twelve months some were receiving nyiiri oro or animal milk or cobal. By 13 to 18 months over half the children were receiving nyiiri oro and over one quarter drinking cobal but even over 25 months there were still some children who were not receiving regular supplementation. Further analysis revealed that these are all Fulbe children, as many Fulbe mothers believe that to supplement solid food before weaning will retard the motor development of the child. They say that the child's legs become 'heavy' if given supplementary food before weaning and s/he will not walk quickly. Thus many Fulbe children can reach weaning without any real supplementation which serves to explain their steeper declines in mortality after 24 months. Other studies (Cantrelle et al 1980, de Lestrangle and Passot-Guevara, 1981) attribute the greater survival of Fulani children elsewhere in Africa to the more widespread giving of animal milk than occurs amongst children of other ethnic groups. In fact, the sample populations were reluctant to give fresh milk (biradam) to small children as they said it caused fever (jonte) and usually just gave small quantities of soured milk (kadam). As the Fulbe have easier access to cow's milk, their children tend to receive it in greater quantities than the Rimaibe but lack additional early supplementation with solid food. By contrast, many Humbebe women supplemented goats milk in the first six months of life which they sieve and boil before giving it to the child. Humbebe mothers in general gave a variety of solid foods earlier than the Fulani.

What the questions on supplementation failed to capture was the widespread use of preventive medicines by all groups which are discussed in Chapter IV. These were not considered 'food', even though they were often given with milk or karite butter, but rather as 'medicine' (lekki) and thus were not cited during supplementation questions, despite the fact that they often constituted the major part of the child's energy intake.

3.5 PRINCIPAL SYMPTOMS BEFORE DEATH : EVIDENCE FROM THE VERBAL AUTOPSIES.

An attempt was made to ascertain differential periods of risk and causes of death using the 'verbal autopsy' format to clarify the nature and management of a dead child's last illness.

Although the principal account was taken from the mother it must be noted that in five cases the mother had not been the main caretaker of the child while it was alive as it had been fostered elsewhere. Both the retrospective and longitudinal information indicated that fostered children were often returned to their real parents if they became seriously ill, and in addition non-fostered children were often moved to the house of an older woman such as the child's maternal or paternal grandmother as the death became imminent. This is linked to the fact that old people have a crucial role to play in the control and diagnosis of illness and is discussed in detail in Section 3.8. Of the 122 children for whom verbal autopsies were collected, 18% died somewhere other than their usual place of residence. Only one child died in hospital.

For the sample population each case was individually assessed by noting the nature and duration of symptoms and the perceived cause of death as given by the mother. Some principal symptoms and probable causes of death were clear cut, but others had what are here termed 'confounding' symptoms. It is possible therefore that a child may have had chronic diarrhoea and malnutrition for over one month but actually died from a respiratory infection which started just a few days before death. In this case the principal symptom could be said to be diarrhoea and the confounding symptom the respiratory infection. In addition, the perceived cause of death as given by the mother often referred to a traditional illness, notably the 'bird' (foundou) or the 'wind' (hendu) and for them constituted the real reason why the child had died. Separating these traditional illnesses from the

clinical symptoms before death proved rather difficult as the latter were of secondary importance to the mothers. These illnesses and how they relate to 'western' disease aetiology are discussed in detail in Section 3.6.

Information concerning the principal symptoms of children who died at different ages are shown in Table 3.8 indicating that fever and diarrhoeal disease were the most important principal symptoms before death. The local definition of jonte is a fever which responds to treatment with chloroquine - ie malaria which is here translated as 'fever'.

Table 3.8 : Principal Symptoms before Death amongst Children under Five.

Age at Death (Mths)	Fever	Diarrhoea	Diarrhoea+ fever	Respiratory infection	Stiffness/Convulsions	Measles	Misc
< 1 (N=10)	5	...	2	...	1	...	2
1-11 (N=43)	13	12	9	2	...	...	7
12-24 (N=35)	8	7	11	5	...	2	2
24+ (N=34)	9	10	10	3	...	2	...

3.5.1 Neonatal Mortality.

Table 3.9 below uses data from the verbal autopsies of neonatal deaths during the past five years (N=10) to illustrate the principal and confounding symptoms experienced by these children before death. This shows clearly that of the five children who had fever, all suffered convulsions before death, whilst of the children who suffered diarrhoea and fever one had a respiratory infection and the other severe weight loss. All the neonatal deaths took place between the third day and third week of life and four out of the ten children were, according to the mothers, exceptionally small at birth.

Table 3.9 : Principal and Confounding Symptoms during the Neonatal Period.

	Confounding Symptom				
	None	Resp- iratory infect- tion	Convul- sions	Weight Loss	Other
Principal Symptom:					
Fever (N=5)	...	...	5	...	...
Diarrhoea + Fever (N=2)	...	1	...	1	...
Convulsions (N=1)	1	...	...	...	...
Other (N=2)	1	...	...	...	1

Evidence suggests that neonatal tetanus, biological causes such as birth trauma, congenital malformations and prematurity are the principal causes of death during the first month of life (Leroy and Garenne 1989). The women's interviews indicated that amongst

the Humbebe, Troni and Rimaibe around 30% of women had been vaccinated against neonatal tetanus during their last pregnancy, as opposed to just 8% of the Fulbe who are usually in the middle of their seasonal transhumance when the vaccination teams are active. Neonatal tetanus is generally related to the cutting and treatment of the umbilical cord, although higher rates of neonatal mortality amongst both the Troni and the Fulbe probably reflect not just cord cutting practices, but also the environmental conditions of their houses. Table 3.10 shows the instrument used to cut the cord of the last births of all women in the sample (including those who had experienced a child death more than five years ago).

Table 3.11 : Implement Used to Cut the Umbilical Cord at Birth.

	Razor	Knife	Millet Stalk	Stone	Scissors	Don't Know
Humbebe	63	31	...	...	6	...
Troni	10	25	...	55	10	...
Fulbe	64	8	1	...	5	22
Rimaibe	73	12	...	...	7	8
(Row Percentages)						

Amongst the Troni it was customary to cut the cord with a stone rather than a razor blade which was favoured by other groups. The fact that tetanus spores are more likely to be found on the ground amongst such stones could account for their higher degree of infection around birth. Around the Fulbe households there is usually a greater amount of animal excrement, which is frequently handled by women as this group use dried cow dung as cooking fuel.

After the birth, the Humbebe hold the child so that the cut cord dangles into boiling wild raisin oil heated in a piece of clay pot. They burn the umbilical cord several times a day until it shrivels up and it is possible that this has some sort of sterilising effect against contaminating bacteria. The Fulbe and Rimaibe tend to just leave it or tie a small piece of cotton around the top and rub cinders and animal or karité butter into it until it has fallen off.

3.5.2 Postneonatal Mortality.

The principal and confounding symptoms preceding deaths between the first and eleventh month of life are shown in Table 3.11

Table 3.11 : Principal and Confounding Causes of Death During the Post-Neonatal Period.

Principal Symptom	Confounding Symptom						
	None	Respira- tory Infect- tion	Diarr- hoea	Fever	Con- vul- sions	Weight Loss	Misc
Fever (N=13)	5	3	...	...	1	3	1
Diarrhoea (N=12)	5	4	...	2	...	...	1
Diarrhoea + Fever (N=9)	2	1	...	...	1	5	...
Respiratory (N=2)	1	...	...	1	...	...	...
Other (N=7)	6	...	1	...	...	...	...

above. This indicates that respiratory infections played an important role in conjunction with fever and diarrhoeal disease in contributing to the deaths of many children. This is consistent with evidence from other studies of cause-specific mortality at this age from studies carried out elsewhere (Fauveau et al 1990). In addition, over half those who had experienced diarrhoea and fever before the death had also suffered severe weight loss. Of those who had suffered a respiratory infection as a confounding symptom, most had had diarrhoea as the major and prolonged symptom before death. In other areas of West Africa, such as the Gambia, which have, for example, active campaigns advocating Oral Rehydration Therapy for diarrhoea, respiratory infections seem to be a principal rather than confounding symptom before death (Greenwood et al 1987). Most Humbebe and the Fulani withhold water during diarrhoea believing that it make the illness worse. This both prolongs the episode and increases the severity of its effect, leaving respiratory infections to play a secondary but acute and fatal role.

3.5.3 Deaths between 12 and 60 months.

Table 3.12 shows the principal and confounding symptoms for children who died between one and five years of age. This indicates that for those whose primary symptom before death was a fever, possibly malaria, the majority had convulsions and weight loss which would normally both accompany any severe febrile illnesses. For those who died of diarrhoea, around one third had accompanying weight loss whilst for those who had diarrhoea with a fever (perhaps indicating dysentery) nearly half had accompanying weight loss. Respiratory infections seemed to play a less important role as a confounding symptom for those children suffering from diarrhoea (either with or without a fever) in this later period compared with those who died during the postneonatal period. For those whose major illness was a respiratory

Table 3.12 : Principal and Confounding Symptoms between 12 and 60 Months.

Principal Symptom:	Confounding Symptom						
	None	Respira- tory Infec- tion	Diarr- hoea	Fever	Convul- sions	Weight Loss	Other
Fever (N=17)	6	...	1	...	5	5	...
Diarrhoea (N=17)	2	4	...	5	...	6	...
Diarrhoea+ Fever (N=21)	2	4	...	...	3	10	2
Respiratory Infection (N=8)	1	...	1	5	...	1	...
Measles (N=4)	2	...	2	...	...	...	...
Other (N=2)	1	...	...	...	...	1	...

infection, over half had an accompanying fever, one had diarrhoea and one weight loss. Half the measles cases also experienced diarrhoea which has been shown elsewhere in the world to be a particularly fatal combination (Goldberg and Mbodji 1987).

3.6 TRADITIONAL ILLNESS TAXONOMIES.

Table 3.13 below shows the mother's own diagnosis of the illness which killed her child and indicates that traditional taxonomies have an important role in retrospective diagnoses and account for over half the perceived causes of death amongst the Fulani. The

Table 3.13 : Distribution of Deaths by Perceived Nature of Child's Last Illness.

	DOGON		FULANI	
	Humbebe	Troni	Fulbe	Rimaibe
<u>Traditional Illnesses.</u>				
Hendu	14	17	3	11
Kerngol	...	...	...	5
Foundou	33	17	51	38
<u>'Modern' Illnesses.</u>				
Jonte (malaria)	5	17	11	5
Diarrhoea	21	17	16	22
Measles	2	17	3	3
Respiratory infection	5	...	11	...
Other	7	17	3	5
Don't Know	12	...	3	11
(Column Percentages)				
Total Number of Deaths:	42	6	37	37
Total percentage of deaths due to traditional taxonomies:	48	33	54	54

following accounts summarise the main points from many informal conversations about the two principal fatal childhood illnesses 'foundou' and 'hendu'. 'Kerngol' is described in Appendix VI and corresponds in western terms to congenital syphilis. For the Fulani its complex aetiology does not have a metaphysical dimension and is not usually perceived to be fatal.

3.6.1 Foundou.

Foundou literally means bird and refers to the owl of which people are very afraid. Even its name is rarely mentioned as this is thought to precipitate the deaths of young children - it is thus usually alluded to as "n'do" (the thing up above). Owls are said to live by the river during the dry season but come inland to the Seno-Mango during the rainy season when they take the lives of small breastfeeding children. During the day the owl lives in the cemetery but at night it is seen flying over the village. A child catches foundou if the cry of the owl coincides with the cry of the child, or if dust from the cemetery which has stuck to the owl's claws falls on to the child as it flies over. If a woman is pregnant and the child turns in her womb as the owl flies over her then the child will be born with foundou and will usually die¹. Foundou prefers to take the first born children of a woman (which is probably born out demographically by the higher risk of dying at parity one) because it is said other birds tend to steal the first egg laid by an owl, but any breastfeeding child is susceptible. Prevention of foundou is usually thought to be effective by making a talisman from owls' feathers or claws available from traditional healers who have stalls in most markets, or by a woman leaving some breastmilk outside in a bowl, supposedly for the owl to take.

The main 'symptom' of foundou is a clenching of the child's fists and a secondary, less important sign is convulsions which in terms of modern diagnoses could indicate severe febrile convulsions from malaria or a tetanic fit during the neonatal period. Generally speaking foundou can really only be recognised

¹ Hence it is thought safer for small children and pregnant women to sleep either indoors or under a hangar. During the hot season however, people are forced to sleep outside in the open air. Apparently no protection from foundou is provided by a mosquito net!

by old people, traditional healers and marabouts and as long as one or both of these symptoms are present even for an instant then the child would be said to have foundou. Therefore a child could have accompanying fever or diarrhoea or respiratory infection but as long as the fists were clenched or the child had convulsions, then foundou would be diagnosed. Neonates who were born yellow (probably with neonatal jaundice) were said to have too little blood, another symptom of foundou, as were children who had green stools or loose stools with 'fibre' in them. The most common cure for foundou is to put dried goat dung on hot coals and make the child breathe in the smoke or to receive an amulet from a marabout.

What is most important about the notion of foundou is firstly its perceived severity and secondly its 'public' nature as a method of explanation. An individual mother would be unlikely to recognise foundou and has to rely on a diagnosis from a 'specialist', usually from outside her household. Once a diagnosis of foundou has been made, public opinion indicates that there is little hope for the child and general consensus is that western treatments are powerless against the illness. Thus, going to the hospital or doctor with a child who had diarrhoea and fever but which had been diagnosed as having foundou was considered ineffectual and inappropriate. By contrast, a child who had a simple diarrhoea and fever (without clenched fists) rather than one related to foundou could, according to popular belief, respond to western therapy.

As illustrated in Table 3.13, the majority of causes of death given by the mother relate to foundou or hendu rather than straightforward clinical symptoms. It seems however, that foundou is very much a retrospective diagnosis, particularly of a cause of death, probably because the perceived severity of the illness absolves the mother from guilt or blame. The monthly morbidity surveys only saw one or two cases of foundou in living children

(who had malaria) even though I was told it was 'everywhere'. Similarly, mothers of living children who had had a straightforward diarrhoea which had lasted a long time talked retrospectively about the child having had foundou several months afterwards, even though at the time the illness had simply been diarrhoea.

3.6.2 Hendu.

Although hendu literally means 'wind', in terms of illness taxonomy it refers to sukunyabe (sorcerers) who are actual people out to do evil, and bombe who are invisible spirits who haunt the bush and who can also make people ill. A person 'catches' hendu by the sorcerer or spirit drinking their blood. They would not necessarily know that this had happened but may wake and cry out during a nightmare indicating that this had occurred. The main physical symptoms of hendu are a rigidity or shaking of the body put down to fright, as it is said that the child is terrified of something or someone that only s/he can see. In addition, the eyes are said to be wide open and staring with fear, and particularly if the eyelashes are stuck together, hendu is usually diagnosed. Again these symptoms are probably associated with severe febrile convulsions and the staring eyes in particular are typical of the sunken eyes which are symptomatic of marasmus or dehydration accompanying diarrhoea.

Ordinary physical symptoms such as diarrhoea are generally distinguished from hendu by their duration. Thus a simple diarrhoea lasts only one or two days, but diarrhoea caused by hendu and accompanied by the above mentioned 'symptoms' would last for a month or more and usually have blood in it. Again, a lay person cannot usually identify hendu but would have to rely on an old person, traditional healer or marabout. Similarly, modern treatments at the dispensary are thought to be totally ineffectual, and the usual cure for hendu was to buy medicines to put on hot coals and breathe in the smoke. These are widely sold

at most markets or prepared by traditional healers. The prevention of hendu is more difficult than the prevention of foundou and is usually done with the aid of a talisman from a marabout, rather than with medicines from traditional healers.

The implications of these traditional illnesses for power relations between the mother and the healer and for subsequent health-related behaviour are important as traditional healers rarely give diagnoses of ordinary 'western' symptoms such as diarrhoea or fever, but more often foundou or hendu. This increases their power over the child and the mother, who knows that as a lay person she is neither able to recognise nor cure the illness. Such a diagnosis also absolves the healer from blame if the child dies as these illnesses are known to be very serious. In this way, what starts off, for example, as a simple diarrhoea which a mother may have been able to treat in her own home with a traditional remedy, often becomes 'transformed' into foundou or hendu by a traditional healer or an old person. The focus of the illness is thus subsequently changed from the 'private' to the 'public' domain and means that from this moment, modern treatments are considered inappropriate. The actual patterns and pathways of diagnosis and how they are related to intra-household power dynamics and structures are demonstrated and discussed in Section 3.9.

There is however, no clear pattern to the clinical diagnoses of both traditional illnesses which is probably accounted for by the fact that the most important symptoms of foundou (clenched fists) and hendu (eyes wide open/fear) do not lend themselves to conventional diagnosis but are rather contingent on the reaction of whoever the mother consults. What is consistent between the local accounts of the illnesses and the evidence is that the duration of the illness can influence diagnosis. Of illnesses attributed to hendu 42% lasted over one month compared with 27% of ordinary illnesses and 29% illnesses attributed to foundou.

3.7 MANAGEMENT OF CHILDREN'S FATAL ILLNESSES.

3.7.1 Informal Consultation and Choice of Healer.

It is possible to build up a picture of the exact sequence of events before death based on the mothers actions, her perception

Table 3.14 : Choice of First Practitioner by Person Consulted about the Child's Illness.

Person consulted:	First person to Treat the Child:				
	Mother herself	Trad. Healer	Marabout	Doctor	Other
Husband (N=38)	34	13	16	32	5
Mother-in-law (N=16)	12	50	19	12	6
Other person in marital family (N=13)	8	31	31	23	8
No-one (N=8)	37	25	12	25	...
Own mother (N=16)	12	50	19	12	6
Other (N=13)	8	31	31	23	8
Forgotten (N=9)	22	44	11	22	...
Healer first treating child:	24	34	15	24	3

(Row percentages).

of the illness and her resources in terms of money and available

advice. Table 3.14 above shows the first treatment undertaken in relation to the person the mother informally consulted about the child's illness.

This indicates that most people (34%) said that they first went to a traditional healer although this probably under-estimates many who tried a home treatment before seeking treatment outside the household which appeared to be a common pattern in relation to current illnesses described in Chapter IV. Those who had informally consulted their mother-in-law or their own mother were more likely to seek a remedy at a traditional healer than those women who had not consulted anyone about the illness. Most importantly, almost one third of the thirty-eight cases who consulted their husband went to a modern medical practitioner for the first treatment. The use of self-treatment, or that provided by a traditional healer/marabout or western practitioner by consultation with the husband or mother-in-law/own mother (ie older female relative) was significant ($\chi^2=5.72$, $DF=2$, $P<0.05$).

Table 3.15 below shows that nearly half those who treated the child themselves the first time, treated it themselves the second time, over one quarter of them went on to use a traditional healer and one fifth a marabout. Of those who used the traditional healer the first time, nearly half went on to use a modern practitioner for the second treatment. Of those who had used the doctor the first time, only one returned to the doctor for a second treatment and 79% went on to some form of traditional treatment from a professional healer. No-one who used the marabout for the first treatment went on to use a marabout for the second. The significance of self-treatment, traditional healer/marabout or doctor used as first and second healers was significant ($\chi^2=17.47$, $DF=4$, $P<0.001$). Interestingly for those people who went on to use the doctor as the third treatment (N=5), one had previously used two traditional treatments, two people had used a marabout followed by a traditional healer, one

Table 3.15 : First and Second Healer to Treat the Child.

First healer:	Second healer				
	Mother herself	Trad healer	Mara-bout	Doctor	Other
Mother herself (N=15)	47	27	20	7	...
Trad. Healer (N=21)	10	38	5	48	...
Marabout (N=9)	22	22	...	44	11
Doctor (N=17)	12	41	23	6	18
Other (N=3)	...	33	67	...	...
(Row percentages)					

person a marabout followed by a doctor, and one person a doctor followed by a traditional healer.

Given that the first choice of treatment appears to relate the second and third choices, Table 3.16 below shows the mother's first choice of treatment in relation to her own perception of the nature of the illness. This demonstrates that two thirds of children with hendu were first treated by a traditional healer, together with over half children with foundou and 40% of those with miscellaneous symptoms. Jonte and diarrhoea were most readily treated by the mother herself together with half the measles cases and the respiratory infections. The fact that some cases of foundou and hendu were treated at the doctor is perhaps related to the fact that this is a retrospective diagnosis and

Table 3.16 : Choice of First Treatment and Mother's Perception of Cause of Illness.

First Healer	Mother's diagnosis								
	TRADITIONAL			WESTERN					
	Hendu (N=11)	Kern- gol (N=2)	Foun- dou (N=47)	Jonte (N=8)	Diarr- hoea (N=24)	Meas- les (N=4)	Respira- tory Infec- tion (N=6)	Misc (N=5)	DK (N=9)
Mother herself	18	...	15	37	37	50	50	...	22
Trad healer	64	...	51	12	12	...	...	40	22
Marabout	9	...	17	...	17	...	33	20	11
Doctor	9	100	13	37	33	50	17	20	44
Other	...	...	...	12	...	...	...	20	...

(Column percentages)

'Traditional' vs. Western Diagnosis and Healer: $\chi^2=26.31$, DF=4, P<0.001.

that at the time the mother thought the illness was of a straightforward 'western' aetiology. In addition several women said that although the official cause of death had publicly been acknowledged as foundou or hendou by a traditional healer or old person, they themselves were convinced that the child had died simply of diarrhoea or fever.

3.7.2 Cost of Treatment.

Many treatments were free either because the plant in question was easily collected, or because the healer was a friend or relative who would not accept a fee. In addition, some healers

Table 3.17 : Source of Payment for First and Subsequent Treatments.

	First Treat- ment (N=114)	Second Treat- ment (N=62)	Third Treat- ment (N=15)	Fourth Treat- ment (N=5)
Free:	35	39	27	40
Treatment paid by:				
Mother herself	28	18	7	...
Husband	25	29	40	20
Mother-in-law	4	6	7	20
Woman's own family	6	2	20	20
Other	1	5	...	...
(Column Percentages)				

only demand payment if the treatment works, or are often given a chicken or small gift in appreciation. The average cost of treatment from a traditional healer was CFA 150 (30p), a marabout costs on average CFA 170 (35p) but could frequently be much more expensive than a traditional healer. Treatment from the dispensary or aide-soignante cost on average CFA 315 (65p).

Table 3.17 indicates that the husband, and the woman's own family in particular, become increasingly responsible for the payments as the number of treatments increase, although free treatments comprised over one third of all total treatments in each group. The woman herself paid for over one quarter of all first treatments but her contribution to treatment payments declined as the number of treatments increased.

Table 3.18 below shows the choice of first healer and the related responsibility for paying for the treatment used and demonstrates that nearly two thirds of mothers initially treating their children chose a free treatment, usually in the form of plant leaves, bark or roots that are readily available. If the first

treatment was with a traditional healer, over half the treatments were paid for by the woman herself and only 23% by the husband. Similarly, the majority of the costs of marabout consultations were born by the woman herself. However, the husband bore most of the costs for treatments by modern practitioners which were paid for.

Table 3.18 : Choice of First Healer and Responsibility for Payment.

	First Healer				
	Mother herself (N=26)	Trad Healer (N=39)	Marabout (N=17)	Doctor (N=28)	Other (N=4)
Free	65	10	30	43	50
Treatment paid by:					
Mother herself	11	54	41	4	...
Husband	15	23	12	39	50
Mother-in-law	...	5	6	7	...
Woman's family	8	8	12	...	...
Other	...	...	...	...	...

(Column percentages)

Free Treatments, Self-Payment, Payment by Others and Self-Treatment, Trad. Healer/Marabout, Doctor tested in 3 x 3 table:

$\chi^2=32.8, DF=4, P<0.001$

Table 3.19 below shows who paid for the first and second treatments and indicates that 41% of women pursuing two treatments were paying for both themselves. However in 75% of cases where the husband paid for the first treatment, he also

Table 3.19 : Payment for First and Second Treatments of Child's Last Illness.

	Payment for Second Treatment:					
	Free	Mother herself	Husband	Mother-in-law.	Woman's family	Other
Payment for First Treatment:						
Free (N=19)	47	16	21	5	5	5
Mother herself (N=17)	35	41	6	6	...	6
Husband (N=16)	25	...	75	...	...	...
Mother-in-law. (N=4)	25	...	25	25	...	25
Woman's family (N=5)	80	20	...	...	...	...

paid for the second treatment. This suggests that whichever partner paid for the first treatment also paid for the subsequent treatment and that responsibility for payment was established at the beginning of the illness rather than being contingent on the duration of the illness or on the cumulative expense. A 3 x 3 table testing the use of free treatments, self payment and payment by others for first and second treatments found it to be statistically significant ($\chi^2=11.65$, DF=4, P<0.05).

3.8 MOTHERS' INTRA-HOUSEHOLD SOCIAL SUPPORT, CHILDHOOD MORTALITY AND FATAL ILLNESS MANAGEMENT.

3.8.1 Women's Status and Childhood Mortality.

This analysis is concerned with a woman's 'personal' status (see Oppong 1987 for 'economic' 'political' 'social' and 'personal' status definitions) and the power and authority she assumes, or is subject to, when she marries into a household and into what is basically a work relationship with her mother-in-law. It will be shown that a mother's status position within her household in relation to other women affects the management of her children's fatal illnesses and ultimately their mortality. Categories of 'status' used in this context are based on the nature of a woman's intra-household support and/or autonomy, although it must be emphasised that these ascribed social positions are only a starting point for the analysis and it is necessary to recognise the fluidity and flexibility of household boundaries, the importance of extra-household resources and the changes in a woman's status over time. Thus a woman who starts her married life as a 'lone daughter-in-law' may reach the status of 'head with daughters-in-law' by the end of her child bearing years.

In looking at both fatal and current illness management it will be shown that household status does have an affect on individual women's consultative and financial resources, on time available to give or to search for treatment, and subsequently on their children's mortality. In addition, a woman's ability to transcend household boundaries and status-related constraints by volition or out of necessity, constitutes a further paradigm for the analysis of illness management strategies. The following description outlines the various hierarchical formations that can exist within different types of household. Although it is recognised that wife rank has an important role in organising labour and power between women of the same husband, the purpose

of this study is to analyse cooperation and hierarchy as it affects the whole household. Thus, although rivalry and jealousy has been documented between women of different wife rank within the a same nuclear unit (Clignet 1970) it is felt that the presence or absence of women who can work for them, or for whom they are all obliged to work, is of more immediate importance.

Figure 3.4: Categories and Definitions of Women's Household Status.

* Index Woman and direction of her labour co-operation or obligation.

1. Entirely Alone *O

Woman is sole woman of reproductive age in her household and therefore has no co-wives, sisters-in-law or daughters-in-law. She may however, have a widowed mother-in-law in the same household.

2. Head Wife with Other 'Head' Women *O -- O -- O -- O

Woman is wife of the household head, (or of his brother) and is with other women of equal status in the same household (not controlling for wife rank). No daughters-in-law present. These households can be described as being more 'egalitarian' as despite status divisions based on wife rank, there is no mother-in-law/daughter-in-law hierarchy. Although a widowed mother-in-law may in some cases reside in the same household, women are not obligated to work for her in the same way that they would be, if her husband were still alive.

3. Head Wife with Daughters-in-Law *O



Wife of head (or of his brothers) with women of daughter-in-law status present in the household. These women are relinquished from household duties by the presence of daughter(s)-in-law but often have to provide the money for condiments for each meal.

Figure 3.4 Cont...

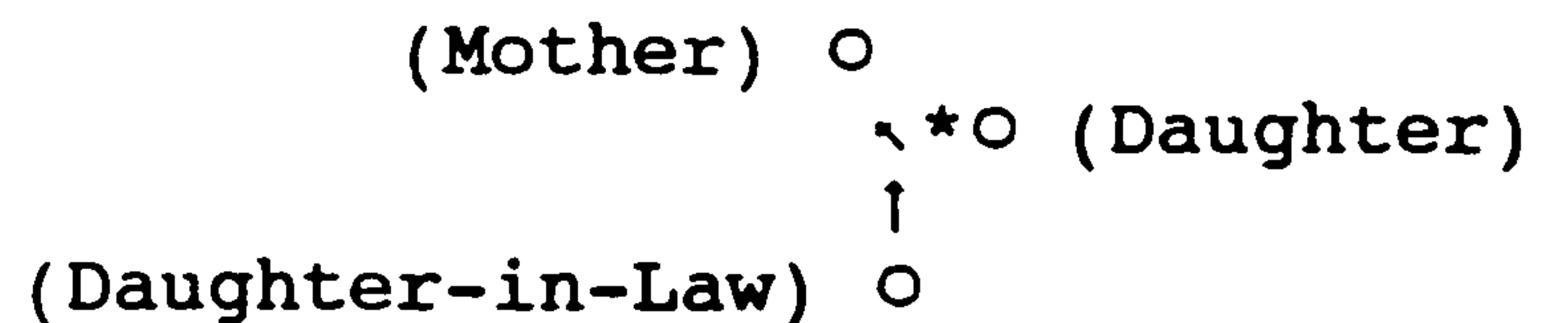
4. Lone Daughter-in-law ○
 ↓
 *○

Women is married to the son or nephew of the household head - ie someone who has married into the family and therefore a work relationship with her mother-in-law. These women are solely responsible for food preparation, water and fuel collection and have no women of similar status present in the household to assist them.

5. One of Several Daughters-in-Law ○
 ↓
 *○ ↔ ○ ↔ ○

Women who are also married to the son or nephew of the household head, but who have sisters-in-law in the same household and can share the responsibility for household tasks under the supervision of the mother-in-law. Chores such as food preparation are carried out according to a strict rota with the daughters-in-law taking turns to usually prepare three meals each day.

6. Women Living in their Natal Family (Suudu Baba)



These women live with their suudu baba either because they are divorced or sick or disabled and unable to work in their marital family. Other women return to their suudu baba because they have argued with their parents-in-law or husband, or because their husbands are absent on seasonal labour migration. In addition, all Fulani women return to their suudu baba several months before the birth of their first child and stay there for up to one year afterwards. Performing household tasks for their mother is done out of respect rather than obligation unlike a daughter-in-law who, if in the same household, is required to carry out such duties.

7. Female Heads. *○

Two women in the sub-sample were heads of households. One was a became a widow in Feb 1990 and subsequently lived alone with her two children as her late husband did not have any surviving nearby relatives to 'absorb' them into their family, and one was the leviratic 'fifth' wife of a man who lived in a nearby town and whom she rarely saw.

Table 3.20 below considers the position of each married woman in the sample in her own intra-household hierarchy. This shows that amongst the four groups considered, women were not only part of households which had very different structures as described in Section 3.3.2 above, but the positions they occupied within them endowed them with different degrees of autonomy, obligation and control. It is postulated that these intra-household status differentials affect their illness management and ultimately their children's mortality.

Table 3.20: Social Position of All Women of Reproductive Age Within their Households (Sept 1989).

	Humbebe (N=106)	Troni (N=47)	Fulbe (N=87)	Rimaibe (N=94)	Mean Age
Lone Head	13	17	36	14	35.4
Head with Other Heads	36	21	19	23	34.3
Head with D-Law(s)	21	6	5	16	36.9
Lone D-Law	12	6	15	13	25.3
One of Several D-Laws	17	47	15	25	27.0
Daughter of Head	2	2	9	9	28.0
Female Head	...	...	1	...	42.0
(Column Percentages)					
Married Women Only: $\chi^2=44.25$, DF=12, P<0.001					

Thus 36% of the Fulbe women were the only females of reproductive age in their households, and lived in nuclear units with their husbands and children. By contrast 36% of the Humbebe were in households where work was divided up between other women of more or less the same status (not accounting for wife rank). In addition 21% of the Humbebe had daughters-in-law to work for them, and thus were relieved of the majority of household duties.

Nearly half the Troni were living in households where they were sharing household duties with other women under the direction of a mother-in-law. Only about half the proportion of Troni women were lone daughters-in-law (and thus low status and lone workers) compared with women from other groups. Thus the social position of women in their own household environments, and potential for their empowerment, together with their control over their own time and labour is very different for women in each ethnic group or social class. This theme will be considered as an explanatory pathway to understanding the differential morbidity and mortality of their children.

Table 3.21 below shows the direct effects of women's intra-household status on the mortality of their children. It should be

Table 3.21 : Life Table Measures of Childhood Mortality by Women's Household Status Differentials.

	Alone	Head + Other Heads	Head + D-Laws	*Lone D-Law	One of Several D-Laws
12q0	173	163	207	238	192
48q12	302	346	135	398	212
60q0	424	453	314	541	363
Number of Live Births at Start:	178	223	95	90	189
* Lone D-Law v. One of Several D-Laws Mantel Haenzel Odds Ratio (60q0) Confidence Intervals				P<0.1 1.57 2.45-1.02	
* Lone D-Law v. Head with D-Laws Mantel Haenzel Odds Ratio (60q0) Confidence Intervals				P<0.1 1.69 2.84-1.02	

re-emphasised however that such status can change with the lifetime of a woman and with the social reproduction of her household and therefore often with increasing parity. Thus a woman's first and last births may not occur when she occupies the same status position, as other women may have married into, or left the household, and thus changed the dynamics of her situation in it. The table does however give an indication of the mortality experience of women in different status categories, and the differentials appear to be consistent with current health outcomes using anthropometric measures of living children, which will be discussed in the next chapter. It indicates therefore, that the mortality of children whose mothers are lone daughters-in-law in their households is significantly higher than children of women occupying the highest status position (heads with daughters-in-law). More importantly, it is significantly higher than children of women who are also daughters-in-law, but who have peers with whom they can share household tasks. Age differentials between the different groups of married women are not particularly great as shown in Table 3.20 above.

3.8.2 Childhood Mortality and Maternal Assistance with Household Tasks.

Table 3.20 showed how the women of Beni (who experienced the lowest mortality) were more likely to be in household situations where, even if their labour was controlled by a mother-in-law they at least had peers with whom they could share their workload. By contrast 36% of the Fulbe women are in nuclear families and 15% are of lone daughter-in-law status. They are therefore the sole 'workers' in their households and as such are obliged to take full responsibility for such tasks.

Table 3.22 below shows the link between a mother having a co-worker of the same status in the household (and thus an ability to share household chores), on her children's mortality although

Table 3.22: Life Table Measures of Mortality by Mothers' Intra-Household Support.

	Mother is Sole Worker	Mother has Intra- Household Support
12q0	180	202
48q12	338	187
60q0	457	351
Number of Live Births at Start:	268	507
Sole Worker v. Support		P<0.1
Mantel Haenzel Odds Ratio		1.3
Confidence Intervals		1.7-1.0

again it must be remembered that over a woman's lifetime other women can marry into, or leave the household, and the number and composition of her peers or co-workers can change. An assumption of the table therefore is that women have had the same amount of help and intra-household support during the whole of their reproductive life which in reality is rather unlikely, but still constitutes an interesting differential worthy of consideration.

The table indicates that significant differences seem to occur between women who are the sole worker in the household (regardless of their status) and those who have intra-household help. The main effects seem to be in the late childhood period indicating that elements of maternal 'care' rather than congenital biological factors associated with the early months of life are influential. The mechanisms by, and extent to which, intra-household help influences both illness management and the

day-to-day care of children will be discussed in Chapters IV and VI respectively.

3.9 Household Status and 'Public' and 'Private' Illness Diagnosis and Treatment.

Many studies associated with child survival are concerned with understanding the public and domestic domains of social activity in relation to the household production of health (Buvenic et al 1987). Household members have varying degrees of authority autonomy and resources under their control, and differ in the amount of reliance they have on both other households or on the 'public' sphere in general for both diagnosis and treatment procedures.

In the sample communities the usual way of diagnosing a prolonged or complex illness was to 'show' the child to an older person or healer. Post-menopausal women, in particular, were thought to have a profound knowledge of the symptoms of traditional illnesses and many treatments were only supposed to be administered by elderly women, and not by the mother of the child. In this way, women in the fertile age groups, particularly in smaller households where they are possibly the only woman of reproductive age, are not able to consult peers within their own 'private' sphere. It is also difficult for them to readily build up a knowledge of either symptoms or effective remedies because only old people or professional healers were thought to be competent in the management of the most serious illnesses such as foundou or hendu.

Thus if a woman's only intra-household consultative resource is a post-menopausal woman, the affair of the child's illness immediately becomes a public matter. Resulting diagnoses from old people, traditional healers or marabouts were more likely to be 'traditional' and therefore 'a priori' be fatal, precluding

modern effective treatment and exonerating the healer from blame.

It was noticeable during the morbidity surveys that households where 'within-household' egalitarian female alliances existed for example, between sisters-in-law, women had more possibilities for internal household consultation about an illness and gained more pragmatic advice. Discussions between co-wives or a mother-in-law and daughter-in-law were often more influenced by elements of competition and dominance and thus frequently resulted in a metaphysical diagnosis because of its associated vindication of personal responsibility and blame. In households where egalitarian discussions were able to take place, a child was more likely to be diagnosed as having a 'simple' illness such as diarrhoea, rather than one of the complex foundou/hendu variety. Those women who lacked peers were forced into a hierarchical or extra-household consultation more quickly, thus being more likely to receive a traditional diagnosis which, as described above, precludes modern treatment.

A household where a woman is the sole daughter-in-law gives her little independence or status to initiate within-household discussions, ask for money or indeed be able to take time off from household tasks, for which she is solely responsible, to seek treatment. Importantly however, if a woman's natal family is nearby, further resources for consultation are available to her without venturing into the truly public domain. Thus both external and internal female power-relationships have a very strong effect on both the consultative resources available to a woman which in turn influence the diagnosis and treatment.

Table 3.23 below uses different status groups (assuming household status to be constant at the time of the child's last illness) to show that if a woman was the only daughter-in-law in a family she was much more likely to give a traditional diagnosis of the illness (hendu or foundou). These women in particular, lacked

Table 3.23 : Household Status, Traditional Diagnosis and Primary Consultation.

	Alone (N=23)	Head with Others (N=35)	Head with D-Laws (N=9)	Lone D-Law (N=25)	One of Several D-Laws (N=22)
% Citing Traditional Diagnosis:	35	51	33	68	46
$\chi^2=6.5, DF=4, P<.1$					
Person Consulted About Child's Illness:					
Husband	43	37	22	28	36
Mother- in-Law	13	20	11	24	18
Other in Marital Family	4	11	33	4	5
Own Mother	13	3	...	28	14
Other	...	17	22	8	9
Noone	4	11	...	4	9
Forgotten	22	...	11	4	9
(Column Percentages)					

within-household egalitarian alliances, and their consultation was subsequently more likely to be with the mother-in-law who was more likely to give a 'traditional 'diagnosis. The illness therefore became a public affair more rapidly as such women had no peers with whom they could confer and were obliged by their status to follow diagnoses and treatment strategies suggested by

their husband's mother which were likely to be more traditional.

Table 3.23 shows that household status has an affect on initial consultation which was shown above to influence subsequent treatment behaviour. Of those who were alone with their husband in their nuclear unit, 43% consulted him about the child's illness, along with 37% of women who were head wives with other heads. Only 28% of the lone daughters-in-law however consulted their husband, as 24% consulted their mother-in-law and 28% consulted their own mother. Although these differentials are not statistically significant, they will be shown to be consistent with the data from current illness management in the next chapter and are therefore worthy of consideration. A χ^2 test performed on consultation with the husband vs. mother-in-law/own mother by household status gave a χ^2 value of 4.07 (DF=4, P=.39). Even their own mother, as an older woman is more likely to suggest a traditional diagnosis, as this exonerates her from guilt or blame if the child dies and is expected due to her age and post-menopausal status. Similarly, in households where they were one of several daughters-in-law, women were consulting their mothers-in-law and their own mothers more frequently. In households where women are of a high status (with daughters-in-law) or in egalitarian consultative settings, it is likely than children's illnesses in these environments remain 'within-household' affairs longer than illnesses of children whose mothers only have limited intra-household consultation networks.

Table 3.24 below indicates that low status women who were forced by their social position and family structure into more frequent consultations with older women and who cited a traditional diagnosis more often, were more likely to seek treatment at a traditional healer or with a marabout. It is of course possible that the diagnosis was received after the visit to the traditional practitioner and not beforehand, but still likely that the referral, if not the exact diagnosis, was the direct

Table 3.24: Choice of First Healer by Women's Household Status.

Healer:	Alone (N=23)	Head + Other Heads (N=34)	Head + D-Laws (N=9)	Lone D-Law (N=23)	One of Several D-Laws (N=20)
Mother Herself	22	29	22	17	25
Trad. Healer	39	23	33	39	35
Marabout	13	12	11	26	5
'Western' Practi- tioner	22	32	22	13	35
Other	4	3	11	4	...

result of consultation with their mother-in-law or with their own mothers. Those who were in more egalitarian alliances with peers and who consulted their husbands more frequently, were more likely to pursue treatments with western practitioners.

3.10 Household Status and Treatment Payment.

Subsequent analysis of the payment of the first treatment indicated that 36% of women who were the only daughter-in-law were paying for the treatment themselves as opposed to 25% of those who were one of several daughters-in-law or who were the wife of the head, and 33% of women who were entirely alone. 14% of these lone daughters-in-law were paid for by their own family compared with just 4% of the higher ranking women. The husband paid for the treatments for 24% of lone women, 29% of 'heads with other heads', but only for 9% of lone daughters-in-law. There seemed to be a slight difference in whether the husband paid for the treatment by wife rank for women in polygynous marriages with the husband paying for 36% of first wives compared with 31% of second and third wives. The mother-in-law paid for 9% of the lone

daughters-in-law's children's medicines, but rarely financially assisted mothers in other status groups, as for the former she was a primary consultative resource.

The mean total cost of all treatments before death is shown in Table 3.25 below indicates consistently that lone daughters-in-law seem to occupy a disadvantageous position. They afforded only half the amount of money that women in more egalitarian alliances were able to spend. Women who are head wives with other of head status afford the highest amounts of money which appears to be consistent with their patterns of current illness management shown in Chapter IV. Their inclination and need, for increased commercial activity from which they seem to profit, will be described and explained in Chapter VI.

Table 3.25 : Mean Total Amount Spent on Child's Last Illness by Woman's Household Status.

	Total Cost (CFA)
Alone	202
Head with Other Heads	474
Head with Daughters-in-Law	205
Lone Daughter-in-Law	181
One of Several Daughters-in-Law	368

The table also shows that women who were in a 'high status' position but who also had daughters-in-law seemed to spend less on the illness. This could be because daughters-in-law, as well as relieving a high status woman from household duties, also lead her to incur certain expenses especially for food preparation, as

the head woman in the household is often expected to pay for sauce condiments for meals her daughter(s)-in-law prepared.

Appendix V gives specific examples of how intra-household female status differentials operate to affect and control the management of a child's fatal illness. These case histories highlight issues of autonomy and empowerment as well as social support and describe how an illness event can move from a 'western' to a 'traditional diagnosis' and the implications for treatment. These will be shown in Chapter IV to consistently affect non-fatal illness management and children's anthropometric outcomes.

CHAPTER IV: HOUSEHOLD DETERMINANTS OF ILLNESS MANAGEMENT AND NUTRITIONAL STATUS.

4.1 Introduction.

Research in the developed world indicates that social networks and support have a substantial impact on health, and that the more socially isolated and less socially integrated an individual, the more likely s/he is to fall sick or even to die (Berkman et al 1986, House et al 1988, Waxler-Morrison et al 1991). Few studies however, have attempted to make such a link in the developing world, and in particular to estimate the impact of a woman's social as well as physical isolation within her household on her management of her children's illnesses.

Table 4.1: Household Characteristics of the Sub-Sample.

	Dianweli Humbebe	Dirimbe Fulbe	Dirimbe Rimaibe
Mean Household Size:			
Cool Season	7.0	5.1	7.0
Hot Season	7.8	5.1	7.2
Rainy Season	11.3	7.9	7.8
Mean Dependency Ratio:			
Cool Season	1.6	1.8	1.9
Hot Season	1.8	2.2	2.2
Rainy Season	1.7	1.5	1.8
Dependency= $\frac{\text{Number of Children under 15} + \text{Adults over 60}}{\text{Number of Adults between 15 and 60}}$ Ratio			
Percentage of Absent Husbands:			
Cool Season	30	16	50
Hot Season	30	27	47
Rainy Season	13	13	5

The following discussion will clearly indicate that treatment strategies depend very much upon the household context and support structure within which they take place. Data for this analysis are taken from the monthly morbidity surveys and seasonal anthropometry in the sub-sample villages whose basic household characteristics are outlined in Table 1.1 above.

4.2 COMMUNITY VARIATION IN ILLNESS PREVALENCE AND NUTRITIONAL STATUS.

4.2.1 Perceived and Actual Variation in Illness Prevalence.

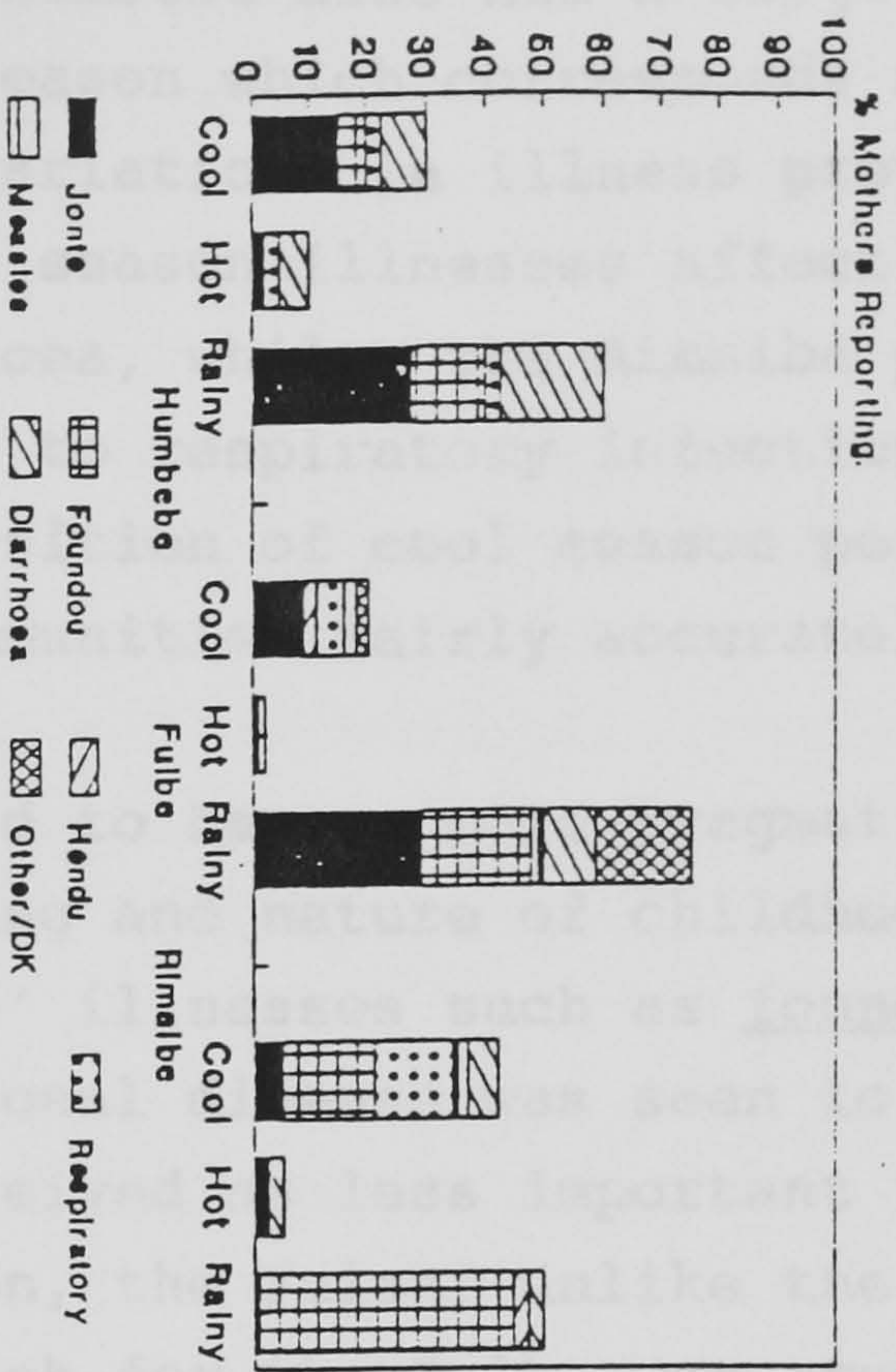
Before embarking on a micro-level analysis of status and support related treatment strategies, it is first necessary to outline community level variations in illness perception and management together with the monthly prevalence of specific diseases within the sub-sample populations.

Appendix VI describes the main traditional and 'western' taxonomies of illness found amongst both the Fulani and the Humbebe. It must be noted that often the cause of an illness, rather than the nature of the symptoms are crucial to its treatment, and that simple illnesses such as diarrhoea can have a variety of causes which affect their subsequent management. More importantly, it will be demonstrated that the perceived potential for illness prevention has significant consequences for women's ability to take an active part in illness management within their own households.

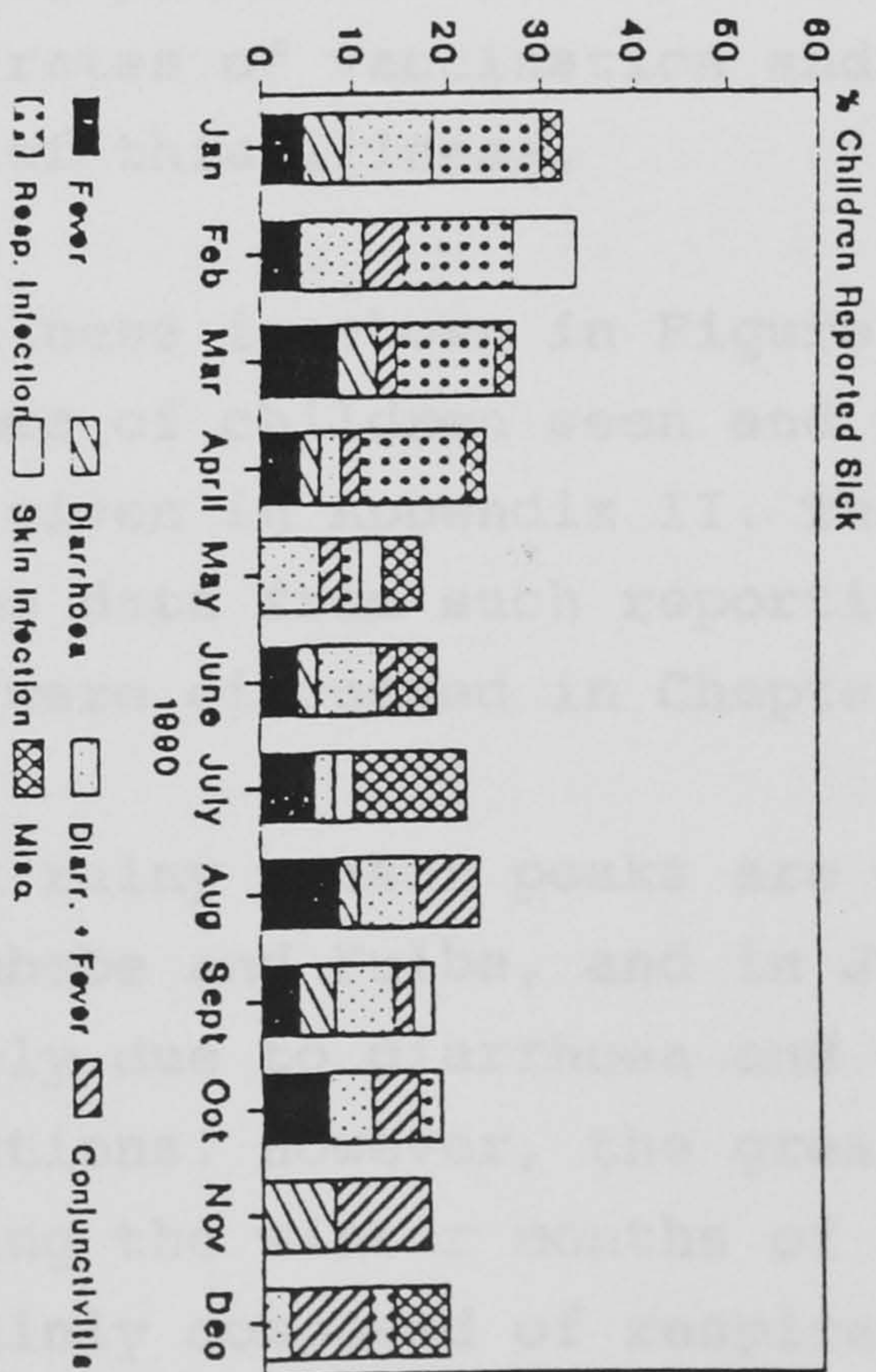
Figure 4.1 (a) represents the seasonal variation in illness as perceived by the communities in the sub-sample. All groups felt the rainy season to be the most risky period, with the majority of Rimaibe attributing a greater proportion of the peak to

Figure 4.1: Perceived and Actual Variation in Illness Prevalence

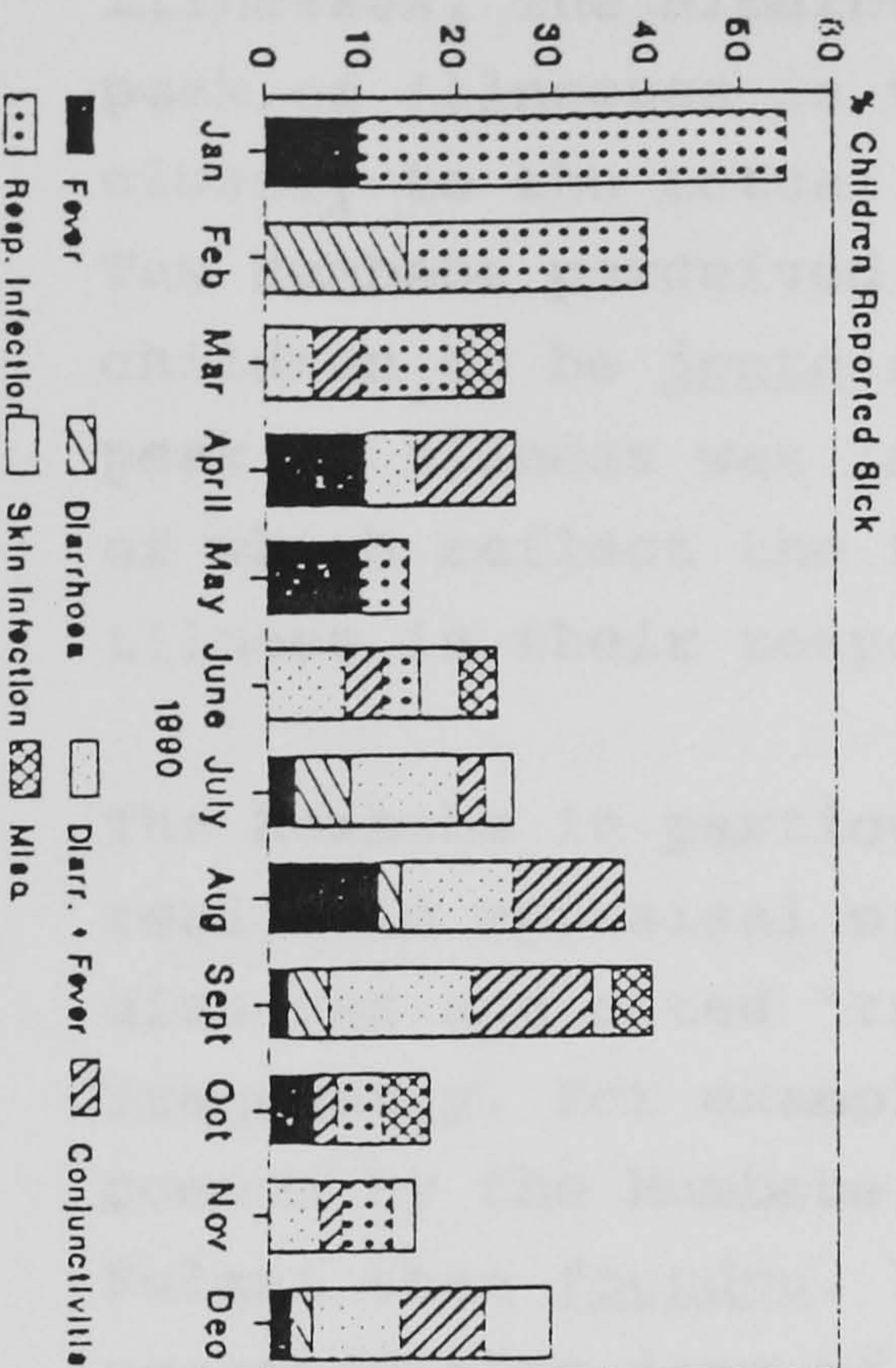
Figure 4.1 (a) Perceived Seasonal Variation in Illness (Dirimbe and Dianwell).



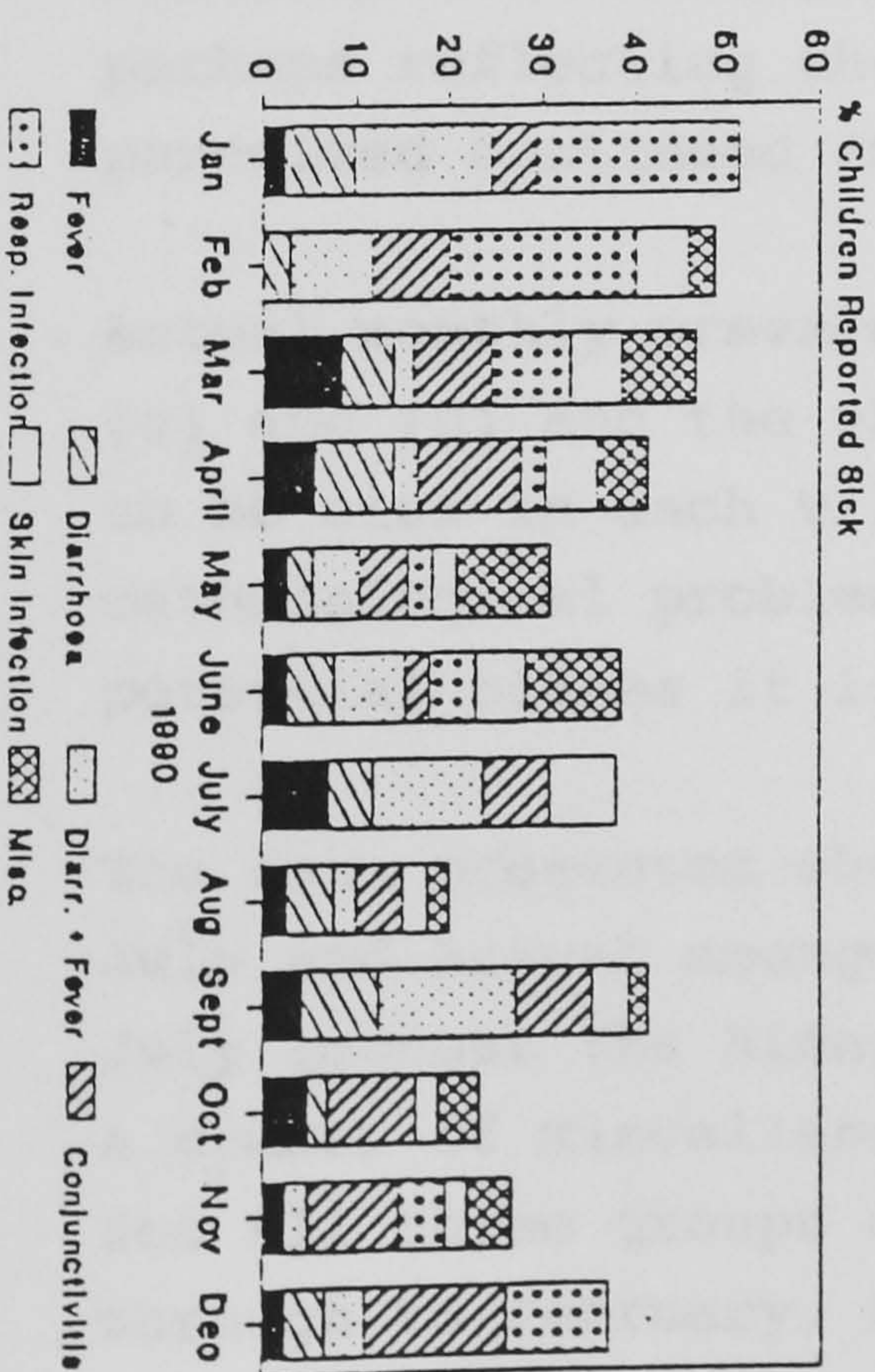
(b) Prevalence of Principal Illnesses Humbebe



(c) Prevalence of Principal Illnesses Fulbe



(d) Prevalence of Principal Illnesses Rimalbe



foundou, the Humbebe to jonte and diarrhoea, and the Fulbe to jonte and foundou together with miscellaneous or unspecified illnesses. The Rimaibe and the Humbebe also had a large perceived peak of illnesses in the cool season which corresponds more closely to the actual monthly variations in illness prevalence. The Humbebe perceived most cool season illnesses affecting small children to be jonte and diarrhoea, whilst the Rimaibe perceived peak of illness was largely due to respiratory infections, both of which reflect the true composition of cool season peaks of illness in their respective communities fairly accurately.

The Humbebe in particular seemed to have a more pragmatic and realistic appraisal of the timing and nature of childhood diseases and cited 'traditional' illnesses such as foundou less frequently. For example, diarrhoeal disease was seen to be most common by the Humbebe, but perceived as less important to the Fulani than foundou. In addition, the Fulani unlike the Humbebe, reported also fear of hendu which for the Fulbe was prevalent in the cool season and for the Rimaibe in the rainy season. The Fulbe also cited measles as being prevalent in all three seasons perhaps reflecting their lower rates of vaccination and the perceived continued importance of this illness.

Actual monthly prevalence of illness is shown in Figure 4.1 (b) (c) and (d) and the exact numbers of children seen and reported to be sick in each village are given in Appendix II. The methodological problems of using data from such reporting, and potential biases it introduces were discussed in Chapter II.

The data presented shows slight rainy season peaks are evident in July and August amongst the Humbebe and Fulbe, and in June and July amongst the Rimaibe, largely due to diarrhoea and fever and a number of miscellaneous infections. However, the greatest peaks for all three groups occur during the winter months of December through to February, and are mainly composed of respiratory

infections and conjunctivitis. The main difference between the three communities is the lower reported illness prevalence amongst the Humbebe and the greater proportions of diarrhoeal disease amongst the Rimaibe. Less cases of diarrhoea either with or without fever seem to be reported by the Fulbe, except during the rainy season, which together with their lack of perceived importance of this disease implies that it is either less prevalent, or that they fail to recognise or acknowledge it as a potentially serious illness. The cool season peaks amongst all three groups are consistent with those found in the Seno-Mango in 1982 (Hilderbrand 1985) although unlike evidence from those surveys, no significant variation in the prevalence of malaria (jonte) was found between the two Fulani social classes.

4.2.2 Perceived Causes of Illness.

Table 4.2 below shows that for most illnesses, particularly conjunctivitis, the mothers/caretakers had no idea of the cause although they seemed to more able to identify the cause of ear infections, respiratory infections and 'other' miscellaneous illnesses. As described in Appendix VI, ear and skin infections are the most common manifestations of kerngol, whilst most respiratory infections were put down to a change in climate. Diarrhoea and fever have a variety of causes which are often contingent on the age of the child or on who made the diagnosis.

A greater proportion of ear infections (of which there was a greater certainty about the cause) went on to be treated as were the symptoms of weight loss and skin infections. The least commonly treated illnesses were respiratory infections, which as described in Appendix VI, are perceived as being very difficult to cure.

Table 4.2: Perceived Causes of Principal Illnesses.

	Principal Illness							
	Fever (N=57)	Diarr- hoea (N=124)	Resp. Infect- tion (N=70)	Conjunc- tivitis (N=77)	Ear Infec- tion (N=11)	Skin Infec- tion (N=29)	Weight Loss (N=6)	Other (N=24)
Perceived Cause:								
Allah	5	2	3	5	9	7	17	4
Change in Climate	7	2	36	3	9	7	...	4
Teething	...	6	3	4	...	3	...	4
Hunger	...	2	...	5	9	...	...	17
Lack of Preventive Medicine	4	7	...	3	...	3	...	...
'Heat' from Pregnancy	5	7	3	...	...	...	...	...
Doua/Marai (Upset Diet)	4	6	...	5	...	...	...	...
Kerngol	...	...	1	...	18	10	17	8
Hendu	7	8	...	...	9	...	17	13
Foundou	5	2	...	...	...	...	...	...
Other	2	...	1	...	9	7	...	4
Don't Know	62	60	53	75	36	62	50	46
% Treated:	64	63	48	65	82	76	83	76
Principal Illness x Treated $\chi^2=14.08, DF=7, P<0.05$								

4.2.3 Community Level Variation in Anthropometric Outcomes.

The mean Z-Scores for weight for height, weight for age and height for age for the children weighed and measured in each village in each season are presented in Appendix VII. Humbebe children show consistently better outcomes using all three measures. However, the overall differences are not as great as perhaps one might expect given the different methods of children's food acquisition and the differential frequency of their food consumption which are discussed below.

Figure 4.2. (a) (b) (c) shows the mean deviations from the NCHS median in weight for height, height for age and weight for age calculated from the anthropometric measurements taken in September 1990 when nearly every child was back in their village after trans-humance or labour migration of their mothers (N=136). This seems to indicate that in terms of each measure, the three communities followed roughly similar age distribution of growth faltering. No sex differentials in anthropometric outcomes were found.

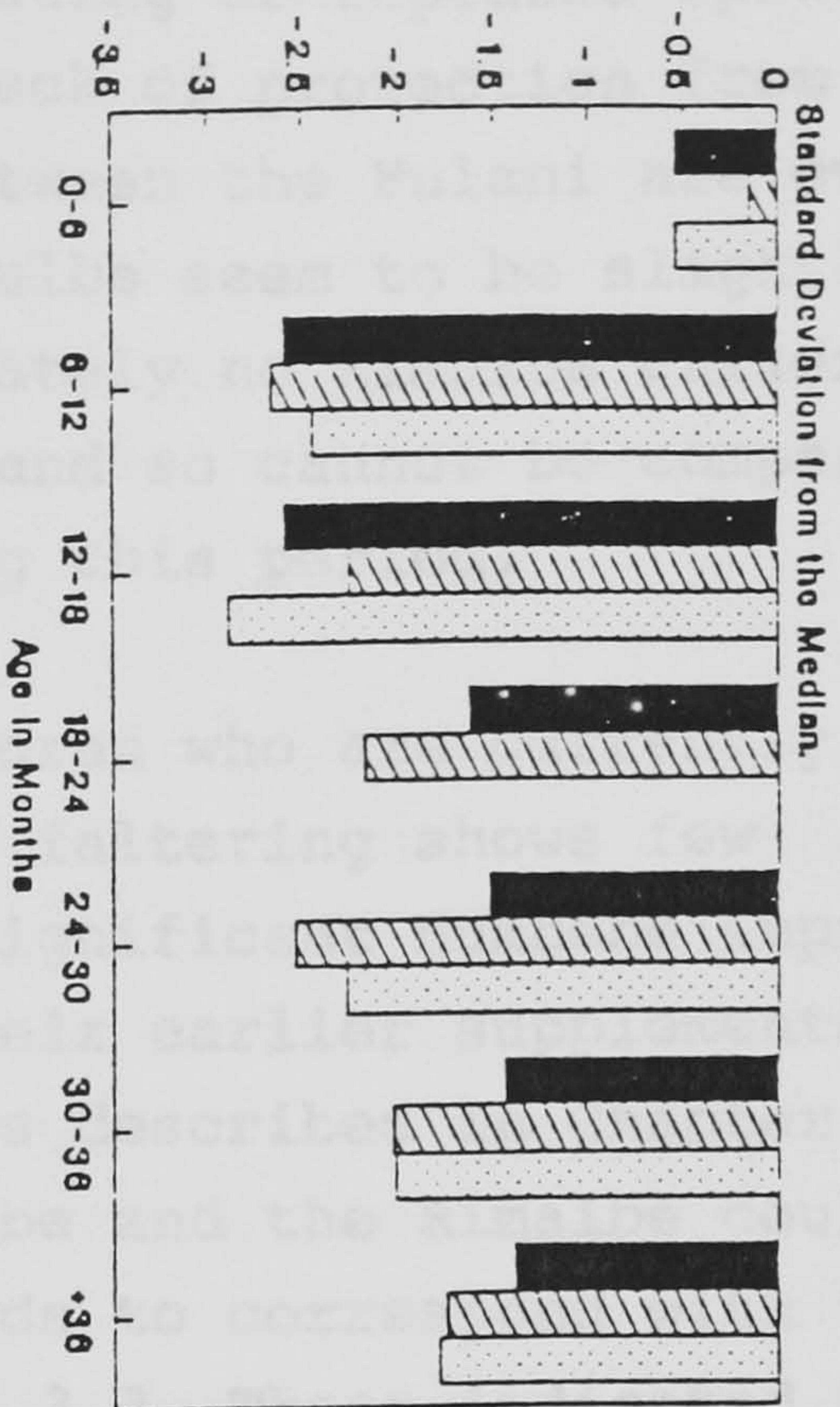
Weight for height deficiencies which result from acute malnutrition or wasting (Ashworth and Dowler 1990) are worse for the Humbebe in the first 12 months of life but improve in later childhood when both Fulani classes become substantially more wasted as the Humbebe virtually reach the norm. From 6 to 18 months all three groups are severely below the median, although it must be taken into account that this was not only the rainy season when there is a greater prevalence of diarrhoeal disease, but is also the time of food shortage before the October harvest, and the main cultivation period for Humbebe and Rimaibe women.

In terms of height for age (stunting due to long term undernourishment or repeated malnutrition), the Humbebe deviate

Figure 4.2: Community Level Variation in Anthropometric Outcomes.

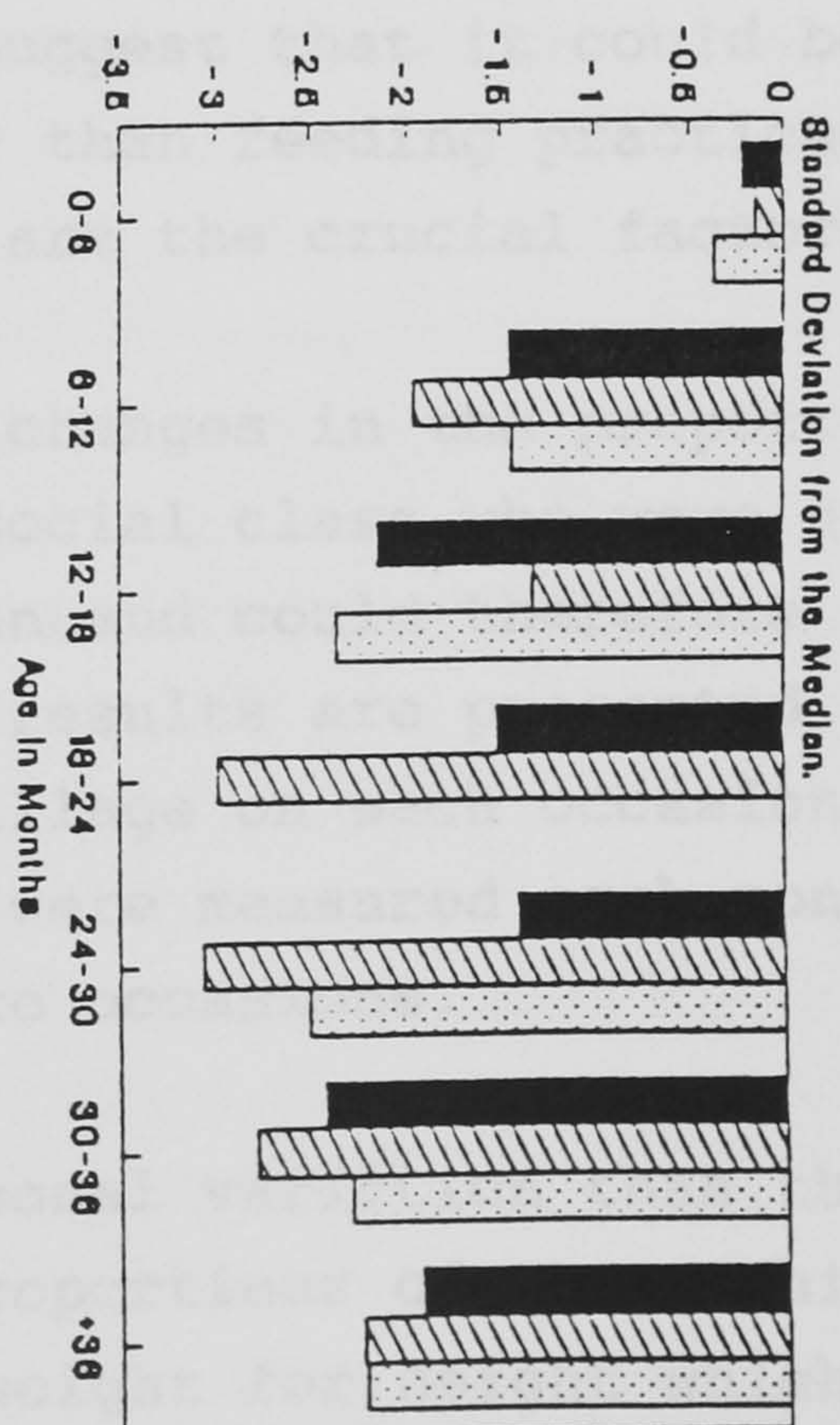
Figure 4.2 (a)

Weight for Age
(All Groups, Sept 1990).



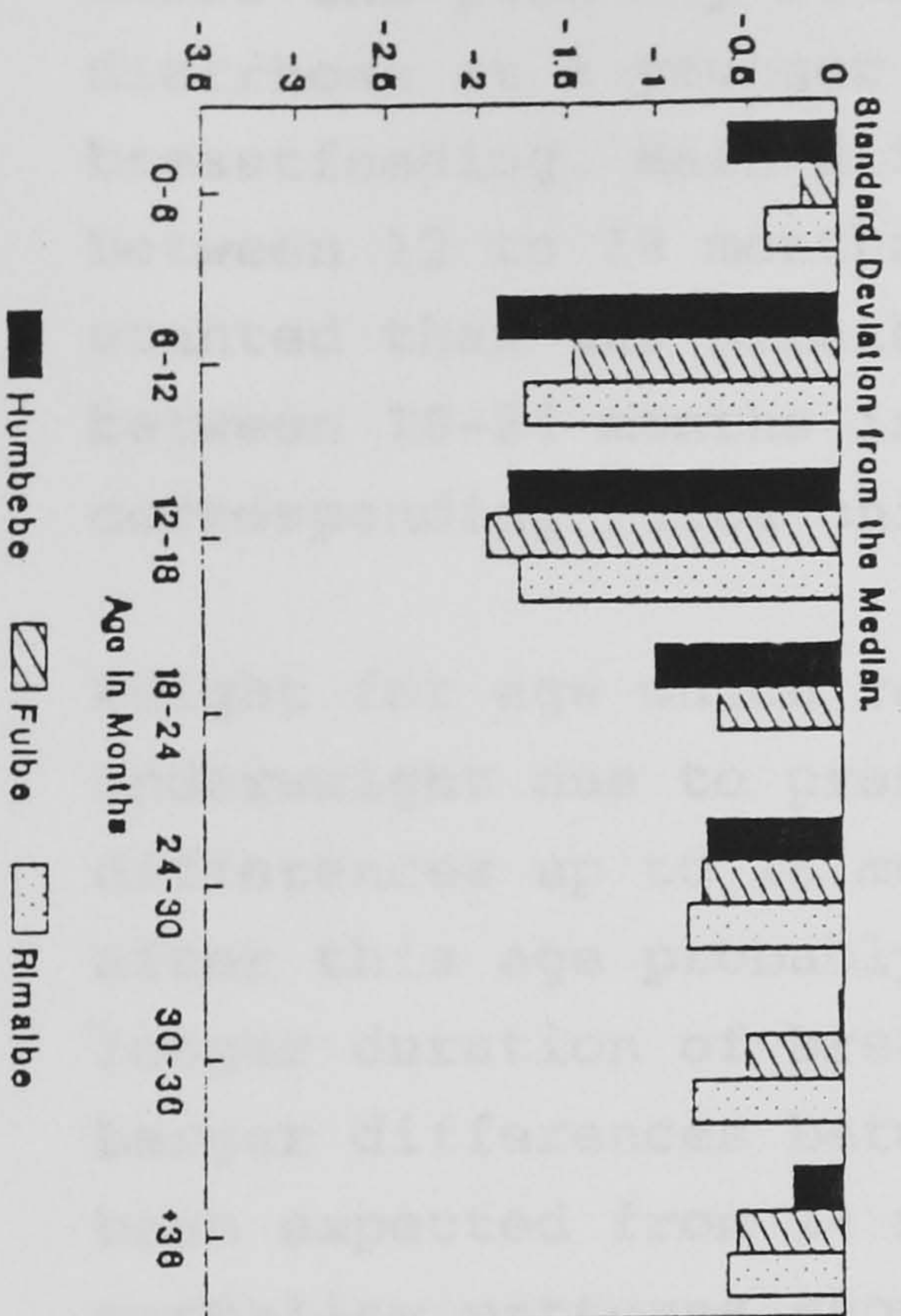
(b)

Height for Age
(All Groups, Sept 1990).



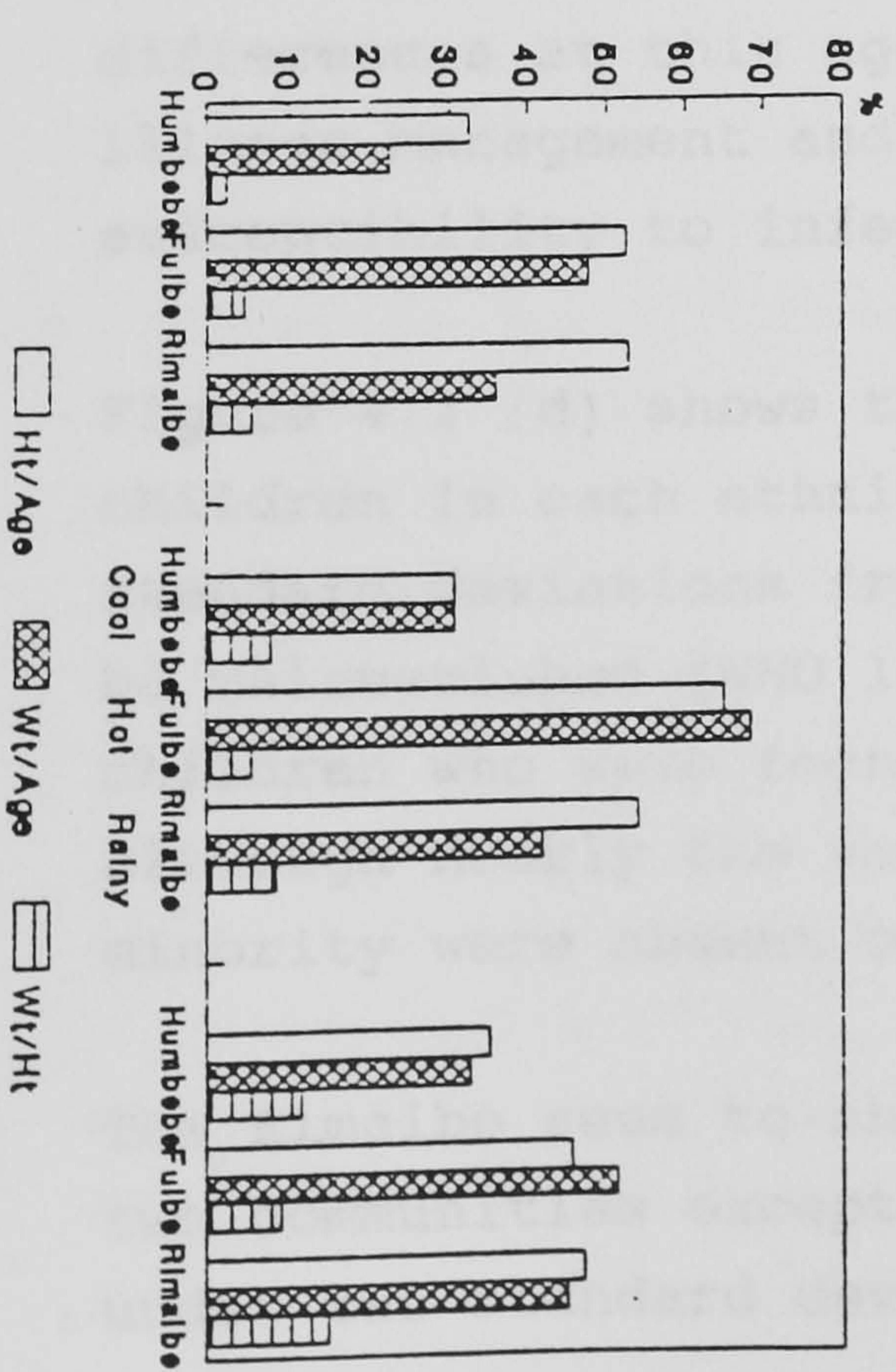
(c)

Weight for Height
(All Groups, Sept 1990).



(d)

Seasonal Change in Nutritional Status
% Below Median -2 Standard Deviations



more sharply from the median around 12-18 months, but seem to be slightly better in the older age groups except at 30-36 months where the peak may reflect past wasting or repeated episodes of diarrhoea at a younger age and a lack of protection from breastfeeding. Main differences between the Fulani are evident between 12 to 18 months when the Fulbe seem to be slightly less stunted than the Rimaibe. Unfortunately no Rimaibe children were between 18-24 months in September and so cannot be compared with corresponding Fulbe children during this period.

Weight for age which reflects children who are currently underweight due to present or past faltering shows few differences up to 18 months, but significant Humbebe improvements after this age probably reflect their earlier supplementation and longer duration of breastfeeding as described in Chapter III. Larger differences between the Fulbe and the Rimaibe could have been expected from 24 months onwards to correspond with the mortality patterns shown in Figure 3.3. These indicated that Fulani mortality differentials at 60 months were starting to become apparent at 24 months, and the lack of real anthropometric differences at this age tends to suggest that it could be general illness management and care rather than feeding practices and susceptibility to infection which are the crucial factors.

Figure 4.2 (d) shows the seasonal changes in the proportions of children in each ethnic group or social class who were under two standard deviations from the median and could therefore said to be malnourished (WHO 1983). These results are presented for children who were found in each village on each occasion, and although nearly the same children were measured each month, a minority were absent on one or more occasions.

The Rimaibe seem to show less seasonal variation than the other two communities except in their proportions of those children under two standard deviations in weight for height which rise

slightly during the rainy season. Proportions of Fulbe children who are experiencing growth faltering are greater during the hot season when milk becomes scarce and when other groups are conserving millet rather than exchanging with the Fulbe milk sellers. Humbebe seasonal differences are also not so great and probably reflect their increased food security even during the stressful pre-harvest period, and the more stable timescale of operation of their households which will be discussed in Section 4.6.2.

Appendix VII shows that the numbers of children receiving three meals per day varied substantially between the two ethnic groups and between the two Fulani social classes. It indicates that the majority of Humbebe children were receiving three meals per day throughout the year, and many were getting an extra snack or treat as well. By contrast, in the pre-harvest season (September) particularly, only about one quarter of the Fulbe and less than half the Rimaibe children were eating three meals per day. A greater percentage of the Fulbe children were receiving snacks, sometimes milk which was consumed particularly by older children instead of a solid meal. Thus compared with the Humbebe, Fulbe children gained a larger proportion of their intake from separate individual consumption rather than from what they received from the family bowl. The implications of independent rather than group consumption of food by children, and particularly the supervision of children's eating are important factors influencing their actual intake, and will be discussed using the observational data in Chapter VI.

It became clear that women's work obligations and her intra-household support were significant factors in determining how many meals individual children consumed. Fulbe mothers who sold milk almost daily, and especially those lone women who lacked a young girl of working age, often left their families without preparing a lunch time meal on the days they went to market. In

addition, many who made butter in the early morning (a time consuming task), did not prepare a breakfast but merely heated up whatever nyiiri oro was left over from the night before, often eating it with milk. Thus their children were often consuming a smaller number of meals around the family bowl and often resorted to scrounging from other households wherever they could. They did however consume a larger number of 'treats' (peanuts, fruit etc) brought back by their mothers from the market and purchased with their milk money. By contrast, it will be shown that the Humbebe and to some extent Rimaibe women lived in environments of greater intra-household support where tasks could be shared on a rota basis. Thus even the participation of women in market trading usually meant that someone else was available to prepare food according to the household rota and most children received three meals each day round the family bowl. Humbebe women's economic activity was not in such great conflict with their food preparation as both were mutually compatible due to the presence of co-workers.

The anthropometric outcomes for the Dirimbe Fulani seem slightly better than for Fulani in other areas of Mali, as a recent study of Fulani children in the Timbuktu region (Carnell and Guyon 1990) found 20% of children under five below 2 standard deviations from the median weight for height. They are also consistent with seasonal variations previously found in the Seno-Mango (Hilderbrand 1985) although Fulbe/Rimaibe differences found in the inner Niger delta (Wagenaar-Brouwer 1985) indicate a period of wet season faltering amongst the Fulbe as opposed to the hot season stresses found in the Douentza survey. This probably reflects the different seasonal cycles of the delta with its more varied and year-round food supply, compared with the arid Seno-Mango where the Fulbe are more heavily dependent on milk/millet exchanges which become more difficult in the hot season.

4.3 WOMEN'S HOUSEHOLD STATUS AND INTRA-HOUSEHOLD SUPPORT AS DETERMINANTS OF CHILDREN'S ILLNESS MANAGEMENT AND ANTHROPOMETRIC OUTCOMES.

Appendix VIII illustrates a model of stages and components of illness management, and outlines the 'empowering', 'facilitating' and 'sanctioning' factors that are allied to women's household status. A woman's household position affects each level of her illness management behaviour in different ways depending on her degree of personal autonomy or accountability. Examples of the roles of preventive medicines and traditional healers in relation to empowerment of individual women, or to the social sanctioning of specific treatment strategies, are discussed illustratively.

Table 4.3: Ethnic Differentials in Women's Household Status.

	Dianweli Humbebe	Dirimbe Fulbe	Dirimbe Rimaibe	Mean Age
Alone	11	34	23	34.1
Head Wife with Others	42	9	23	33.7
Head Wife Status with Daughters- in-Law.	17	6	3	44.1
Lone Daughter-in-Law	8	16	10	29.0
One of Several Daughters-in-Law	19	25	27	25.9
Lives in Maternal Family	...	6	13	29.0
Head of Household	3	3	...	51.0
N=98	36	32	30	
(Column Percentages)				
Married Women Only: $\chi^2=25.88, DF=8, P< 0.05.$				

Using the definitions of household status outlined in Chapter III (see Figure 3.4), Table 4.3 shows consistently that that the Rimaibe, and especially the Humbebe are more likely to live in extended households of high social support. The Fulbe, by contrast, tend to reside in smaller nuclear units where the child's mother is the sole woman of reproductive age in her household. The implications of the presence or absence of such intra-household support for illness management will be discussed below.

Figure 4.3 Weight for Age by Household Status

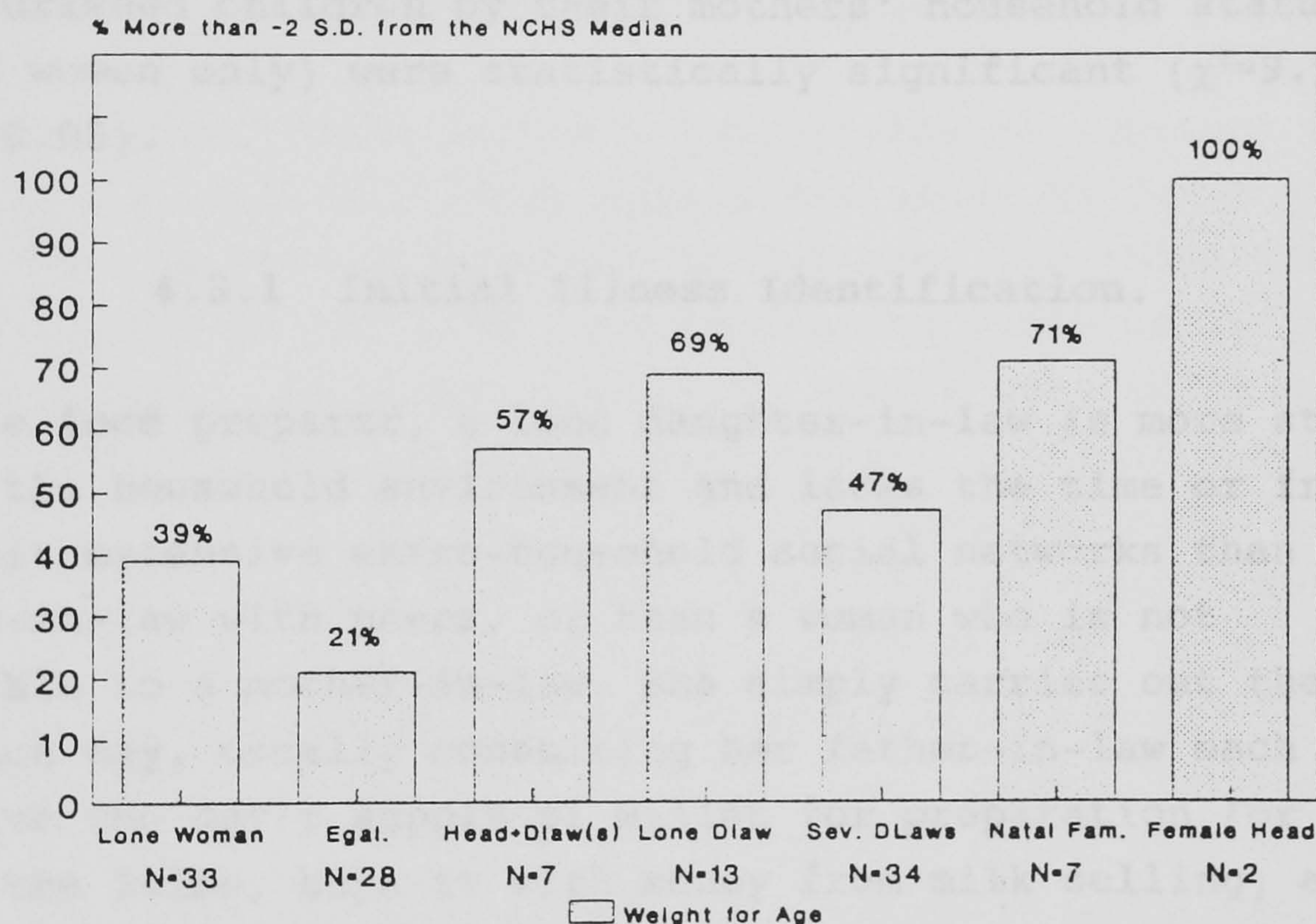


Figure 4.3 above indicates that a woman's social support within her household not only has an effect on the mortality of her children as described in Chapter III, but also on their current anthropometric status. Weight-for-age is the chosen measure because it reflects the effects of recent nutritional insults in addition to episodes of illness. The figure shows that on the

whole, children of currently married women in 'high status' positions such as 'heads with other heads' have better outcomes than those of daughters-in-law status. Lone daughters-in-law in particular have a higher proportion of malnourished children (more than 2 Standard Deviations from the NCHS Median) than daughters-in-law who have peers in the household with whom they can share responsibilities, such as food preparation, and fuel and water collection. The children of women who lived in their natal families are also more malnourished than children of any of the currently married women, except those of the lone daughters-in-law. Most severely malnourished however are the children of the female heads of household. The differences in the proportions of malnourished children by their mothers' household status (married women only) were statistically significant ($\chi^2=9.94$, DF=4, P<0.05).

4.3.1 Initial Illness Identification.

As a sole food preparer, a lone daughter-in-law is more strongly tied to the household environment and lacks the time or freedom to exploit extensive extra-household social networks than a daughter-in-law with peers, or than a woman who is not responsible to a mother-in-law. She simply carries out the same tasks each day, usually consulting her father-in-law each morning to receive the day's supply of millet for preparation (or in the case of the Fulbe, buys it with money from milk selling) and approaches her mother-in-law daily or weekly for condiments. Thus, if there are no disputes, there is no more direct organisation by the mother-in-law because the system, in effect, runs itself on the strength of the fact that the mother-in-law has absolute rights to her labour and time.

By contrast, the focus for women who are one of several daughters-in-law is not simply on the cooking pot, but rather on

the figure and personality of the mother-in-law who acts to delegate and organise household tasks and rotas, to solve disputes and instigate equality. Clearly an increase in the number of working females in the family requires both a more complex system for the division of labour and a more elaborate system of delegation of authority (Clignet 1970). Power relationships between individual daughters-in-law and the mother-in-law are more socially enforced and publicly apparent within the household where they are several. A lone daughter-in-law, who by the nature of her lone status, may not be subject to such potential rivalries and favors, thus has her relationship with her mother-in-law reflected in her daily labour, rather than through active social intervention and organisation.

This differential focus on the mother-in-law is apparent in the initial stages of illness management shown in Table 4.4 below. Women of lone daughter-in-law status, (ie those who were solely responsible for food preparation and whose daily focus is the cooking pot), were more likely to notice that their child was sick compared with daughters-in-law who had peers in the household to help them with daily tasks. Interestingly, for those women who were one of several daughters-in-law, nearly one quarter of their children's illness episodes (23%) were identified by the mother-in-law, compared with just 7% of those of lone daughters-in-law. In addition, the largest percentage of children identified as being ill by someone other than their mother were those of were the children of heads with daughters-in-law, implying that not only do daughters-in-law have their own children to look after but also those of their mother-in-law.

Although women who are 'alone' in their households, are also the only worker, unlike the lone daughters-in-law, they have an added freedom and autonomy that comes from not being accountable to a mother-in-law but, due to a lack of potential for intra-household

Table 4.4: Identifying, Discussing and Treating the Illness.

Women's Household Status							
	Alone (N=80)	Head with Others (N=108)	Head with D-Laws (N=14)	Lone D-Law (N=28)	One of Sev- eral D-Laws (N=100)	Mat. Family (N=31)	Female Head (N=8)
% Mothers Noticing Child was Ill	74	90	67	85	69	78	100
$\chi^2=55.14$, DF=6, P<0.02							
Illness Informally Discussed with:							
Husband	12	20	14	11	11	...	...
* Child's Real Mother	...	4	...	...	2	...	...
Mother- in-Law	5	13	7	14	18	3	...
Marital Family	7	12	7	7	6	...	...
Woman's Mother	1	1	...	4	6	35	...
Neighbour	1	4	...	4	2	3	25
Old Woman	1	0	14	...	...	...	25
Other	1	2	...	...	...	...	...
Noone	70	44	57	61	55	58	50
% Children Subsequently Treated:							
	61	73	41	55	67	53	50
$\chi^2=11.91$, DF=6, P<0.1 * For Fostered Children							

bargaining, negotiation, or co-operation, may be forced to make extra-household social contact more frequently. Thus 8% percent

of these children's mothers relied on their own mothers to tell them that their child was sick, 4% relied on a neighbour and 4% were told by their husbands - a greater diversity of people than for any other status group. 90% of married women in households which were not centered around the mother-in-law/daughter-in-law hierarchy (heads with others) noticed that their children were ill themselves. 22% of women living in their natal families were told by their own mother that the child was sick, whilst all female heads of household who were the central focus and provider for the family noticed that their children were ill.

4.3.2 First Informal Discussion About the Child's Illness.

It is evident from Table 4.4 that a woman's household status has an influence on whom she consults about the child's illness or whether she even consults anyone at all. As noted in Chapter III, 'consult' here denotes an informal discussion rather than advice seeking, and constitutes a verbal acknowledgement that the child is ill. The table shows in particular, that for married women, a woman's place in the household hierarchy in relation to other women affects her ability to consult her husband, depending on the strength or nature of the 'focus' on her mother-in-law as discussed above. The χ^2 test applied to those consulting their husband, someone else or noone by status group for married women only was statistically significant ($\chi^2=15.6$, $DF=8$, $P<0.05$). The table shows that 'high status' women, particularly those in 'egalitarian' households are more likely to consult their husbands, as were women with daughters-in-law who are the 'organisational' key to the household's function, and as such may be regarded more highly by the men, as well as by the junior women of the household. The daughters-in-law, by contrast, sought consultation with their mothers-in-law rather than their husbands, although Section 4.4.3 shows that it is the husbands of these low status women who are more likely to be absent on

seasonal labour migration.

Women who were the sole 'worker' (in this case women who were lone daughters-in-law or 'alone') tended to consult no-one more than the other groups, whilst over one third of women living with their parents consulted their mothers. Women who were heads of household were automatically forced into an extra household consultation, or consulted no-one at all.

4.3.3 Choice of Healer.

Table 4.5 shows the type of healer first chosen according to the woman's status in her household. 'Higher status' women, particularly those with social support such as the head wives with other women of similar status, are able to treat the child themselves as do nearly three quarters of those who live alone, female heads and heads with daughters-in-law. What these women have in common is autonomy and/or time to collect and prepare particular herbal remedies, compared with just over half of the daughters-in-law either with or without peers who very often lack both the knowledge to make informed decisions, the ability to leave household tasks and the social sanctioning to gain approval of any treatment that they may undertake themselves. The element of mother/daughter-in-law focus depending on the number of the latter becomes clear as the mothers-in-law treated 15% of children of the daughters-in-law when the latter had had peers, but did not treat any of the children of lone daughters-in-law. By treating within the public sphere of her own household a mother-in-law reinforces the hierarchy, and her high status position within it, to the individual daughters-in-law, and to the household as a whole.

A surprisingly high proportion of children of lone daughters-in-law (18%) were treated by traditional healers and an additional 13% visited old ladies with reported powers of healing, without

Table 4.5: Choice of First Healer by Woman's Household Status.

	Alone (N=50)	Head with Others (N=80)	Head with D-Laws (N=7)	Lone D-Law (N=16)	One of Several D=Laws (N=68)	Mat. Family (N=17)	Female Head (N=4)
Healer:							
Husband	8	3	14	6	4	...	...
Child's Mother	74	81	71	56	54	65	75
Mother- in-Law	...	3	...	...	15	...	...
Marital Family	...	3	...	...	5	...	...
Woman's Mother	2	1	...	...	4	23	...
Trad. Healer	4	6	14	18	9	6	25
Marabout	4	...	...	...	3	...	...
Western Practit- ioner	8	3	...	6	7	...	...
Old Lady	...	...	...	13	3	6	...
(Column Percentages)							
Treatment by Mother/Treatment by Others by Status (Married Women Only): $\chi^2=15.21$, DF=4, P<0.005							

trying a home remedy first. This is important for two reasons - firstly, lone daughters-in-law have very little time of their own or autonomy to pursue treatments using their own intuition. Thus, a visit to a healer, although more expensive and time-consuming means that a diagnosis is made, and a cure already prepared. Secondly, and more importantly, it also means that the fact that the illness deserved a treatment is publicly recognised. This is particularly important when, as described above, the children of

lone daughters-in-law, unlike those of daughters-in-law with peers, are the sole means by which their household can replicate itself in the future. Unlike the female household heads and heads with daughters-in-law who also visit healers in larger numbers, the lone daughter-in-law is in the least powerful household status position meeting the most powerful individual in the healing community. Thus further autonomy is taken away from her due to the public sanctioning of the healer's powers and the strength of his authority as discussed in Appendix VIII.

4.3.4 Type of Medicine Used.

Table 4.6: Choice of Medication of Person First Treating Child.

	Healer								
	Husband (N=11)	Child's Mother (N=174)	Mother in-law (N=12)	Marital Family (N=5)	Natal Family (N=5)	Trad Healer (N=23)	Mara- bout (N=5)	Old Lady (N=5)	Clinic (N=12)
% Using Modern Medi- cine	73	39	17	60	80	...	...	...	100
Husband/Child's Mother/Mother-in-Law x Traditional/Modern Medicine:									
$\chi^2=7.5, DF=2, P<.05.$									

Table 4.6 above shows the percentages using modern medicine with the remainder using some form of traditional remedy usually composed of plant roots, leaves or bark. This indicates that besides those treated at the clinic, nearly three quarters of those treated by the husband and 80% of those treated by the natal family used modern medicines, although it must be noted that the dose and administration of modern medication such as chloroquine may mean that it actually has little effect. Nearly two thirds of women who were treating their children themselves

used traditional medicine as it is often free and easy to collect if growing close to the village. In addition, the mothers-in-law (most commonly treating the children of their daughters-in-law) also tended to use traditional medicine more than other healers.

4.3.5 Payment for First Treatment.

Table 4.7: Payment for First Treatment.

	Alone (N=52)	Head with Others (N=79)	Head with D-Laws (N=7)	Lone D-Law (N=16)	One of Sev- eral D-Laws (N=68)	Mat. Family (N=17)	Head (N=4)
Free eg leaves, roots or bark.	52	37	43	31	35	47	50
Paid with a gift eg Chicken	...	1	...	...	...	...	...
Borrowed	10	9	...	...	9	...	25
Paid with money	39	53	57	69	56	53	25
(Column Percentages)							

Table 4.7 illustrates how the first treatment was paid for and shows that the greatest number of women choosing free treatments were female heads of household, women who were alone with no adult female support, or heads with daughters-in-law who have to incur the expense that this high status position brings. Those women who were unsupported and yet relatively autonomous (ie women who were alone and those who were female heads of households) were also able to rely on networks external to the

household to borrow treatments from friends or relatives. Lone daughters-in-law were paying with money as they lack the time to gain cash from supplementary economic activities or to collect free treatments, a knowledge of appropriate remedies and autonomy to wander freely into the bush at will to search for them. In addition, the fact that many were using healers meant that cash payment was usually obligatory.

4.3.6 Source of Cash to Pay for First Treatment.

Table 4.8 shows the individuals providing cash for those women

Table 4.8: Source of Cash to Pay for First Treatment.

Paid By:	Alone (N=21)	Head with Others (N=34)	Head with D-Laws (N=4)	Lone D-Law (N=11)	One of Sev- eral D-Laws (N=32)	Mat. Family (N=8)	Female Head (N=1)
Child's Mother	43	73	25	54	31	50	100
Husband	29	21	75	27	34	...	...
Mother- in-Law	5	...	...	18	12	...	...
Husband's Family	10	...	...	...	9	12	...
Woman's Mother	14	6	...	...	12	37	...

(Column Percentages)

Mother Pays/Other Pays by Status (Married Women Only):

$\chi^2=15.03, DF=4, P<0.005.$

who paid for the treatment with money. It is however important to emphasise that as found in other studies of domestic budgeting (Harris 1981), the source of the cash - ie from which economic activity or individual it came, affects how it is spent. Nearly three quarters of those who are head wives in 'egalitarian households' pay with their own money, as do over half of lone daughters-in-law. More lone daughters-in-law received payment from their mothers-in-law than those who were one of several daughters-in-law. The latter appeared to be able to rely on the mother-in-law for consultation and treatment but turned to their husbands, the marital family or their own mothers for cash. More of the lone daughters-in-law received money from the mother-in-law for treatment perhaps, because as discussed, the child, whether male or female, represents the only member of the next generation of that household to date. Those receiving most payments from their husbands are the heads with daughters-in-law who organise the running of the female labour in the family and who themselves incur substantial costs in doing this. Those who were alone also had a substantial amount of treatments (29%) paid for by their husbands, but also relied on their marital family and to a larger extent on their natal family more than other married women.

Over one third of those living with their natal family had the treatments paid for by the suudu baba although observational work showed that even though a treatment may be administered in the natal family, its cost was supported by the marital family as the child, especially if it was a boy was said to 'belong' to them. The lowest amount was spent by women living in their maternal family (CFA 21.0) who may lack the financial resources from their husband or mother-in-law they had access to during residence in their marital household whilst finding their own family reluctant to pay for the treatment of a child who 'belongs' to another household. Interestingly, the mean amount spent by daughters-in-law (CFA 97.3) was higher than for any other status group.

4.3.7 'Special Care' Given During Child's Illness.

What also became clear from the data was the fact that although some children were not treated with any kind of medicine, they often received 'special care' during the illness which would not have been carried out under normal circumstances if the child had been well. This includes actions such as making the child a special dish to eat or having it avoid certain foods, giving the child milk when it would not normally be considered necessary, making the child sleep elsewhere (for example with the mother when it had been sleeping with another relative) or washing, clothing or wrapping up the child when this would not normally be done.

All these actions, although not comprising treatments per se, serve as a recognition that the child is ill and constitute the giving of extra care and attention which, as shown in Section 4.6 seems to have a beneficial anthropometric outcome. Research amongst animal and human populations shows that care and support during an illness can cause specific biochemical changes which benefit host resistance (Cassell 1976) although it must be considered that better nourished children who fall sick are able to demand more attention during the illness than their malnourished counterparts (Barrett and Frank 1987).

Table 4.9 indicates that despite the high number of heads with daughters-in-law not treating (55%), a very much higher percentage of them (89%) were able to give extra 'care' of some sort during the illness. This is not only less expensive but unlike a treatment (the administration of which implies an unspoken personal responsibility for the health of the child) can be carried out by someone else, for example a daughter-in-law. In addition, amongst 'lone' women and daughters-in-law with peers, one third of whom did not treat, around 80% of the remainder were able to give some sort of special care and

Table 4.9: Percentage of Untreated Children Given 'Special Care'.

	Head Alone (N=31)	Head with Others (N=28)	Head with D-Laws (N=9)	Lone D-Law (N=13)	One of Sev- eral D-Laws (N=33)	Mat. Family (N=15)	Female Head (N=4).
% Children Not Treated But Given 'Special' Care:	81	57	89	69	79	73	25
$\chi^2=10.7, DF=6, P<.1$							

attention to the child. Again, the greatest anomaly is the lone daughters-in-law, 45% of whom did not treat and another 31% did not provide any extra care. Amongst the group with the largest proportion of treated children (head women with other women of head status) only half of the remainder not treating provided any such care. The facilitating factors for such care and the consequences of it in terms of anthropometry will be discussed in Section 4.6.

4.4 ADDITIONAL TYPES OF INTER AND INTRA-HOUSEHOLD SUPPORT AND THEIR EFFECT ON ILLNESS MANAGEMENT AND ANTHROPOMETRIC OUTCOMES.

4.4.1 Intra-Household Female Support.

Recent studies have provided evidence that the social network or support system available to the mother is important in determining the quality of care she is able to give her infant

(Zeitlin et al 1990). This support may be functional or psychological and come from within or outside the household and is given by friends, neighbors or relatives in the absence of any formal welfare services. Variations in the effects of different internal support structures available to women in the sample are discussed below.

It became clear during the observational work that intra-household support for individual women came not only from other women of reproductive age but also from young unmarried daughters over about eight years old, who could assist with food preparation and other household tasks. These 'helpers', especially for many Fulbe women, provided invaluable assistance with child care while the mother was away or otherwise occupied, and for certain families of lone women made a difference as to whether two or three meals were prepared each day, if the woman was absent, for example, selling milk.

Table 4.10 below shows that a greater percentage of women who had other women in the household were able to treat their children, but more importantly, nearly three quarters of women who had another woman and a helper were treating their children as opposed to just 44% with a helper alone. Chapter VI will show that the requirements for day-to-day child care are often different from those for illness management, and for women with intra-household adult female support a 'helper' may constitute extra potential for the reorganisation of household tasks, if a child becomes sick. For lone women however, having a 'helper' however, does not provide an incentive to treat the child when another adult woman is required for additional consultation, and to be responsible to the household as a whole possibly, as the mother's work replacement while she pays attention to a sick child. Observation indicated that 'helpers' for lone women were more often used for food preparation and

Table 4.10: Percentage of Children Treated by Mother's Type of Household Assistance.

Type of Household Assistance			
All Women:			Another Woman and Helper (N=190)
No Helper (N=60)	Helper (N=43)	Another Woman (N=91)	
63	44	59	71
$\chi^2=12.3, DF=3, P<0.01$			
Lone Women:		Women with Other Woman/Women in Household:	
Overall % Treated: 55		Overall % Treated: 67	
No Helper (N=60)	Helper (N=43)	Another Woman (N=91)	Another Woman and Helper (N=190)
63	44	58	70
$\chi^2=2.4, DF=1, P<0.05$		$\chi^2=3.29, DF=1, P<0.05$	

functional child care tasks (such as washing and feeding), rather than for care or treatment of a sick child.

Given that the presence of a another woman and a helper seems to be the most advantageous for illness treatment, Table 4.11 below again gives an indication of why the Humbebe may be raising more

Table 4.11: Household Assistance Available to Mothers of Sick Children in Sample by Ethnic Group.

	Humbebe (N=121)	Fulbe (N=103)	Rimaibe (N=163)
Help Available:			
No Help	1	30	18
Another Woman + Helper	85	32	34
Helper	6	14	13
Another Woman	8	25	34
(Column Percentages)			
$\chi^2=99.0, DF=6, P<0.001$			
% Treating:	72	53	62
$\chi^2=9.1, DF=2, P<0.01$			
% Providing Special Care:	69	68	78
$\chi^2=4.42, DF=2, P<0.1$			
% Treating and/or Providing Special Care:	83	69	67
$\chi^2=8.97, DF=2, P<0.02$			
% * Doing Nothing:	7	22	22
$\chi^2=12.48, DF=2, P<0.002$			
* 'Nothing' = No Consultation, No Treatment, No Special Care.			

healthy children and treating more of their illnesses. It shows that 85% of sick Humbebe children were in this optimal situation with both another woman and a helper in the household, whilst only about one third of sick Fulani children lived in this type of home environment. More Fulbe were likely to have no help at all whilst the Rimaibe at least had another woman in the household. Thus a greater proportion of Humbebe were able to treat and/or provide special care whilst over one fifth of both the Fulbe and the Rimaibe neither discussed nor treated the illness, nor paid any special attention to the child.

4.4.2 Support from a Woman's Natal Kin: The Importance of the Suudu Baba.

The location of a woman's natal household has been found to be extremely important in many different cultures and settings for a woman's sense of security and psychological well-being (Zeitlin et al 1990, Jeffreys et al 1988) as well as for practical assistance. Several studies have paid attention to 'marriage distance' and its effect on a woman's contact with her natal kin (Dyson and Moore 1983, Jeffrey et al 1989, Fricke et al 1992), but have not identified the consequences of this for child health.

During the hot season many women in the sub-sample who had intra-household support, visited their natal families for a considerable amount of time, where they were welcomed heartily and often returned with gifts of millet for their marital households, clothes for themselves and treats for their children. The distance a woman is from her natal family determines, of course, the frequency of her visits and probably the degree of enthusiasm with which she is received. In addition, the structure of the natal household itself determines what resources can be given to daughters who have married elsewhere. Some women

mentioned that they were particularly 'spoilt' because they were their mother's only daughter, and some such women were even given condiments on a daily or weekly basis by their mothers if this were the case. Another woman who had married into another village complained she rarely received anything from her natal family as her only brother was now head of the household, and in doing all he could to provide for them had little time, money or millet to give to her. She felt that if he had had living brothers or uncles, he would have been able to be more generous.

Table 4.12 shows that the mothers of Rimaibe children were more likely to have their natal family in the village whilst less than half the Humbebe had married into the same community and 14% had a suudu baba located far away (over 20Km) The Fulbe also tended to marry within the village although 5% of mothers' suudu baba were also at a considerable distance.

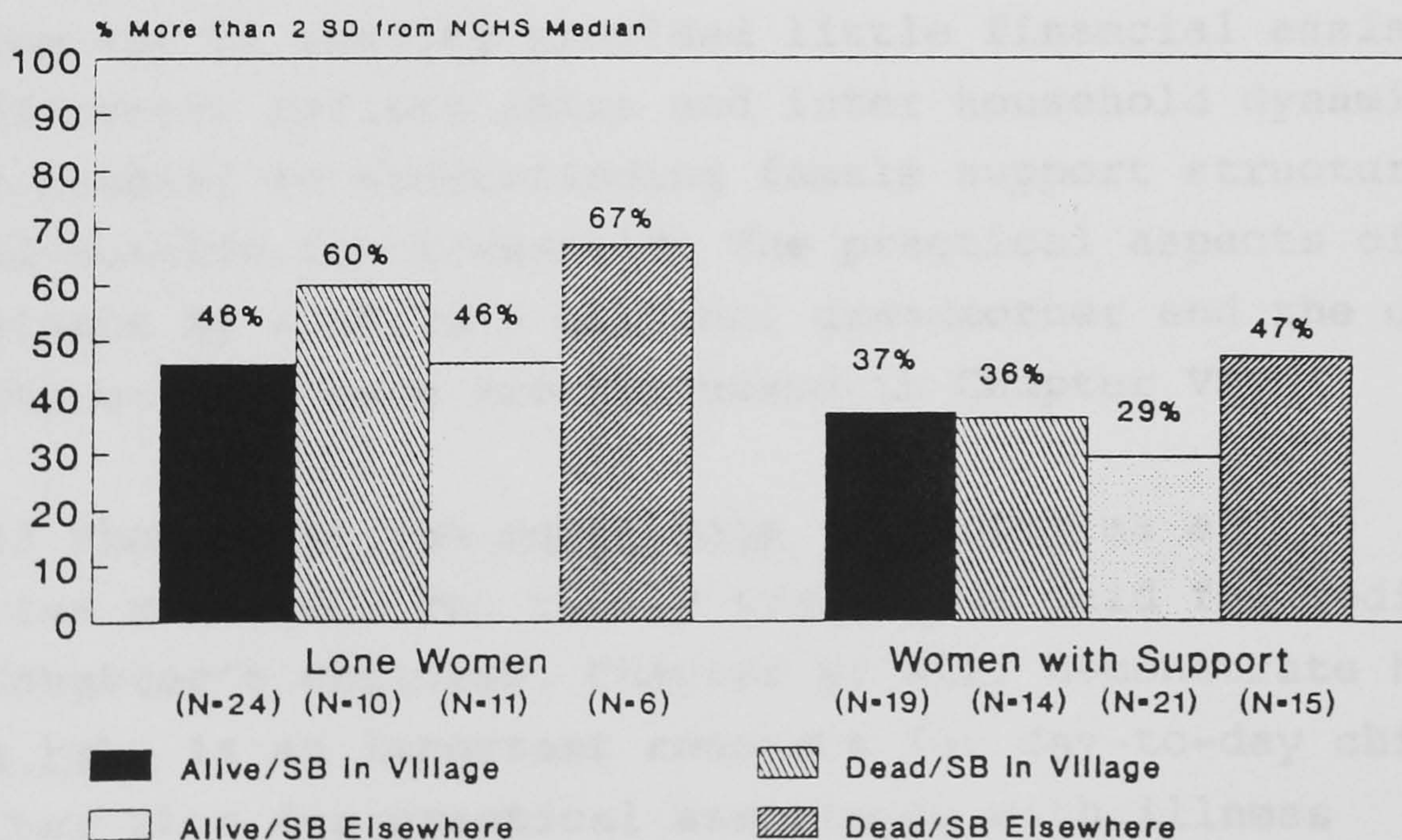
Table 4.12: Location of Suudu Baba by Ethnic Group/Social Class.

Location of Children's Mothers' Suudu Baba			
	Same Village (N=42)	Nearby Village (N=60)	Far Away (N=67)
Distribution by Ethnic Group:			
Humbebe:	42	44	14
Fulani:			
Fulbe	61	34	5
Rimaibe	67	33	...
$\chi^2=9.83, DF=4, P<0.05$			

Thus the Humbebe are forced to rely on their marital families' internal structure for support and are fortunate in living in large supportive households with both other women and helpers to assist with or relieve them from household duties. The Rimaibe, on the other hand, not only have larger numbers of women within their households than the Fulbe, but also have their natal families around. Lone women, particularly the Fulbe are forced to seek extra-household support more frequently, and are therefore in a more advantageous position if their natal family is close by.

Initial analysis shows that the presence or absence of a woman's natal family (suudu baba) in her village to be weakly correlated with anthropometric outcomes in terms of weight for age, in that 46% of all women whose suudu baba is elsewhere have children who can be described as malnourished (more than 2 SD from the NCHS median weight for age) whilst only 38% of children of mothers whose natal family is in the village have children in the same category ($P < .25$, $DF=1$, $\chi^2=1.54$).

Figure 4.4 Weight for Age by Status of Maternal Grandmother and Location of Mother's Suudu Baba (SB)



More interestingly, the presence or absence of the suudu baba seems not to be related to the simple household status of the woman in terms of the anthropometric outcome of her children, but rather with whether she has any overall intra-household support within her marital family. This pattern, although not statistically significant, is shown in Figure 4.4 above and provides evidence of the differential reliance on extra household resources by women with some or no intra-household support.

The proportions of children of lone women (ie those with no other women of reproductive age in their households) who are malnourished increase if their maternal grandmother is dead. They seem particularly at risk if she is dead and their mother's suudu baba is elsewhere. For children of women with intra-household support, the suudu baba does not make a difference unless the maternal grandmother is dead and the rest of the natal family is located in a different village leaving them with minimal natal household support. Children of women with intra-household support, whose maternal grandmothers are still alive and whose suudu baba is in the village, actually did worse than if she were dead or alive elsewhere. This may be because maternal grandmothers typically said all financial responsibility for their married daughter and her children should come from their sons-in-law and in reality provided little financial assistance. These differences reflect intra and inter household dynamics which are crucial to understanding female support structures both within and outside the household. The practical aspects of child care provision by a child's maternal grandmother and the quantity and quality of such care are discussed in Chapter VI.

Table 4.13 shows that the suudu baba is useful as a consultative resource, but rarely treated or paid for medicines for its daughter's children. Chapter VI will demonstrate how the suudu baba is an important resource for day-to-day child care, rather than for practical assistance with illness

Table 4.13: Illness Management and Location of Child's Mother's Suudu Baba.

Location of Suudu Baba (Natal Household)			
	Same Village (N=181)	Nearby Village (N=128)	Far Away (N=27)
First Person Consulted:			
Husband	9	14	30
Real Mother		2	...
Mother-in-Law	12	15	...
Marital Family	9	4	...
Suudu Baba	11	1	...
Neighbour	3	2	...
Old Lady	1	2	...
Other	...	1	4
Noone	54	59	67
Women Consulting Marital Family/Suudu Baba/Noone by Suudu Baba in Village or Elsewhere:			
$\chi^2=11.83, DF=2, P<0.005.$			
% Children Treated by Suudu Baba:			
	3	1	...
% Treatments Paid for By Suudu Baba			
	5	5	...

management. Many women explained that once a woman marries, her

husband is supposed to pay for all her expenses and not her natal family. One informant summed it up saying 'when you marry you are finished with your suudu baba, you're expected to get everything from your husband'. Another was often given money by her mother to clothe or feed her male child, but she always turned this money over to the household head saying the child 'belonged' to his family. Thus although more women are able to consult their suudu baba if it is in the village, the proportions of treatments given or paid for by the suudu baba are extremely small, because the child and the married woman is seen as being the responsibility of the marital family. 30% of those women whose suudu baba is far away are forced into a consultation with their husbands, or seem to be more isolated and consult no-one, not even their mother-in-laws or other members of their marital families.

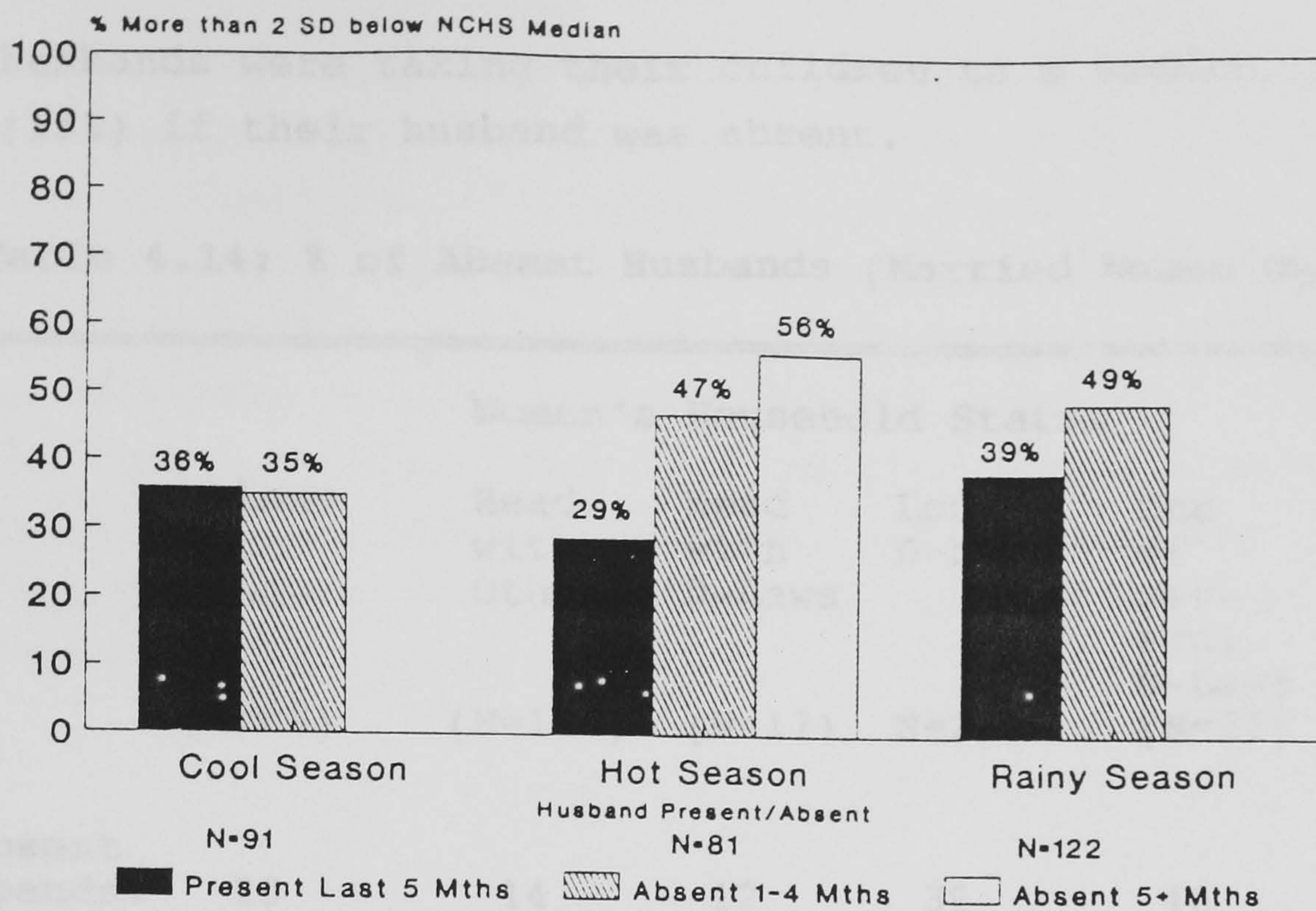
4.4.3 Absence of Husband.

In addition to variations associated with intra-household female support, differences were associated with the presence or absence of the husband. Other studies (Ashworth and Dowler 1990, Zeitlin et al 1990) have indicated that the presence or absence of the husband has an effect on the nutritional status of the child, but do not identify an increased effect in relation to the length of his absence.

Figure 4.5 shows that for all groups (including the Humbebe), the nutritional status of the child declines with the length of absence of the mother's husband (assumed in this analysis to be the child's father). This is particularly evident during the hot season when the peaks of malnutrition for children during this most difficult period, are amongst those whose fathers have been away for over five months. Even during the rainy season when nearly every man had returned, those children whose fathers had

Figure 4.5

Weight for Age and Absence of Husband



been absent during the previous few months were still significantly more malnourished. None of the differences during any season however were statistically significant.

Analysis of the illness management data indicated that the presence or absence of the husband had little bearing on the decision to treat the child, with 67% of those mothers with husbands present treating their children against 63% of those whose husbands were absent ($\chi^2=.36$, $DF=1$, $P>0.1$). What differed most amongst married women with the absent husbands was the focus on the mother-in-law, not as a consultative resource or as a healer, but in providing money for treatment in lieu of her absent son (or stepson). 13% of mothers-in-laws paid for the treatments of absent husband's children and none paid for the treatment of children whose fathers were in the household. Fewer women were treating the children themselves if the husband was not in the household, and twice the percentage of women with

absent husbands were taking their children to a traditional healer (13%) if their husband was absent.

Table 4.14: % of Absent Husbands (Married Women Only).

	Women's Household Status				
	Alone (N=85)	Head with Others (N=114)	Head with D-Laws (N=17)	Lone D-Law (N=28)	One of Sev- eral D-Laws (N=97)
% Absent Husbands:	23	14	12	39	40
$\chi^2=39.24, DF=4, P<0.001$					

The cross-sectional surveys found 42% of children's fathers to be absent in January (cool season), 27% in May (at the end of the hot season) and only 4% during the cultivation period in September. The proportion of times a woman's husband was absent was not significantly correlated with the wealth ranking, partly because, for example, a wealthy Fulbe man with cows would be likely to be more absent from the home for the greater part of the year, while those left behind were likely to be poorer and possess no animals with which to move. However, Table 4.14 shows an extremely close association between the woman's status and her husband's absence, as the husbands of higher ranking women such as 'heads with daughters-in-law' would be unlikely to leave the household, but rather send their sons on seasonal labour migration.

The fact that low status women with absent husbands are more

likely to use healers rather than self-treat relates to an issue cited by one informant whose husband had been away on labour migration in Cameroon. She remarked that during her husband's absence she constantly felt watched by the village, not only in her behaviour with other men but in all aspects of her daily routine. Treating by a traditional healer therefore would be publicly seen by all as taking affirmative action regarding the illness during the husband's absence, and in this way a woman would minimise her personal responsibility if the child happened to die while he was away.

4.5 SOCIO-ECONOMIC CHARACTERISTICS OF SPECIFIC HOUSEHOLD TYPES AND THEIR EFFECT ON ILLNESS MANAGEMENT AND ANTHROPOMETRIC STATUS.

Following the discussion of intra-household support and status related differentials, it is necessary now to consider broader household characteristics which affect its day-to-day function rather than its internal form or structure. The following section therefore concentrates on household wealth categories (constructed using the wealth ranking described in Chapter II) and their effect on the household timescale of operation and subsequently on child nutrition and illness management.

4.5.1 Household Wealth

The wealth ranking data collected using the methods described in Chapter II provided some interesting insights into how people viewed the constituents of wealth (animals, children, fields) and how a dearth of one could be made up for by an excess of the other. In addition, most informants identified a difference between families who had always been rich through inheritance and 'self-made' families who had 'got lucky'. Conversely, they also

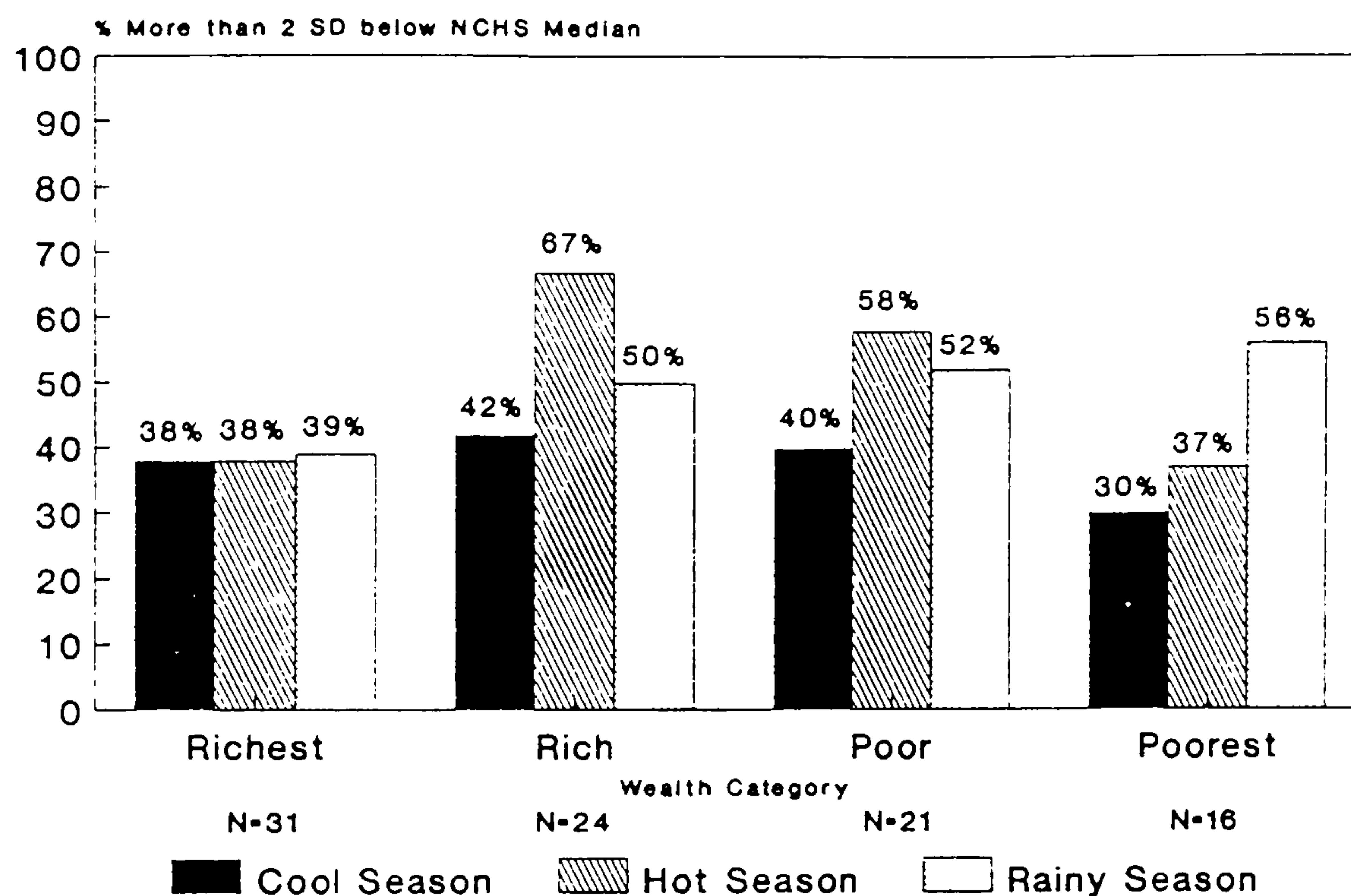
distinguished between families who had always been poor and those who had recently fallen upon hard times, for example due to the droughts of 1973 or 1985. Some of these points using actual definitions and accounts from the informants are presented in Appendix IX. It is important to remember however that these definitions and rankings were provided by selected informants who were male heads of household. Although the consistency between their ranking of individual households was high, their categories may not reflect intra-household disparities in access to wealth. In particular young women who have married into the family and are of a low social status may not have access or rights to household 'wealth' in the form of cattle, fields or cash. This is reflected in the discussion in Chapter VI which shows that many of the sickest children in the observational sample were from the wealthiest households, but had mothers who were low status daughters-in-law and as such had little access to household's resources which were controlled by the male household head.

Appendix IX also shows that particular internal household structures typified the various household wealth categories. In general, poorer households tended to be smaller and as a rule larger households who fell upon hard times tended to split either seasonally or permanently into smaller nuclear units. By contrast, larger wealthier households tended to include a lot of 'poor relations' such as crippled, sick or elderly relatives who produced little of the household's wealth but consumed its resources. Thus within households there were substantial variation in both the production and consumption capacity of individuals depending on their age, gender, social status and relationship to the household head.

Analysis of the illness management data indicated that there were no great differences in, for example, the number of treatments administered, payment for treatment, or medicines used simply by wealth, although women in the 'richest' category had nearly one

quarter of treatments paid for by their husbands compared with just 9% of the poorest women, one quarter of whom paid for the treatment themselves.

Figure 4.6 Wealth Ranking and Weight for Age (January - Sept 1990).



Dirimbe Fulani Only

Figure 4.6 however shows considerable (although not statistically significant) seasonal variation in weight for age of the Fulani children in Dirimbe according to the wealth ranking. It indicates that the children of the wealthiest families (both Fulbe and Rimaibe) demonstrate very little seasonal variation in their anthropometric status, probably due to a more secure food supply, or the availability of cash or assets (particularly animals) that can be exchanged for food during the difficult hot season. The middle groups (rich and poor) exhibit hot season stresses, when milk is scarce, the physical climate more difficult, large numbers of men are away on seasonal labour migration and millet procured on a daily rather than long term basis.

The poorest families illustrate a different pattern however, as with increased time from the previous harvest (October 1989), the proportions of malnourished children becomes greater, unlike the rich and poor families who have peaks during the hot season, but are able to improve their nutritional status with the arrival of the rainy season, and the reunification of families divided by seasonal labour migration and the increased availability of milk and wild foods. The nutritional status of the poorest families however, gets continually worse, presumably until the next harvest is secured, indicating that it is perhaps simply poverty and an overall lack of assets and a greater reliance on what they can procure from the harvest alone, rather than through exchange or purchasing, that influences the nutritional status of their children.

4.5.2 Household Time Scale of Operation

The wealth ranking data does, however, give an indication of why Fulbe/Rimaibe differences in anthropometric status and mortality outcomes may be so great. Table 4.16 shows the 'Time Scale of Operation' of individual households and considers on what basis they obtain their staple food, namely millet. It indicates that rich and poor Fulbe and Rimaibe have entirely different methods of household function.

'Secure' refers to households who obtain millet either several sacks at a time, buy it at each weekly market or are able to call upon reserves in their granaries. 'Daily' refers to those households who obtain millet each day either by exchanging it for milk (Fulbe), or by buying just a few bowls at a time. Securing millet is the main preoccupation of all households and constitutes the main motives for male seasonal labour migration and for selling livestock. If millet has to be secured on a daily basis, the ability of the household to react to long term

Table 4.15: Time Scale of Millet Procurement amongst Dirimbe Fulani Households.

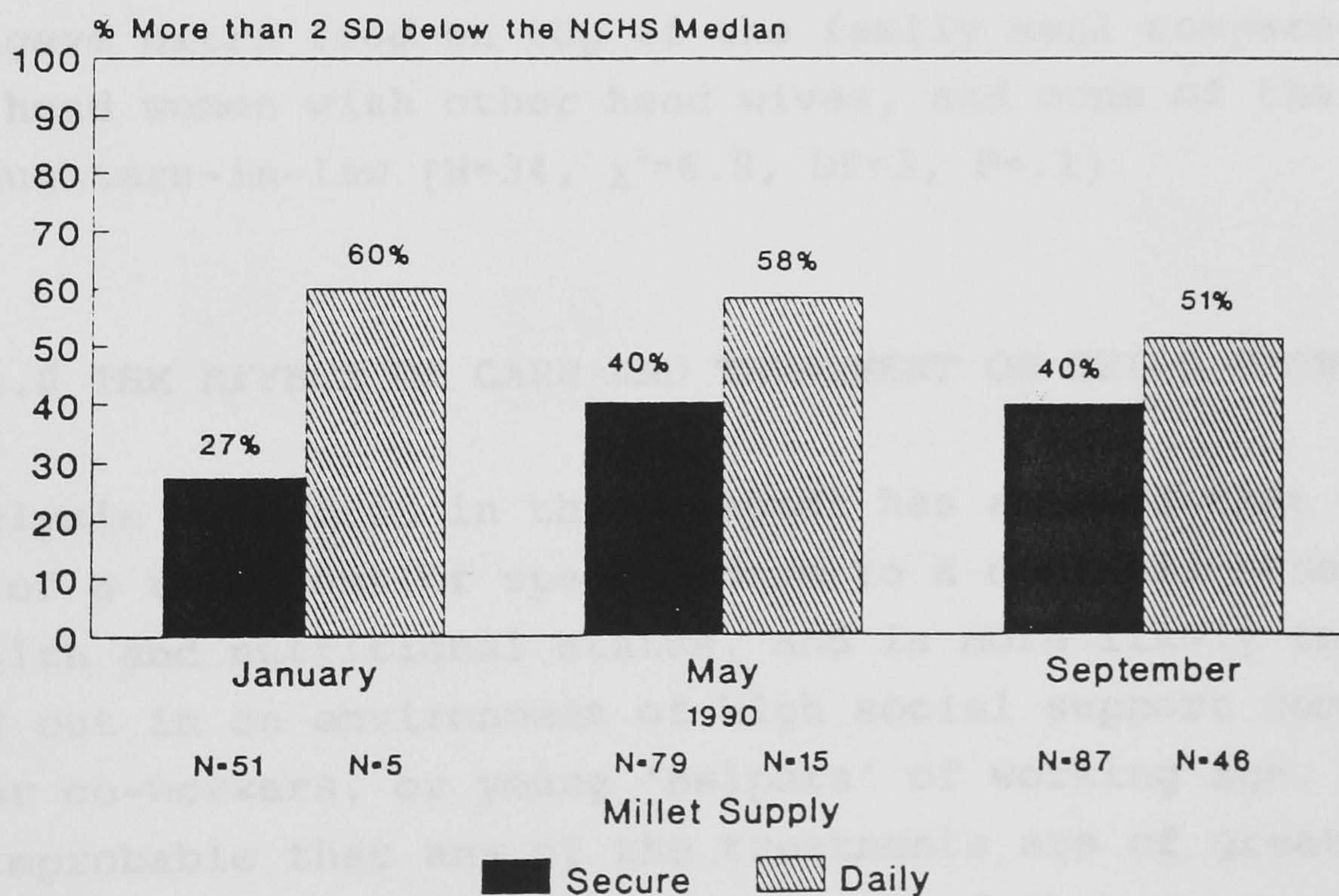
Fulbe				
	Richest (N=4)	Rich (N=7)	Poor (N=8)	Poorest (N=6)
Secure	...	14	12	50
Daily	100	86	87	50
Rimaibe				
	Richest (N=4)	Rich (N=6)	Poor (N=6)	Poorest (N=3)
Secure	100	67	67	...
Daily	...	33	33	100
<p>For Richest and Rich Households: Secure/Daily and Fulbe/Rimaibe in 2 x 2 table: DF=1, Fisher's Exact Test (One Tail) P<0.001.</p> <p>For Poorest and Poor Households: Secure/Daily and Fulbe/Rimaibe in 2 x 2 table: DF=1, Fisher's Exact Test(One Tail) P=.3</p>				

difficulties or to be preoccupied with labour and time intensive tasks such as illness treatment is reduced. In addition, such households will be more at the mercy of short term price fluctuations in the general market due to the seasonal availability or shortage of staple foods (Pacey and Payne 1985). Table 4.15 indicates that for the richest Fulbe (ie those with many cows), milk is sold or exchanged daily for millet, and constitutes the normal timescale of operation for richer families. As wealth decreases the time scale is less dependent on daily milk selling (due to a lack of animals) and the poorest families are accumulating millet to last over a period of at

least several days.

For the Rimaibe the contrary is true as their richest families operate on a secure basis, whilst the poorest are procuring food each day. For all groups these patterns tend to intensify seasonally, with 91% of households visited in the cool season operating on a secure basis compared with 89% of those visited in the hot season and 66% of those in the rainy, pre-harvest season. Figure 4.7 shows the consequences of these differential time scales in terms of anthropometric outcomes for all groups, including Humbebe households, of whom 96.6% are able to operate on a secure basis all year round. It is clear that all those children living in households relying on daily food procurement are worse off than those who have a more secure supply although the seasonal differences are not statistically significant.

Figure 4.7 Weight for Age and Household Time Scale
(All Groups, Jan, May, Sept 1990).



Further analysis indicates that of those children in households operating on a daily timescale (N=39) only 43.6% were eating three meals a day compared with 88 % of those who secured millet on a long term basis ($\chi^2=32.56$, DF=2, P<0.001). 38.5% of these 'daily' households were eating two meals a day, and 18% just one solid millet based meal.

Interestingly, it became clear that women's household status had important consequences for additional food given to the child, particularly if the family meal was insufficient. Analysis indicated that in September when all but a few families were visited, that 45% of children in households operating on a daily basis were relying more on additional food prepared for them individually by their mothers, rather than solely on what they obtained from the family bowl, compared with just 32% of 'secure' households (N=109, $\chi^2=1.6$, DF=1, P=.2). In these 'daily' households, women who were closer to the cooking pot by the nature of their status were able to give additional food to their children more easily than those women who by the nature of their higher status did not prepare family food. Thus 61% of daughters-in-law gave extra food on top of the family meal compared with 25% of head women with other head wives, and none of the heads with daughters-in-law (N=34, $\chi^2=6.8$, DF=3, P<.1).

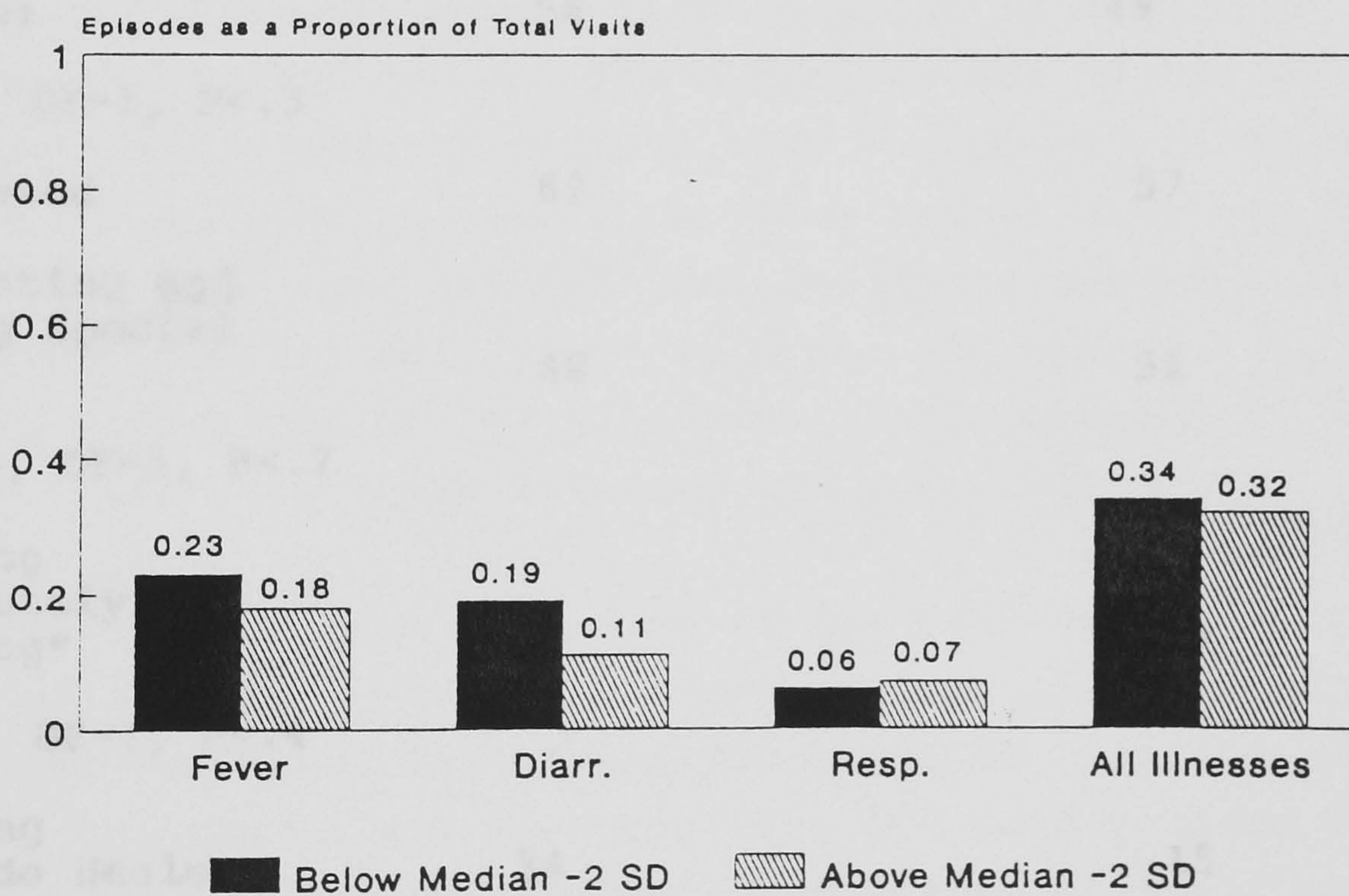
4.6 THE EFFECT OF CARE AND TREATMENT ON CHILD GROWTH.

The analysis presented in this chapter has assumed that the giving of a treatment or special care to a child is beneficial to its health and nutritional status, and is more likely to be carried out in an environment of high social support composed of peers or co-workers, or young 'helpers' of working age. Although it is improbable that any of the treatments are of great medicinal value, it is doubtful that any of them are actively harmful. In this case it is therefore more useful to consider

treatment as a 'proxy' for an interest in, or concern about, the child's illness. This final section will show that there seems to be a connection between treatment, care and improved nutritional status, regardless of the medicinal value of the therapy.

Figure 4.8 below shows that children whose weight for age in September was more than 2 standard deviations from the median, are reported to be suffering from diarrhoea and fevers only slightly more than the well nourished children, and have less respiratory infections. The lack of expected difference may well be due to reporting bias by the mothers of malnourished children, particularly if the illness had gone on for several months

Figure 4.8 Weight for Age and Episodes of Illness
(Number of Times Sick/Number of Visits)



(January - September 1990)

Table 4.16. below was constructed using the September weight for age measurement of children who had been noted to be sick with diarrhoea, fever or respiratory infections from January-September

1990. It seems to indicate that, in general, the more malnourished children tended to have a greater proportion of their illnesses treated, although more children who had better anthropometric outcomes were treated and given special care during their illness. It was commonly believed that only when a

Table 4.16: Treatment Strategies of Malnourished and Adequately Nourished Children.

	Malnourished.	Adequately Nourished
	Below -2 SD Median Weight- for-Age. (N=97)	Above -2 SD Median Weight- for-Age. (N=93)
% Consulting No-one:	56	49
$\chi^2=.9, DF=1, P<.3$		
% Treated	69	57
% Treating <u>and</u> Giving Special Care	48	51
$\chi^2=.08, DF=1, P<.7$		
% Doing Absolutely Nothing*	19	19
$\chi^2=.7, DF=1, P<.4$		
% Using Outside Healer:	34	15
$\chi^2=6.21, DF=1, P<.01$		
* No consultation, No treatment, No special care.		

child became severely ill was it worth initiating a treatment - with losing weight being considered a particularly serious symptom worthy of medication. Rather than the nature of the medication, issues of women's control over the actual treatment seemed to be more directly related to health outcomes. Those children who were adequately nourished were more likely to have mothers who consulted someone when they were sick - that is to say they verbally acknowledged the fact that the child was ill, and were more likely to treat the child within the confines of their marital or natal household. Over one third of the illnesses of the more malnourished children were treated by a healer from outside the household - usually a traditional practitioner or a marabout, who as described usually only let the mother participate minimally in the decision-making. The implications are therefore, that malnourished children are treated more frequently merely because their malnourished state appears to merit such action. The actual nature of the treatment and particularly a woman's control over it appears to be more significantly related to health outcomes rather than the mere fact that the child was treated. Her resources for consultation and treatment and her ability to initiate and control it, are, as discussed, a function of her situation in her household environment and associated autonomy and accountability.

Appendix X recounts case histories of two children of comparable age and social class, who exhibit contrasting characteristics of illness management and anthropometric outcomes. Despite the fact that their households are of equal size and both possess an educated household member, the relative status of their mothers within them, clearly leads to different treatment strategies and health outcomes. It will be shown in the following chapters that household structure, women's household status and associated resources of time, personal power and autonomy that come into play for illness management, have a different roles during the day-to-day care of children.

CHAPTER V: FOSTERAGE AND INTRA-HOUSEHOLD VARIATION IN CHILD CARE ARRANGEMENTS.

5.1 Background.

Considerable recent interest has been directed towards the extent and nature of child fosterage, particularly in sub-Saharan Africa, and its implications for child health (Bledsoe 1983, Bledsoe and Gage 1987, Page 1989). It is recognised that theories of fertility decline which focus on changes in the direction of wealth flows from parent to child, may be misleading in areas where the financial costs of raising children do not fall primarily on the biological parents. Thus, in addition to the biological regulation of fertility through contraceptive use, the socially managed regulation of family size and composition through fostering must be considered as an important mitigator of child rearing and its associated expense (Bledsoe and Isiugo-Abanihe 1989).

It will be shown that in addition to differential patterns of illness management resulting from intra-household female status variation, both informal and formalised non-maternal caretaking arrangements are also linked to the social positions of both the biological and foster mothers within their respective households. The movement of children both within and between households is not random, but rather depends on the autonomy and authority certain women have to request children, and the obligation that other women are under to foster them out.

Fosterage in this context usually refers to the 'relocation or transfer of children from their biological or natal homes to other homes where they are raised and cared for by foster parents' (Isiugo-Abanihe 1985). Little research has focused on the transfer within families of children who may also be subject to formalised non-maternal care despite the fact that their

mother lives in the same household. In addition, many children live with their biological mother but not their father - ie away from the agnatic family.

The implications of this for child health are difficult to elicit and are less well documented, particularly for children under five years of age. Data from Sierra Leone however, indicates that children sent to 'elderly' grannies shortly after weaning have poorer health and nutritional status and live in inadequate care environments (Bledsoe et al 1988). In addition, the evidence from Douentza suggests that the health of the child may in itself influence its care status with many fostered children being returned to their biological mothers if they become sick.¹

Data describing fostering practices is often taken from large-scale surveys such as the DHS (Desai 1991) or socio-economic surveys which were not designed to capture such subtleties of variation in child care and usually only refer to children living apart from their biological mothers (Lloyd and Desai 1991). They frequently fail to identify the great mobility of children both between and within households. Both permanent and semi-permanent non-maternal care depend on 'push' factors forcing or encouraging the biological mother to foster her child away, and 'pull' factors which encourage or oblige a foster mother to become the principal caretaker.

Amongst the Douentza sample families, it was found that besides formally fostered children and those under maternal care in the marital household, five further variations in child care

¹ Chapter III noted how 18% of all child deaths occurred in a household different from the one where the child usually lived. Fostered children may be returned to their real mothers when their illness becomes fatal, whilst children who lived with their biological mothers may be moved to the household of a high status woman such as the mother-in-law as their death becomes inevitable.

arrangements were commonly undertaken. The following analysis will be concerned with describing their characteristics and the precipitating factors.

5.2 PREVALENCE OF THE FOSTERING OUT AND THE FOSTERING IN OF CHILDREN.

5.2.1 Fostering Out.

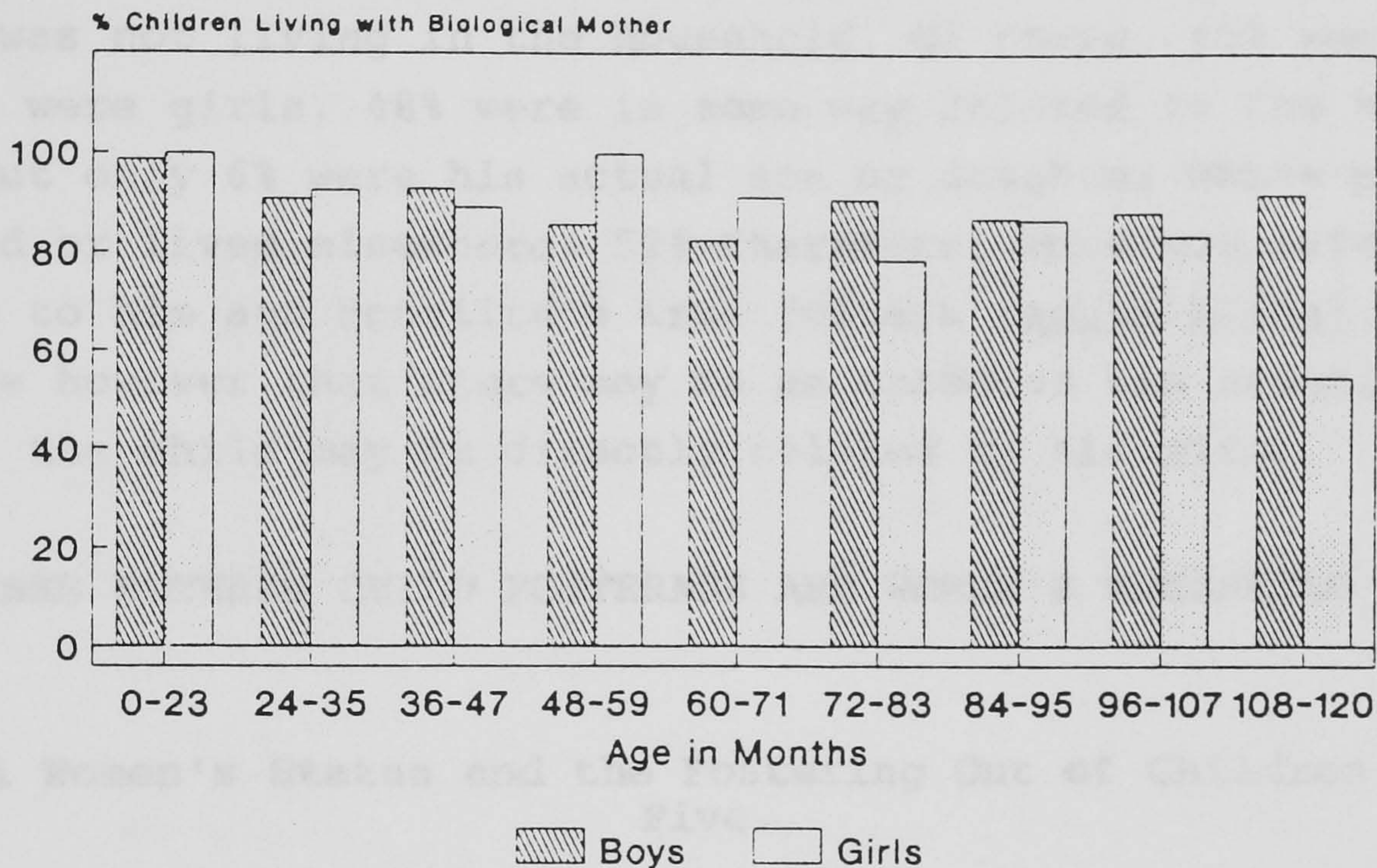
Definitions of types of fostering of older children have been extensively documented in recent literature and include 'kinship' fostering (often to facilitate weaning), 'crisis' fostering following the dissolution of the family of origin, 'apprentice' fostering' to learn a trade or skill, 'domestic' fostering to assist with household tasks, and 'educational' fostering to attend formal or Koranic school (Isiugo-Abanihe 1985). Given the young age of the children in the Douentza sub-sample, the types of fostering discussed are limited to the first two categories and thus constitute 'nurturant fosterage' rather than that associated with a training in adult role skills or education (Goody 1982).

Data from several West African settings consistently implies that the greater proportion of fostering usually occurs after age 10, particularly during the teenage years. Its exact timing is often sex-specific with girls being fostered out earlier and more frequently than boys, especially in patrilineal communities (Fiawoo 1978, Isiugo-Abanihe 1985, Goody 1982).

Although this study is concerned primarily with the health and welfare of children under five years old, it is necessary to view the extent of the formal fostering out of such children within the context of overall fostering prevalence amongst the sample communities. Despite being an unsatisfactory measure, children noted during the birth histories as not living with their mothers

will be assumed to be fostered out for the purposes of this initial analysis. Based on this premise, Figure 5.1 below was constructed using birth histories from the entire sample and shows an increase in the fostering out of children, particularly of girls, as they get older.

Figure 5.1 % Children Living with Mother (Children Under 10 years of Age).



From Birth Histories from 298 Women in Sample.

By age ten, 17% of boys were not living with their biological mothers against 46% of the girls. Up to age five the sex differences in fostering out of children are reversed with 10% of boys between 30 and 60 months living away from their biological mothers compared with 7% of girls. This is slightly lower than that found in other areas of Africa where, for example in Ghana and in Cameroon, 14% and 16% respectively of under fives are living away from their biological mothers (- for a review of fostering prevalence elsewhere see Page 1989). It does not however, take into account other non-maternal patterns of child care besides formal fostering which will be discussed below.

5.2.3 Fostering In.

The household censuses which formed part of the cross-sectional surveys inquired about 'souka bamba'; the Fulfulde phrase used to define children who are formally fostered into a household who were thus easily identified. Analysis of data from the household surveys showed that of all under fives in the households enumerated (N=337), 10% were fostered in - ie their biological mother was not living in the household. Of these, 45% were boys and 55% were girls. 48% were in some way related to the household head, but only 6% were his actual son or daughter whose mothers had died or lived elsewhere. 52% therefore, were not directly related to him and constitute true fosters (souka bamba). It is possible however that there may be an extended kin relationship, or that the child may be directly related to his wife.

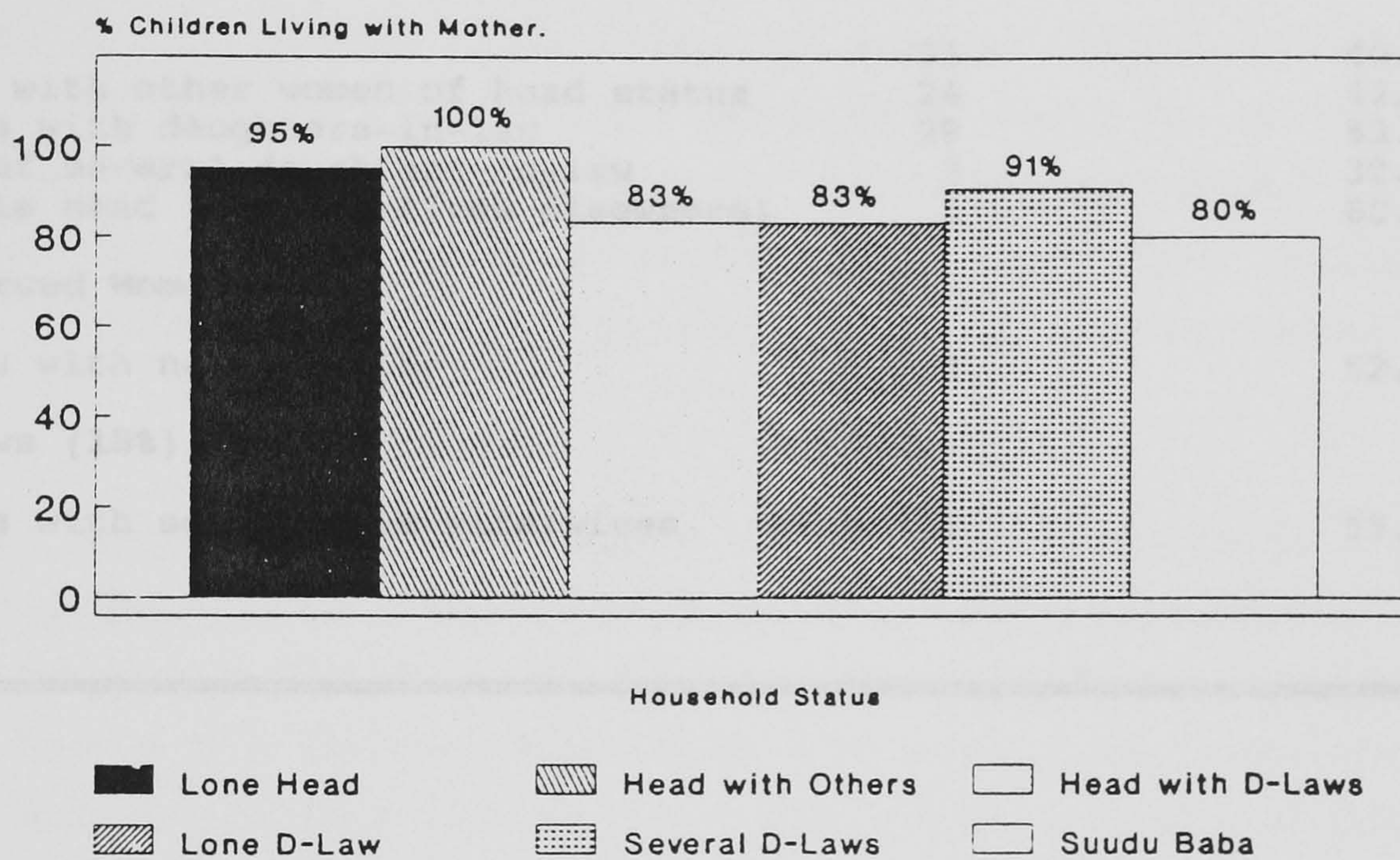
5.3 LINKS BETWEEN CHILD FOSTERAGE AND WOMEN'S HOUSEHOLD STATUS.

5.3.1 Women's Status and the Fostering Out of Children under Five.

What was particularly clear was that the movement of children to and from individual women both outside and within the natal household was linked to the household status of both the biological and foster mother. These pathways of transference of children were usually unidirectional and constituted strict regulations for fostering in and fostering out. Figure 5.2 was constructed from the birth histories of all women in the cross-sectional surveys and shows that those who were either alone or in households with other women to help them with chores, and in theory with child care, were more likely to keep their children with them. 20% of children whose mothers had moved back in with their own natal families were living elsewhere, probably with their fathers or paternal grandmothers. When a woman is divorced

and returns to her own parents she will take most of her daughters and her breastfeeding child with her. Her sons and perhaps one daughter are usually left in her husband's family - the former to eventually take their his male familial roles, and the latter to help her paternal grandmother with chores.

Figure 5.2 % Children Aged 30-60 Months Living with Mother by Mother's Household Status.



From Birth Histories from 298 Women in Sample.

Lone autonomous women prefer to keep their children with them probably for company and for future help with household tasks. Heads with daughters-in-law who are coming to the end of their child-bearing years, not only have the embarrassment of giving birth when even their daughters-in-law are doing so, but, as will be shown in Chapter VI often prefer to engage in commercial activity or animal rearing rather than child care and thus have their 17% of their children raised elsewhere. Lone daughters-in-law, preoccupied with household tasks with no assistance, seem to relieve themselves from further duties associated with child care by fostering a greater proportion of their children elsewhere.

5.3.2 Women's Status and the Fostering In of Children Under Five.

Table 5.1: Characteristics of Women Fostering in Children under Five (N=34).

Household Status:	% of Children Fostered in to:	Mean Age of Foster Mother:
Married Women (79%)		
Lone	21	40.1
Head with other women of head status	24	42.2
Heads with daughters-in-law	29	53.8
One of several daughters-in-law	3	32.0
Female head (husband lives elsewhere)	3	60.0
Divorced Women (3%)		
Lives with natal family	3	52.0
Widows (18%)		
Lives with son and his wife/wives	8	55.5

Fostering children in is equally status-related, with the majority going to heads with daughters-in-law, or to lone women or to 'heads with other women of head status'. In addition, one divorced woman had returned to her suudu baba with a fostered child. A further six were fostered to women who were the widowed mothers of the heads of household who lived with their sons(s) and daughter(s)-in-law. Only one child was fostered to a woman who was of daughter-in-law status. The table also shows that the foster mothers were, in many cases, beyond their reproductive years - 58% were more than 50 years old - a common feature of foster mothers elsewhere in Africa (Bledsoe and Isiugo-Abanihe 1989).

5.4 FOSTERAGE AND OTHER TYPES OF NON-MATERNAL CARE OF CHILDREN IN THE SUB-SAMPLE.

As described above, souka bamba refers to fully fostered children who are living in a different household to their biological mothers. However, in Fulfulde, a child who is being raised by a particular individual is said to be 'with that person's arm' (e jungo nedo). This individual is known as being formally responsible for the day-to-day care of the child, and the child usually eats and sleeps with them. By asking 'whose arm is this child with?' during the monthly morbidity surveys, a much greater prevalence of 'non-maternal' care was revealed than that which came to light by simply asking questions about formally fostered children (souka bamba) during the cross-sectional surveys.

Altogether amongst the sub-sample of Dirimbe and Dianweli, 31% of weaned children under five (N=79) were under non-maternal care and 2% were under the care of their mothers but not their fathers. Table 5.2 below shows that 17% were inter-household fosters, and therefore living in a different household from their biological mother. 11% were subject to intra-household fostering -ie 'with the arm' of another household member even though the mother lived in the same house. 1% were undergoing semi-permanent fostering (moving back and forth from different households) and 1% were foraging².

As described, no real sex differences in any kind of care were found below age five - although all the intra-household fostered male children (N=3) were fostered for socialisation reasons, whilst intra-household fostered female children (N=5) are under

² The subsequent discussion refers to foster mothers of inter-household fostered children and to the biological mothers of children in other child care arrangements, unless otherwise specified.

Table 5.2: Type of Care of Weaned Children and Age of Mother or Foster Mother.

Type of Care:	% of Weaned Children (N=79)	Mean Age of Mother. (Years)	Mean Age of Child (Months)
Maternal Care:	66	30.7	42.5
Inter-Household Fosters:	17	*47.9	44.8
Intra-Household Fosters:	11	24.7	39.8
Semi-Permanent Fosters:	1	22.0	49.0
Living with Mother in Mother's Natal Family:	2	24.0	40.0
Foraging:	1	25.0	35.0

* For Formally Fostered Children=Age of Foster Mother

the care of the paternal grandmother to facilitate their weaning. The foster mothers of fully fostered children tend to be considerably older than biological mothers who care for their own children, and than the biological mothers who have fostered their children out within the household. Similarly, children who were fostered out within the same household tended to be slightly younger than the fully fostered children who lived in an entirely different household than their biological mother.

Detailed descriptions of what these care arrangements entail are presented below together with specific illustrative cases.

CARE OF WEANED CHILDREN UNDER FIVE YEARS OF AGE.

1. Maternal Care.

These children in the sub-sample were being directly cared for by their mothers, literally being 'with their mother's arm' (e jungo in'iko).

2. Inter-Household Fully Fostered.

These children were not living with their biological mothers but were fostered out of their households to a relative elsewhere (usually to a maternal or paternal aunt or grandmother). Many were returned to their biological mothers either when they became sick or when the marital status of the foster-mother changed.

3. Intra-Household Fostered.

These children live in the same household as their biological mother but are not 'with her arm'. They eat and sleep with another female relative, most commonly, the mother-in-law. Amongst the Rimaibe in particular, many first born male children are 'given' to their paternal grandmothers under this arrangement so that the child is socialised and 'educated' by his father's parents. Thus, in effect, the values and traditions of the family are preserved from any outside influence brought in by his biological mother when she married into the household.

In addition, some children were fostered within (and often outside) the household when their mothers became pregnant. It is believed that 'heat' given out by a pregnant woman's stomach can make a child ill with opere - an illness characterised by diarrhoea, fever and weight loss. Breastfeeding children therefore of pregnant women are usually abruptly weaned because it is also believed that the mother's milk 'belongs' to the foetal child and will make the currently breastfeeding child sick with opere. Such children are often subsequently looked after by the paternal grandmother, not only to facilitate weaning but also in order to minimise their physical contact with their real mothers and being affected by this 'heat'. In households where there are several women of reproductive age, a mother-in-law can often be responsible for several such small children at one time who all sleep and eat with her to avoid 'heat' from their pregnant mothers.

4. Semi-Permanently Fostered (Children Moving Back and Forth from Different Households).

Children were often temporarily sent away for weaning, frequently to their maternal grandmother or to another female relative in another household or village. This was usually for a few weeks but could turn into a more permanent arrangement if both parties agreed. In most cases however, mothers had no right to refuse the request of an older female relative for the child to come and live with her permanently. Some women fostered children to their mothers-in-law whilst they undertook seasonal labour migration and never reclaimed the child on their return. The one girl experiencing such an arrangement in September 1990 went back and forth from her maternal grandmother's house in a nearby town during a 'trial' period of fostering to see whether or not she liked her new home.

5. Children Living in their Mother's Natal Family (Suudu Baba).

Both children's mothers' husbands had been absent on labour migration for so long that it was not certain if/when they would come back. Both mothers had rowed with their parents-in-law and preferred to move back in with their own mothers until their husbands' return.

6. Foraging Children.

One child in the sample was the son of a sick mother who was too weak and ill to prepare food for her family. The boy (aged 4) ate with many different village families as the mood took him, until he settled into eating daily with an unrelated elderly woman and her small adopted daughter - an arrangement he made of his own accord. Eventually he started sleeping over at their house and finally became absorbed into their family. His mother was relieved he was eating regularly and his father seemed barely concerned.

5.4.1 Status Related Constraints for Inter and Intra-Household Transfers of Children.

Table 5.3 below was constructed using data from the sub-sample communities of Dirimbe and Dianweli and indicates that those women receiving the majority of fully fostered children were in

Table 5.3: Child Care Status and Maternal/Foster Mother Status for those Fostering Children In and Out.

	FOSTERED IN BY:		FOSTERED OUT BY:		
	Inter Household Fostered (N=15)	Intra Household Fostered (N=8)	Back and Forth (N=1)	Maternal Natal Family (N=2)	Forager (N=1)
Women's Household Status:					
Alone	33	...	100	...	100
Head with Others	40	12	...	...	...
Head with D-laws	20	...	...	...	...
Lone D-Law	...	12	...	...	...
One of Several D-laws	...	75	...	...	...
Maternal Natal Family	...	...	...	100	...
Female Head	7	...	...	...	...

(Column Percentages)

Alone/Head with Others/Head with D-Laws vs D-Laws/Maternal Family/Female Head and Fostered In/Out in 2 x 2 Table: Fishers Exact Test (One Tail) P<0.001

high status positions - either alone, heads with other women of head status, or heads with daughters-in-law. No such children were fostered to low status women - ie to the daughters-in-law. On the contrary, these women were giving the majority of children who were fostered out under intra-household fostering

arrangements when the child was either requested by the mother-in-law or fostered due to the pregnancy or illness of the mother. Those children who were foraging or going back and forth in semi-permanent arrangements had mothers who were alone and who lacked female support to provide additional child care within the household. They were therefore obliged to adopt these temporary and rather unsatisfactory measures by force of circumstance. Fisher's Exact test of 'high' and 'low' status women and the fostering in and out of children proved to be statistically significant.

Inter-household fostered children were usually asked for by women who had accrued status due to their age, their own child bearing or due to their social position within their households. The status-related ability to request a child is particularly well illustrated by the case of a childless woman who had been divorced three times and who had recently become the third wife of her new husband. She said that she had never been able to foster a child as none of her husbands had been willing to undertake the extra expense. In marriage she said 'I am under someone else's charge and do not have the right to bring a child here'.

Junior women who were asked for their children could rarely refuse and negotiations were usually started by the high status woman. Transactions were said to follow socially sanctioned channels, particularly with regard to intra-house fostering, with women being obliged to 'give' a son to their husband's mother. In reality however, the acceptable transfers of children involved in inter-household arrangements were fairly flexible, and depended more on the availability of children, particularly girls, rather than on a woman's kin relationship to them.

As long as a husband's permission was granted at the beginning of the negotiations concerning inter and intra-household fostering,

the details of the transfer rarely involved men until a later stage as, unlike, for example, bridewealth transactions, no cash, goods or animals changed hands. Although fostered children, particularly girls, are usually seen as being under the care of the individual foster mother, and not the foster mother and her husband, children are essentially given to individual women on the basis of their marital status. Thus the care arrangements may change if the woman becomes divorced or widowed as described in the case history in Appendix XI.

5.5 'PUSH' AND 'PULL' FACTORS ASSOCIATED WITH FOSTERING.

The 'push' or 'pull' factors associated with the permanent or semi-permanent fostering of children in the sub-sample are listed below. The 'pull' factors constitute the prime reasons for a woman wanting to foster a child into her family, whilst the 'push' factors show what kinds of circumstances may force a child to be reared away from his or her biological mother.

Pull Factors: - ie Child Actively Requested.

-Foster mother childless.

-Foster mother's children (particularly her daughters) all grown up and left home.

-Socialisation of next generation with family values (particularly boys).

-Foster mother had had a previous foster child who had now grown up and married and repaid her former foster mother with one of her own children.

-Foster mother is child's name-sake (tokora) and decides to raise her.

Push Factors: - ie Child Fostered by Force of Circumstance.

-Biological mother migrated (seasonally or permanently).

-Biological mother sick.

-Biological mother pregnant again - child sent to live elsewhere to avoid 'heat' from her stomach.

-Biological mother divorced or widowed (weaned boys usually left with their father).

-Biological mother argued with her parents-in-law and moves back in with her own parents.

-Biological mother's husband absent on seasonal labour migration and she moves back in with her own parents.

-Child illegitimate.

-Child being weaned - resulting in either temporary 'in-house', 'back and forth' or permanent fostering.

Table 5.4 below shows that the obligation or motivation to foster children in or out also corresponds closely to the household status of the foster mother. Nearly half (43%) of the children who were actively sought were requested by women who were alone. Two-thirds of these were girls who would perform household tasks in the future and provide company for the woman in her household environment. The majority of other children who were actively requested were sent to high status women such as 'heads with other heads' or 'heads with daughters-in-law'. One-third of those who were fostered under forced circumstances - usually because the biological mother had migrated or become pregnant - were mainly sent to women who were 'heads with other women of head status'. These were women therefore, who lived in laterally structured households and had peers to help them with household tasks so that the burden of raising an extra child can in theory, be shared, although as Chapter VI shows not in practice.

Those who were forced to be fostered out under in-house

Table 5.4: Circumstances of Fostering and Status of Foster Mother.

	Forced Circumstances (N=18)	Child Actively Requested (N=13)
Inter-Household Fostering:		
Fostered <u>In</u> By:		
Alone	8	43
Head with other Heads	33	21
Head with D-Laws	8	14
Female Head	...	7
Intra-Household Fostering:		
Fostered <u>Out</u> By:		
Lone D-Law	8	...
One of Several D-Laws	25	14
Children Living in Mother's Natal Family		
Mother's Natal Family	17	...
(Column Percentages)		
High Status and/or Autonomous (ie Alone/Head with Others/Head with D-laws/Female Head) and Low Status (D-Laws/Natal Family) by Forced/Wanted in 2 x 2 table: $\chi^2=7.15$, DF=1, P<0.01.		

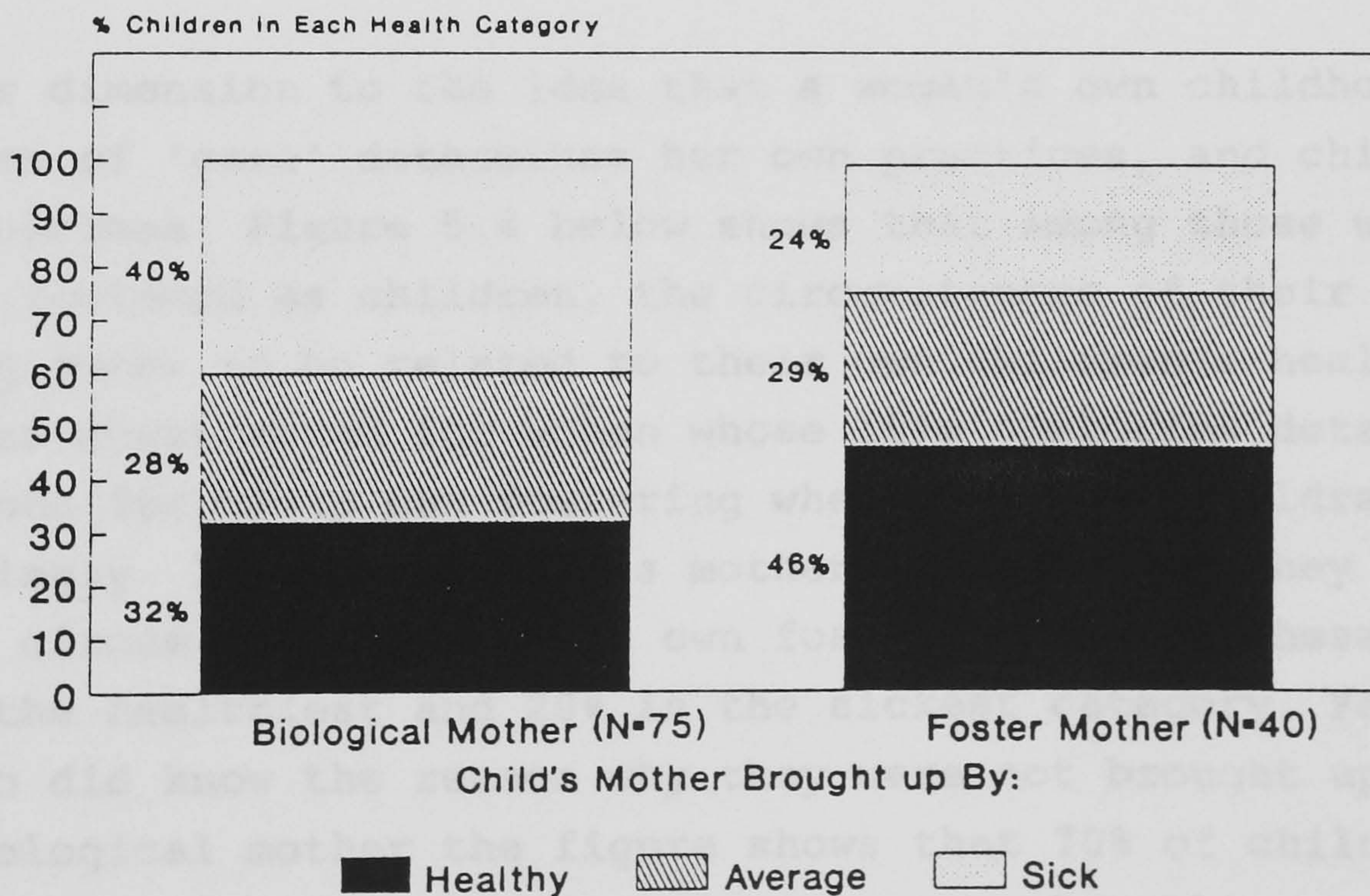
arrangements were the children of women who were one of several daughters-in-law. 17% of those children who were fostered away from the agnatic household through forced circumstances, usually due to divorce, remained with their mothers in her natal family.

5.6 INTER-GENERATIONAL ASPECTS OF FOSTERING.

A further important determinant of child fostering was whether the mother herself was fostered as a child. Although a woman's own mother will be shown in Chapter VI to be an important resource for the informal daily care of children, in fact only 61% of women in the sample were brought up by their biological mothers.

Data from the birth histories indicates that fostering before age five does not seem to correlate closely with whether the mother was fostered or not herself. By age 10 however, 18% of children of women who were themselves fostered, were living apart from their biological mothers compared with 11% of children of women who had not been fostered as children ($\chi^2=2.76$, $DF=1$, $P<.1$).

Figure 5.3 Wt/Age Score by Mother's Own Upbringing.

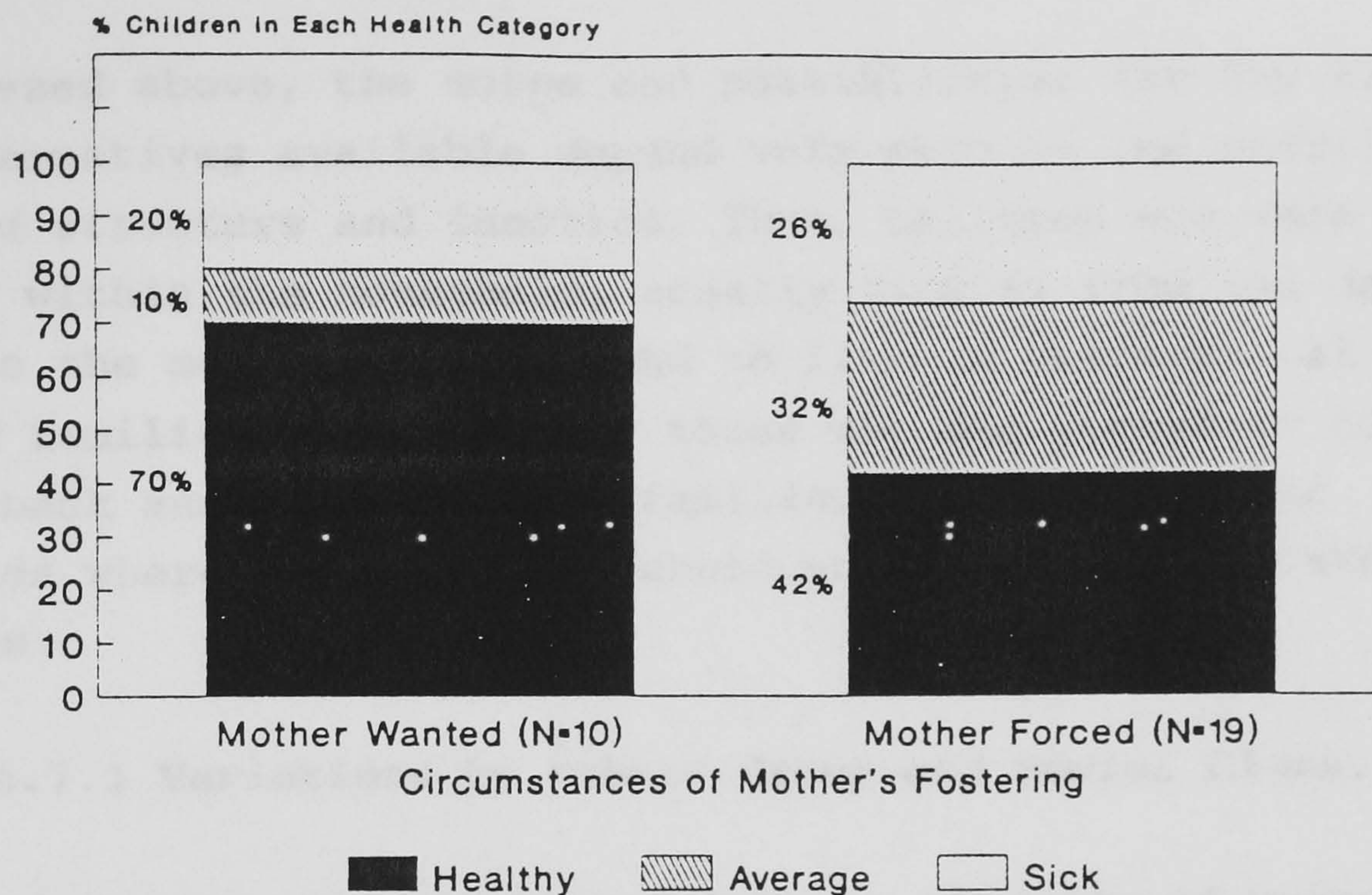


Using the weight/age score (see Appendix III) as a crude measure of the inter-generational impact of fostering on health, Figure 5.3 above shows that overall, children of women who were themselves fostered when they were young were more likely to be healthy than those who were brought up by their biological mothers ($\chi^2=2.67$, $DF=1$, $P=.1$). It was noticed during the recounting of women's life histories that women who had been fostered, or who had had disrupted childhoods expressed a greater satisfaction with life in their marital families, which possibly represented an increased stability for them. Women who had been brought up by their biological mothers often seemed to be more psychologically orientated to their natal rather than to their marital families, particularly if their mother lived nearby. The influence of women's own childhoods has been shown, mainly in 'western' literature, to be an important determinant of their child rearing practices (Wurgaft et al 1984, Parkinson and Harvey 1987, Seligman et al 1988). The effect of past life experience on a woman's degree of interest in, and motivation for, full participation in marital family life needs to be further explored in relation to child health outcomes.

A further dimension to the idea that a woman's own childhood experience of 'care' determines her own practices, and children's health outcomes. Figure 5.4 below shows that among those women who were fostered as children, the circumstances of their own fostering seems to be related to their own children's health. The figure was constructed for women whose life histories detailed the reasons for their own fostering when they were children - interestingly 26% of children's mothers (N=10) said they did not know the circumstances of their own fostering and of these 30% were in the healthiest and 20% in the sickest category. For the women who did know the reason why they were not brought up by their biological mother the figure shows that 70% of children of women who were fostered for positive reasons when they were young were in the healthiest category, compared with 42% of children

Figure 5.4

Wt/Age Score by Circumstances of Mother's Own Fostering



whose mothers were fostered for negative reasons - for example due to the death or divorce of their own mother. Although these results are also not quite statistically significant ($\chi^2=3.46$, $DF=2$, $P=.17$) it is still possible that a mother's own experience of care as a child can have an effect in the amount of investment she is prepared to put into her own children, and her perception of what she considers to be a normal and acceptable care environment.

5.7 CHARACTERISTICS OF FOSTERED CHILDREN'S HOUSEHOLDS.

It has been shown that specific status characteristics of individual women and their stage in their reproductive and 'status' life-cycles are linked to both 'push' and 'pull' factors for both inter and intra-household fostering. It is however, also necessary to look at socio-economic and demographic characteristics that attract or permit fostered children to come

into a household, force them to be redistributed within it, or require that they be sent away to be reared.

As discussed above, the scope and possibilities for the kinds of care alternatives available depend very much on the overall household structure and function. Thus, children who were fostered within the household, usually passing from the daughter-in-law to the mother-in-law, tend to live in hierarchical extended families. By contrast, those who are forced to forage or to move back and forth between families are from nuclear households where few intra-household non-maternal caretakers are available.

5.7.1 Variations by Ethnic Group and Social Class.

Ethnic and social class differentials in the care of weaned children therefore relate to the typical household types associated with each group as shown in Table 5.5 although differences in maternal/non-maternal care by ethnic group/social class are not statistically significant. 12% of Humbebe children and 10% of Rimaibe children were in intra-household fostering arrangements compared with 8% of Fulbe because the larger lateral structure of their households permitted this form of child redistribution and non-maternal care. Full maternal care of weaned children barely varied between the three groups. The greatest differences were in the proportions of children who were fully fostered, with 25% of weaned Humbebe children living under this arrangement compared with 16% of children within both Fulani social classes. No Humbebe children were living in arrangements that did not consist of either formal fostering, intra-household fostering, or maternal care. All weaned children living with their mothers' maternal families were Rimaibe and all foraging children or those going back and forth from different households were Fulbe.

Table 5.5: Variations in the Care of Weaned Children by Ethnic Group and Social Class.

	Humbebe (N=24)	Fulbe (N=25)	Rimaibe (N=30)
Maternal Care	62	68	67
Inter Household Fostered	25	16	17
Intra- Household Fostered	12	4	10
Back and Forth	...	4	...
Maternal Family	...	4	7
Forager	...	4	...
(Column Percentages)			

5.7.2 Socio-Economic Variations.

Family socio-economic status also plays an important part in determining what kind of fostering is undertaken and, as described, poverty was cited by several women as being the main reason why they did not formally foster in a child. Undertaking formal fostering is a commitment of at least ten years to an individual child and often involves having to furnish its bridewealth or dowry either with, or instead of, the biological parents. The dowry of a inter-household fostered girl was usually paid for jointly by her real mother and her foster mother, but boys were often given their bridewealth, particularly animals, solely by their foster parents. Bridewealth

and dowry obligations remained with the biological parents for intra-household and semi-permanent arrangements.

Inter-household fostered children are also usually entitled to inherit from their foster parents along with their biologically related children. Many discussions however cited incidents where male foster children had received little inheritance from dead foster fathers. Pre-inheritance, particularly for a fostered girl from her foster mother, was quite common and many women who were fostered as children seemed to have been given quite large amounts of gold and jewelry by their foster mothers while they were still alive. Conversely, there seemed to be frequent transfers of animals from adult adoptive sons to their elderly foster parents in recognition of the role they had played in their upbringing.

Depending on the circumstances of the fostering therefore, formally fostered children are in a position to have two sets of parents (both biological and adoptive) contributing to their bridewealth or dowry which would, in theory, appear to be relatively advantageous in later life. Thus, they can incur quite large expenses for the foster parents, particularly if they have their own biological children as well.

Biological parents of fostered children rarely provide gifts for the child during its upbringing elsewhere. They, and indeed other relatives of the child not just the biological parents, were nonetheless, observed sending plates of food or milk over to the child's household if it was in the same village. This food was specifically ear-marked for the fostered child and theoretically only given to other children if any was left over.

In addition, when a woman who had fostered a child away prepared household meals, she would often send a plate of food over to her

Table 5.6: Child Care Arrangements and Household Wealth (Weaned Fulani Children Only).

	Maternal Care (N=37)	Inter Household Fostered (N=10)	Intra Household Fostered (N=5)	'Back and Forth' (N=1)	Maternal Family (N=2)	Forager (N=1)	% Wanted
Richest	32	30	80	...	...	...	67
Rich	22	40	...	...	100	...	37
Poor	27	30	20	...	...	...	40
Poorest	19	...	...	100	...	100	33
(Column Percentages)							

child who lived with another family. Clothes and shoes are sometimes given to foster children, particularly after the return of the real father or brother from labour migration. No money however was ever said to be received by foster parents as a contribution to the child's upkeep from the real parents.

Bridewealth and dowry considerations as well as the more immediate expense of feeding another person, may explain the concentration of foster children in richer families and the prevalence of alternative more informal arrangements amongst the poorest, as demonstrated in Table 5.6 above. It also indicates that over two-thirds of those children living under non-maternal care in the richest families were 'requested' whilst only one third of those children living under such circumstances in the poorest households were actively invited to do so. However, for children living under non-maternal care, neither the differences between the formal fostering and more informal arrangements nor

the proportions 'requested' when tabulated by household wealth were statistically significant.

5.7.3 Children's Siblings and Shared Maternal Care.

Table 5.7 shows the number of siblings under five years of age that the weaned child had by the same biological mother.

Table 5.7: Number of Siblings Under Five Years of Age Under Care of Same Mother or Foster Mother.

	Maternal Care (N=52)	Inter- Household Fostered (N=15)	Intra- Household Fostered (N=8)	Back and Forth (N=1)	Mother's Natal Family (N=2)	Forager (N=1)
No Siblings	13	80	37	...	50	100
One or More Older	8	13	...	...	...	...
One or More Younger	65	7	62	100	50	...
Older and Younger	14	...	...	...	...	...

For All Children Under Non-Maternal Care: No Siblings vs. Siblings by Inter-Household Fostered vs. Intra-Household/Back and Forth/Natal Family/Forager 2 X 2 table: Fisher's Exact Test (One Tail) P<0.05

* 'Siblings' for inter-household fostered children denotes children under care of same foster mother.

For the inter-household fostered children, these refer to the real children of the foster mother as she may have one or two of her own children under five years of age, as well the fully fostered child under her care.

Given the socio-economic constraints described above and the 'pull' factors motivating women to formally foster, 80% of the children who are formally fostered into a family under inter-household arrangements are under the care of a woman who has no other children under five years of age. They thus have little competition with other children for resources which she may have access to.

About two-thirds of weaned children under the care of their real mother have a younger sibling as do those who are fostered within the household to the 'arm' of another woman. The presence of a younger sibling for the intra-household fostered children probably constitutes the prime reason for their movement from maternal care to being looked after by another household member. The child going back and forth had two younger closely spaced siblings, whilst one of the children living with its mother and her own parents had no siblings and the other had a younger sister. The foraging child had no siblings and was the only living child of his parents.

5.8 A CASE-CONTROL COMPARISON OF FOOD CONSUMPTION AND ILLNESS MANAGEMENT BETWEEN FOSTERED AND NON-FOSTERED CHILDREN.

As described, most inter-household fostered children are brought into families where they are the sole under five under the care of the foster mother, and are often the sole under five in the entire household. It was therefore decided to investigate whether inter or intra-household fostering gave a child any particular advantage or disadvantage in terms of both its food consumption and illness management, compared with similar children who were under the care of their biological mothers within their agnatic families.

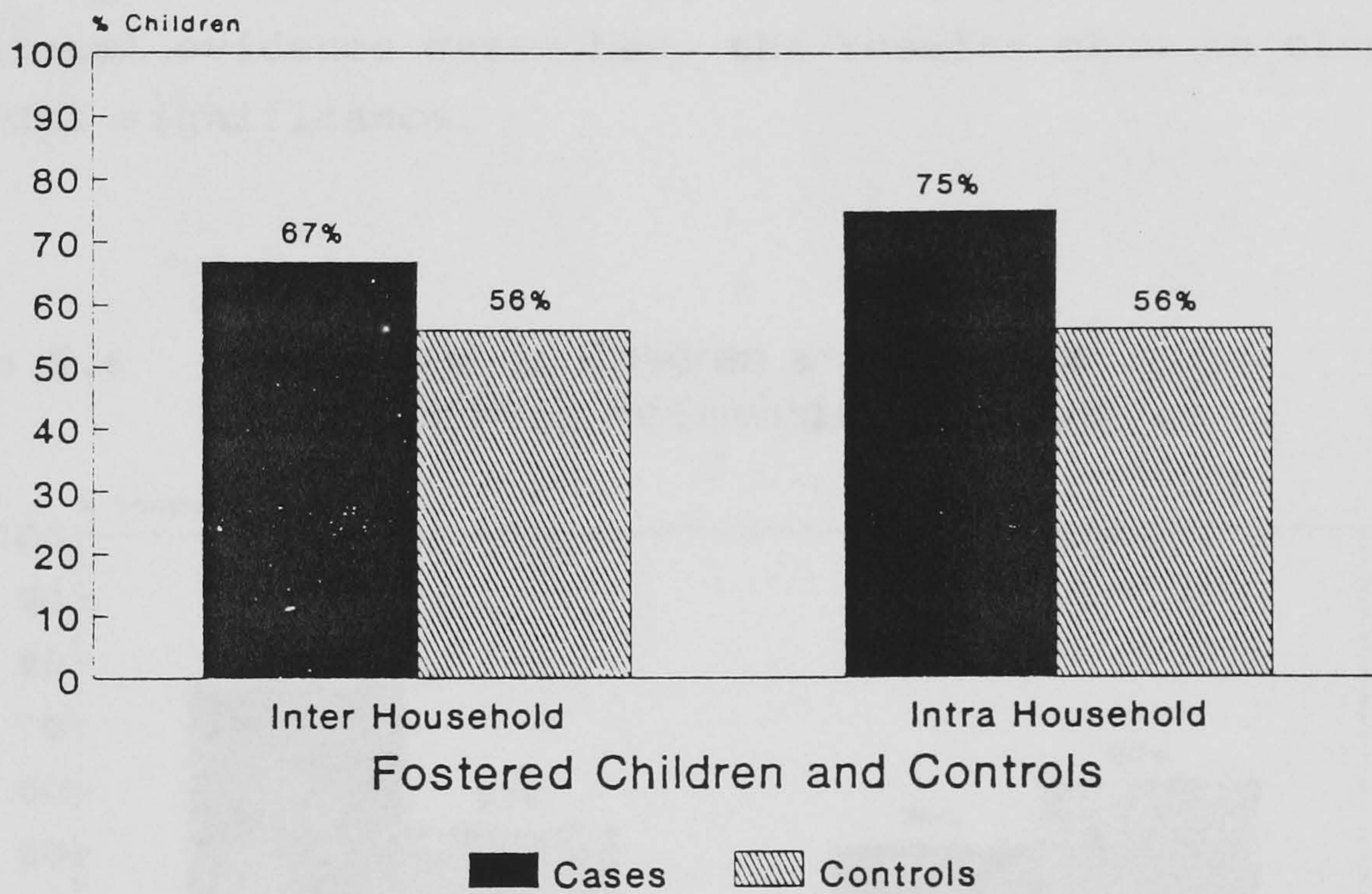
Each inter and intra-household fostered child was matched with a

'control' child who was of the same age (+-3 months), sex and ethnic group/social class but who lived under full maternal care in the agnatic household.

5.8.1 Food Consumption Differentials and Fostering Status.

Figure 5.5

Fostered Children and Controls
% Children Receiving Three Meals a Day

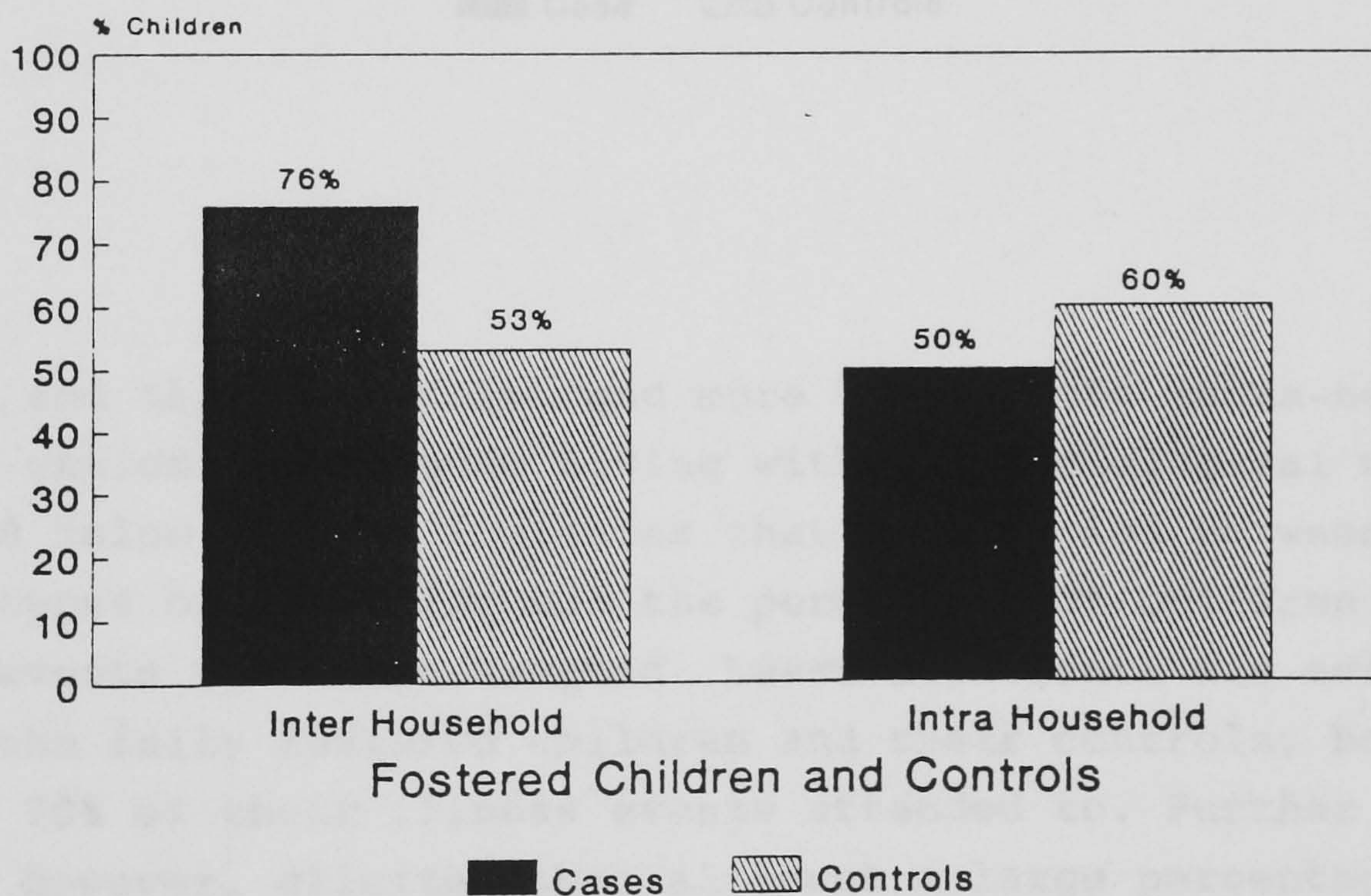


An analysis of the food consumption data for September 1990 shown in Figure 5.5 above, indicates that both intra-household, and particularly inter-household fostered children seemed to be at an advantage compared with similar children who lived under maternal care in their agnatic families. Two-thirds of the inter-household fostered cases are receiving three meals a day compared with 56% of similar children living in their agnatic households although the differences are not statistically significant using the χ^2 test for either group.

In addition, Figure 5.6 below indicates that 76% of the cases are

receiving extra food on top of the family meal compared with just 53% of the controls. As described above, it is common for the biological parents or other relatives of inter-household fostered children to send food over to them, which may account for the greater amount of extra food they appear to receive. By contrast, three quarters of the intra-household fostered cases are receiving a three meals a day but only half of them are receiving additional snacks or treats compared with 60% of their controls. Although important and consistent with the qualitative and observational evidence described, the results show no clear statistical significance.

Figure 5.6 Fostered Children and Controls
% Children Receiving Extra Food

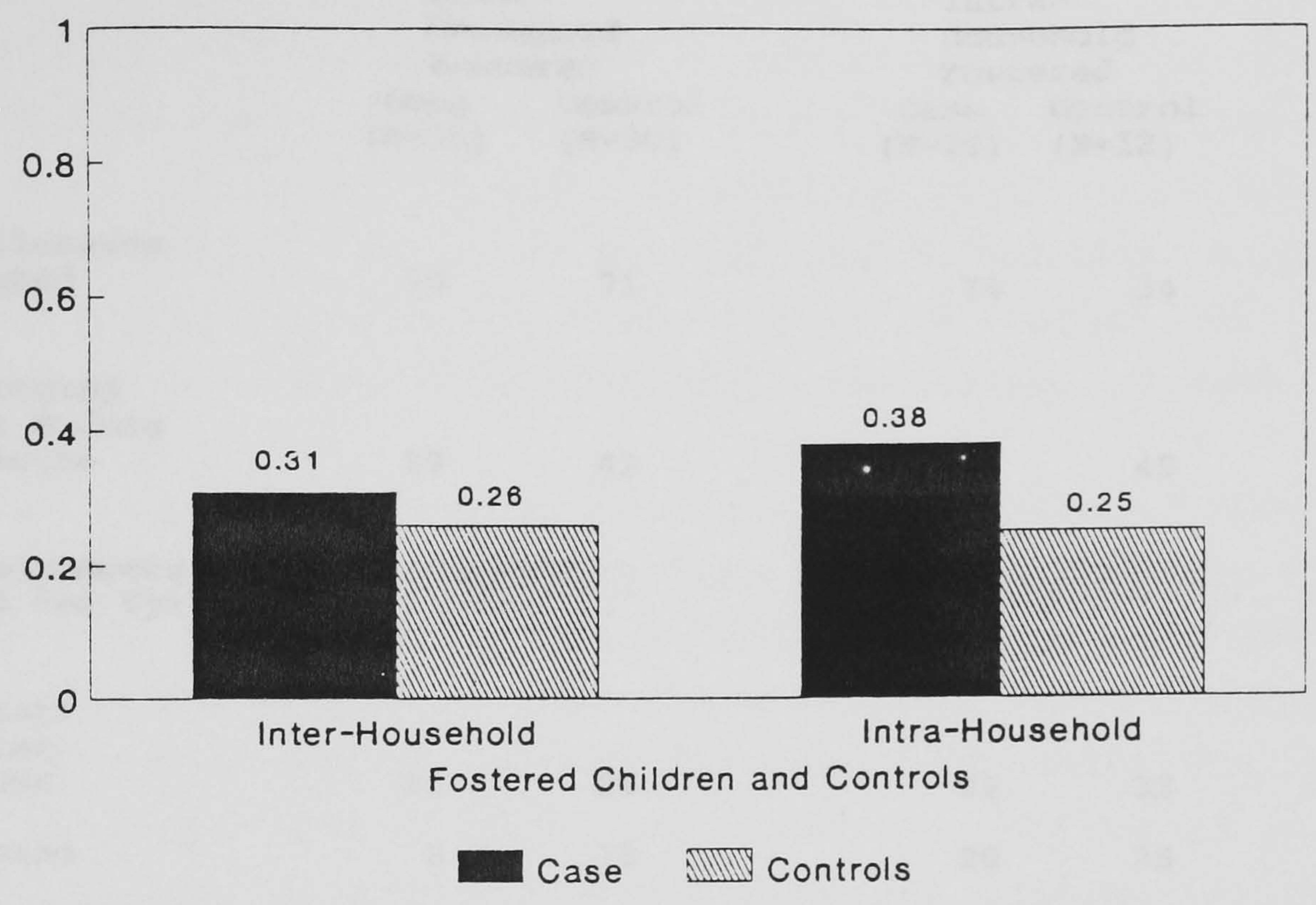


5.8.2 Differentials in Illness Management.

Figure 5.7 below indicates that the proportion of times a child was sick varied very little between the inter-household fostered

Table 5.8: Illness Management of Fostered and Non-Fostered Children

Figure 5.7 Proportion of Illness Events/Visits



children and their controls, and more between the intra-household fostered children and those living with their biological mothers. Table 5.8 below however indicates that what varied between the various types of fostering was the percentage of children's illness events that were treated. Least difference was evident between the fully fostered children and their controls, both of whom had 70% of their illness events attended to. Further analysis however, elicited that although a large percentage of their illnesses were treated, 71% of treatments given to the fully fostered children were free, and only 29% consisted of allopathic medicine. By contrast, similar children who lived with both their biological parents received only 44% of free treatments and had nearly half (43%) of their illnesses treated with modern preparations.

Table 5.8: Illness Management of Fostered and Non-Fostered Children

	Inter-Household Fostered		Intra-Household Fostered	
	Case (N=38)	Control (N=30)	Case (N=20)	Control (N=12)
% Illnesses Treated	70	71	74	34
% Treated with Modern Medicine	29	43	45	45
% Treatments Paid For By:				
Mother/Foster Mother	23	26	25	33
Husband	6	18	20	25
Mother-in-Law	...	4	20	...
Suudu Baba	...	7	5	1
Free	71	44	25	41
(Column percentages)				
N=Number of Illness Events.				

It also appears that fostered children were less likely to have their treatments paid for by their foster father than the controls were by their real father. This tends to suggest that although the fostering of a child to a specific woman is contingent on her marital status, the majority of the expense incurred tends to fall on her alone rather than being shared with her husband. As shown in Chapter IV husbands were more likely to pay for modern rather than traditional therapies which may explain why only 29% of fostered children's illnesses were treated with 'western' medicine.

In addition, given that most of these inter-household fostered children were fostered to older women, it is useful to note how elsewhere in West Africa, elderly women fostering children on a permanent or semi-permanent basis, are known to pride themselves in their knowledge of traditional medicine. Furthermore, they have a socially ascribed superior ability to diagnose and treat illnesses by virtue of their age and post-menopausal status compared with the child's younger biological mother and are thus more likely to resort to traditional treatments. (Bledsoe 1988).

Most markedly, nearly three-quarters of illnesses of intra-house fostered children were treated, against about one third of illnesses of the controls. These children, who were under the care of the mother-in-law (but whose mothers lived in the same household), have a more central familial role which may mean that a greater proportion of their illnesses were perceived to merit attention. More importantly, their paternal grandmother, who was their principal caretaker, inevitably had more time and cash for treatment than their biological mothers. However, like the foster mothers of the inter-household fostered children, these elderly paternal grandmothers, were more likely to use traditional medicine. Thus, although a much greater proportion of in-house fostered children were treated compared with the controls, less than half were treated with modern medicine. In addition, by pursuing traditional treatment in front of the biological mother within the household domain, the paternal grandmother is further able to confirm her elevated status and unequivocal knowledge of diagnosis and treatment.

Although none of the treatment payment differentials between the cases and controls for either group were statistically significant, it is noticeable that 20% of the treatments of children fostered within the household, were paid for by the paternal grandmother and 20% by the grandfather. In addition, 25% of the treatments were paid for by the biological mother even

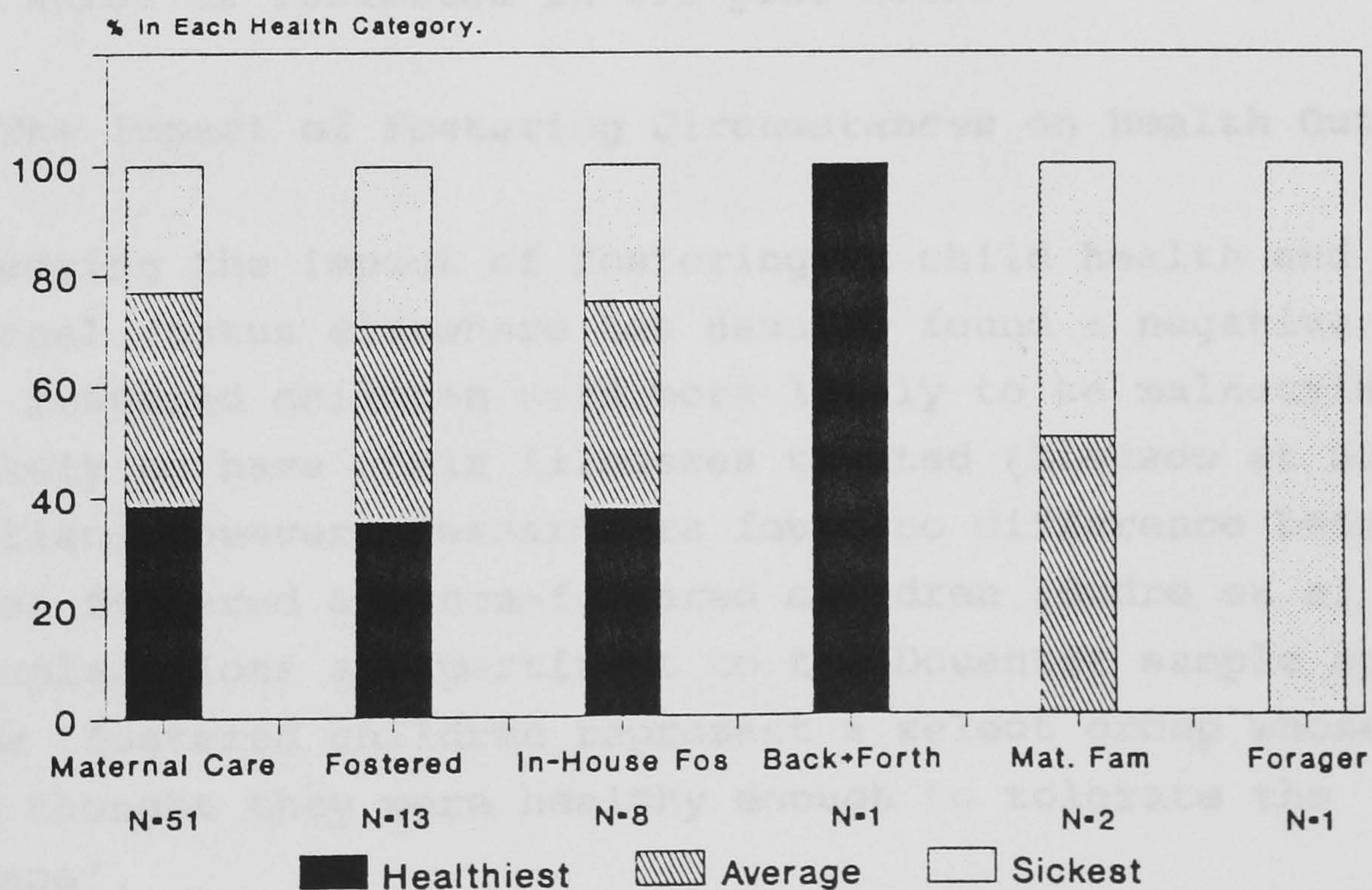
though she was not directly caring for the child. Interestingly, paternal grandmothers, paid for none of the treatments of the control children. The fact that one of the primary reasons for in-house fostering is to socialise the child with 'family' values, seems therefore to be reflected in the greater proportions of such children's illnesses that were treated, and in the greater number of payments made by the paternal grandparents.

5.9 VARIATIONS IN CHILD CARE ARRANGEMENTS AND HEALTH OUTCOMES.

Figure 5.8 below shows that the effect of differential illness management on health outcomes by child care status as measured by the weight-for-age score is not as great as perhaps might be expected - a fact confirmed by a χ^2 test on maternal vs. non maternal care ($\chi^2=.01$, DF=2, P=.9).

Figure 5.8

Health Score and Care Status
(Weaned Children Only N=76)



As described, formally fostered and in-house fostered children were consuming a greater number of meals per day than their counterparts who lived with their biological mothers, although inter-household fostered children often receive food from other sources to supplement their intake. Both groups however were more likely to be treated with traditional medicine. Health outcomes however barely vary between those children under maternal care and those who are formally fostered or 'in-house' fostered, despite their different family circumstances, increased food intake but more traditional patterns of illness management. The child who was going back and forth and who is in the healthiest category was, in fact, getting care and attention from both her mother and her maternal grandmother who lived with a wealthy marabout family in the town. The children who were in their maternal suudu baba were of women whose husbands were away for an indefinite period on labour migration. They had fallen out with their parents-in-law and thus had little recourse to seek treatment or cash in their marital families to whom their own parents perceived the children to belong. The 'forager' described above was scrounging for food wherever he could in the village which is reflected in his poor score.

5.9.1 The Impact of Fostering Circumstances on Health Outcomes.

Data studying the impact of fostering on child health and nutritional status elsewhere has usually found a negative effect, in that fostered children were more likely to be malnourished and less likely to have their illnesses treated (Bledsoe et al 1988). In Swaziland however, researchers found no difference between the health of fostered and non-fostered children (Sudre et al 1990). Their explanations are pertinent to the Douentza sample as they cite how 'fostered children represent a select group whose parents thought they were healthy enough to tolerate the experience'.

This seems to be consistent with the fact that what seemed to have more of an impact on health outcomes were the circumstances of the fostering rather than the fostering per se. This is shown clearly in Figure 5.9 where the majority of those children fostered out under forced circumstances were in the sickest category, whilst those who were actively wanted or requested were much healthier. The differing proportions of 'forced' and 'wanted' children in the sickest health category proved to be almost statistically significant ($\chi^2=3.15$, DF=1, P<0.1).

Figure 5.9 Health Score and Circumstances of Fostering

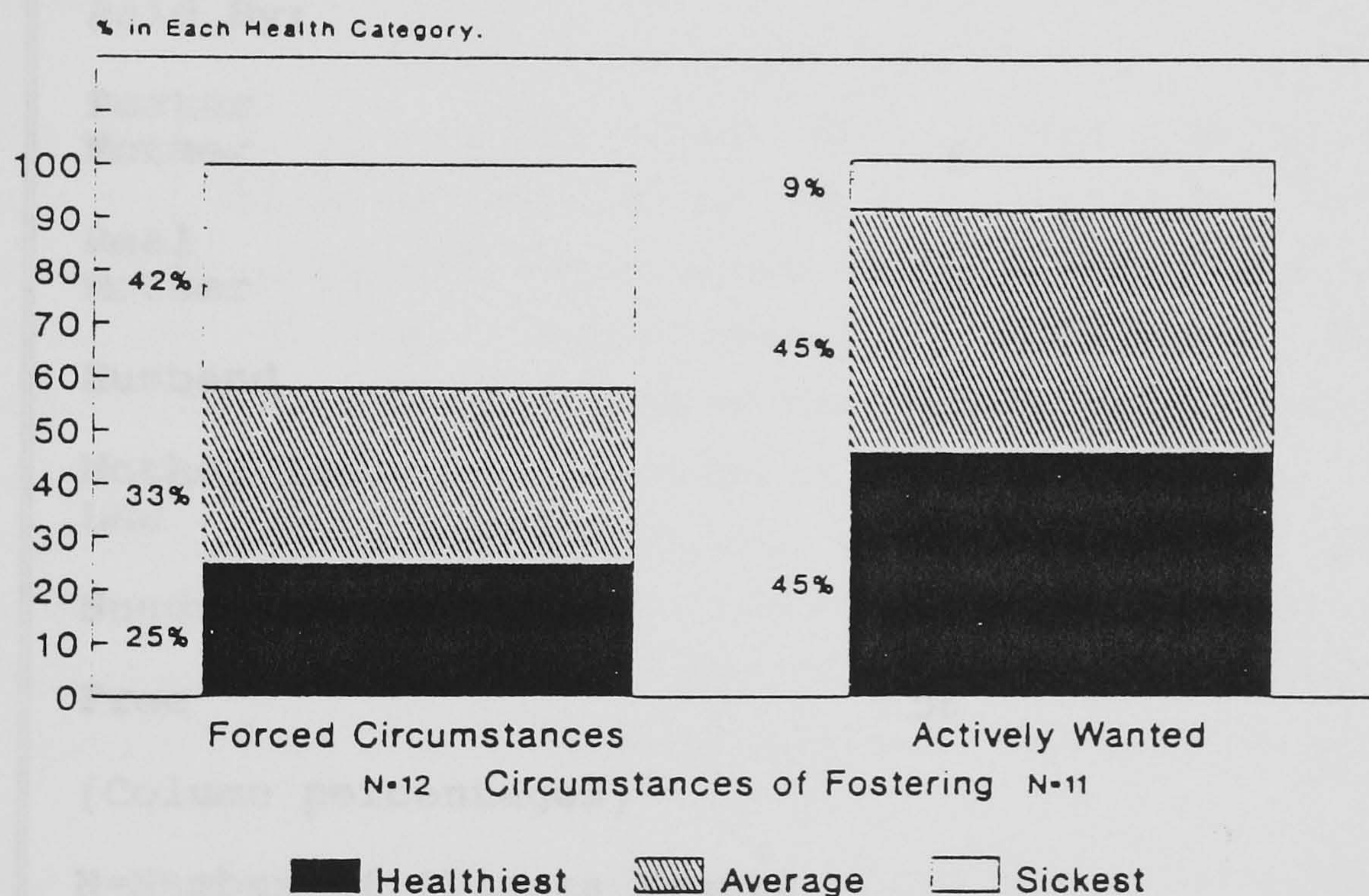


Table 5.9 above shows that although the 'forced' children were sick 40% more than the 'wanted' children, more or less the same percentage (64%) of their illnesses were treated, - a higher proportion with modern medicine.

What seemed to differ most was payment for specific treatments

Table 5.9: Illness Management and the Nature of the Circumstances of Fostering.

	Child Fostered by Force of Circumstance (N=73)	Child Actively Wanted (N=38)
Proportion of Times Sick:	0.41	0.29
% Illnesses Treated	64	66
% Treated with Modern Medicine	51	38
% Treatments Paid By:		
Foster Mother	6	17
Real Mother	20	4
Husband	7	16
Mother-in- Law	2	4
Suudu Baba	9	...
Free	56	58
(Column percentages)		
N=Number of Illness Events		

with 17% of the treatments of children who were actively wanted payed for by the foster mother, compared with just 6% of those fostered to women under forced circumstances. In addition, those

children who were actively sought by foster mothers had 17% of their treatments payed for by the foster mother's husband. By contrast, those children who were forced on foster mothers had nearly 20% of their treatments paid for by their biological mothers (even though she was not caring for the child) whilst only 6% were paid for by the foster father.

It seems therefore, that the nature of the circumstances of the fostering affects a foster mother's and indeed foster father's ability or motivation to provide for the child's needs in an event such as an illness. It must also be considered that factors associated with the forced circumstances such as abrupt or early weaning as shown in the case history in Appendix XI, may also contribute to the poor health status of these children.

All in all, the weaker impact of a formal non-maternal care arrangement on a child's health and nutritional status must be interpreted within the context of what full maternal care consists of in a 'normal' household environment. Research in other settings has suggested that where the maternal role is relatively limited (for example if a child has a younger sibling who demands most of the mother's attention) and where surrogate care for weaned children is customary, moving to live in a different household or being formally cared for by a different caretaker may not have such a great health impact (Page 1989).

The following chapter will show that even for weaned children who live under full maternal responsibility, active care is rarely given by the mother and more frequently by surrogate caretakers from either inside or outside the household. It is possible therefore that the physical and psychological impact of being fostered (for positive reasons) is not particularly detrimental in communities where high amounts of non-maternal care is routine even when children are the responsibility of their biological mothers.

CHAPTER VI: INTER AND INTRA HOUSEHOLD DIFFERENTIALS IN THE DAY-TO-DAY CARE OF CHILDREN.

6.1 Background.

Theories of fertility decline often focus on parental investment and its associated costs in terms of both cash and time (Caldwell 1977, Nag et al 1978, Ho 1979, Fapohunda and Torado 1988). Just as fostering transfers the economic costs of having children away from the biological parents, the frequent use of substitute or non-maternal caretakers in many societies means that the opportunity cost of an having extra child is less significant than if it were raised under constant maternal care.

Research indicates that family composition rather than size is the major influence in how individual women balance labour and child care demands, and also in the frequency of their use of substitute carers. (Weisner and Gallimore 1977, Popkin 1980, Borgorhoff Mulder and Milton 1985). Few authors take into account however, that not all women, in the same community or even in the same household, are obliged to carry out the same amount of household labour, and that the proportion of time spent in such activities depends on how many co-workers they have or where they are placed in the household hierarchy.

It will be shown how a woman's social position in her household determines the balance between activities that are carried out for the common household good and those that are for her own personal benefit. Thus her status dictates the amount of time she is obliged to devote to household chores such as food preparation, and, as will be shown, determines whether she spends the rest of her time in social, commercial or child care activities. Child care can, of course, sometimes be carried out in conjunction with household tasks, depending on the age and

health of the child. When additional carers are required however, a woman's status is the prime determinant of how often she uses intra and extra household substitutes, and whom she is able, or forced, to choose.

Chapter IV showed that the presence of intra-household egalitarian, rather than hierarchical, female work alliances facilitated more effective childhood illness management. The following discussion will illustrate how very different resources and pathways of co-operation appear to influence the day-to-day care of children. It will be demonstrated that assistance for child care during non-illness events appears to be limited to a woman's blood relatives rather than capitalising on status-related labour relationships with adult marital family members.

In addition, it must be remembered that children have their own support structures which enable them to seek and offer assistance within a large hierarchical network of siblings and adults both in their households and within the community at large (Weisner 1989). The health of the child facilitates or impedes its ability to exploit these networks, and it will be shown how, even below age five, healthy children begin to actively participate in their households' labour economies. Children who can so participate begin to repay the time and care costs that have been invested in them by, for example, learning to carry out simple household tasks. They are thus able to gain approval from their mothers and other adults they may have to turn to if they become sick.

Frameworks of analyses of parental behaviour distinguish what that parents want from their children and what they want for them (Levine 1988). It has been found that where infant mortality is high, infant care during the first year is organised around ensuring infant health and survival, while the pursuit of learning and development is postponed until a later age when the child's survival is virtually assured. Chapter III showed that

within the Douentza communities, as in other West African settings, the risks to child survival are high after, not before the first birthday. Women accurately perceive the timing of these dangers, as 62% of mothers questioned said their children were more likely to fall sick during their second and third years. Interestingly, it appears from the observational data that parenting practices are adapted accordingly and that special attention is given during this period, just as parenting techniques for survival are described as being maximised during the first twelve months of life in East Africa (Levine 1988).

The different formal caretaking arrangements described in the previous chapter were, with the exception of the foraging child, undertaken via a series of negotiations and verbal agreements between the different parties involved. The following chapter will look at the practical aspects of the day-to-day care of both well and malnourished children of Dirimbe drawing on observations of their interactions with their mothers and caretakers.

It is necessary to first describe the basic maternal characteristics and home environments of each child in the sub-sample and to outline the fundamental differences in care practices which distinguish healthy from sick children, as these are the realities that these children experience. It will be shown however, that specific types of care, and in particular, the use and characteristics of non-maternal carers are related to women's household status and to their ability to control their own time and labour within their household environments.

6.2 SOCIO-ECONOMIC, ENVIRONMENTAL AND LIFE EXPERIENCE/EXPECTATION CHARACTERISTICS OF SAMPLE PAIRS OF MOTHERS¹ AND CHILDREN.

The methodology presented in Chapter II described how the 8 'healthiest' and 8 'sickest' children in Dirimbe were chosen according to the scoring system described in Appendix III. Data from minute-by-minute observations during two six hour periods for each of these children is the basis for the subsequent analysis. The small sample sizes are a reflection of the time and labour constraints on the fieldwork - ie that there were only two main researchers in the field. It was felt that given these limitations, it would be more profitable to gain an in-depth insight into the 16 families at the extremes of the health score. Prolonged observation of a complete 'day' in their lives was therefore thought to be more insightful than many 'snapshots' of a larger number of mother-child pairs. Thus although none of the statistical tests (Mann-Whitney U) which were carried out on much of the data are statistically significant, it is thought that the consistency of certain caretaking patterns and styles and their descriptive interpretation within the context of other detailed information about the family can form a useful framework for analysis. Future work using more cases in each health and age category may be needed to analytically quantify some of the trends and patterns presented.

In order to put the observational data into context, Appendix XII consists of descriptive accounts of the home circumstances of each mother and child pair, and uses illustrative comments from the mothers concerned. Taken as a whole, with the summary tables presented in Appendices XIII to XVI, they provide detailed insights into the daily environments within which the child and its mother or principal caretaker inter-act.

¹ Mothers here also refers to foster mothers of inter-household fostered children.

6.2.1 Health and Nutritional Characteristics.

Appendix XIII shows the demographic and nutritional characteristics of the children chosen for observation. There seem to be no consistent parity differences, but a greater number of the sickest children are Rimaibe boys and a larger number of healthier children are Fulbe girls. Care environments which are detrimental to boys, particularly those associated with elderly female surrogate caretakers are discussed in Section 6.3.5.

In particular, it is important to note that those children who are over six months old and still breastfeeding, despite being the healthiest in this age category still have a very poor score, even in comparison to the sickest children in other age groups. As shown in the mortality analysis in Chapter III, the pre-weaning period when protection from maternal anti-bodies is reduced, and supplementary food often inadequate or irregular, constitutes the period of greatest risk for these children.

Although the older breastfeeders are less than one standard deviation away from the median weight-for-height, both are well below the median weight-for-age. Although two of the sickest children were below the three standard deviations from the median weight-for-height, five out of eight were below three standard deviations weight-for-age, indicating quite severe degrees of both current and past malnutrition. Most of the healthiest children had had no diarrhoeal disease episodes, compared with the sickest children, who had had diarrhoea more frequently, some during half the occasions they were visited.

6.2.2 Household Characteristics.

Appendix XIV shows that the mothers and fathers of the healthier children were slightly older but that the age differences between

the parents of sick and healthy children did not vary (mean=7 years). The mean proportions dead also did not show consistent patterns with two of the mothers of the sickest children never having had a child death. However, an additional two of the mothers of the sickest children had lost a child during the previous six months. The number of living under fives under the care of the mothers of the sickest and healthiest children also showed no sizeable variations.

The mother's household status however, did seem to differ markedly between the healthiest and sickest children. Most of the mothers of the healthiest children were alone (but with additional help from divorced or widowed sisters-in-law) or were head wives, either with other women of head status, or with daughters-in-law. Only one mother of one of the sickest children was alone - most were 'one of several daughters-in-law' and one was a female head of household. The same proportions of all women were polygynous -all were wife rank number one except the female head who was rank number five. Interestingly, the healthiest children's mothers had fewer women of reproductive age within their households, but over half of them had one or more young 'helper' (daughter aged eight years or more). Only one of the sickest children's mothers had any helpers at all. No real difference were evident in household wealth although, ironically, a slightly higher proportion of the sickest children were from the richest households.

6.2.3 Household Environment.

Differences in the children's eating and sleeping arrangements and their household environments were also thought to be important and are presented in Appendix XV. Importantly, all the healthiest children (who were mostly girls) usually with their mother around the women's bowl. By contrast, the sickest children (who were mostly boys) tended to eat by themselves or with other

children. Unlike the healthiest children, the sickest children who eating out of a bowl by themselves were not overseen while they ate. The mother was therefore often unable to know how much the child had consumed, whether the food had been in contact with contaminating material or whether, as the observational work often confirmed, other children came and ate the food instead of the subject child.

All children slept with their mothers or foster mothers apart from child number 15 who slept with his paternal grandmother under an intra-household fostering arrangement. One of the healthiest children had access to a latrine, but importantly, all families of the healthiest children except for one, used well water for drinking. Half the sickest children's families used pond water although a greater proportion of them were observed to cover the storage pots.

Differences in the organisation of households, particularly their kitchen areas are described in Appendix XII, and in addition Appendix XV confirms that a greater proportion of the healthiest children's mothers hung up their pots and calabashes away from potential contamination by animals. A greater number of the sickest children's families possessed a mosquito net which is probably more associated with their increased wealth rather than any other factor.

It will be shown in Section 6.4.3 that older children in particular, spend enormous amounts of time away from their mothers' marital households, and that the level of hygiene in the community as a whole probably has a greater impact on their health than just that which pertains to their own home environment.

6.2.4 Differences in the Mother's Life Experience.

Appendix XVI presents differences in characteristics which are considered to be important in providing an overall picture of past and future psycho-social components of women's maternal strategies and indicates the extent to which their household status, may determine the breadth of their life experience and ultimately the health of their child. For women, particularly of a low daughter-in-law status, these relate to proximity and presence of the mother's own mother and her experience of the world around her.

This shows that all but two of the healthiest children's mothers had their suudu baba in the same village and five out of eight had a mother who was still alive. By contrast half of the sickest children's maternal grandmothers were dead and most of their mother's suudu babas were located elsewhere. Interestingly, only two of the healthiest children's mothers were fostered when they were young compared with five out of the eight mothers of the sickest children.

In addition, all the healthiest children's mothers except one had been out of Douentza and the surrounding areas - one had ventured as far as Segou several hundred kilometers away, and one had even been to Mecca. By contrast, most of the mothers of the sickest children (who were nearly all daughters-in-law) had only seen Douentza and the surrounding villages - none had gone further than over the border into Burkina Faso or to the bourgou. The 'life experience' of the healthier children's mothers which has been shown to be related to innovative behaviour elsewhere (Scrimshaw and Scrimshaw 1980) is broader and their knowledge of the outside world is therefore greater, and seems to be reflected in the better health of their children.

6.2.5 Hopes and Aspirations for Children.

More illuminating in conjunction with the maternal and household characteristics, were the hopes and aspirations that mothers had for their children. These are also presented in Appendix XVI and show that the mothers of healthy children have a future vision for them which pertains to the child itself. By contrast, mothers of sick children have aspirations which pertain more to the mothers themselves - such number 9 (a lone woman) who hopes that her son marries a wife who can pound millet for her, and number 13 (a female head) who hopes that her fostered daughter will not leave the village when she marries. In addition, the aspirations of numbers 4 7 and 8 (all higher status autonomous women), relate to an approval of the child by the community as a whole, and refer to networks of friends and good character, rather than simply what kind of marriage partner they desire for their offspring. By contrast, the mothers of the sick children 10 12 and 14 (all daughters-in-law) simply want their child to grow up, which given their extremely malnourished states, may not even be possible.

6.2.6 Preferred Child Typology.

A mother's own attitude to, and satisfaction with, her child may be influenced by how closely its behaviour conforms to the preferred or expected child typology ie what qualities people desire and expect in children. These typologies are usually constructed under culturally expedient socialisation goals which benefit both the parents and the community and can have consequences for health inter-actions (Graves 1976, Levine 1977). Amongst the sub-sample such goals virtually universally relate to a child's participation in the household labour economy but more often to generally to a desire to see characteristics in a child that are calm and undemanding and let a mother get on with her work.

Chapter II described how all 16 women were asked about what their child had done recently which had pleased them or made them happy. Nearly all women referred to household tasks carried out by the child, and most, including all the daughters-in-law, said that until the child could be sent on an errand or asked to do a chore, there was nothing it could do that really pleased the mother. The accounts of each mother and child pair in Appendix XII recount how the mother of healthy child number 3 (who lived with her natal family) replied that the fact that her child simply sat close to her made her extremely happy. Similarly, the mother of healthy child number 7 (head with divorced sister-in-law) said that when her daughter smiled, she was very contented. It is clear therefore that these mothers have potentially different styles of interactive behaviour and expectations from the mothers of unhealthy children, many of whom, as daughters-in-law had a greater amount of household duties and were content when their child was simply playing quietly out of their way so they could continue their work. Thus the passivity and lack of activity that accompanies malnutrition on many occasions, may actually be incorporated as a dimension of this preferred 'type' and thus justify a lack of swift action or treatment.

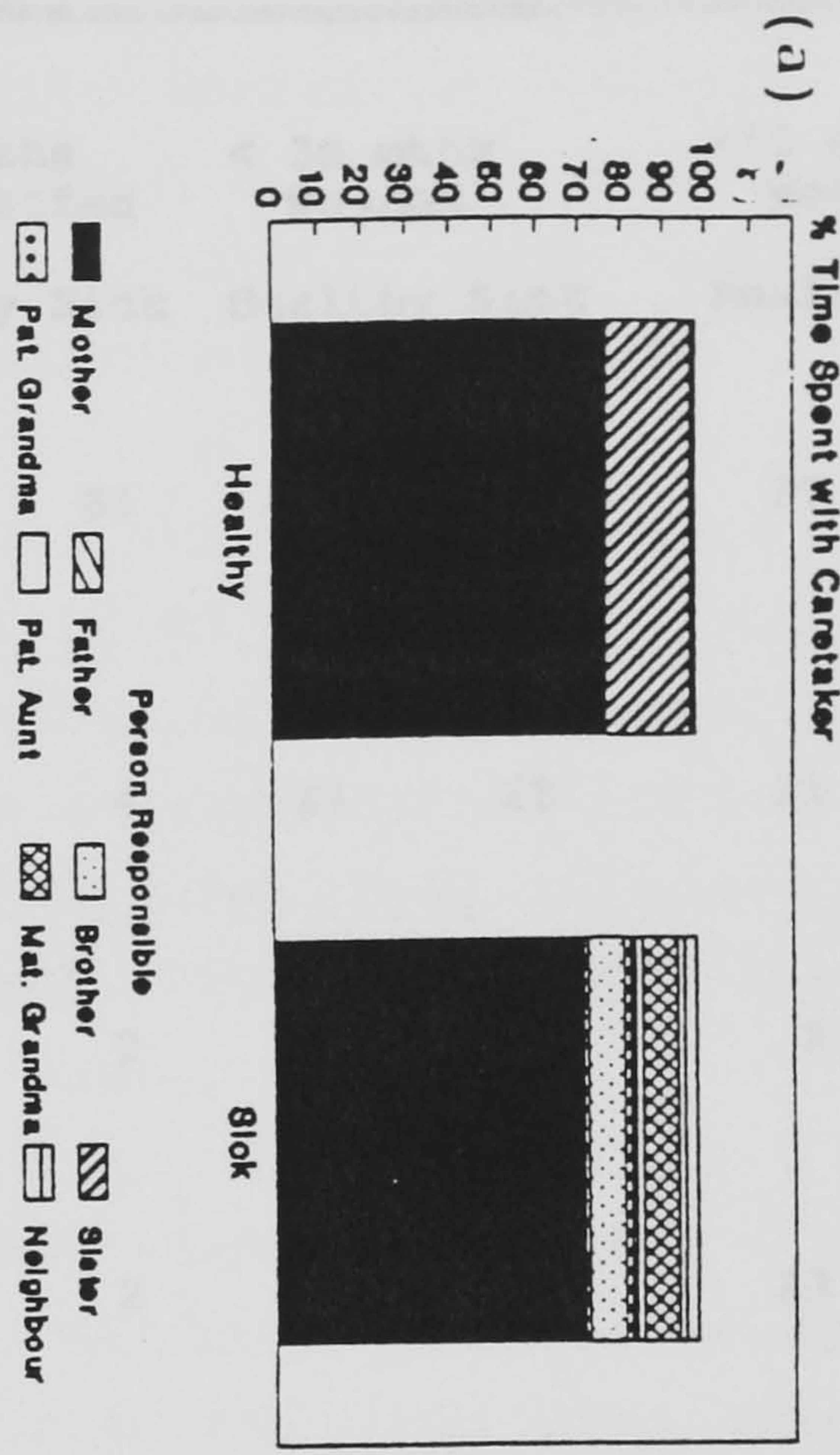
6.3 CARE DIFFERENTIALS DISTINGUISHING THE 'HEALTHIEST' AND 'SICKEST' CHILDREN.

6.3.1 Time Spent with Mother and Non-Maternal Caretakers.

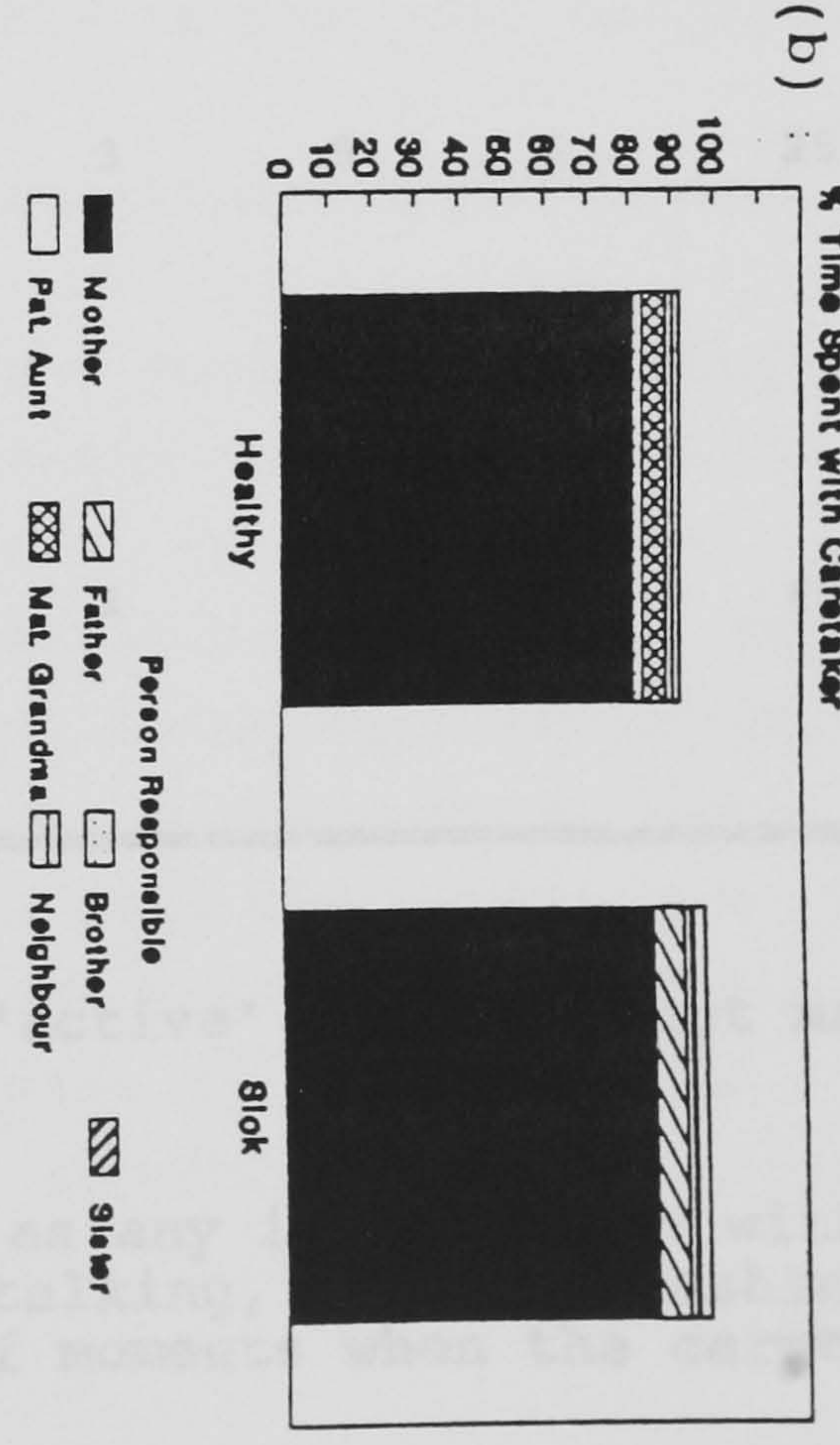
Figure 6.1 (a-d) in conjunction with Table 6.1 below shows the amount of time children spent in the care of their mother or with other non-maternal principal caretakers - whether or not they

Figure 6.1

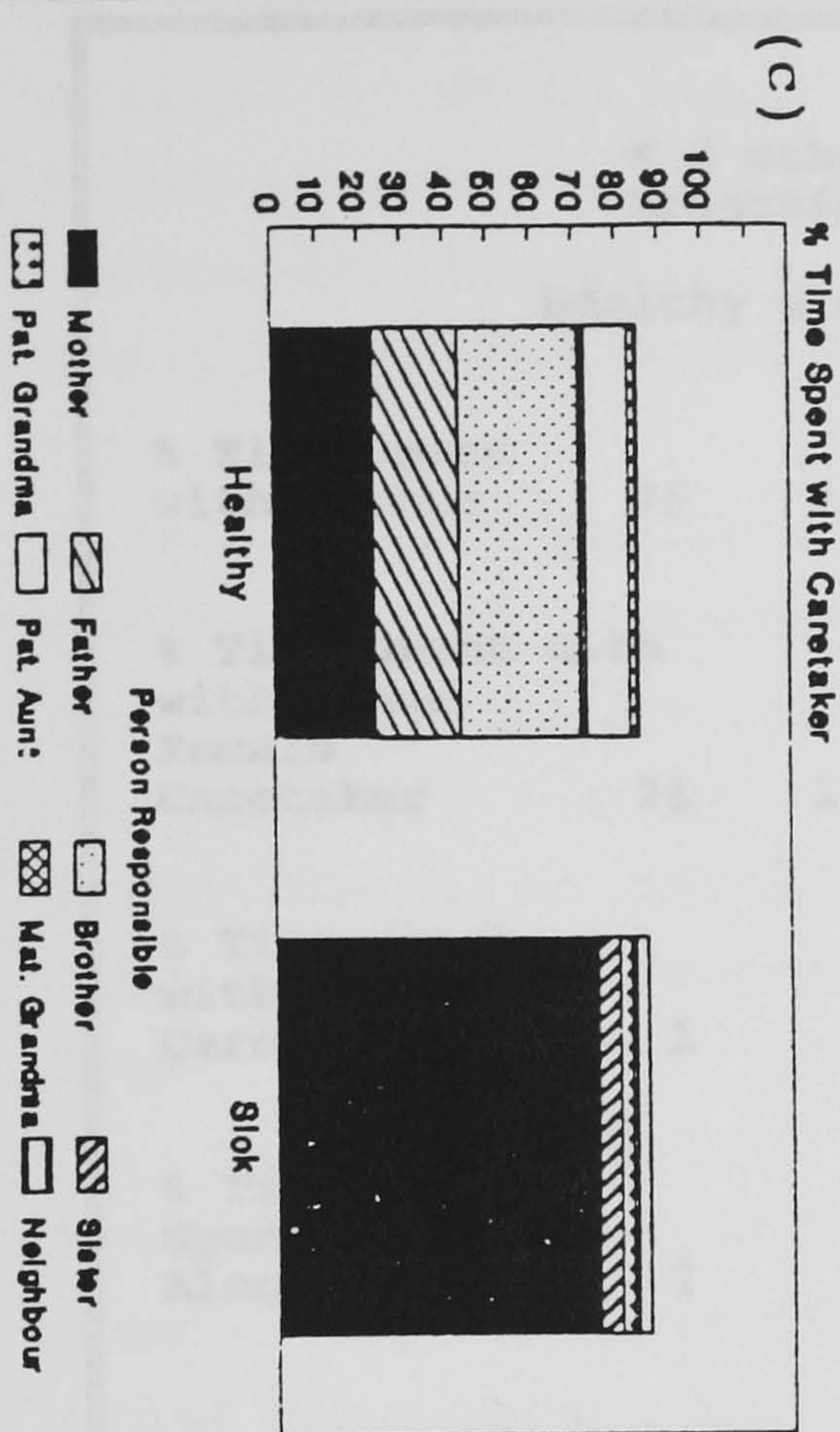
% Time Spent with Various Caretakers
Children Less than Six Months Old



% Time Spent with Various Caretakers
Children More Than Six Months Old



% Time Spent with Various Caretakers
Children Less than Thirty-Six Months Old



% Time Spent with Various Caretakers
Children More Than Thirty-Six Months Old

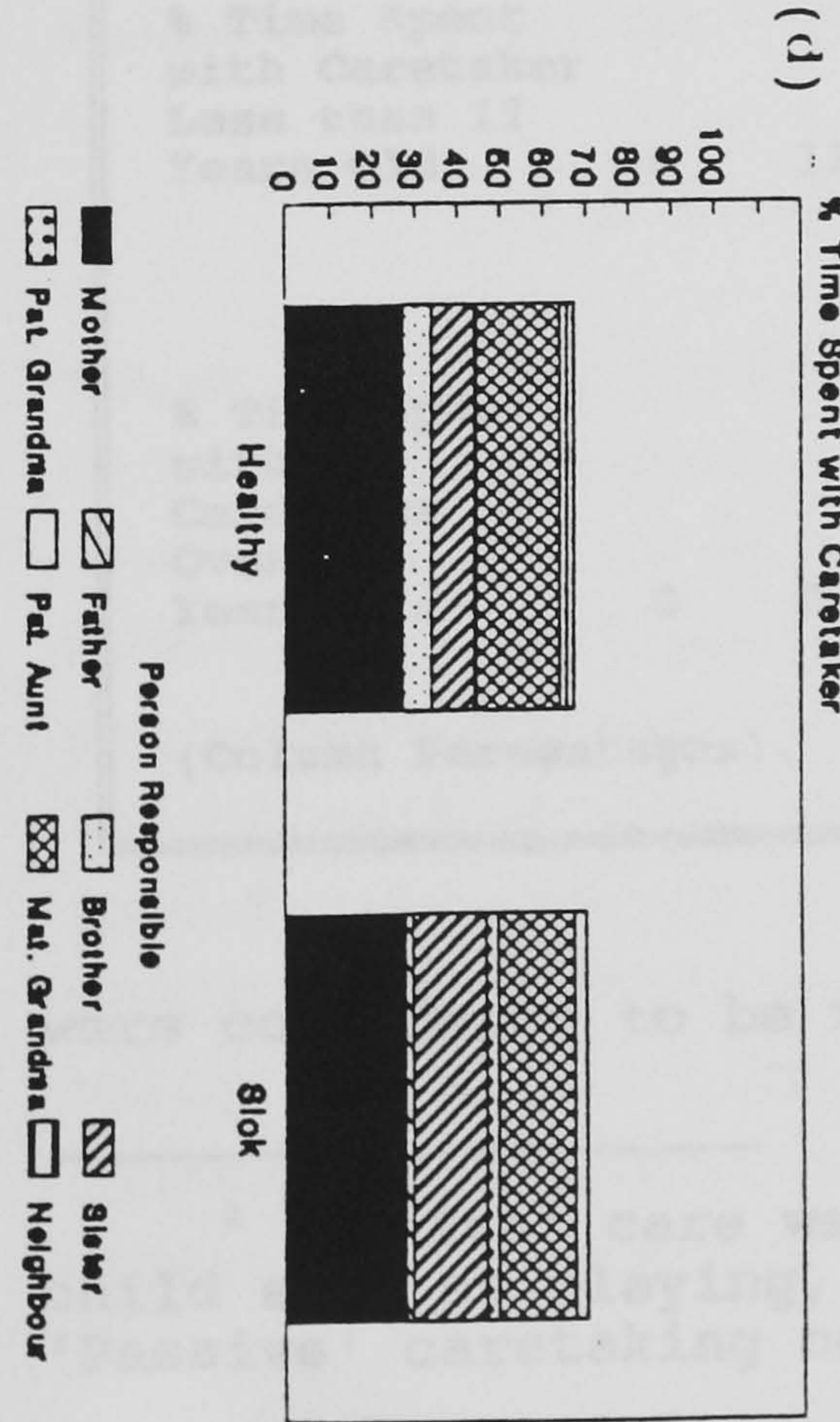


Table 6.1 Percentage of Time Spent in Maternal and Non-Maternal Care.

	< 6 mths Breastfed		+6 mths Breastfed		< 36 mths Weaned		+36 mths Weaned	
	Healthy	Sick	Healthy	Sick	Healthy	Sick	Healthy	Sick
% Time Spent with Mother	76	71	81	85	24	75	27	28
% Time Spent with other Female Caretaker	21	17	9	4	14	12	33	40
% Time spent with Male Caretaker:	1	9	2	9	47	0	8	1
% Time Spent Alone	2	3	8	2	15	13	33	30
% Time Spent with Caretaker Less than 12 Years Old:	18	13	4	3	9	6	25	27
% Time Spent with Caretaker Over 60 Years Old:	0	2	3	1	9	4	40	26

* * *

(Column Percentages).

were considered to be receiving 'active' care². Direct maternal

² 'Active' care was defined as any inter-action with the child such as playing, holding, talking, feeding, washing etc. 'Passive' caretaking consisted of moments when the caretaker was

and the kinds of surrogate carers employed, varied between the different age groups, and between children of different health status. It is of course difficult to determine whether the care given by an individual caretaker has a direct effect on the health of the child, or whether the child is under the care of a specific person because of its health status.

On the whole, sibling or surrogate care is an integral part of child-rearing in most communities in Africa, and in other developing regions of the world (Weisner 1989). Surrogate carers may however, employ different caretaking styles, intensities of involvement, or carry out different functional caretaking actions than biological mothers (Konner 1977, Weisner and Gallimore 1977, Tronick et al 1987, Sigman et al 1988).

Figure 6.1 (a-d) and Table 6.1 show that amongst the Dirimbe sample that for healthy children, maternal care decreases as the child gets older. By contrast, sicker children move away from surrogate to increased maternal care, but only during the time of known or perceived increased risk - ie the post-weaning period.

6.3.2 Caretakers of Breastfeeding Children.

Table 6.1 shows that the healthiest younger breastfeeding children were under the care of their mothers for 76% of the time compared with 71% of the observation time for the sick children. Both groups of breastfeeders received more maternal care as they got older with the sicker children being with their mother for longer periods than their healthier counterparts. More importantly, Figure 6.1 (a) shows that the healthiest breastfeeding children who were not under maternal care, were being looked after by their sisters. By contrast, the unhealthiest ones were mainly in the care of their brothers or maternal grandmothers when not with their mothers.

Sick older breastfeeders spent more of their time in the care of their mothers than comparable healthy breastfeeders, but also more time in the care of male relatives such as their father. By contrast, Table 6.1 shows that healthier older breastfeeders were cared for by a female non-maternal caretaker for over twice as long as their sicker counterparts. Thus a mother's ability to obtain female as opposed to male care at these early stages appears to be important. However it will be shown that a woman's relationship to, and control over, surrogate female caretakers is more important than simply the fact they are female. Elderly maternal grandmothers will be shown to have negative caretaking styles which are particularly detrimental to the health of boys.

Given that the mothers of the healthier children were shown in Appendix XIV to have 'helpers' and the sicker ones to lack them, it is likely that the styles of care given by sisters vs that given by male caretakers or grandmothers accounts to some degree, for the health differentials and will be discussed in Section 6.6.4. In reality, a woman's household status does not operate by modifying her ability to negotiate for the use of other caretakers' time as it will be shown in Section 6.6.3 that assistance with child care from other women in the household is rarely forthcoming regardless of household status. It will be discussed however how status determines the amount of time she has to employ surrogate care, and how the role of the 'helper' becomes increasingly important, or extra-household assistance in the form of her own mother.

As the perceived period of risk is not until the post-weaning period, mothers of breastfeeding children seem to capitalise on whatever help is available for surrogate care - involving brothers and fathers - regardless of the child's health or nutritional status. By contrast, however, for children who fall ill during the post-weaning period discussed below, the types of

surrogate caretakers appear to be chosen because of the child's health status and not in spite of it.

6.3.3 Caretakers of Weaned Children.

Figure 6.1 (c) and Table 6.1 show enormous differences in the amount of maternal care, and in the choice of surrogate carers of younger weaned children depending on their health status. It has been described how this is the period of perceived increased risk cited by women during routine interviews. Thus, healthy weaned children aged less than 36 months were only with their mothers for 24% of the time, compared with their sicker counterparts who spent 75% of the observational period under direct maternal care.

At this age therefore, healthy children are less dependent on their mothers and spend a much greater proportion of their time with surrogate caretakers. 8% of their time was spent with surrogate female carers, but more importantly, Table 6.1 shows that both healthy boys in the younger weaned age group spent a great deal of time in the company of their father or older brother compared with none for their sicker counterparts, one of whom was a girl. Paternal or male sibling care of healthy children, particularly boys who, at this age, are beginning to communicate verbally appears not to be so detrimental and may even stimulate and develop socialisation and cognitive skills. In addition, it begins the socialisation processes which will enable them to leave the female domain, where, as discussed in section 6.3.5, even at this age they are excluded.

Not only do sick children in this age group receive very high amounts of maternal care, but Table 6.1, shows that additional surrogate care was provided entirely by women or girls rather than men or boys. This seems to confirm that caretaking practices are adapted to the apparent perceived vulnerability of sick children during this period and result in their receiving extra

female, and particularly maternal attention.

Such adaptive, rather than routine caretaking, in response to differentials in the desired and actual developmental characteristics have been studied elsewhere in Africa (Levine 1988). It is clear however within the Dirimbe population, that the malnutrition or delayed development which are perceived to merit increased maternal attention in the post-weaning period, have their roots in the first and second years of the infant's life when caretaking is not, it seems, tailored to take account of them.

6.3.4 Specific Types of Maternal and Non-Maternal Child Care Activities.

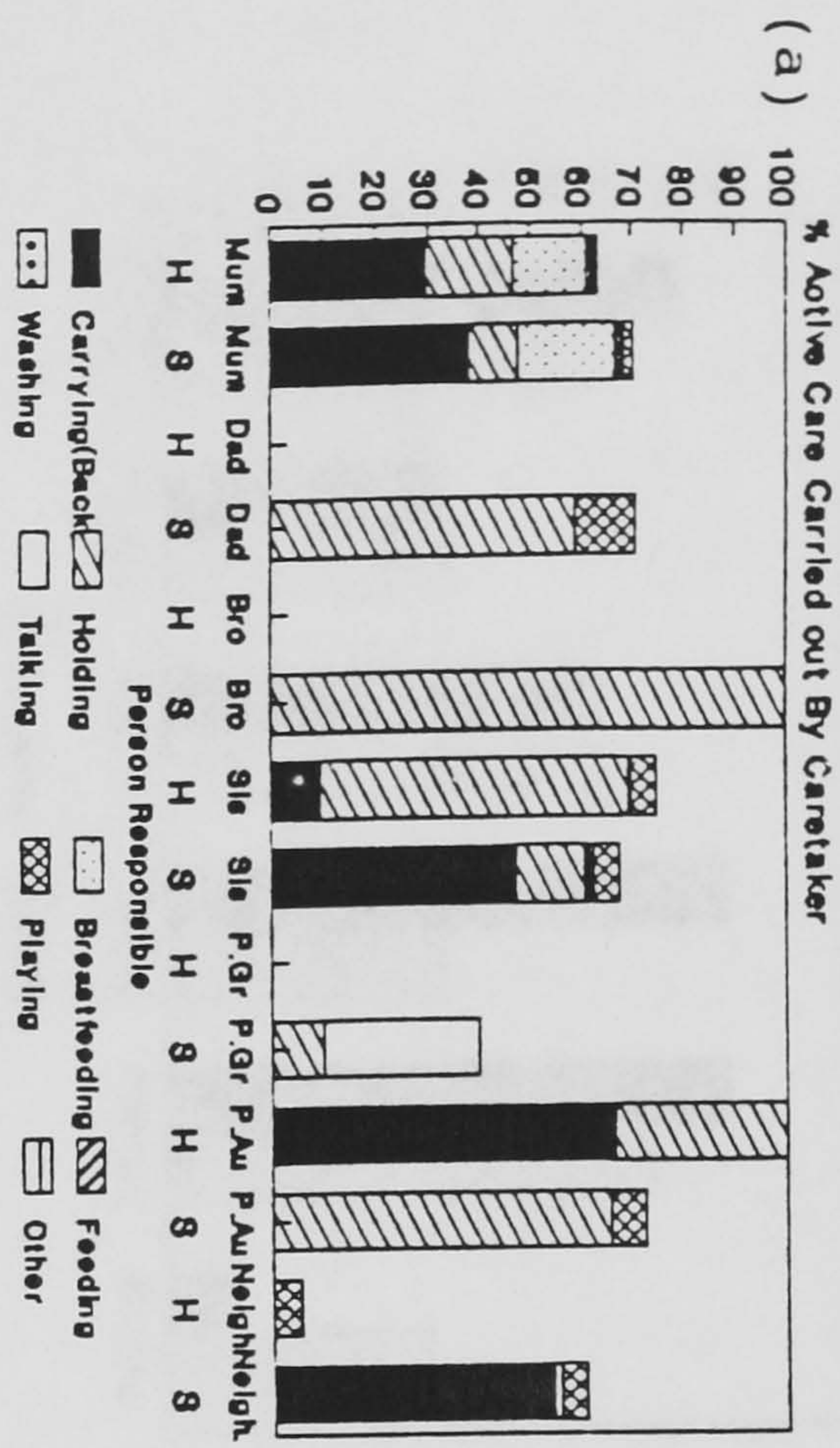
Figure 6.2 (a-d) shows how much 'active' child care a child is getting from each caretaker and what proportion of each caretaker's time with the child is spent in specific caring activities. Figure 6.3 (a-d) shows what percentage of different types of caring activity that a child receives, are carried out by its mother.

These figures indicate that the amount and type of active caretaking, and particularly maternal caretaking, varies according to the age of the child and its health status. The salient feature is that (as long as a child is healthy), the older it gets, less of the caretaking is done by the mother and more by substitute caretakers. Most 'care' of older healthy children lessens in quantity and becomes more passive in nature. Sicker children on the other hand, seem to spend more time in the care of their mother and have more of their caring activities carried out solely by her if they have no younger sibling.

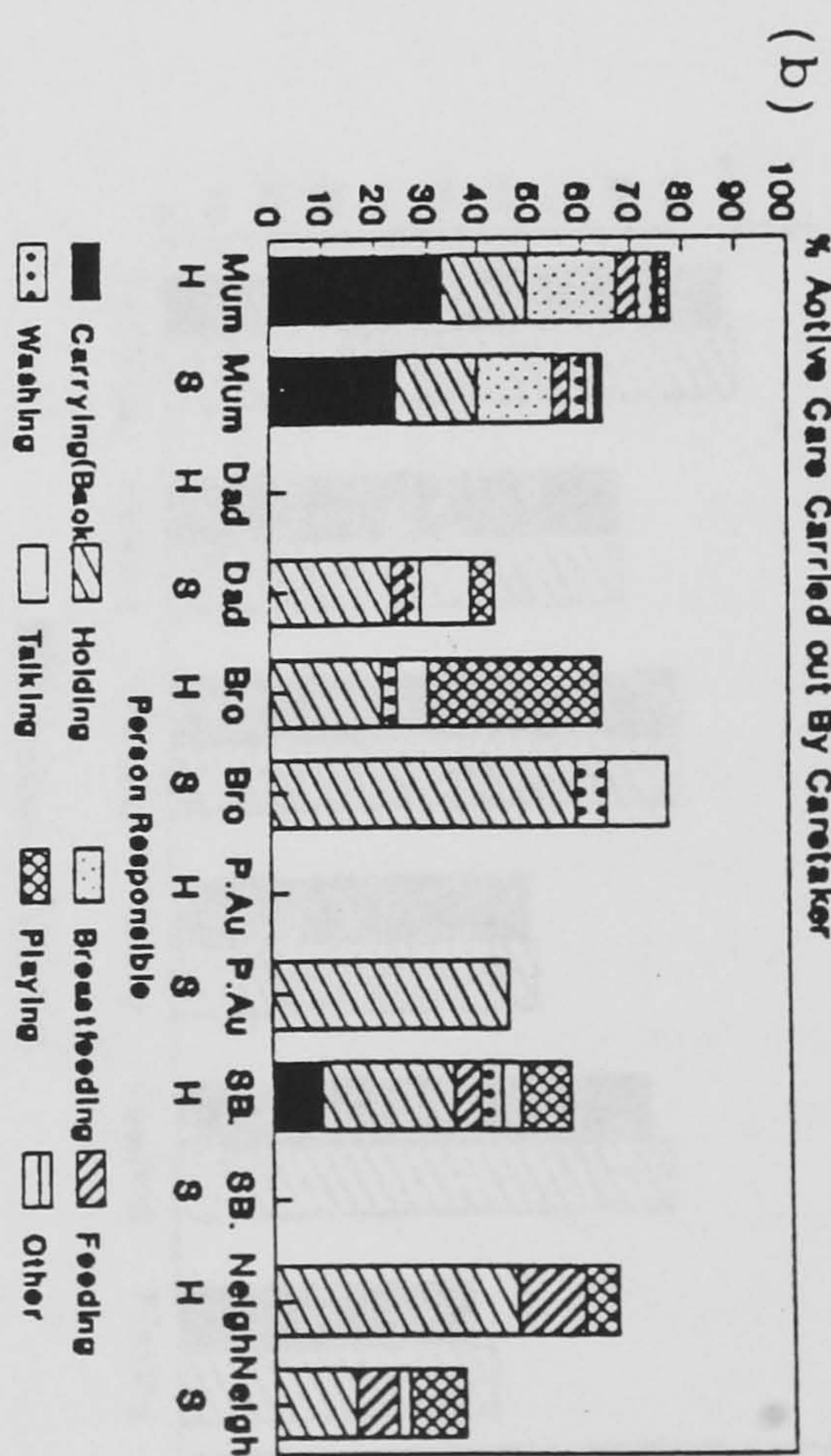
For the youngest unhealthiest breastfeeding children, much of the 'care' carried out by brothers and fathers (shown in Figure 6.1

Figure 6.2

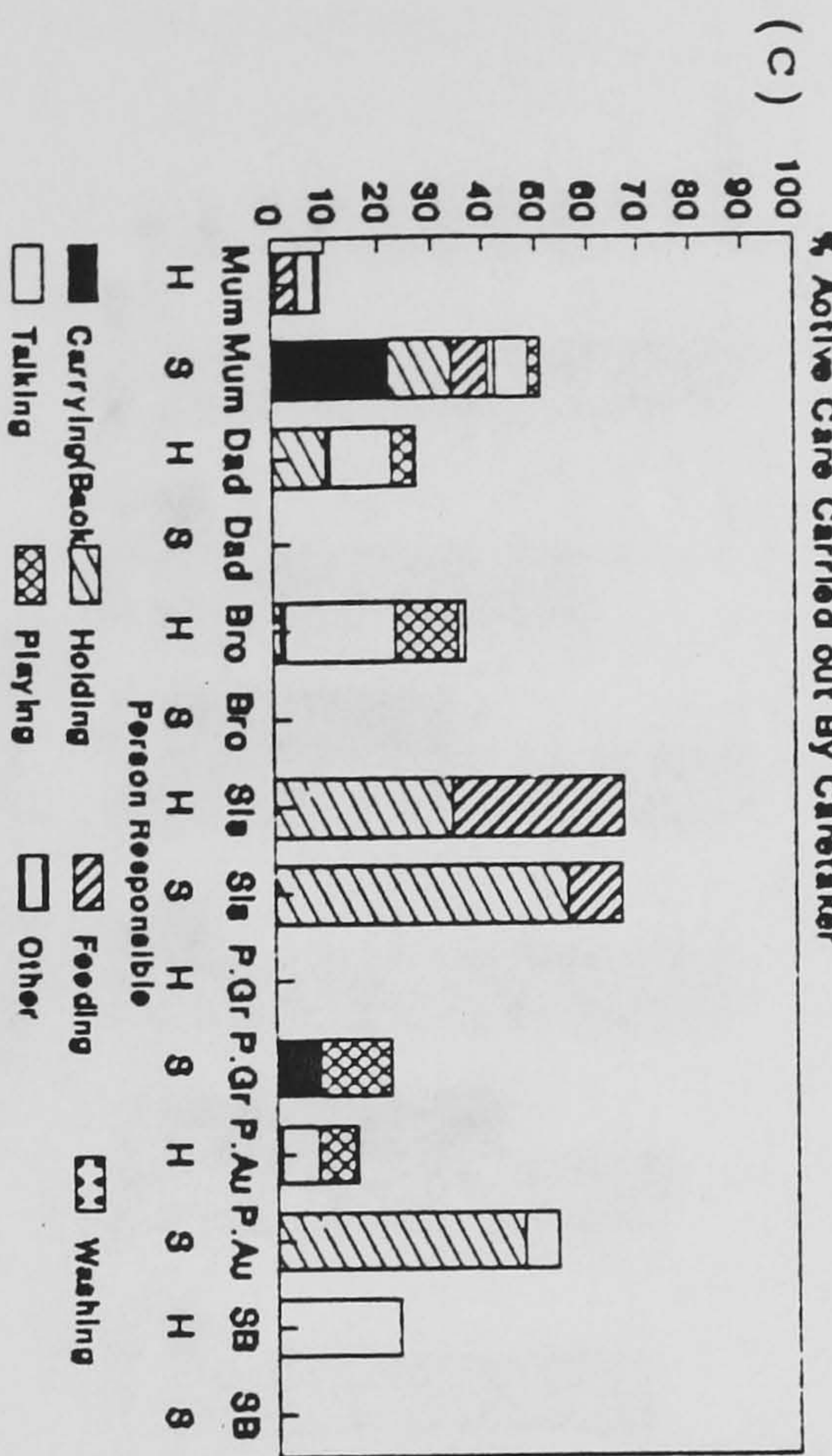
% Activities by Type and Carer
Children Less than Six Months Old



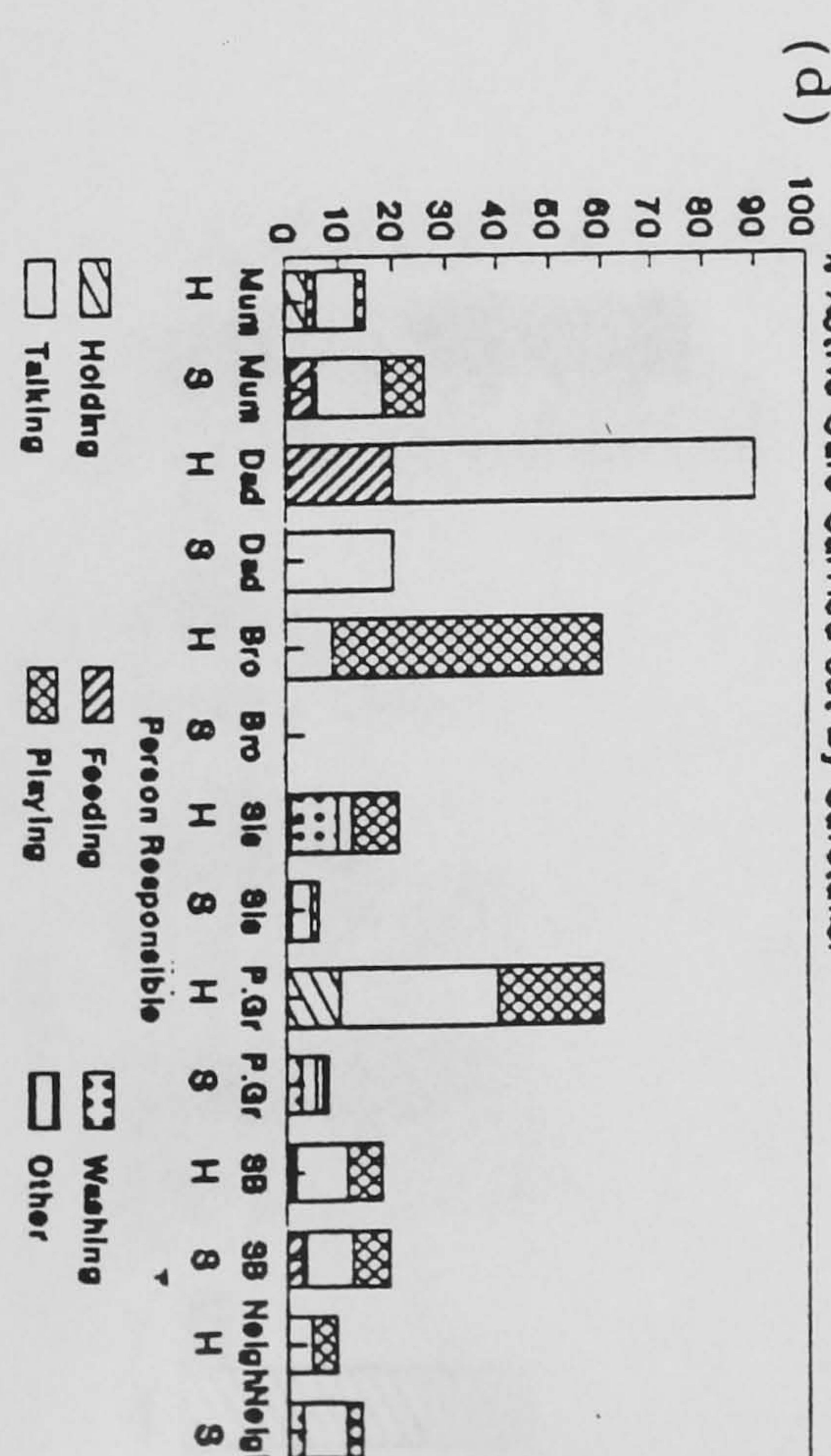
% Activities by Type and Carer
Children More than Six Months Old



% Activities by Type and Carer
Children Less than Thirty-Six Months Old



% Activities by Type and Carer
Children More than Thirty-Six Months Old



H=Healthy
S=Sick

NB % Between End of Bar and 100% = % Time Spent with Caretaker in Passive Care.

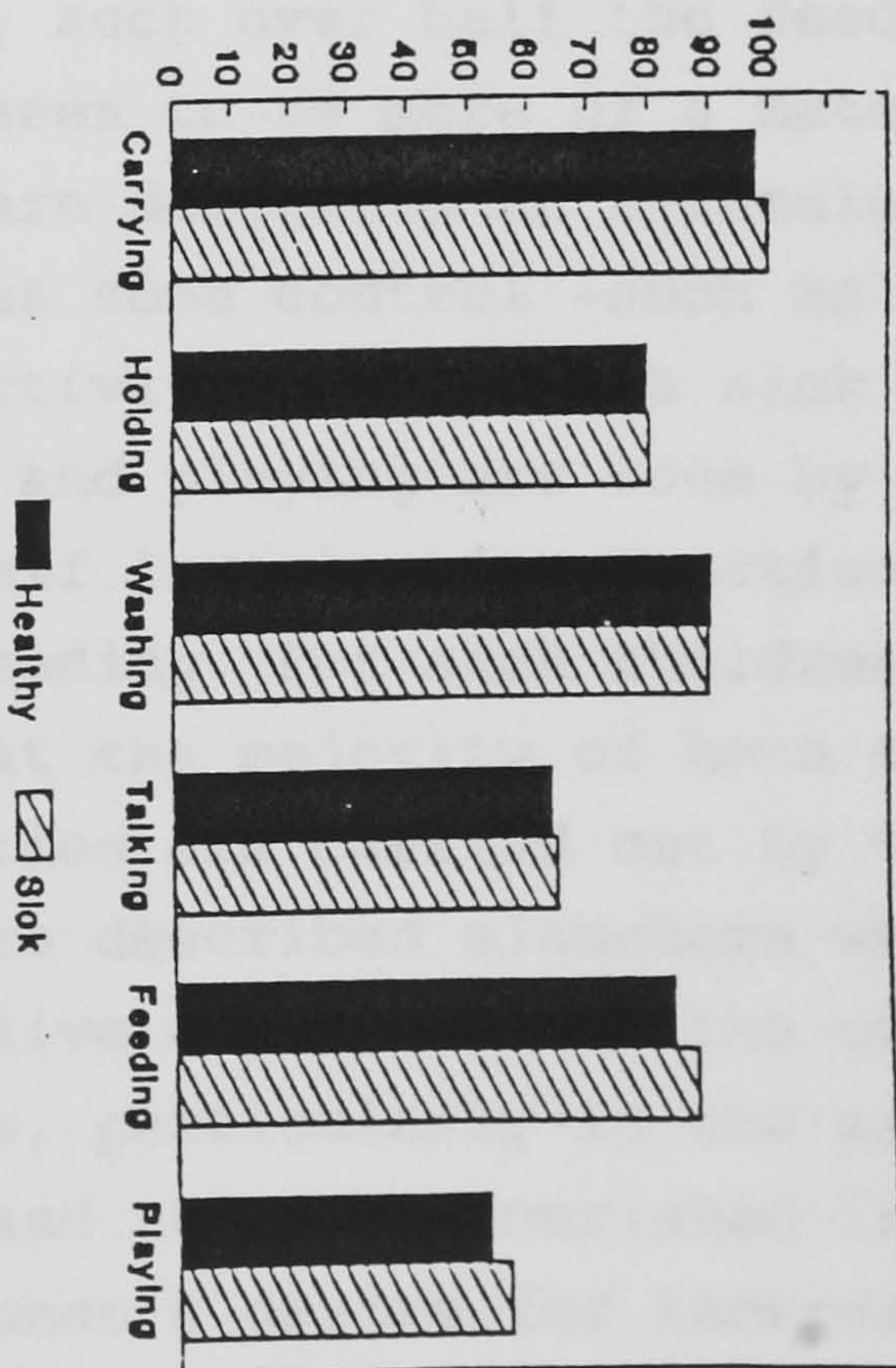
Bro=Brother, Sis=Sister, P.Gr=Paternal Grandmother, P.Au=Paternal Aunt, SB=Member of Suudu Baba (usually maternal grandmother), Neigh=Neighbour.

Figure 6.3

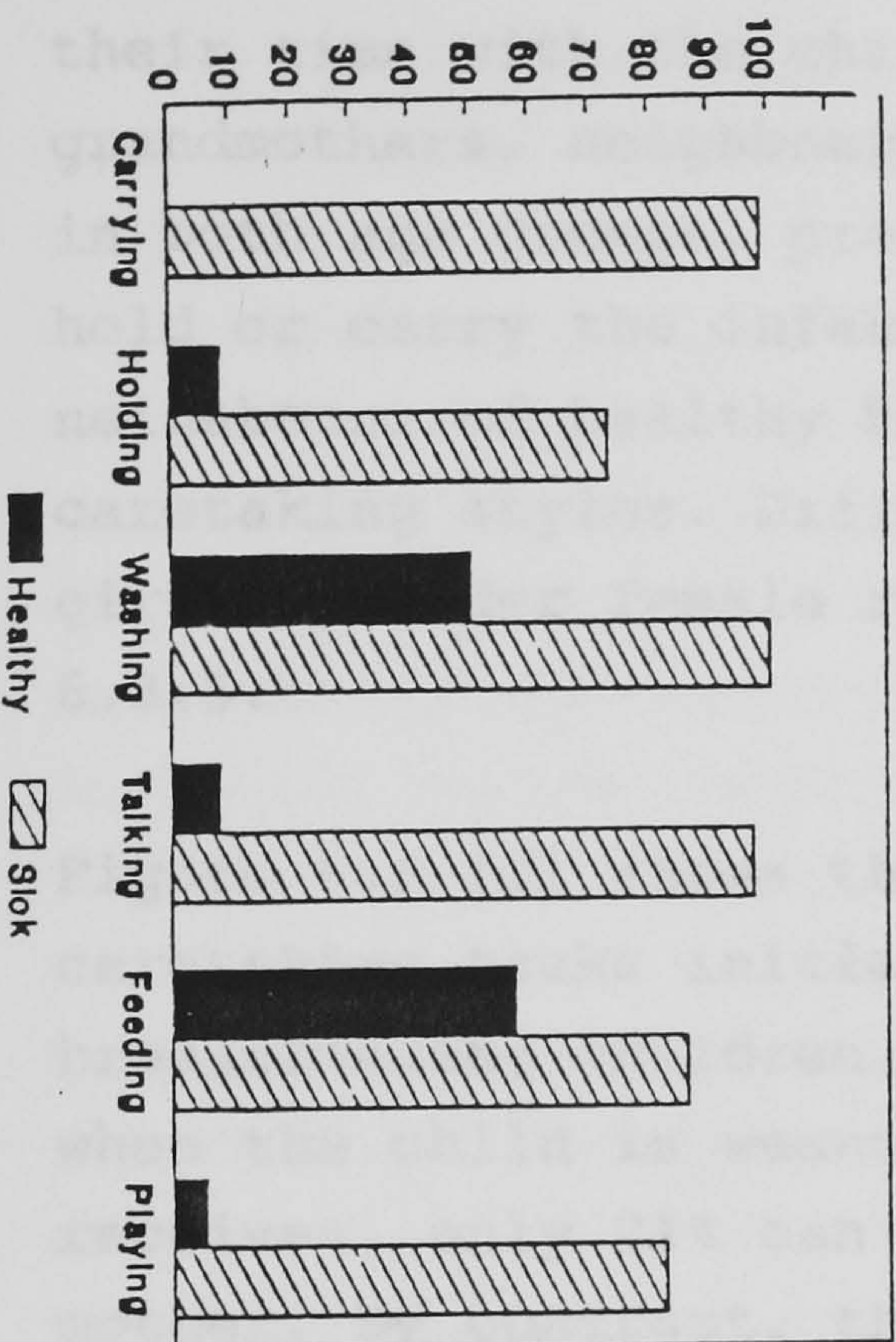
(a) % of Activities Carried Out by Mother
Children Less than Six Months Old



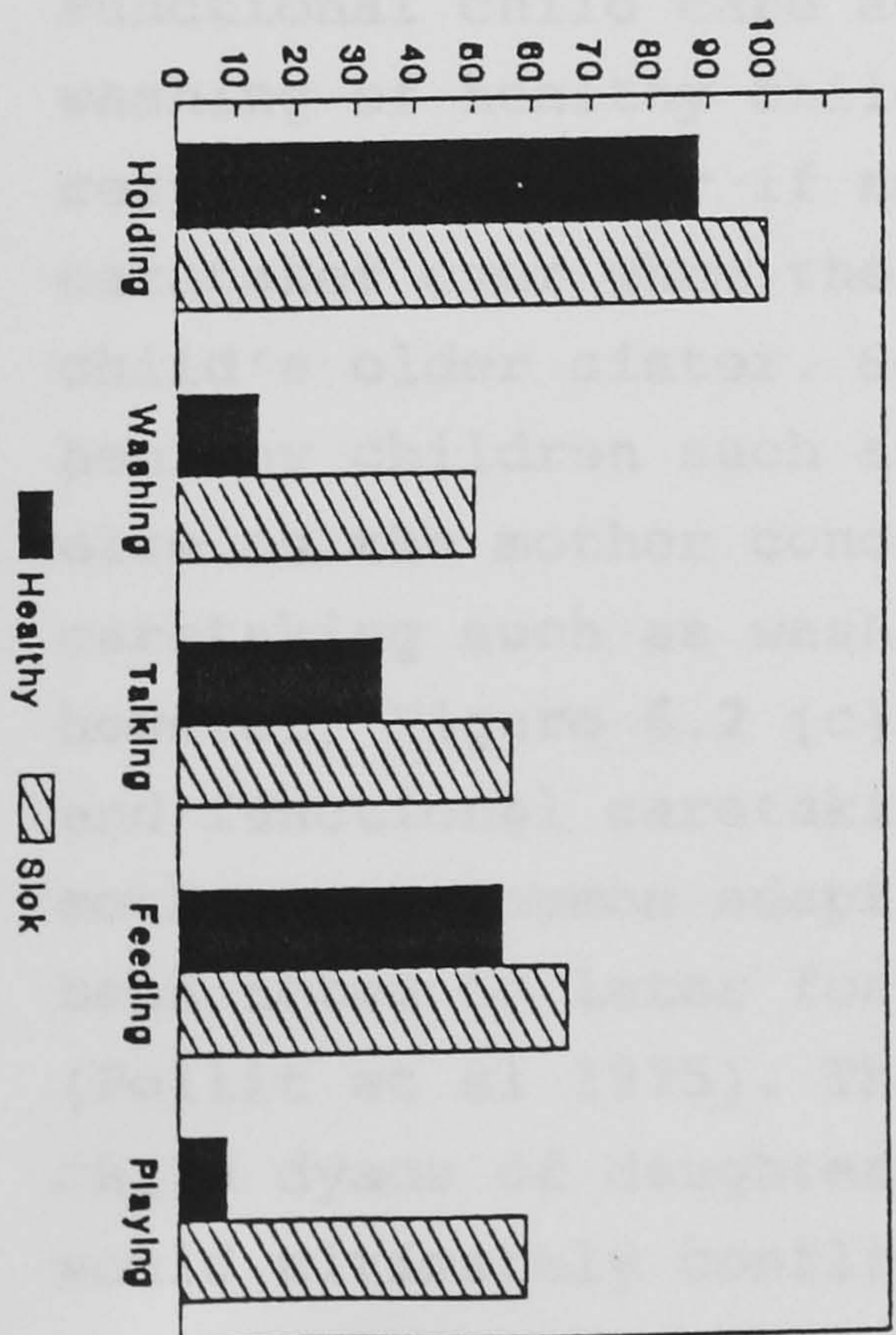
(b) % of Activities Carried Out by Mother
Children More than Six Months Old



(c) % Activities Carried Out by Mother
Children Less than Thirty-Six Months Old



(d) % Activities Carried Out by Mother
Children More than Thirty-Six Months Old



to be principal caretakers for substantial amounts of time) merely consists of holding the child. Notably, brothers of the healthiest older breastfeeders spend a greater proportion of their time with the child, actively playing with it. Paternal grandmothers, neighbours and aunts of sick breastfeeding children in both age groups, provide little active care and usually simply hold or carry the infant. By contrast, aunts, sisters and neighbours of healthy breastfeeding children adopt more active caretaking styles. Differences in the care of young boys and girls by older female relatives is discussed below in Section 6.3.5.

Figure 6.3 (c) shows that as healthy children get older, caretaking tasks initially carried out by the mothers of breastfeeding children are passed on to other household members when the child is weaned. Of all the care a healthy child receives, only 21% can be said to be actively carried out by its mother. By contrast, that sicker children at this age receive on average 89% of active care from their mothers.

Functional child care activities, such over half the feeding and washing of healthy children are seen to be more of a maternal responsibility, or if not, then are delegated to a female caretaker over whom the mother has some control -such as the child's older sister. Sociable activities with both sick and healthy children such as talking and playing are done by someone else as the mother concerns herself largely with functional caretaking such as washing and feeding. For sick children however, Figure 6.2 (c) shows that the majority of both social and functional caretaking activities are carried out by the mother - a common adaptive pattern described elsewhere which has been noted to later foster excessive dependence in the child (Pollit et al 1975). These traits, particularly in the maternal-child dyads of daughters-in-law and their malnourished infants, would ultimately conflict with women's desire for independent

children who enable them to adequately fulfil their marital role by carrying out household labour effectively.

It has been shown that the behaviour of a malnourished child may synergistically affect the response s/he elicits from his mother or principal caretaker (Barret and Frank 1987) and that male caretakers in particular were more prone to behaving passively with malnourished children (Chavez et al 1974). A vicious circle is set up as passive malnourished children elicit passive caretaking styles and lead, particularly where multiple caretaking is the norm, to attachment disorders that are commonly described in the western 'failure to thrive' literature (Wilcox 1987). Male caretakers within the Dirimbe sample generally provide passive care to such sickly children, and may not be able to be so sensitive to their non-verbal demands. Maternal and paternal grandmothers and aunts practice more stimulating caretaking styles. Thus, a woman's ability to command female care, rather than to elicit the help of male caretakers may influence the extent to which the dyadic chain of passivity/lack of response between the child and caretaker is initiated and continues.

Section 6.3.1 showed that both sick and healthy children in these older age groups spent around one third of their time not in the presence of any kind of caretaker. Three out of the four children in this group had younger breastfeeding siblings who seem, as shown in Figure 6.3(d) to not only divert the attention of their mothers, but also of their older sisters who now actively care for the weaned child only minimally.

6.3.5 Household Dynamics and Gender Differentials in the Care of Weaned Children.

Appendix XIII indicates that even though there are no substantial sex differentials in mortality, most of the healthiest children

in the observational sample are girls and most of the unhealthiest are boys. Evidence from specific cases noted during the field observations suggests that 'all female' caretaking environments, particularly ones which are centered and controlled by an elderly woman such as the child's maternal grandmother, produce variations in the kinds of care given to male and female children who inter-act differently within them.

Appendix XII (Children Numbers 15 and 16) describes how the two sickest children aged over 36 months, were both boys whose mothers were frequently absent. They were left almost daily with their aunts and grandmothers where they were largely ignored, and where they could not, due to their gender, participate in the social and labour activities going on around them.

By contrast, the healthiest children in this age group were both girls who also spent time in mainly female environments where they actively participated in social exchanges and carried out simple household tasks for which they gained praise and attention. For these children, assertive and direct participation in these environments was easier - firstly, because they were girls, and secondly because they were healthy.

Elderly female grandmothers who are often widowed, consider (like elderly foster mothers described in the previous chapter), that they will be repaid for babysitting young girls with future rights to their labour when they grow up. Thus they often actively seek young girls to care for with this in mind, particularly requesting to look after the children of their own daughters who cannot refuse to comply. Such girls can, and indeed are obliged, to later help their grandmothers with household chores to repay hours of babysitting they received as children.

By contrast, small boys are not so immediately useful to their grandmothers and are thus unable to earn equal amounts of

approval or respect from them through the completion of simple female tasks. Thus, male children in all female environments, particularly if they are unhealthy, do not have the ability to exploit them or to participate in them, nor the strength or motivation to forge new links outside the home.

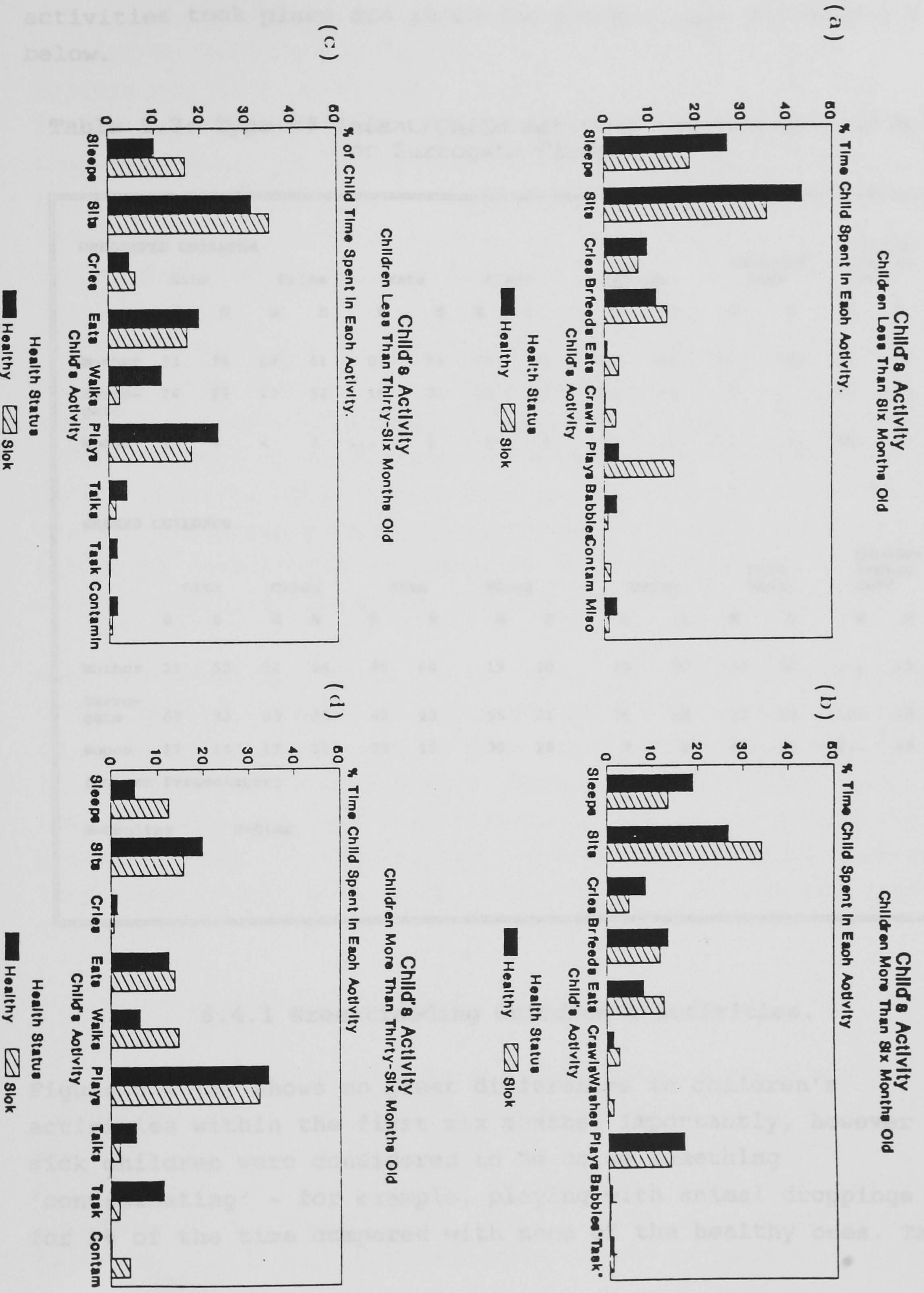
The Fulani have a concept called birgul which has connotations of training and is an informal 'education' for life, and carries a great deal of prestige. It is very gender specific with boys being brought up and 'educated' by their fathers and brothers, and the girls by their mothers and sisters. Thus small girls or female babies are often actively sought by older teenage sisters who wish to complete their own 'education' (birgul) by visibly caring for them in order to gain respect from their elders and mothers. The care of children by substitutes therefore may not be a passive occurrence caused only by the mother's preoccupation with other activities, but can be actively manipulated to fulfil the status and prestige, or future labour requirements of other individuals within their household or community.

6.4 CHILDREN'S TIME BUDGETS.

The following discussion presents what the children themselves were observed doing either in, or away from, the presence of a caretaker. Children's activities not only correlate with their physical and cognitive development but, particularly for older children, indicate the extent of their participation in, and contribution to, the functioning of the household unit. It will be shown that even small children have a place in the household labour hierarchy and gain approval and attention from their mothers and other household members, by carrying out simple tasks and chores.

Children's activities themselves are presented in Figure 6.4 (a-d) and the presence and type of caretaker with whom selected

Figure 6.4



activities took place are shown for grouped ages in Table 6.2 below.

Table 6.2: Type of Infant/Child Activity and Presence of Mother or Surrogate Caretaker.

BREASTFED CHILDREN														
	Sits		Cries		Eats		Plays		Babbles		'Pretend' Task		Contaminates Self	
	H	S	H	S	H	S	H	S	H	S	H	S	H	S
Mother	73	75	69	61	85	74	71	68	84	67	91	100	NA	56
Surrogate	26	22	27	32	16	25	20	29	14	33	9	...	NA	42
Moone	1	2	4	7	...	1	9	2	2	...	...	...	NA	2
WEANED CHILDREN														
	Sits		Cries		Eats		Plays		Talks		Real Task		Contaminates Self	
	H	S	H	S	H	S	H	S	H	S	H	S	H	S
Mother	21	53	32	64	35	60	19	40	15	70	23	32	...	15
Surrogate	62	33	53	25	42	23	55	31	76	22	32	13	100	36
Moone	17	14	15	11	23	16	30	28	9	9	45	55	...	49
(Column Percentages)														
H=Healthy S=Sick														

6.4.1 Breastfeeding Children's Activities.

Figure 6.4 (a) shows no great differences in children's activities within the first six months. Importantly, however the sick children were considered to be doing something 'contaminating' - for example, playing with animal droppings - for 2% of the time compared with none of the healthy ones. Table

6.2 shows that breastfeeding children who were potentially picking up bacterial infections through practicing such activities, were in the care of surrogate carers (usually fathers, brothers or maternal grandmothers) for 42% of the time they were doing so. Figure 6.4 (b) shows that after six months, the healthy breastfeeders, having received more active caretaking, are themselves, more active and play, cry and breastfeed more than the sicker ones.

Although Figure 6.4 (b) shows that the sicker breastfeeding children were eating for a greater amount of time, Table 6.2 shows that a greater amount of this eating time (25%) was spent under the care of a surrogate carer rather than the mother. Eating patterns will be discussed in relation to weaned children below and emphasise that the unsupervised or poorly supervised giving of food to sick children is often harmful and can lead to contamination or inadequate consumption.

Most importantly, Figure 6.4 (b) shows that the healthy and sick breastfeeding children over six months old were already starting to perform 'pretend', and in some cases actual household tasks, albeit for only 1% of the time. Even very young girls were observed having a bowl of millet to 'pound' using a stick as a pretend pestle, or fetched cups of water for their mothers when they could barely walk, much to the delight and satisfaction of the latter.

6.4.2 Weaned Children's Activities.

Figure 6.4 (c) shows that sick children less than thirty-six months old were sleeping and sitting passively more than healthy children of the same age. Figure 6.4 (c) and (d) shows that sicker weaned children talked substantially less, and Table 6.2 indicates that their talking usually occurred in their mothers presence. Healthier weaned children tended to talk more either

with, or under the supervision of, surrogate caretakers thus developing conversational skills and social networks with a larger number of individuals.

Younger weaned children shown in Figure 6.4(c) ate more often than sicker children who consumed food during longer periods in the older age groups. Table 7.2 indicates that eating for the sicker children was done in the presence of the mother for 60% of the time although, as described in Appendix XII (child number 11) she may not actually be aware of what the child was doing with the food. An additional 25% of the time of sicker weaned children was spent consuming food in the presence of a surrogate caretaker and 16% alone. Healthier children were consuming food unsupervised for nearly one quarter of the observational period - often snacks they procured themselves by scrounging and foraging.

Research in other areas of Mali stresses the importance of mothers' supervision of children's eating arrangements, particularly for malnourished children (Dettwyler 1989). The author describes how, at family meals, the bowl is set on the ground and even children of 7 or 8 months can eat out of it with the assistance of their mother. In addition, snacks and left overs which often form the main part of a child's food consumption during the day are usually left for one or several children to consume while the mother returns to her chores.

In these cases self-sufficiency and eating competence may be an important determinant of nutritional status and be established, via the 'precociousness' that develops via intense interactive stimulation when the child is very young. Healthy children can profit from the independence of having their own bowl or by making sure they are able to get an equal share of food left for several children, but sick children may be disadvantaged if left unsupervised (See Appendix XII - child number 14).

Figure 6.4 (c) shows that healthy children aged less than 36 months carried out real as opposed to pretend household tasks for 2% of the time compared with none of their sicker counterparts. Possibly due to their freer access within, and exploration of, their environment together with less maternal supervision, they find themselves in contaminating situations twice as often. Similarly, Figure 6.4(d) shows that the sickest children in the oldest age groups were also indulging in such contaminating behaviour for 4% of the time compared with none for the healthier children.

Table 6.2 shows that for the sicker weaned children 'contamination' was carried out in the presence of the mother during 15% of the observational time, indicating that she may not be aware of, or responsive to, contaminating objects that the child was in contact with. By contrast, all the healthy children who were 'contaminating' themselves were in the presence of surrogate carers and away from maternal supervision.

Most importantly, healthy children over thirty-six months old were able to complete errands and household tasks for 11% of the time compared with just 2% for the sick children. These were real jobs, not pretend socialising 'games' and, as shown in Table 6.2 were performed independently of their mothers, often in the presence of, and for the benefit of, a surrogate caretaker who may reward them with food, or more often, simply praise. By contrast, Figure 6.4 (d) shows that sicker children in the oldest group carried out very few household chores, and if they did, Table 6.2 shows that they were more likely to be done in proximity of their mothers or alone.

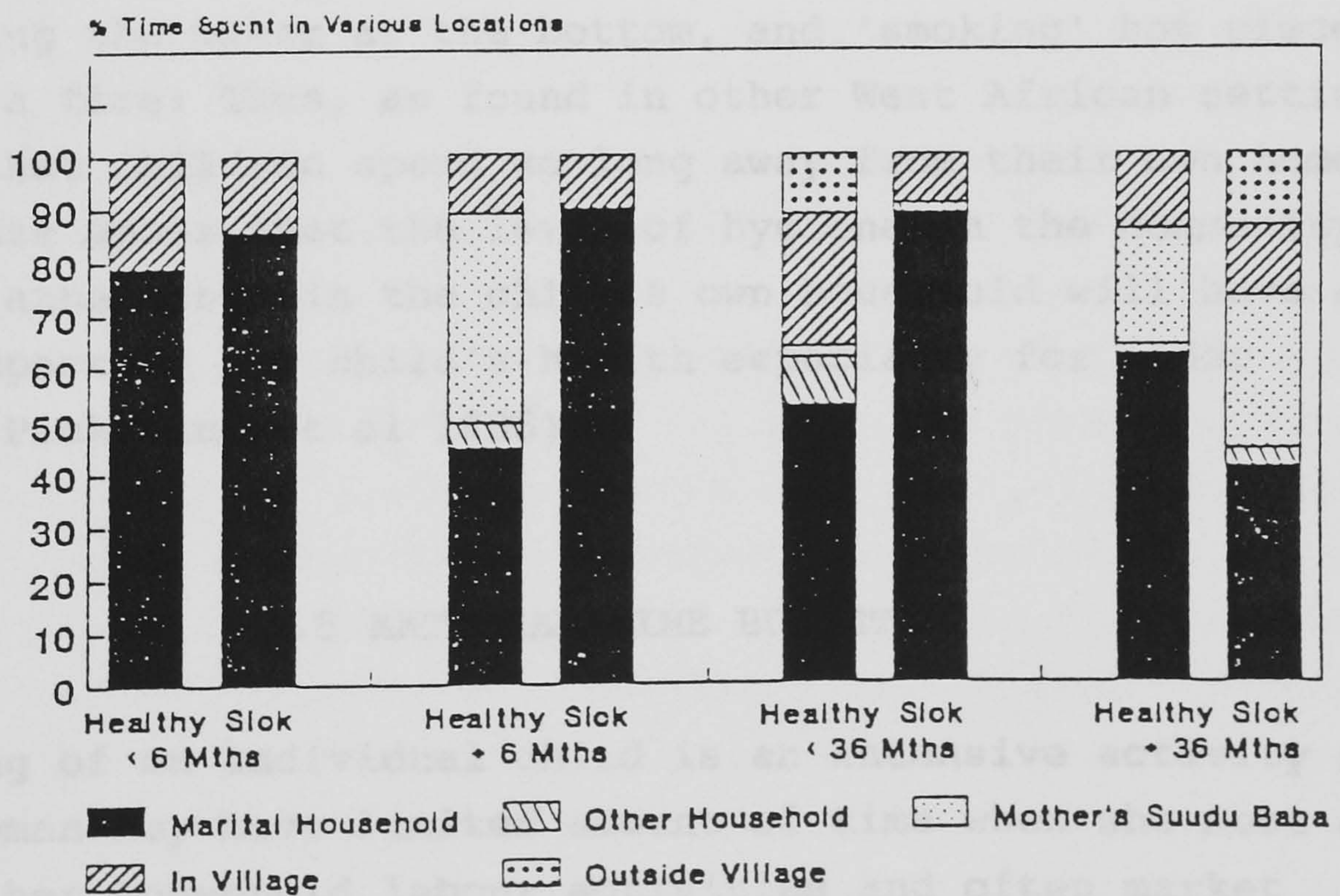
A useful example is in Child Number 8, aged 50 months, described in Appendix XII, who was sent across the village alone to buy salt for her foster mother during the observation period, and carried out numerous child care activities for her aunts and

indeed for other women in the village. She knew, particularly by looking after and feeding other smaller children in her household, how much food was left over and where it was kept. Being of a precocious nature, she therefore either demanded it or helped herself. Sicker children were unable to be so assertive and had little knowledge of what was available. In addition, through not participating in the household labour hierarchy they did not merit the gratitude and appreciation of their mothers so readily.

6.4.3 Location of Child.

Figure 6.5 shows in whose household the children were located or where they were in the village. Most importantly, 40% of the healthier older breastfeeders were in their mother's suudu baba and in fact spent only 45% of time in their own households.

Figure 6.5 Location of Child



Similarly, the younger weaned children who were healthy spent just over half their time in any household and 37% of time out in the village, or even outside the village in the surrounding fields or gardens. By contrast, the sicker children of this youngest weaned age group spent 89% of time in their own households.

Many morbidity surveys assume child's household environment is where the child gets sick and water supply, food storage etc are measured as if they are the main source of a child's potential contamination or infection by its household environment. The data from Dirimbe indicates that healthy children in particular, are spending much more time away from their own homes in other people's houses, or away from the village. In other people's houses, other adults will often castigate a child for dangerous or contaminating behaviour but many older children who were followed were spending enormous amount of time outside the immediate vicinity of the village, often alone or with other young children. Activities they were observed to indulge in away from adults included playing in a dirty and dangerous old well and drinking the water at the bottom, and 'smoking' hot pieces of wood from a fire! Thus, as found in other West African settings, the fact that children spend so long away from their own home environments means that the level of hygiene in the community as a whole, rather than in the child's own household will have a greater impact on the child's health especially for older children (Pickering et al 1985).

6.5 MATERNAL TIME BUDGETS.

The rearing of an individual child is an intensive activity for which a woman may have limited amount of time when she must also perform other household labour activities and often market economic functions (Popkin 1980). Direct competition between a

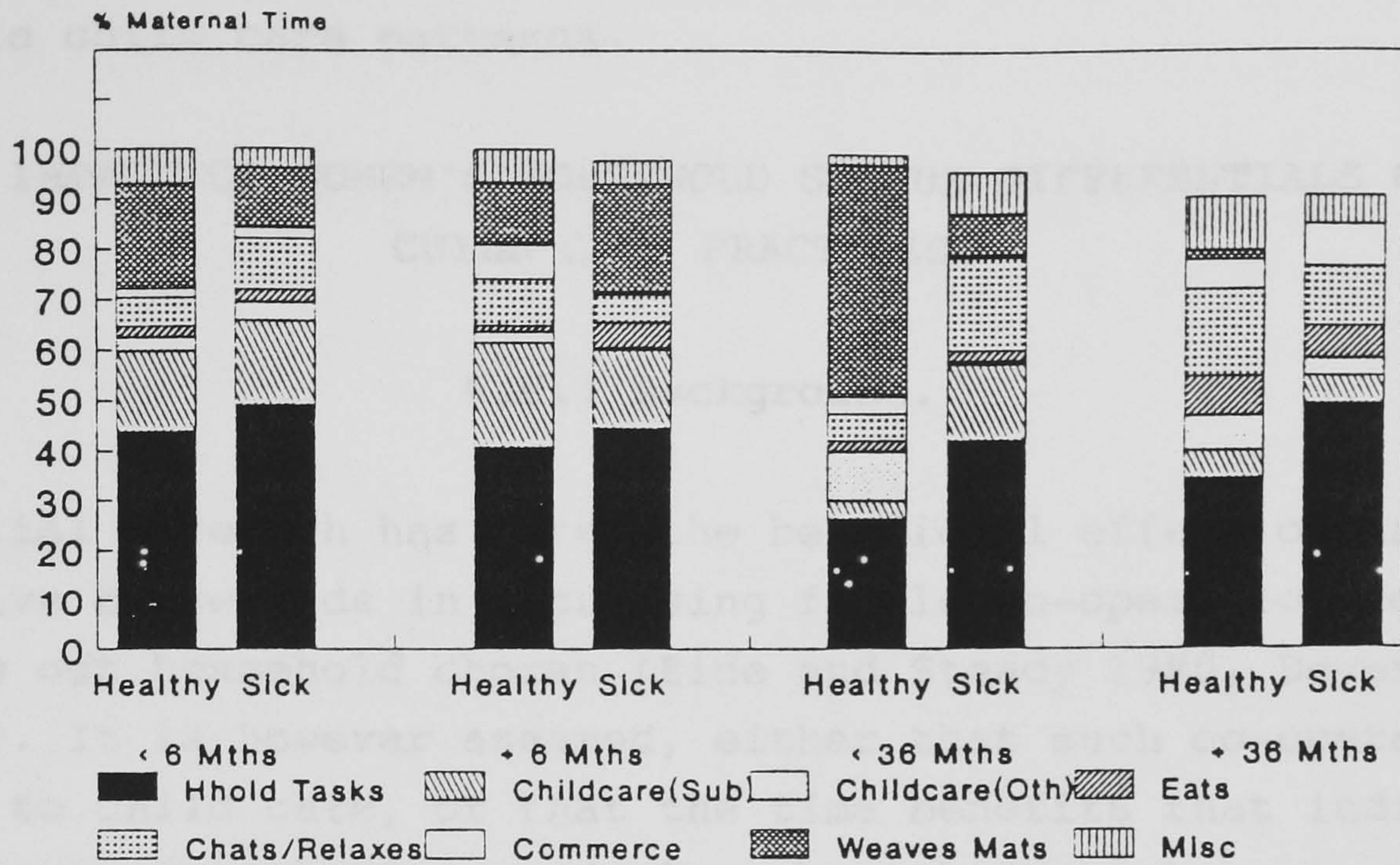
woman's work and her child rearing is, as described, modified permanently by some of the fostering arrangements discussed in Chapter V, and temporarily by the use of surrogate carers. In addition, there are many tasks during which children, particularly breastfeeders, can be cared for concurrently, or instances when working women may not be actively caring but rather 'keeping an eye' out for their child.

The field methodology of collecting the women's time budgets during two six hour periods for each woman, was discussed in Chapter II. It must be emphasised that it may not be representative for women who carry out household or market chores on a rota basis. Such women may have been followed on a day 'on' or day 'off' and the results may thus either under or over-estimate their workloads. In addition, women were followed between 6am and 6pm and personal observation as well as evidence from elsewhere notes that women do a vast amount of work outside these hours, particularly before dawn when they may pound millet or start to prepare food or milk while the rest of the family, (including their children) are asleep (Sieff 1989).

Figure 6.6 below uses data from the maternal observations to present a simple breakdown of the mothers' day and shows that without exception, the mothers of healthier children spent less time on household chores than the mothers of the sicker children. Not surprisingly, the mothers of the youngest breastfeeders spent more time caring for their breastfeeding child, than in caring for their other offspring. By contrast, mothers of the younger weaned children children spent more time caring for another child rather than the subject one - usually a breastfeeder. The oldest weaned sick children were cared for more than their siblings but in general the patterns show a clear maternal focus on breastfeeding children who gain more maternal care and attention than their weaned siblings.

Figure 6.6

Maternal Time Budgets
(Waking Hours Only)



Sub-Subject Child
Oth-Other Child

The effect of woman's commercial activities on child care has been extensively documented but with no really consistent results (Zeitlin et al 1990). This may be because women's work is so different the world over and inter-cultural variation cannot be adequately controlled for to make replicable comparisons. Commercial activity done by women in the Dirimbe observations (with the exception of peripatetic milk selling which is not included here) was carried out from home.

The effect of household work on the amount of time available for child care however, seems to be more universally similar, even in non-African settings, as 'younger women with less developed support networks spend more time on in-house activities' (Messer and Bloch 1985). Given that this is so, the rest of the discussion will show how there are clear links between a woman's

status and the time she spends in household chores, and the compatibility and conflict of her activities with maternal and surrogate child care patterns.

6.6 THE IMPACT OF WOMEN'S HOUSEHOLD STATUS DIFFERENTIALS ON THEIR CHILD CARE PRACTICES.

6.6.1 Background.

Substantial research has noted the beneficial effect of large supportive households in increasing female co-operation for carrying out household chores (Eide and Steady 1980, Buvenic et al 1987). It is however assumed, either that such co-operation extends to child care, or that the time benefits that individual women accrue from having to do less household work, are re-invested or transferred into greater amounts of child care of a better standard (Ware 1984, Miles Doan and Bisharat 1990). What has been more realistically recorded is how little time women actually do spend in looking after their children, although intra-household differentials have been less extensively studied. Variations in women's time use, particularly within their households, are fundamental to understanding how women organise their personal and household work, and balance it with their relaxation time, commercial activities, and child care demands. Differences in methods of spending time not used to carry out household chores, will be shown to be a function of a woman's perceived competition with other women for household resources, and not simply a product of her status. Her status does however, dictate how much of this free time she has, and her ability and freedom to reorganise it during her children's illness events.

Given that intra-household female autonomy and competition modify the use of a woman's spare time once its amount has been dictated by status differentials, it is clear that a simple decrease in the amount of time spent in household chores does not lead to an

automatic increase in that spent on child care. The subtleties of differences in assistance and obligation patterns, and the phenomena of women's isolation in what seem to be supportive surroundings, appear to be crucial to understanding what priorities and resources (human, financial and temporal) a woman has at her disposal on a day-to-day level, and those she can mobilise during a child's illness.

It will be shown that in contrast to the daily child care environment, a child's illness episode seems to involve not only an increase in the intensity of hierarchical power relationships between low and high status women, but also an increased co-operation between women, who on a daily basis appear not to provide each other with much practical support. This apparent dichotomy will be further explored within the context of status relationships in the households under observation.

6.6.2 Status Differentials in Maternal Time Budgets.

Figure 6.7 Maternal Time Budgets
Status Differentials

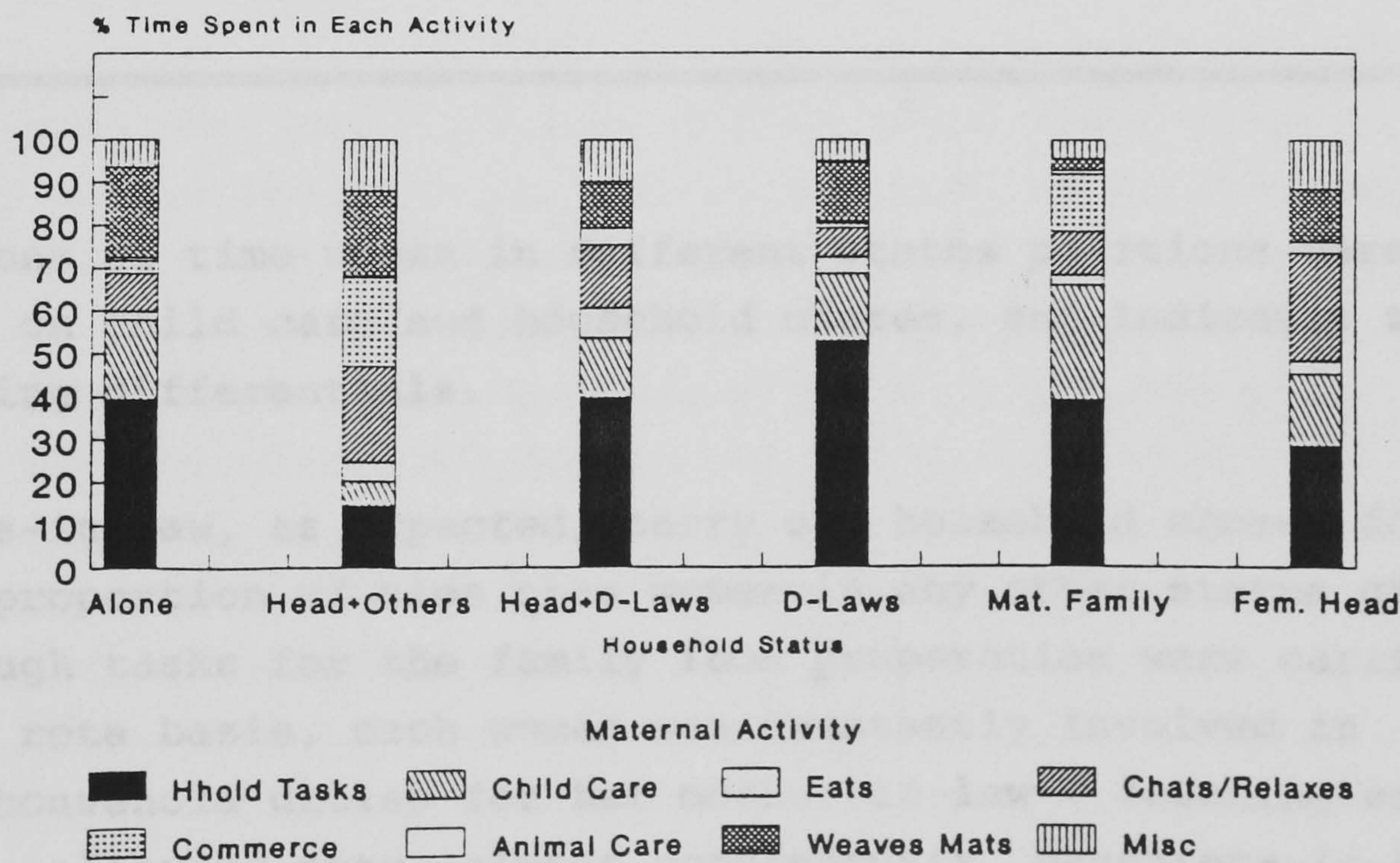


Figure 6.7 shows the different amounts of time spent in various domestic and personal activities by women occupying different household status positions. Table 6.3 below shows the specific

Table 6.3: Amount of Time Spent in Child Care and Household Tasks by Women's Household Status.

Number of Women:	Women's Household Status					
	Alone (N=5)	Heads with Other Heads (N=2)	Head with D-Laws (N=2)	One of Several D-laws (N=5)	Mat Family (N=1)	Female Head (N=1)
% Time Spent in:						
Child Care:	19	5	14	16	27	17
Household Tasks:	39	15	40	53	39	28

proportions of time women in different status positions were spending on child care and household chores, and indicates some interesting differentials.

Daughters-in-law, as expected, carry out household chores for a greater proportion of time than women in any other status group. Even though tasks for the family food preparation were carried out on a rota basis, each woman was constantly involved in further household duties for her mother-in-law - fetching water, firewood, cleaning pots, almost continuously. Daughters-in-law

spend over half their time in such activities compared with just 15% for women who are in more egalitarian laterally structured households where work is shared. What is surprising, is that the heads with daughters-in-law were also carrying out a large amount of household work. This was however, of a voluntary rather than obligatory nature, and most importantly consisted of labour over which they themselves had control.

Most significantly, the women who were carrying out the least amount of household tasks were also carrying out the least amount of child care, which negates somewhat a hypothesis that a decrease in household chores leads to increase in time spent with children. These women (the heads with other heads and the woman living in her natal family) were, on the contrary, carrying out a much greater amount of personal commercial activity. By contrast, women who were 'alone' and the female head, both of whom lacked help, but who at least controlled their own labour, spent greater amounts of time on child care, and mainly used their spare time for mat weaving and socialising. Daughters-in-law who had a greater amount of tasks, but whose labour was controlled by their mothers-in-law, also used their spare time for mat weaving or for chatting and relaxing.

Thus it seems that women balance and organise their time depending on who controls it, and on how much of it is taken up with household tasks. A decrease in household tasks is counter-acted by an increase in commercial activity by those who are in the most supportive, non-hierarchical work relationships but who are therefore in greatest competition for limited resources within the household. Daughters-in-law (with peers) are also in egalitarian work alliances but are controlled by their mother-in-law rather than being autonomous. For the illness events of their children, this hierarchical focus intensifies and their mother-in-law plays an active role as a consultative and treatment resource, often providing payment, particularly if their husband

is absent. By contrast, the 'heads with other heads', have only a lateral rather than hierarchical structure to exploit, and as shown in Chapter IV receive cash from their husbands less frequently to pay for medicines. The husbands of these women, are themselves, solely responsible for trying to support the extended family unlike the husbands of the daughters-in-law, who are obligated to, but also supported by, their elderly fathers. Thus during crises, including illness events, heads with other heads can rely on their peers and husbands for advice and support but not for money - hence their high participation in commercial activity for their own gain. The illness profiles confirm that during such episodes they are able to treat their children much more frequently than other women, pay for over half the therapies with their own cash.

Women who are alone in more nuclear units and the female head, do not have a threat of competition from other women for limited resources in their smaller families. They thus do not feel obliged to use so much of their spare time in personal petit commerce, and prefer to indulge in social activities. During illness events, which they treat less frequently, they exploit extra-household networks, perhaps consolidated during this socialising, to borrow or collect free treatments. In addition, as they are the only married woman in the household their husbands appear to pay for treatments more frequently.

6.6.3 Status-Related Variation in the Types of Surrogate Carers.

Table 6.4 and 6.5 below shows the characteristics of specific surrogate caretakers used by women in different status groups, for their breastfed and weaned children during the observation periods. Table 6.4 indicates that the mothers of breastfeeding children who occupied a high status position, or who were alone and lacked intra-household support were able, or were forced, to be with their children for the vast majority of the time. The

Table 6.4 Maternal and Surrogate Child Care of Breastfeeding Children by Women's Household Status.

	Women's Household Status:			
	Entirely Alone	Head with D-laws	One of Several D-Laws	Maternal Family
Number of Women:	(N=3)	(N=1)	(N=2)	(N=1)
BREASTFED CHILDREN.				
Person Responsible for Child:				
Mother	85	99	69	66
Father	1	...	5	...
Brother	1	...	1	2
Sister	6	...	13	...
Pat. Gran.	...	...	1	...
Pat. Aunt.	...	...	2	...
Mat. Gran	5	...	...	10
Neighbour	1	1	5	6
Noone	1	...	4	16
(Column Percentages)				

children of the lone women were looked after by their elder sister, in the absence of maternal care, or left with carers outside the household such as the maternal grandmother or a neighbour. For most of these women however, the ability to strap a breastfeeding child on to their back, did not really prevent or disturb their work, but probably only made it more arduous.

By contrast, daughters-in-law, whose household tasks were greater in quantity, were only responsible for their breastfeeding children (either actively or passively) for about two thirds of

the time. They relied on substitute care mostly from the child's elder sister, from its father, or from neighbours, but only from their co-workers or mother-in-law for 3% of the time. The child living in its mother's natal household spent most of the time with its maternal grandmother or alone.

**Table 6.5: Maternal and Surrogate Care of Weaned Children
Children by Women's Household Status.**

Number of Women:	Women's Household Status:				
	Entirely Alone (N=2)	Head with Other Heads (N=2)	Head with D-Laws (N=1)	One of Several D-Laws (N=2)	Female Head (N=1)
WEANED CHILDREN.					
Person Responsible for Child:					
Mother	39	23	36	49	68
Father	26	4	...	1	...
Brother	...	23	...	14	...
Sister	...	8	...	5	...
Pat. Gran.	2	...	...	5	...
Pat. Aunt.	20	...	...	1	...
Mat. Gran/Aunt	...	20	16	...	...
Neighbour	1	1	3	3	6
Noone	11	19	49	21	27
(Column Percentages)					

Table 6.5 shows even stronger status-related differentials in the care of weaned children. It indicates that weaned children of daughters-in-law were spending nearly half their time in the care

of their mothers, who as described, are also carrying out household tasks for much longer periods than women in other status groups. By contrast, children of women who lived in households with other women of head status spent less than a quarter of time with their mothers and more time with older brothers or maternal grandmothers. Most importantly, therefore, in extended families children are not looked after by paternal aunts or their half-siblings - ie their mothers' co-wives or sisters-in-law and their children, but rather by their older siblings or maternal grandmothers from outside the household. Women who are alone are able to draw on paternal aunts (in these cases the divorced sister of their husband) and the child's father for additional care. Interestingly, both lone women had 'helpers' (see Appendix XIV) who, spent comparatively little time assisting with child care, and more with food preparation. Observation seemed to reveal that where a woman had a 'helper', she directed the 'helper's' work towards household tasks, particularly pounding and cooking, rather than child care, leaving herself free to look after her children, to socialise and to carry out personal economic activity.

The child whose mother was a female head was either alone, or in the care of a neighbour when not with her mother, as the latter lacked any intra-household surrogate carers. Importantly, the weaned (fostered) child of the head with daughters-in-law (Child number 8 - Appendix XII) spent nearly half her time alone or else in the care of a maternal aunt who lived in the same household. She was however, extremely self-reliant and occupied herself independently away from the household.

This suggests that whereas women will unite for food preparation and assist each other with tasks that are for the common household 'good' - ie which benefit the male family members - they act independently when carrying out tasks which are for the benefit of their separate nuclear units within the extended

family. For the men of the family who are united by blood and therefore by lineage and inheritance, mutual assistance for example with cultivating or herding tasks is normal and expected. For the women, however there is very little inter-nuclear unit co-operation within the larger family, and it was noticeable that women turned to their own natal households for assistance with child care or commercial activities. The notion of the extended family therefore, in practical terms seem to be a male construct for which there is no parallel female equivalent. When a child becomes sick however, the fact that (as discussed in Chapters IV and V) the child is considered to 'belong' to the marital family and not just to the woman, means that concepts of co-operation and mutual assistance that are normally reserved for common goals such as food preparing are brought into play. Thus Chapter IV demonstrates that during children's illness events women in 'egalitarian' households and the daughters-in-law with peers consult each other and offer opinions and sometimes treatments, despite the fact that they give each other very little help with child care on a day-to-day basis.

The lack of care for a child given by its half-siblings or its mother's marital relatives has been documented elsewhere in Africa when it has been noted that it is the child's full blood siblings, who are primarily drawn in to child care roles (Borgorhoff-Mulder 1985, Wenger 1989). This is certainly consistent with the findings in Dirimbe but could be expanded to also include the mothers blood relatives, as maternal, rather than paternal, grandmothers and aunts have been shown to play an important caring role.

By using her older children as surrogate carers, a woman in effect limits her child's daily patterns of inter-actions to those that occur with his immediate family members within the extended household unit. The lack of prolonged time spent with paternal aunts and uncles and even grandmothers, means that for

many children the principal non-parental or non-household adult they are having sustained contact with is their maternal grandmother. Sibling care therefore becomes part of a shared nuclear functioning family system within the extended family unit, but in addition, a mother's power relationships with non-sibling caretakers can have important implications for health as described below.

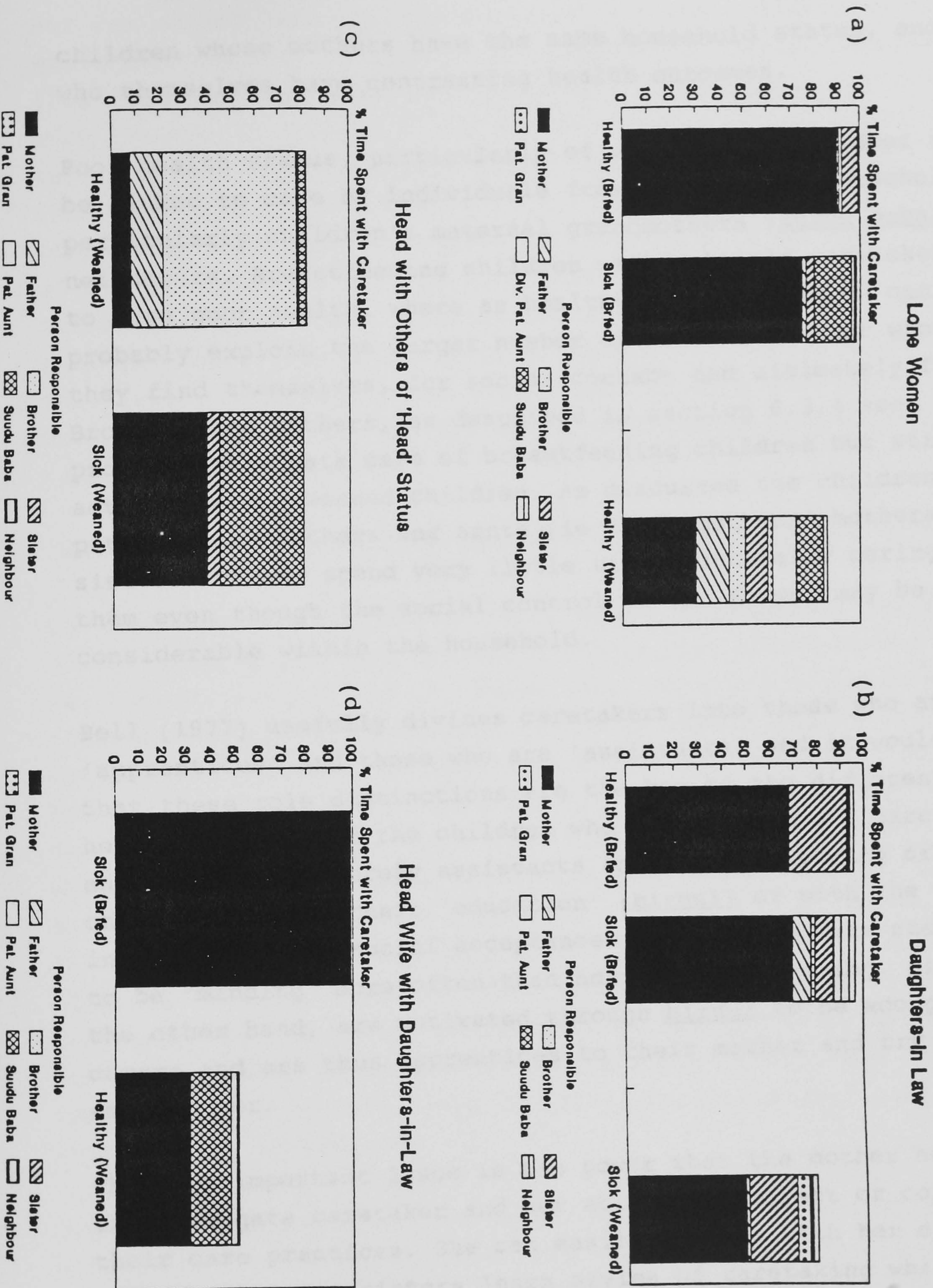
6.6.4 Women's Power Relationships with Surrogate Caretakers.

Given that the structure of a woman's nuclear family unit rather than her status within the extended household, leads to the use of specific surrogate caretakers, it is possible to analyse the links, between the mother's household status, her relationship with the caretakers she employs and the health of her child. Just as fostered children move physically from their low status biological mothers to high status foster mothers described in Chapter V, similar power dynamics are evident between women and their child minders, which may lead to differential health consequences for the child. In addition, it is assumed that the mother actively chooses the surrogate caretaker. However, in many instances, such as those described in Section 6.3.5, she may not be given a choice as elderly mothers or, more rarely, mothers-in-law insist on being responsible. A mother's power relationships with such childminders, particularly elderly grandmothers over whom she has little control, has been documented elsewhere and is usually linked with detrimental child health outcomes (Miles Doan and Bishart 1990).

Figure 6.8 (a-d) show for married women how the combination of their status and choice of surrogate caretaker inter-act in relation to the child's health status. Unfortunately, equal numbers of 'sick' and 'healthy' children were not available within each status group, but some interesting patterns are still evident. These serve to identify care differentials between

Figure 6.8

Caretakers of Sick and Healthy Children by Maternal Status



children whose mothers have the same household status, and yet who themselves have contrasting health outcomes.

Poor health status, particularly of weaned children does seem to be linked to care by individuals from outside the household - particularly children's maternal grandmothers (suudu baba) and neighbours. Breastfeeding children with multiple caretakers seem to have poor health, where as healthy weaned children can probably exploit the larger number of relatives under whose care they find themselves, for social contact and ultimately food. Brothers and fathers, as described in section 6.3.4 seem to provide inadequate care of breastfeeding children but stimulate active healthy weaned children. As discussed the children's paternal grandmothers and aunts (ie their mothers' mothers and sisters-in-law) spend very little time practically caring for them even though the social control of the former may be considerable within the household.

Bell (1977) usefully divides caretakers into those who are 'apprentices' and those who are 'assistants' and it would seem that these role distinctions are the key to the differential health outcomes of the children who are under their care. Boys and fathers are merely assistants and are not looking after the child to further their 'education' (birgul) or with the goal of increasing their social acceptance. Indeed they were shown above to be 'minding' more often than actively intervening. Sisters on the other hand, are motivated through birgul to be acceptable carers and are thus apprentices to their mother and try to emulate her.

The most important issue is the power that the mother has over the surrogate caretaker and her ability to direct or correct their care practices. She can easily do this with her other children - hence sisters learn styles of caretaking which reflect that of their mothers. She is, however, less able to do this with

her own mother, and it is noticeable that the children of women whose own position in their own household is fairly autonomous (for example, lone women, or heads with other heads) may not have such freedom to influence the way in which their own older female relatives or neighbours look after their children. Sicker children, even of high status or autonomous women, seem to be frequently left with caretakers over whom the mother has no social power or control, or with those who have an assistant rather than apprentice orientation. Hence in the choice of surrogate care, the presence of a 'helper' ie a young girl she can direct, is probably the most useful asset a woman can have - but her status is the key factor in determining the amount of surrogate care required.

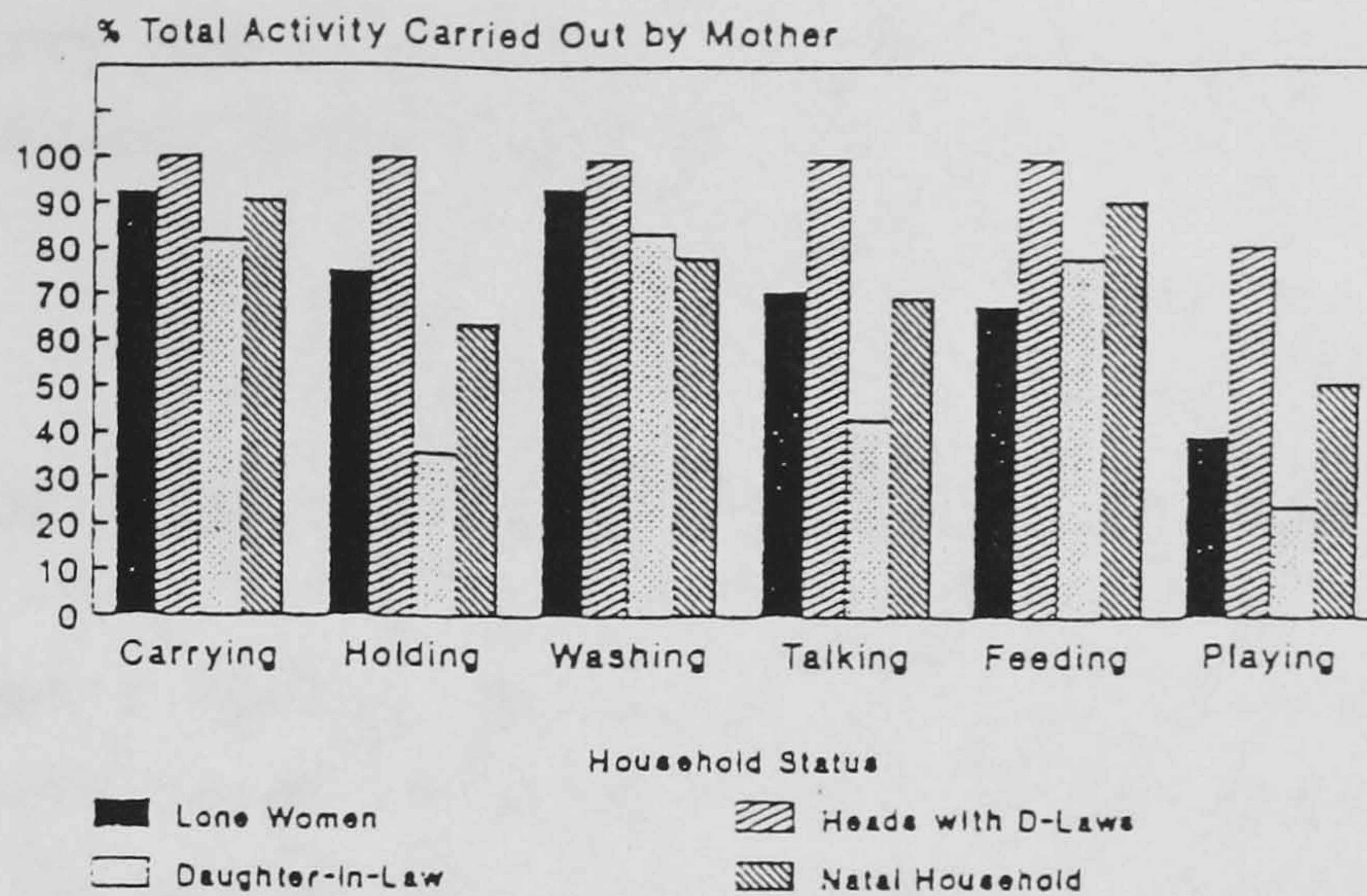
6.6.5 Status Related Differentials in Types of Caring Activity.

Not only does the amount of time a mother spends with her child differ according to her household status, but also how she spends it. Figures 6.8 (a) and (b) below show the kinds of caretaking activities that vary according to the household status of the mothers of breastfed and weaned children. It indicates that, for breastfeeding children, women who are alone and women of daughter-in-law status spend less time in what are probably considered more frivolous activities such as playing and talking, and more in the practical ones such as feeding and washing. The increased amount of time they spend in household tasks thus dictates that the actual 'caring' they carry out is of a functional rather than a social nature. Heads with daughters-in-law who are of a higher status in their households, are able to carry out more or less every activity, both practical and stimulating, themselves.

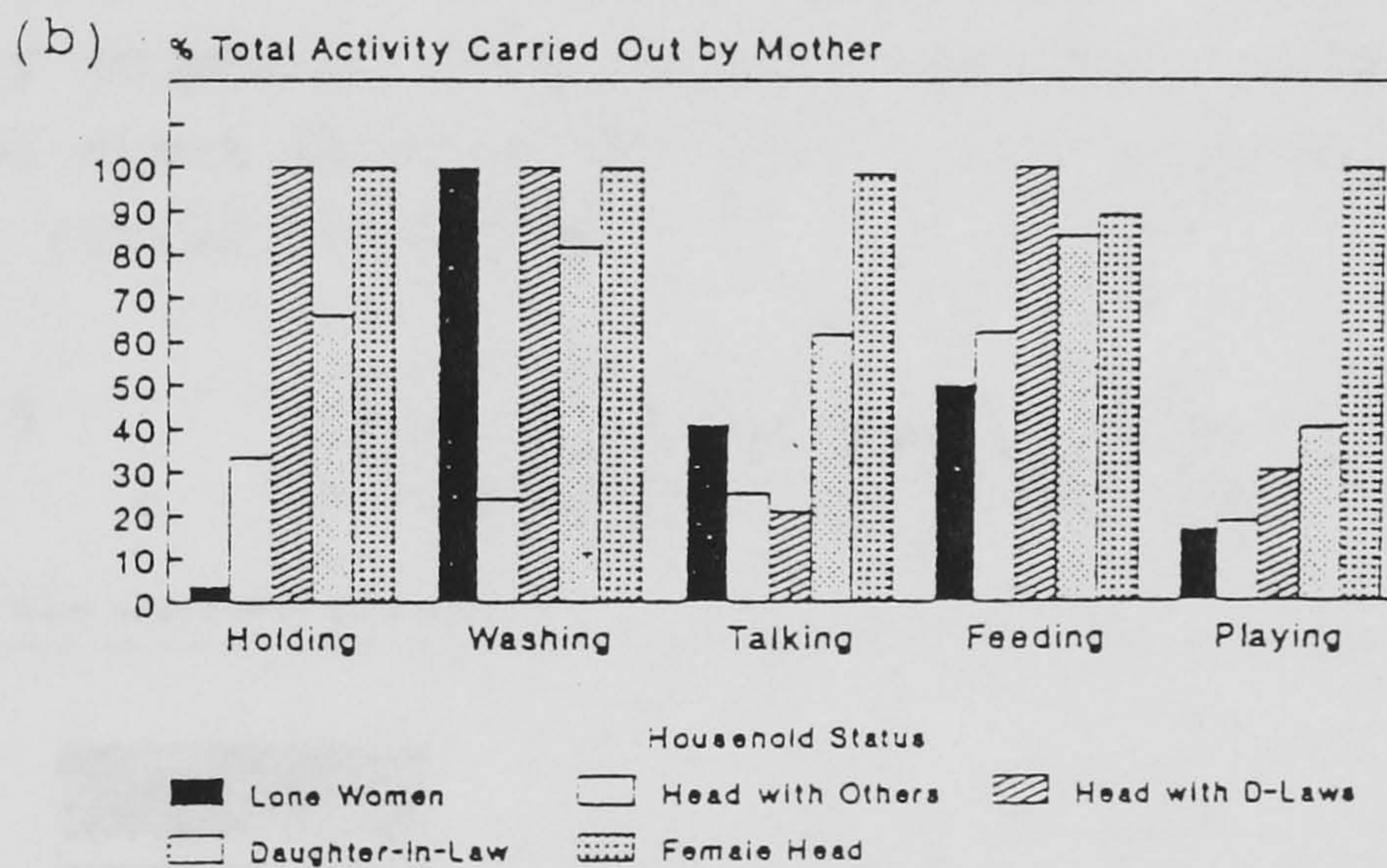
The female head carried out nearly all caretaking activities herself as her only available help was from neighbours who occasionally fed the child. The head women with other women of

Figure 6.8

(a) % Caring Activities Done by Mother
Breastfeeding Children.



% Caring Activities Done by Mother
Weaned Children.



head status although, responsible for the child a greater proportion of the time while they are doing household tasks, are able to delegate washing, talking and feeding to other household members - in this case the children's maternal grandmother or their 'helpers'.

This appears to indicate that women prioritise caretaking activities and when the amount of time they spend away from household chores directly caring for their child is comparatively

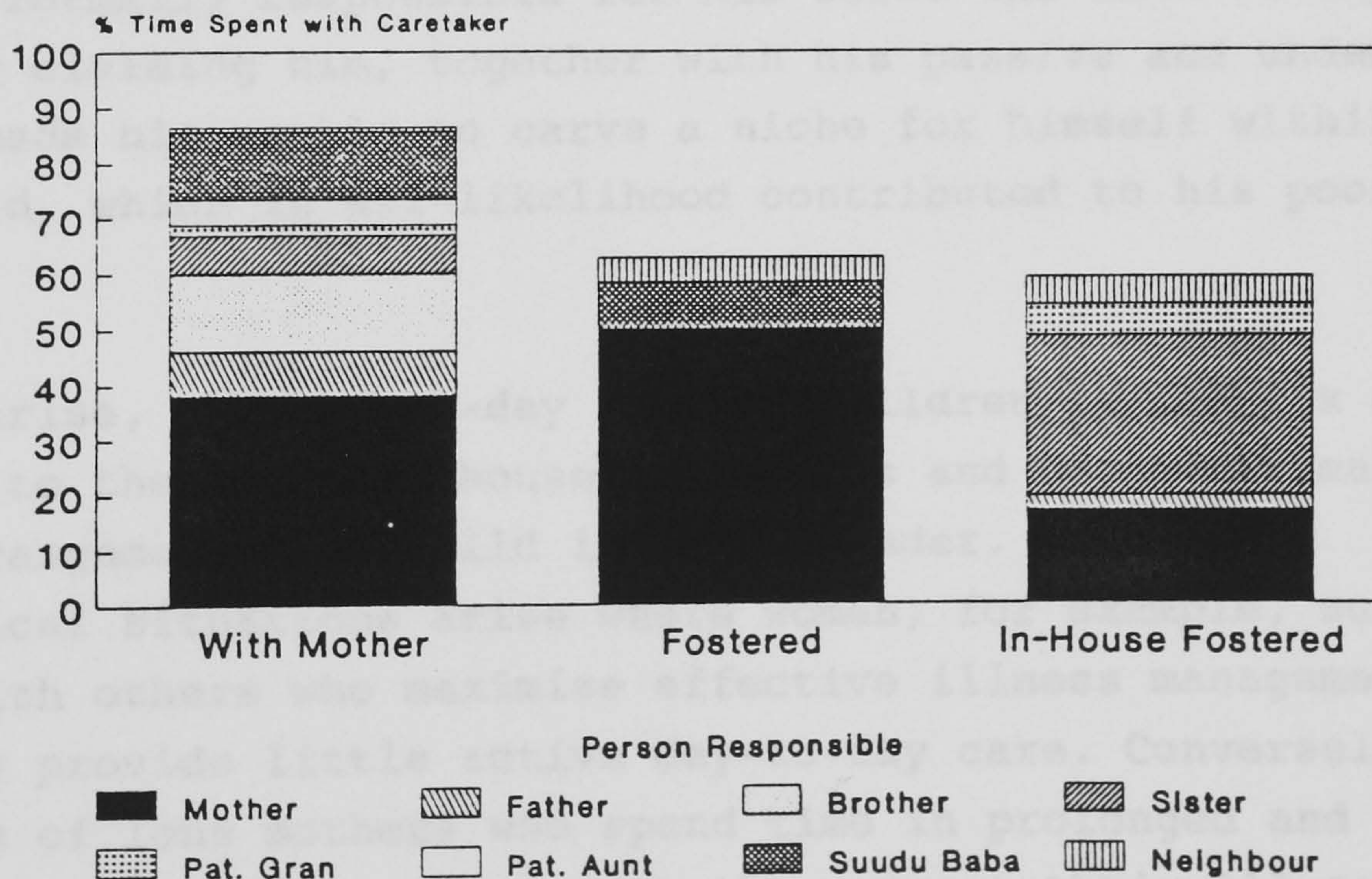
short, they carry out functional aspects of nurturing such as feeding and washing, before social ones such as talking or playing.

6.7 CARE OF INTER AND INTRA-HOUSEHOLD FOSTERED CHILDREN.

Given that women's status has an effect on the amount and quality of care they give their children, it is also important to look at the status of the child itself in relation to differential care practices. The graph below illustrates different amount of time that children under different care arrangements spend with their mothers or foster mothers. The two fostered children (both girls) were actively requested. One however went to a female head of household and spent much of the time alone as described in Appendix XII (Child Number 13).

Figure 6.9

Care Status of Weaned Child
% Time Spent with Various Caretakers.



'Mother' includes Foster mother.

The other was in a largely all female environment where she was constantly demanding food, care and attention and where she was able to perform household tasks to repay her foster family (Appendix XII -Child Number 8).

Compared with other weaned children living with their biological mothers, the fully fostered children spend a considerable amount (37%) of time alone. Interestingly, the in-house fostered boy (Child number 15 in Appendix XII) was 'with the arm' of his paternal grandmother. In reality however, he spent 41% of the time alone and only spent 5% of the time actively being cared for by her. Thus it is possible that children 'with the arm' of their paternal grandmother, receive as little care from her as other children living with their biological mothers. Even though this child slept with her and had his illness events treated by her, and was to all intents and purposes her responsibility, he received little attention from her on a day-to-day basis. Most of his day was passed in the company of his older sister or with his biological mother, who, although living in the same household, was not formally responsible for his care. The lack of anyone actively claiming him, together with his passive and undemanding nature made him unable to carve a niche for himself within the household, which in all likelihood contributed to his poor health status.

To summarise, the day-to-day care of children is complex and relates to the mother's household status and to the formalised care arrangements the child is living under. Apparently paradoxical situations arise where women, for example, such as heads with others who maximise effective illness management, actually provide little active day-to-day care. Conversely children of lone mothers who spend time in prolonged and active physical and social contact with them, treat their illnesses infrequently and inadequately. Although these are generalisations, it is clear that a woman's status determines the

amount of time she spends on household chores and her autonomy or perceived competition, in conjunction with her status determine how she spends her free time.

Although the amount of surrogate care is dictated by the status differentials described above, the type of carer is determined by the structure of the woman's immediate nuclear unit and the quality depends on her social relationship with the surrogate carer. Thus many multi-faceted social factors inter-act with, and may be modified by biological ones, such as a visible faltering in the expected development of the child or an acute illness event.

CONCLUSION.

The Douentza populations are what demographers would describe as 'traditional'. That is to say mortality remains high, with no recent declines, and cultural values together with a lack of family planning services means that 'natural' fertility is the norm. Ecological conditions, health beliefs and illness taxonomies vary only minimally between the Humbebe and the Fulani, neither of whom use health or educational facilities to any substantial degree. It is proposed that mortality differentials between the two ethnic groups (and Fulani social classes) are a result of different characteristics of household form and function, which lead to women occupying different status positions within their family environments. These status positions are associated with varying degrees of autonomy and control of other household members' labour and with differential access to social, financial and psychological resources for health.

The data facilitate an examination of intra-household variation in the identification and treatment of illnesses and in the day-to-day care of children. This is not to say that community level factors are not important, but as described in Chapter I, the indigenous 'social security' systems and inter-household non-kin networks that exist, serve men rather than women.

Community-held traditions, customs and norms may serve to broaden our understanding of the social processes that accompany the health transition, but on a household level they are frequently side-stepped, exacerbated or modified through within-household female status differentiation. In short, the household is not the tidy unit of analysis it is assumed to be (Bledsoe and Gage 1987) and nor do all members, united by gender, pursue the same goals in order to maximise benefits to their sex within its boundaries.

Ignoring power relations within the household is tantamount to saying that it does not matter who seeks the information and who makes the decisions; all household members will look after the best interest of everyone else (Miles Doan and Bisharat 1990). By overlooking such differences within populations who have not yet begun mortality or fertility declines, important determinants of how these reductions may be precipitated are left unexamined.

As described, female status has proved to be a contentious issue, in the theories of fertility, mortality and health transitions, with inter and intra-gender boundaries of definition often being unclear (Oppenheim Mason 1988). On a household level, a woman's decision-making autonomy and her socio-economic resources in relation to those of men, or in relation to those of higher status women such as a mother-in-law, are described but rarely measured (Caldwell 1986). The data from Douentza has attempted a systematic documentation of these differences and has shown the importance of intra-household variation in female status defined by labour obligation and co-operation. It is argued that **within households**, the position of women in relation to each other is equally, if not more important, than their position in relation to men, in terms of being able to mobilise resources to care for, and to treat, their children.

The combination and flexibility of field techniques that were used, also contribute important insights into family or household structures and dynamics. The analysis presented has enabled a detailed examination of the form and function of various households and the differential position of women within them. The evidence suggests, as found in other African contexts, that the health transition components have to be sufficiently flexible to be remodified for accurate explanations at the household level. While poor economic conditions or high fertility place limits on food or money that children can receive from household resources, stratification among women and children within

households can create selective allocations and produce different mortality and morbidity risks (Bledsoe and Isiugo-Abanihe 1989). Although intra-household variation in female power relationships and the importance of extra-household resources, such as natal kin, has been extensively documented in South Asia (Jeffrey et al 1988, Fricke et al 1992) these important dynamics have been neglected within the African setting.

Clearly, the data from rural Mali indicate that hierarchical power structures that affect both mothers and their children operate to different degrees depending on the health status of the child. The fact that the child's perceived health status influences the mother's resources for treatment is, in itself, an important factor worthy of further exploration. The data showed that (among the households in this particular sample) a child's illness was often the catalyst for initiating social support between women in the same household, and sometimes practical assistance, for example, by lending each other treatments. The child's illness under these circumstances threatened the 'common good' or equilibrium of the household, and as such merited (albeit limited) female co-operation. In these cases, the structure of the extended family and the mother's social position within it, are important determinants of her ability to successfully manage the child's illness, and of the resources she can call upon from women who are superior, inferior or equal to her in the household.

By contrast, during the day-to-day care of children, it was shown that the structure of a woman's nuclear family was more important in providing surrogate care and in determining its quality. The presence of a 'helper' - (a young girl over about eight years of age) appears to accrue significant advantage to the mother, who then has control over the amount and type of non-maternal caretaking provided. Observational work showed that in addition to directly caring for their younger siblings, helpers were often

put to work in tasks relating to food production thus freeing their mother for child care. The lack of a 'helper' means that male caretakers, and in particular, maternal grandmothers were used more frequently, and were shown to provide care of a lower standard, which the mother herself has no ability to correct or control. As described, women's status in this case determines the amount of surrogate care she is obliged to use, due to her own preoccupation with household tasks. The structure of her immediate nuclear family, (even if she is living in an extended household), determines the quality of such care.

It has been emphasised how these data represent a mere 'snapshot' in the lives of particular women in certain households in a selected community. The rights and responsibilities associated with specific status categories, may change during a mother's reproductive years and with the social reproduction of her household. It is possible therefore that a woman may move from being a lone daughter-in-law to becoming a head with daughters-in-law within her reproductive life time. By contrast, she may remain in the same position her whole life, if her children form their own households on their marriage. It is necessary to remember therefore, that the household is a dynamic unit changing both seasonally and inter-generationally. Men, women and children fulfil inter-linked roles within it, united by affiliation to a common lineage, but are also differentiated by labour obligations to specific individuals of their own gender.

Many studies, assume a woman's rights and resources to be constant throughout her child bearing years, such as those concerned with explaining the clustering of child deaths (Das Gupta 1989). These fail to take into account that a mother's first and last birth may occur when she is subject to different obligations, and has access to different resources due to the changing nature of her own power and influence in her household environment. These are important considerations which cannot be

measured or controlled for in the statistical sense, but which can only be monitored by in-depth longitudinal studies.

The changing dynamics of co-operation, and the relative self-sufficiency of women within extended families, help to explain why, for example, macro-level surveys have found little difference between the health outcomes of children of polygynous and monogamous women (Desai 1991). Women negotiate to achieve an equilibrium of autonomy and authority, the balance and intensity of which, appear to change with a child's illness event which shifts the focus of their domain from the nuclear unit to the household as a whole. The identification and perceived seriousness of illness events which merit this shift, and the subsequent mobilisation of household resources are, in themselves, a function of status as shown in Chapter IV. In addition, what seems to be consistent is that women's status in relation to other women in the household, seems to affect their opportunity to exploit resources controlled by their husbands. Demographers concerned with women's household status therefore, may gain more accurate insights from examining household processes and dynamics rather than form, and household function rather than structure.

The study raises important considerations for natural fertility and high mortality populations which are inadequately differentiated by conventional demographic analysis. Although many studies distinguish between societies that have varying amounts of access to health and educational services, it is often assumed that 'traditional' communities exhibit undifferentiated patterns of female economic activity or resource allocation (Oroboloye and Caldwell 1975, Kritz et al 1992). This study has shown that just as education can be equated with a woman's increased control over household resources, intra-household variation in the social position of uneducated women can affect their degree of authority and control in a similar manner,

although perhaps not to a similar degree.

Furthermore, Chapter V showed that the economic costs of child bearing can be mitigated by either formal or informal fostering, and the time costs by the use of surrogate caretakers. Rather than fostering acting as a 'pressure release' for over-burdened parents who are able to redistribute their children within the community, it was shown that movement of children from biological mothers to foster mothers is rigorously controlled by the female social hierarchy. It is not therefore, as is commonly assumed, a random occurrence where all women have an equal right to bring up the children of other women.

The influence of women's social status on illness management and child care arrangements can be tested at a larger scale through the addition of specific questions which, for example, capture intra-household differentials in treatment patterns or in non-maternal caretaking. Indeed, the value of such small in-depth studies is to generate hypotheses from observation at the micro-level to test amongst larger populations within different cultural and socio-economic settings. An on-going link from the macro to the micro, not only adds a depth and breadth of explanation to quantitatively constructed assumptions, but also serves to collect evidence to challenge and retest theories at a variety of scales.

Thus the study contributes to our knowledge of micro-level differences in the status of women, and accurately records the changing dynamics of the boundaries, form, and function of households of varying types. It is hoped that further work with the communities concerned can follow specific women as they journey through their life course and gradually accumulate the knowledge, power and resources that enables them to effectively care for, and treat their children.

APPENDIX I: THE HISTORICAL, CULTURAL AND SOCIO-ECONOMIC SETTING
OF THE SUB-SAMPLE VILLAGES.

History.

Dianweli.

Behind the current site of Dianweli, back in a valley in a remoter part of the Seno, there used to be a village called Douna which became very overcrowded. Some residents therefore established a second village nearby, but the chiefs of the two villages waged war against each other and there was much bloodshed. As a direct consequence of this, it is said, it did not rain in Douna or the neighboring village for seven years. The residents of the second village therefore moved away to the site of the present day settlement and called it Dianweli (literally 'Peace is Good'). Subsequently, the first Dianweli split into Dianweli Maounde (great Dianweli) and Dianweli Kessel (new Dianweli), the latter being just 2km away on the path to Douentza. The field research was done entirely in Dianweli Maounde.

Following the establishing of Dianweli Maounde at its present site, the population (unlike the more isolated cliff villages) was caught up in the Islamic jihad of Cheikh Amadou and were converted to the type of Islam he proselytized, namely 'Quadiriyya'. Today the village boasts a mosque and three eminent marabouts. This is not to say that animist practices have not been retained, but they are more concerned with supernatural explanations and superstitions. The 'official' religion of the village is Islam.

Dirimbe.

The future site of Dirimbe was identified during the 19th century by the warrior Gueladjo Hambodejo. He waged war against the Bobo and subsequently established the kingdom of the Kunari near Bandiagara (Sanankoua 1990). His army wanted to capture the Dogon village of Petaka 3km north of Dirimbe but were said to be repelled by the magic powers of its residents. He returned to the site of Dirimbe after each unsuccessful attack and proclaimed that one day a village would stand there and even planted 'doum' (palm) trees whose leaves, to this day, are used for mat weaving by the women.

Oral tradition recounts that in the year of Cheikh Amadou's arrival in the Macina (1818), illness, possibly cholera, ravaged many of the Fulani villages around Douentza and many Fulbe, fearing death, moved to Dirimbe and established a new village. The founder of the village was a Pullo called Hamadi Iyore of the Nialibouli-Dicko clan, and relative of Nouh Edjere, the founder of the town of Douentza. Later the first Dimadjo, Aguibé Guindo,

a Dogon from Koro, near the present day Burkina Faso border, came to settle in Dirimbe.

Subsequently many Fulbe from Douentza (of the class 'Warkambe') of different clans (Nialibouli-Dicko, Sankare and Diallo) used Dirimbe as a summer residence whilst they moved their cattle away from the town during the wet season. Eventually, they took up permanent residence in the village and constructed 'banco' (clay) houses there. Dogon, Bambara and Songhai families from Douentza and neighboring villages of Ouallo, Petaka and Guelgodji moved in. They started working for the Fulbe families for money (mainly to pay taxes imposed under the colonial rule) and gave their daughters to Fulbe men as concubines. Subsequently, many Fulbe/Rimaibe symbiotic relationships developed as the Dogon and other groups became dependents. Even today many Dirimbe Rimaibe families retain the names of Ongoiba (Dogon), Coulibaly (Bambara), and Maiga (Songhai), as proof of their heritage. Thus, the Rimaibe of Dirimbe were not 'captives' in the traditional sense like the Rimaibe of the Macina, and never, for example, cultivated for the Fulbe without being rewarded with money or gifts.

Dirimbe became part of the 'Dinna', the Islamic empire of Cheikh Amadou established between 1818 and 1864 (see Ba H, and Daget 1962 for a comprehensive account of the Dinna) which extended from the Macina as far as the village of Dallah 40km north of Dirimbe. However, then they were conquered by the Tijane under the campaigns of El Haj Umar Tal who deposed Cheikh Amadou at his settlement of Hamdallai near Mopti, and killed him. Dirimbe was subsequently reconverted to 'Quadriyya' (the type of Islam practiced by Cheikh Amadou) by Ba Lobbo, a follower of Amadou Amadou (the grandson of the late leader) who ousted the Tijanis from Dallah to Bandiagara. Today, like the people of Dianweli, Dirimbe adheres to the Quadriyya - the religion of the original Dinna.

Ethnic Composition.

Dianweli

The whole population is Humbebe - a particular clan of Dogon people who were known for their courage and fighting abilities against the other Dogon and Fulbe of that area. All have the family name (jammore) of 'Ongoiba' except the caste of indigo dyers. Some Fulani (Fulbe) families live seasonally outside the village with their cattle and the women come into Dianweli to sell milk. They are not however permanent residents and were not enumerated as part of the village. Formerly, highly endogamous, in recent years many Humbebe marriages take place with other Ongoiba families and an increase in both male and female seasonal labor migration has led to a greater 'openness' of these communities which will be discussed in Chapter I.

It should be noted that the chief of Dianweli who died in April

1990 commanded a great deal of respect nationally in Mali, as did his son Oumar who retained a powerful position in now overthrown government of Moussa Traore. This seemed to result in the village getting a lot of 'gifts' such as 'free' millet diverted from food aid meant for distribution in the 'cercle' of Douentza generally.

Dirimbe

Dirimbe has a slight majority of Fulbe rather than Rimaibe residents, but from December until July most of the former depart for the 'bourgou' or for the 'kunari' and during this period the village is largely composed of Rimaibe. The Rimaibe are located in a geographically different area of the village in clay houses. Although most Fulbe families have some sort of banco dwelling, most, in addition, construct a straw hut (bourgourou). As the Dirimbe Fulbe leave, Fulbe individuals and families from other villages who are also in the middle of their seasonal trans-humance move in and occupy the empty Fulbe houses. Many Rimaibe women made quite substantial amounts of money providing 'bed and breakfast' to passing lone male Fulbe herders on their way to the 'bourgou', selling them tea and kola nuts on a regular basis. Additional Fulbe, Tamasheq and Bella families establish themselves on the outskirts of the village for a few weeks or months at a time and thus the 'dynamics' of the village change quite considerably depending on the time of year. Although many of these passing Fulbe families seemed to be active in village life, especially if they had a 'host-guest' (njaatigi/kodo) relationship with a Dirimbe household, many people did not know the visiting families well and even the chief was unable to list all of them by name.

Water Supply.

Dianweli

Two concrete wells with pulleys were established by Non-Governmental organizations (NGOs) several years ago and one additional hand dug well closer to the village still remains in use. There are three seasonal ponds in the middle of the village but most drinking and washing water comes from the wells. However, one or two families still drink from the ponds as they complain that the well water is 'bitter'.

Dirimbe

Until May 1990, during each rainy season through to November, the drinking water came from two ponds that are also used for washing clothes and people and for watering cattle. During this time the water was extremely murky although the Fulbe tend to 'purify' dirty water with either ash or soured milk. The Rimaibe families who cultivate additional gardens also got drinking water from

shallow hand dug wells that were situated in each garden and belonged to each private owner. The Rimaibe complained however, if the Fulbe women (none of whose families owned gardens) came and used them.

During the cool and dry seasons two large hand dug wells were opened up having been locked during the rest of the year. They were very unstable and had to be dug out every couple of weeks. In May 1990 however, the US Peace Corps built two dutch-brick concrete wells in the village much to the delight of the residents. However, many Fulbe still preferred the taste of the pond water even though they knew that the well water was better for their health. It is also much easier to fill a bucket or clay pot at the pond rather than have to borrow or buy a well bucket, so in reality the use of the wells, certainly by the Fulbe, was actually rather limited.

Female Economic Activity.

Dianweli

All women have at least one field that is given to them by their father-in-law at marriage. Often these and the family fields are located at some distance from the village and sometimes the whole family, or just the able-bodied men, move out to live in a hut near their land during the rainy season. In her private field, a Kumbedjo woman grows millet for her own use. This is usually used to make 'cobal' (gruel) for her and her nuclear family within the extended household, sold in order to buy condiments or exchanged with Fulbe women for milk.

In addition some women spin cotton which they give to a male weaver and then to the women of the caste of indigo dyers in Dianweli who dye the cloth and then give it back to be embroidered and sold. Most importantly, nearly all women practice some sort of 'petty commerce' either at the market of Douentza or at the local market in Dianweli. They may sell 'macari' (a local condiment), salt or dried fish, often buying on credit and keeping the profits to invest in purchasing animals which they fatten up and sell. It was not uncommon for women to indulge in several economic activities at the same time, buying, reselling and reinvesting many different commodities.

In addition to the caste occupation of indigo dying, the making of pestles and mortars (an exclusively male activity) was also considered to be a caste occupation. The wives of the woodworkers however, like the caste women of Dirimbe, were also expected to receive food or money on social occasions such as marriages or baptisms. To give to caste groups and ceremonies was thought by both the Fulani and the Dogon to bring luck, minimize the possibility of insults and slander and to be socially obligatory.

Dirimbe

Most Rimaibe and Fulbe women make mats (dage) out of palm leaves. They are constantly weaving them from the age of about 10 and sit around daily in each other's houses chatting and gossiping. These mats are sold in Douentza for about 250 CFA (c.50p) although most women wait until they have 10 or 12 to sell at a time and then use the profits to buy clothes or jewelry, or a small goat to fatten up and resell. In addition Rimaibe women have a field (korga) that was given to them by their father-in-law at their marriage in which, like the Dogon, they cultivate millet for their own use.

The economic activity of Fulbe women is centered around milk selling - they practice no agricultural activity. Fresh milk (biradam) is given to a woman in the evening by her husband and usually a portion of it is drunk with the evening meal. The rest is left to sour over night and in the morning she may make butter (nebam) which is then taken to town with the soured milk (kadam) to be sold door to door by the spoonful. Money from the milk sold goes to buying millet and condiments for the family's next two meals depending on the number of 'jom kossam' (milk sellers) in each household. A woman who is the only jom kossam in her family can find that she has to sell milk every day and use nearly all the money to feed the family. By contrast, in households where, for example, there are four or five young women, each of them only has to sell milk every other day and can keep more of the profits for their own use.

Any money left over once the millet and condiments have been bought belongs to the woman herself and she may use it either to buy treats in the market for her children such as peanuts, but more usually save it up to buy clothes or jewelry.

Caste families in Dirimbe have their own economic activities. The lawbe carve wooden bowls which the women then blacken with ash to make them decorative. The main activity of lawbe men and women is however 'praise singing' which in reality usually involves inflicting a kind of socially acceptable emotional blackmail on the rest of the population by implicitly threatening to slander them unless they give them money. Griot women can 'menace' anyone in this way to get money to buy food or anything they desire. All griot children in the sample who became sick were treated with cures paid for by their mothers going and 'singing the praises' of individuals either in the village or in the market of Douentza.

**APPENDIX II : Numbers of Children Surveyed and Numbers Reported to
be Sick Each Month:**

	Dianweli		Dirimbe			
	Humbebe		Fulbe		Rimaibe	
	Seen	Sick	Seen	Sick	Seen	Sick
1990						
January	43	14	20	11	41	21
February	44	15	20	9	35	17
March	47	13	20	5	36	17
April	45	12	19	5	36	16
May	45	8	20	3	39	12
June	47	8	25	6	39	15
July	49	11	35	10	42	17
August	47	11	43	17	40	13
September	48	9	47	19	48	20
October	41	8	42	8	43	11
November	39	6	39	7	41	13
December	35	7	44	16	46	19
Total:	530	122	374	116	486	191

NB: The total number of illness profiles collected was only 411 as in 18 cases the mother/foster mother was not available to give an account of the illness. In most cases she had left the village or was otherwise occupied between the initial identification of the sick child and the collecting of the detailed information. Proxy reports (eg from siblings or grandmothers) of each stage of the illness management were not accepted unless the child was said to be 'under that person's arm' and thus formally cared for him/her (see Chapter V).

APPENDIX III: METHOD USED TO CALCULATE A COMPOUND SCORE OF ANTHROPOMETRIC STATUS AND DIARRHOEAL EPISODES.

Number of Episodes of Diarrhoea.

Number of Visits (Jan-Sept 1990):	*0	1	2	3	4	5	6	7	8	9
1**	0	...	...	...	...	...	...	...	...	...
2	-2	50	100	...	...	...	...	...	...	...
3	-3	33	66	100	...	...	...	...	...	...
4	-4	25	50	75	100	...	...	...	...	...
5	-5	20	40	60	80	100	...	...	...	...
6	-6	17	33	50	67	83	100	...	...	...
7	-7	14	28	42	56	70	85	100	...	...
8	-8	12.5	25	37.5	50	62.5	75	87.5	100	...
9	-9	11	22	33	44	55	66	77	88	100

* A 'bonus' was given for having had no episodes of diarrhoea.

** Children who had only been visited once were excluded to reduce bias.

1. The initial diarrhoea score is selected from the table above using the number of diarrhoea episodes out of the number of visits the child received.

2. The child's Z Score from NCHS Average (Weight-for-Height or Weight-for-Age) is then calculated and the following scores of anthropometric status added to the diarrhoea score:

Z-Score	Score of Anthropometric Status
0+	0
<0 to -.99	25
-1 to -1.99	50
-2 to -2.99	75
-3 to -3.99	100
-4 to -4.99	125

APPENDIX III CONT...

Examples:

SEYDOU.

In September 1990 Seydou aged 20 months had been visited 9 times and during 2 of these visits he was found to have diarrhoea.

His diarrhoea score is therefore 22.

His September weight was 8.4kg and his height was 73cm.

Using NCHS Tables his weight-for-height Z-Score is -1.14 and his weight-for-age Z-Score is -1.14.

His weight-for-height anthropometry score therefore = 50.

His weight-for-age anthropometry score therefore = 100.

Wt/Ht Score: Diarrhoea score + anthropometric score (weight-for-height)

$$= 22 + 25 = 47.$$

Wt/Age Score: Diarrhoea score + anthropometric score (weight-for-age)

$$= 22 + 75 = 97.$$

DIKKORE.

In September 1990 Dikkore aged 50 months had been visited 9 times and had never been found to have diarrhoea.

Her diarrhoea score is therefore -9.

Her September weight was 14.6kg and her height was 94cm.

Using NCHS tables her weight-for-height Z-Score is +0.49 and her weight-for-age Z-Score is -0.95

Her weight-for-height anthropometry score therefore = 0.

Her weight-for-age anthropometry score therefore = 25.

Wt/Ht Score: Diarrhoea score + anthropometric score (weight-for-height)

$$= -9 + 0 = -9.$$

Wt/Age Score: Diarrhoea score + anthropometric score (weight-for-age)

$$= -9 + 25 = 16.$$

APPENDIX IV : DIFFERENTIALS IN MORTALITY BY ETHNIC GROUP AND VILLAGE.

	Dianweli Humbebe		Gono Humbebe	
1q0	82		113	
12q0	163		154	
48q12	201		327	
60q0	331		431	
Number of Live Births at Start:	159		140	
	Dirimbe Fulbe	Debere Fulbe	Gono Fulbe	
1q0	88	119	69	
12q0	274	222	245	
48q12	421	335	541	
60q0	579	483	653	
Number of Live Births at Start:	113	42	29	
	Dirimbe Rimaibe		Debere Rimaibe	
1q0	49		89	
12q0	154		227	
48q12	317		320	
60q0	422		474	
Number of Live Births at Start:	102		113	

APPENDIX V: CASE HISTORIES OF FATAL ILLNESS MANAGEMENT.

Hama.

Hama, a Dimadjo boy, aged 39 months in January 1990, was the first child of Adama, a twenty-four year old woman who was seven months pregnant at the time of his death in April. A child born between Hama and this current pregnancy had died aged 17 months of diarrhoea diagnosed as foundou.

When Hama was weaned he was sent to live with his paternal grandmother, an elderly woman of about sixty who still lived in the same household as the household head from whom she was divorced. Neither she nor her ex-husband had remarried but continued to live together with their sons as one extended family. Responsibility for the care of Hama was claimed jointly by his mother and this grandmother. He was not formally 'fostered' as such, but simply ate and slept with the old lady and was said to be 'with her arm'. Adama's husband was the eldest son of the household head but was working in Bouake in the Cote d'Ivoire, and then Mopti at the time of Hama's death. Adama was the only daughter-in-law in the family and as such responsible for all food preparation and household tasks.

In January 1990 when the monthly morbidity follow-ups started, Hama was found to be suffering from a cough, cold, fever and weight loss which had lasted three days. His grandmother diagnosed a cold (dourma) caused by the cool temperatures of winter and gave him 'pommade chinoise' (tiger balm) to rub on his face and to drink. He was, at this point on a diet of fresh and curdled milk and the staple nyiiri oro. His grandmother bought the 'pommade' with money from her mat weaving and together she and the mother treated the child.

In February the cough and cold were still present and by now had lasted over one month. A traditional healer in a neighbouring village diagnosed a cold and gave her a powder to put on hot coals so the child could breathe in the smoke. This seemed to have no effect so Adama and her younger sister took the child to the doctor in Douentza who gave them some pills, probably aspirin or an antibiotic, which like the traditional cure were paid for by the grandmother.

By March Hama was extremely weak and malnourished and a visit to a traditional healer in the village led to a diagnosis of hendou, probably because the illness had by now lasted a long time and he had started to have convulsions. This healer gave them powder to put on hot coals and roots to mix up with water with which to wash the child and to give as a drink. At this point the grandmother said that the dispensary was no longer able to cure Hama even

though she had been happy to take him there before hendu had been diagnosed. Subsequent visits to a marabout and to four healers in villages many kilometers away resulted in confirmation of the hendu diagnosis and a repetition of treatments similar to those described above. Hama's grandmother took him to these healers accompanied by his mother, and it was she who paid for the treatments, either with money from couscous she had sold, or by giving chickens as gifts. By this point Hama could not sit up and being unable to take solid food was existing entirely on gruel (cobal) and a little soured milk (kadam).

By early April he was virtually unconscious and lying covered in bed sores on a mat under a piece of material in a dark corner of the grandmother's house. I took him to the dispensary but was told by the entire village that I was wasting my time as he had hendu. After about one week Hama died in hospital apparently from a respiratory infection confounded by severe malnutrition.

Assia.

Assia's mother Hawa, was a Kumbedjo woman aged about 30 who lived with her husband in a large extended family. Hawa had had six children before Assia of whom three were dead.

In January 1990, Assia was aged 10 months but was extremely small for her age. Her mother was convinced that the final illness was related to the fact that Assia was small at birth and because she herself did not have sufficient breastmilk. Assia had experienced weight loss over the previous month (but apparently no diarrhoea) and a cough and cold during the previous week. Hawa put karité butter in her nostrils and continued the daily routine enemas with ngouhoumi (a traditional preventive medicine discussed in Chapter IV) which she intended to do until the child started to walk. By March, Assia had a fever which her mother treated with toupaye (Nigerian produced tetracycline available in most markets). By April however, the cough was still present and weight loss and diarrhoea had started. During this period the husband tried treating the child with bark of a particular tree of which Hawa did not know the name. In addition, a visiting Aide-Soignante told her to give the child chloroquine syrup. Hawa commissioned someone to go to Douentza to buy this but by the time the person reached the town they had forgotten the name of the medicine and returned without it. At this point Hawa thought it was teething that was causing the illness but showed a number of elderly women who said that this was not the case, although none of them could suggest an alternative diagnosis¹.

¹ 'Teething' illnesses will be discussed in Appendix VI They are usually connected with fevers and diarrhoea and left to run their course.

By May, Assia was extremely marasmic and still had diarrhoea and a fever. Hawa had finally got the chloroquine and had been to an Aide-Soignante in another village who had prescribed 'sulphadimidine' (usually used to treat septic infections) - half a tablet to be given twice a day, which is less than the usually effective prescribed dose (King 1988). At this point the child was so thin and ill that I could not weigh her and even though I said I would make up ORT and a supplementary food, Hawa did not take up the offer. Hawa continued her domestic duties leaving Assia under a blanket next to the place where she and the other women pounded millet. The massive dehydration was probably exacerbated by the fact that Hawa was giving her black coffee to drink (a diuretic) and was continuing the enemas with ngouhoumi. In addition, Hawa's breastmilk which had never been sufficient was now drying up because Assia was not suckling and because she herself was fasting as it was Ramadan. As I left for Douentza I offered to take them both to the hospital and even though the head of the family and her husband insisted she must go, Hawa refused saying she had to be with her family to pray at the end of the fasting period. Later she said she did not go because she thought it was not worth it as the child would soon die.

By June the child exhibited typical symptoms of severe marasmus and had watery diarrhoea, a candida infection in her mouth, a skin infection on her head and blood and pus coming out of her left ear. Hawa still did not have a firm diagnosis of the illness from any of the healers or old ladies she had consulted, but as neither foundou or hendu had been mentioned, she could in theory still administer western treatment. She was still giving aspirin and chloroquine from a previous visit to an Aide-Soignante and boiled up tree bark gained from a final visit to a traditional healer who said the source of the child's illness was in her stomach. She had now stopped the coffee and enemas on my advice and together we prepared ORT and a high energy 'bouille' for a week. By this stage the child exhibited anorexia typical of severe marasmus, and at the end of the week she died.

These case histories serve to show how treatment strategies are influenced by the nature of the diagnosis and by covert concepts of 'responsibility'. Hama's illness was able to be treated at the dispensary while it was still a simple cold, but once it became hendu no further modern treatments were thought to be effective. By contrast Assia's illness was never properly diagnosed, despite seeking treatment outside the household and her mother could carry on using western therapy until the end. Assia's case which was followed closely illustrates two points. Firstly, that whoever carries out the treatment takes unspoken responsibility if the child dies especially when, in Assia's case no public diagnosis had been given and the illness remained, in effect, the private affair

of Hawa². Secondly, the more a case looks fatal especially in the absence of an 'a priori' hendu or foundou diagnosis, the less likely a mother is to attempt treatment and thus take responsibility for it. Hawa refused orders from the high status men in her family to go to Douentza which may have jeopardized her position in the household but at least absolved her from blame or personal guilt if, as by that stage was inevitable, the child died. However, Assia was extremely tenacious and Hawa herself was surprised about how long the child survived. By the next month she let me start preparing ORT and a high energy 'bouille' as by then the death was imminent and I, as last person to treat her, would relieve her of some of the responsibility.

The importance of household structure is also demonstrated as Hama's household in particular exhibited 'weaker' or disjointed characteristics. These, in combination with the 'intra-household fostering', served to lay responsibility with the old lady, who as a divorced woman has little social power in her own household and yet as an older woman was supposed to have accumulated medical knowledge through experience. In addition Adama, as the only daughter-in-law can divert social and financial obligation to her mother-in-law, because of her own junior position, and because of the absence of her husband. Hawa on the other hand does not have a mother-in-law in her household which may account for her lack of specific diagnosis either traditional or otherwise, or assistance with treatment from other women within the household. These examples illustrate that no case is clear cut and that even traditional diagnoses can be blurred, but particularly in the absence of a 'public' and fatal diagnosis, the responsibility of the mother is greater to bear the consequences of the child's illness alone.

²It is possible that the education, particularly of young girls in a society where few adults, especially women, have been to school, may not initially have a positive effect on health due to the nature of intra-household power relationships. For example, whilst treating Assia it was sometimes difficult to communicate with Hawa who only spoke Djamsai. After a week when we had been going several times a day to make up a high energy 'bouille' and ORT, she told me to talk to a young teenage girl in the household (her niece) who would then translate for her. It turned out that this girl had been educated elsewhere, and knew how to make up ORT but was reluctant to do so as not only would she be telling her aunt (whom she was supposed to respect) what to do, but also she did not want to be 'blamed' for the child's death, which, by that stage was inevitable.

APPENDIX VI

Perceived Causes, Symptoms and Treatments of Selected Illnesses.

Diarrhoea (Ndoggu Reedu) and Dysentary (Eme).

Prevention: Fulani: giving of suundu and ngouhoumi (combretum micanthum) Humbebe: enemas with ngouhoumi (combretum micanthum).

Symptoms: Ndoggu Reedu (lit. running stomach) is simple diarrhoea whilst for eme, blood and/or mucus have to be present.

Perceived Cause: Short episodes in infants are often attributed to teething. Diarrhoea in a recently weaned child is often blamed on the fact that before weaning the child may have suckled the milk from his pregnant mother which is said to 'belong' to the child in her womb and will therefore make him ill with diarrhoea and may even proceed to opere (kwashiorkor). Furthermore, a recently weaned child of a pregnant woman is susceptible to fever and diarrhoea caused by the 'heat' said to come from her stomach. To avoid diarrhoea from this cause, abruptly weaned children of pregnant women are usually sent to sleep with another female relative, sometimes in a different household, during the duration of the mother's pregnancy. In addition, the lack of a particular component of the child's diet to which s/he has become accustomed may also cause diarrhoea. Diarrhoea of long duration and with blood may be attributed to hendu (see Chapter III) and is considered more serious and usually treated by a traditional healer. ORT, for example would not be appropriate for treating a diarrhoea caused by hendu but may be perceived to be effective against one attributed to another cause, such as the 'heat' from a pregnant woman.

Treatment: A common cure amongst the Fulani besides giving therapeutic doses of ngouhoumi and suundu is to boil up bark from mbarkaweri (pilotigma reticulatum) tchaiki (acacia albida) and ibe (ficus gnaphalocarpa) and give the mixture as a drink or make the child sit in it. The Humbebe who give daily enemas with ngouhoumi usually continue them throughout an episode of diarrhoea, but change the plant to barakonoye or kakumban particularly if the cause is seen as being 'heat' from a pregnancy.

Dietary Changes: Both groups withhold water during episodes of diarrhoea as it is thought to 'cool' the stomach and make the diarrhoea worse. In addition, cobal (gruel) is withheld as it is considered 'bitter' and would also exacerbate the symptoms. For eme, but not for ndoggu reedu, one of the main dietary changes amongst the Fulani is to give soured milk with butter as this was said to have a beneficial effect. Fresh milk is generally

withheld as it increases the chances of the child getting kefi (see below).

Jonte and Kefi

Prevention: Leaves of dorko and yeloko can be given as preventive medicines, but unlike ngouhoumi (*Combretum micranthum*) are not given regularly to small children (see below).

Symptoms: Jonte: Headache and hot skin. Kefi: Vomiting up a substance 'yellow as the yolk of an egg'.

Western Equivalent: Malaria/Fever.

Perceived Cause: Drinking fresh milk - hence its increased perceived and actual prevalence during the summer months when more milk is available.

Treatment: Chloroquine and Aspirin or boil up leaves of ngouhoumi (*Combretum micranthum*) kaaki (*Azadirachta indica*) or tane (*Balanites aegyptica*) and wash the child with the liquid and/or give it to the child as a drink.

Dietary Changes: Withhold milk entirely or replace fresh milk with soured milk. Both the Rimaibe and the Humbebe habitually boil milk before giving it to small children to prevent jonte which may indicate some incidence of hypolactasia but further research would need to confirm this. Thus in a family with several under fives, the older children may drink fresh milk whilst infants are usually given boiled or soured milk or no milk at all.

Remarks: Kefi is usually a precursor of jonte, especially in the summer months. Most people agreed that kefi always turned into jonte, but it was possible to have jonte without having kefi first.

Kerngol.

Prevention: Leaves of wadagare given daily from the baptism mixed with karité butter. Forbidding child to venture out into direct sunlight.

Symptoms: 'Nose being eaten away', teeth falling out, a feeling that something is moving around inside the head. In children kerngol is often manifested in eye and ear infections, scalp infections and prolapsed rectum due to frequent diarrhoea. Anything where there is an outward sign of swelling and pus is usually an indication of kerngol.

Western Equivalent: Endemic Syphilis (but by extension for the Fulani, kerngol includes any severe skin, eye or ear infection with extensive pus or swelling).

Perceived Cause: Unknown

Treatment: Injections from the clinic or giving child a solution of potash made from millet stalks to drink. Scalp infections were often treated with commercially marketed blue powder used to whiten clothes.

Dietary Changes: Withhold sugar as this was thought to aggravate kerngol as was anything bitter such as lemons, soured milk or cobal (gruel).

Garooje.

Prevention: Charm from a marabout before the first tooth has come through.

Symptoms: Vary - most commonly diarrhoea, but also eye infections, fever. Some women said that whatever illness a child had when the child's first tooth came through would continue with the emergence of every subsequent tooth.

Western Equivalent: None.

Perceived Cause: Teething.

Treatment: No effective medicines available - teething illnesses are generally not treated as it is thought that when the tooth finally comes through the illness will stop, although amongst the Fulani suundu danedjo given by a post-menopausal woman is thought to help diarrhoea caused by teething.

Dietary Changes: None

Remarks: The colour and consistency of a child's stools denotes whether diarrhoea can be attributed to 'teething'. Lighter coloured stools would indicate a diarrhoea 'caused' by teething which would be left to run its course, unlike a diarrhoea attributed to another cause, such as 'heat' from a pregnant woman's stomach, which can be treated.

Doua/Marai.

Prevention: None

Symptoms: Vary - diarrhoea, fever, eye infections.

Western Equivalent: None.

Perceived Cause: An upset in the child's normal diet. For example, if a child was used to receiving fresh milk every day and then did not receive it one day, this may cause doua exhibited as diarrhoea. If a child is used to eating until s/he feels full every day and then in the dry season is unable to eat until sated, this may cause an eye infection. An upset in the diet of breastfeeding mothers may cause an illness, such as diarrhoea in their children which is then attributed to doua.

Treatment: To give whatever food had been lacking.

Dietary Changes: See above

Respiratory Infections: Coughs (Doyru) and Colds (Durma).

Prevention: None

Perceived Cause: Sudden change in temperature

Treatment: Colds were considered very difficult to cure, but amongst the Fulani karité butter is often put in the child's nostrils or hot water given to him/her at night. The Humbebe give enemas with goredji or wash the child with the leaves of albarkaredji. More commonly however, the cardboard from a sugar packet was burnt and the child forced to breathe in the smoke as it was widely believed that this was efficacious.

Conjunctivitis (naw gite).

Prevention: Fulani: Giving of suundu baledjo.

Perceived Cause: Lack of suundu, looking at someone who had an eye infection, or change in usual diet, particularly in the diet of a mother of a breastfeeding child.

Treatment: Biliteki - a topical anti-biotic preparation available at the pharmacy or in local markets was commonly used, with one tube being shared by many different people. More often amongst the Fulani, the eyes were covered with garure a red vegetable dye used by the Tamasheq in their decorative leather work. It is possible that this practise was popular because garure resembles mercurochrome - a red liquid anti-septic, or purple gentamicin eye drops, both of which are commonly used by the French. In addition, both eye and ear infections in both breastfed and weaned children were often treated by putting breastmilk on the affected area.

Dietary Changes: Rectifying whatever was missing from the regular diet if conjunctivitis is attributed to doua.

APPENDIX VII:

Mean Z-Scores for Children Weighed and Measured Each Season:

	Dianweli		Dirimbe			
	Humbebe Mean	SD	Fulbe Mean	SD	Rimaibe Mean	SD
January: (N=104)						
Weight for Height	-.43	.89	-.56	.82	-.56	.91
Weight for Age	-1.22	1.24	-1.67	.99	-1.68	1.17
Height for Age	-1.44	1.70	-1.89	1.12	-2.14	1.66
May: (N=104)						
Weight for Height	-.60	.94	-.72	.86	-.82	.91
Weight for Age	-1.36	1.21	-1.84	.19	-1.92	1.19
Height for Age	-1.46	1.45	-1.99	1.31	-1.97	1.49
September: (N=125)						
Weight for Height	-.70	.99	-.72	.86	-.89	1.02
Weight for Age	-1.39	1.12	-1.77	1.2	-1.90	1.16
Height for Age	-1.38	1.34	-1.98	1.54	-1.97	1.57

Numbers correspond to children seen in January, May and September from Appendix II.

NB: Two fostered girls aged about four (one Pullo and one Kumbedjo) were excluded from the weight for age and height for age calculations as their exact ages were not known.

APPENDIX VII CONT

PATTERNS OF FAMILY FOOD CONSUMPTION (Children over 6 Months of Age Only).

	Humbebe	Fulbe	Rimaibe
JANUARY:			
Number of Children Seen:	33	15	26
Number of Children Receiving 3 Meals a Day:	28	10	24
Number of Children Receiving Extra Food*:	5	4	6
Number of Children Receiving 'Treat'**:	1	...	...
Number of Children Receiving Extra Food and 'Treat':	...	3	...
MAY:			
Number of Children Seen:	31	12	29
Number of Children Receiving 3 Meals a Day:	27	6	25
Number of Children Receiving Extra Food*:	6	5	8

**PAGE
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AS ORIGINAL**

May Cont....

Number of Children Receiving 'Treat'**:	6	3	1
Number of Children Receiving Extra Food and 'Treat':	9	1	3

SEPTEMBER:

Number of Children Seen:	35	36	39
Number of Children Receiving 3 Meals a Day:	32	9	17
Number of Children Receiving Extra Food*:	5	11	5
Number of Children Receiving 'Treat'**:	3	3	7
Number of Children Receiving Extra Food and 'Treat':	8	7	4

* Extra Food=Nyiiiri Oro, Cobal or Milk consumed by the child in addition to the family meal.

** Treat=fruit, peanuts, 'biscuit' or other special snack.

APPENDIX VIII: FACTORS INFLUENCING THE EMPOWERMENT OF WOMEN IN ILLNESS MANAGEMENT.

Requirements for Effective Illness Management.

The figure below shows the six factors which have emerged as being important to illness management and which are strongly affected by community held beliefs which endorse different treatment procedures, and ultimately by a woman's social status within her household. These are grouped according to whether they are considered facilitating, empowering and sanctioning. The facilitating and empowering factors relate to the individual woman whilst the 'sanctioning' factors refer to her social interactions not just with the rest of her household but with the community at large. A schematic diagram is also presented of the processes that make up the 'management' of an illness which will be discussed in relation household status using supportive quantitative and qualitative evidence.

Status Related Requirements for Illness Management.

'Empowering'.

1. **Knowledge/Confidence** to pursue effective treatments, sometimes despite a lack of social sanctioning for a particular treatment strategy - eg treating 'hendu' at the clinic.
2. **Influence/Power** - to delegate tasks, to command money and/or labour from other household members, for example, to be replaced in the household rota for food preparation or to obtain surrogate childcare for other children whilst effective treatment is sought.

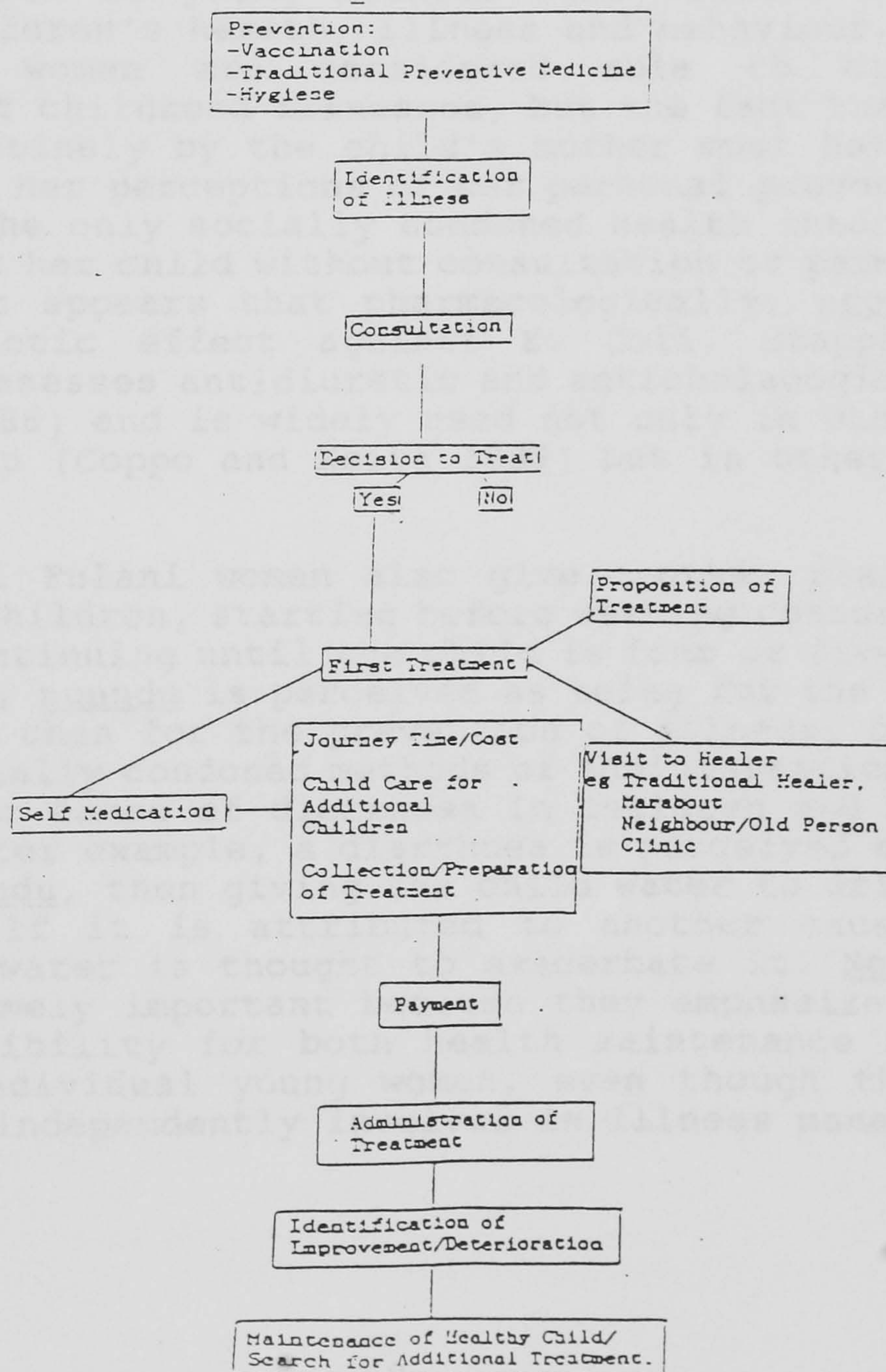
'Facilitating'.

3. **Control over use of own time** - eg ability to leave or delegate household tasks such as food preparation, for example, to search for leaves or roots used in healing or to visit traditional healers.
4. **Autonomy** - particularly to pursue treatments outside the household or to side-step control of the treatment process by a higher status household member, such as a post-menopausal woman and possibly a mother-in-law.
5. **Access to Payment/Recompense for Treatment** - eg own cash or right to demand cash from other household members, or access to material goods that can be exchanged for treatment eg a chicken, or membership of external social networks in order to borrow certain treatments.

APPENDIX VIII Cont..... 'Sanctioning'.

6. Social Acceptability and Responsibility of pursuing specific treatment strategies - eg younger women are not considered knowledgeable in curative medicine and during periods of seclusion, for example after child birth, are not allowed to venture far afield in search of treatment. Responsibility for diagnoses/treatment extends naturally to an unspoken responsibility for life or death of the child - hence the frequent giving of 'fatal' diagnoses by healers and older women.

PROCESSES IN ILLNESS MANAGEMENT:



THE IMPORTANCE OF PREVENTIVE MEDICINES.

Ngouhoumi (also known as kuyowi) (*Combretum micanthum*) is given to all children from the day of birth for at least several months but usually until weaning, to 'clean out the dirtiness from the stomach', to 'calm the child' and 'to make him feel full'. All Fulani women give this orally whilst the Humbebe give it by enema - a practice reported by other groups in West Africa for similar reasons (Lallemand 1981). Despite the real physiological danger of giving daily enemas to small children, for Humbebe women the practise does give a mother control over the child's defecation, so that for example, voluntary defecation on the ground, in the house or in the child's carrying cloth is avoided, her work less impeded and contamination perhaps reduced.

Ngouhoumi, whether given orally or by enema is therefore important because it confers to young mothers some element of perceived control over children's health, illness and behaviour. Only older post-menopausal women are considered able to diagnose and effectively treat childhood illnesses, but the fact that ngouhoumi can be given routinely by the child's mother must have important consequences for her perceptions of her personal preventive powers and is in fact the only socially condoned health intervention she can carry out for her child without consultation or permission from someone else. It appears that pharmacologically, ngouhoumi does have an anti-biotic effect against *E. Coli*, *Staphylococci* and *Streptococci*, possesses antidiuretic and anticholagogic properties (Oliver-Bever 1986) and is widely used not only in other areas of the Dogon plateau (Coppo and Keita 1989) but in other regions of West Africa.

In addition, all Fulani women also give another plant known as suundu to their children, starting before weaning concurrently with ngouhoumi and continuing until the child is four or five years old. Unlike ngouhoumi, suundu is perceived as being for the maintenance of health rather than for the prevention of illness, but involves more complex socially condoned methods of administration. A lack of suundu is a major cause of diarrhoea in children and affects its management. If, for example, a diarrhoea is perceived as being due to a lack of suundu, then giving the child water to drink will not make it worse. If it is attributed to another cause, then as described above water is thought to exacerbate it. Ngouhoumi and suundu are extremely important because they emphasize and permit personal responsibility for both health maintenance and illness prevention by individual young women, even though they may not subsequently be independently involved in illness management.

APPENDIX VIII Cont... THE ROLE OF TRADITIONAL HEALERS.

As discussed in Chapter IV, initial therapeutic strategies are very much influenced by the perceived cause of the illness (if known) rather than by the nature of specific symptoms. Data from the sub-sample indicated that for those who visited a traditional healer 47% cited a 'traditional' diagnosis (foundou, hendu or kerngol) compared with just 6% of those who visited another type of healer or who treated the illness themselves. Whether these mothers went to the healer because they attributed the illness to a traditional cause or whether the healer ascribed a traditional cause during their visit is unclear. Importantly, of those who visited another type of healer, or who personally dealt with the illness, 63% still had no idea of the cause compared with just 26% of those who went to a traditional practitioner.

The main issue concerning 'traditional' illnesses as described in Chapter III is not solely their perceived severity, but the fact that they can only be adequately recognized and treated by the healer and not by a lay person or by the clinic. Thus, in addition to the public nature of the diagnosis and subsequent management, there are strong notions of control vis à vis the relative empowering of the healer at the expense of the individual mother.

Four healers were interviewed at length during the year and it became clear that firstly, they occupied marginal and isolated social positions in their villages, which may have served to reinforce their mysticism and to create a sense of autonomy and lack of community accountability. In Dirimbe, one was the head of the only Kumbedjo family in the village which was cited by all participants in the wealth ranking as being by far the poorest family. The other was a Dimadjo and a recent settler in Dirimbe where he lived with his childless wife. He had apparently learnt about healing during a five year period of apprenticeship with sorcerers under water! All four healers said they never conferred with other healers to exchange knowledge or medicines, and they never added to their knowledge of therapeutic plants which they had learnt from their fathers. Women could never become healers, and indeed a cause of hendu was often said to be attributed to women, particularly those who had married into the village from elsewhere.

Most diagnoses were based on divination through either the throwing of cowrie shells or by giving the patient snuff to make them sneeze and studying the pattern made in the sand! In addition, great attention was paid to what the body was like - the palms of the hands, the eyes, the neck, rather than the actual clinical symptoms such as diarrhoea or fever. The duration of the illness was of great significance, as for example, a diarrhoea of several months duration would indicate hendu rather than one which lasted just a few days which would probably be attributed to a more

straightforward cause. Most importantly, the healers never told a woman that her child's illness was a simple matter that she could easily cure herself with a home preparation, nor did they divulge the names of any of their medicines. Everyone who came to them left with some sort of plant based preparation to breathe in, use as a wash, as an enema, or to swallow, or would receive a koranic or non-koranic recitation. If the healer felt genuinely unable to cure them he would refer them to another healer or marabout, but rarely to the clinic. In some instances a healer would refuse to treat a very sick child straight away saying he needed several days to prepare the medicine, by which time the child died, again reinforcing the social sanctioning of his power and knowledge without actually implicating him in the death.

APPENDIX IX : HOUSEHOLD WEALTH (DIRIMBE FULANI ONLY).

	Mean Number of Household Residents		SD		Number of Households	
	Fulbe	Rimaibe	Fulbe	Rimaibe	Fulbe	Rimaibe
Richest	12.3	14.2	2.1	1.1	3	4
Rich	7.1	7.4	3.2	3.2	7	7
Poor	8.1	7.3	2.9	2.5	7	6
Poorest	7.3	7.0	4.6	2.6	6	3

What was most interesting about the wealth ranking was the knowledge each informant had of other household heads' animals and fields although this is not altogether surprising in a village environment where wealth measured in animals is very visible. Some informants mentioned however that nowadays with many men herding cattle for other people, for example, for urban civil servants, it was difficult to tell how many cows actually belonged to each herder. Importantly, most informants distinguished between poor families who had always been poor and those who had recently fallen on hard times. Similarly, the Fulbe seemed to greatly value wealth from inheritance, always putting one such household head who had inherited, rather than 'made' his wealth in the richest category.

Most fascinating was the consistency of the results. Interestingly, the marabout families (0305 and 0304) were nearly always placed in the poorer categories. Similarly, the traditional healer (0424) who lived in an extremely dilapidated house was ranked as being by far the poorest family in the village by every informant. Thus, it seems that social power and influence are no substitute for wealth which, even by the Rimaibe, is measured in animals.

The main difference between the Fulbe and Rimaibe rankings were that the Fulbe related wealth entirely to animals and distinguished different families by the numbers and composition of their herds, whether they herded for other people or whether they simply did not possess any animals. By contrast, the Rimaibe, although primarily concerned with animals also laid store by material possessions for cultivation such as ploughs and other animals such as camels. Importantly, for the Rimaibe someone with few animals could be 'saved' by having fields which did well, or by having children who could cultivate.

EXAMPLES OF FOUR INFORMANTS' RANKINGS.

Numbers refer to household codes. Ranking 1=Wealthiest (A maximum of 9 groups was permitted - see Grandin 1988). Definitions and divisions are given using the exact words of the informants.

* Informant's Own Household.

Affo Tambora (Dimadjo).

1. 0404 0410
2. 0411 0402 0426 0423
3. 0425 0401
4. 0403
5. 0405* 0408 0416 0419 0418 0421 0409 0415 0413 0406 0407
6. 0424

"Definition of wealth is diaudi (literally meaning cattle). Rich people have cows, sheep and goats, camels and ploughs. Group 1 have camels and ploughs and the others do not. Groups 1,2 3,4 have animals.

Groups 5 and 6 have not even got goats.

The head of 0407 is poor but he has three sons who cultivate a lot of millet for him.

The best thing to have is animals - you can be rich without having lots of children if you have animals. You can't be rich without animals. If you hear that someone is rich, it means that he has a lot of animals".

Laya Maiga (Dimadjo)

1. 0404 0402 0410
2. 0411
3. 0401 0425* 0423
4. 0426 0403 0405
5. 0407
6. 0421 0416 0419 0418 0424 0408 0409 0413 0415 0406

"Wealth ? Do you mean children or animals? You can't be rich without animals. Cows are best. It's not necessarily the large

Appendix IX Cont.....

families that are wealthy.

Group 1 have lots of animals - 0402 for example has no goats but he has lots of cows. Groups 1, 2 and 3 all have animals.

0426 has goats, 0403 has a few cows, 0405 has sheep and goats, 0423 has sheep and a few cows.

Group 6 have no animals to speak of".

Boukary Oumarou (Pullo).

1. 0319
2. 0318 0302 0324
3. 0322 0308 0328 0326 0327 0316
4. 0333* 0306
5. 0323 0313 0305 0301
6. 0314 0334 0307
7. 0325 0311 0310
8. 0315 0304 0317 0329

"Definition of wealth is cows, goats and sheep - cows are better than all other animals.

0319 has lots more cows than anyone else - he inherited them.

It is not possible to have money and no animals - if you need money, you sell animals. The number of people in the family does not bring you wealth - it is animals that are important.

0315's animals all died and he was forced to sell the rest. The others in group 8 have never had animals - they never inherited - they just never had any".

Amadou Alou (Pullo)

1. 0319
2. 0324 0318
3. 0327 0328 0322 0308 0316 0302 0326
4. 0313
5. 0323 0305 0333
6. 0311 0315 0301 0325 0310 0306 0334 0314 0307*
7. 0321 0317 0329 0304

Appendix IX Cont.....

"Wealth is animals, entirely animals. You can't be rich without animals.

The problem is that all the animals are together - the herder's own animals and those that he herds for other people. I don't really know about 0313 because of this.

Cows are better - when there's not much grass goats are better - they are stronger. But cows are more valuable. The size of the family is not important. You can be a small family, but if you have lots of animals you will be rich".

APPENDIX X: CASE HISTORIES OF NON-FATAL ILLNESS MANAGEMENT.

Illness management profiles of two Dirimbe children are detailed below. Adama (male) and Aminata (female) are of comparable age and social class, but exhibit very different characteristics of illness management and anthropometric outcomes. The table on page 269 illustrates some of their respective maternal and household characteristics and indicates that the disruptive or 'disjointed' characteristics of Adama's household, the lower household status of his mother and the non-supportive environment she lived in, as well as her own ill health led to fewer treatments being pursued and a less effective management of his illnesses with the result that he became severely malnourished and remained so even after his period of hospitalisation.

Aminata's mother by contrast has a greater number of consultative resources at her disposal, and was well supported by her co-wives, sister-in-laws and her husband. She could undertake a greater number of therapies having the time to prepare certain treatments or to exploit extra-household networks to borrow them. She also received payment from her husband (the educated household head) more frequently.

Household Characteristics Affecting Illness Management.

I Number of Under-Fives:

Adama's Household: Seven under-fives were direct members of the household. Two additional under-fives were also affiliated to the household and spent a lot of time there although in theory they lived elsewhere. The (educated) paternal grandmother was, at one point, responsible for four recently and abruptly weaned under-fives who ate and slept with her. Three (including Adama) became severely malnourished and one (Adama's twin sister Hawa) subsequently died.

Aminata's Household: Only five under-fives were present in the household as Aminata's mother's two co-wives were childless. The head (childless) co-wife had, however, adopted a four year old boy who was the son of a woman she had also raised and who had subsequently married. One additional under-five moved away to Douentza in December 1989 as his mother was divorced by the brother of the head, and was replaced by the new wife's two year old boy who supposedly lived with his maternal grandmother but spent a lot of time in the household.¹

¹ This child is in fact the illegitimate son of Adama's mother's husband's previous wife and thus links the two households.

II Intra-Household Support:

Adama's Household: Neither household had any young girls over 8 years old to help with household tasks (Adama's mother's only daughter of this age was fostered away). However Adama's mother and her 3 sisters-in-law were under the direction of their mother-in-law (the only educated woman in the sample) who neither admitted to her education in front of her uneducated husband nor successfully co-ordinated their labour. **Aminata's Household:** Five women of 'equal' status (ie wives of the household head or of his brother) whom despite differing wife rank amiably and successfully co-operated with household tasks. Although Aminata's mother was the third wife of the head, she had been engaged to him from birth and grew up in his household. She was also the only one to bear him children.

III Health of Women in Household:

Adama's Household: Hawa and one of her sisters-in-law were both chronically sick for several months, but unlike her frailer counterpart, Hawa never renounced her household duties despite her continual bleeding and probable anaemia. **Aminata's Household:** All women in good health, although Aminata's mother noticeably lost a lot of weight during the pre-harvest period.

IV Social Rifts:

Adama's Household: Frequent arguments between daughters-in-law and lack of support for one of them from the mother-in-law, often leading to separate eating arrangements. **Aminata's Household:** No extreme rifts and more sociable environment. Aminata's mother's co-wife ran a 'bed and breakfast' service for passing Fulbe herders and thus there were paying guests in the household almost daily who brought in frequent news of the outside world. Observational work noted however that Aminata's mother tended to socialise and converse more with her sisters-in-law than her co-wives and hierarchical conflict was therefore minimised. Appendix Four shows that these women were her greater consultative resource.

V Maternal Support:

Adama's Household: None of the mothers of the daughters-in-law were still alive and only one of them had her suudu baba in the village. **Aminata's Household:** All women in the household had their suudu baba in the village but Aminata's mother was the only one whose mother was still alive.

VI Influence of Pregnancy/Breastfeeding Status on Labour Withdrawal and on 'In-House' Fostering':

Adama's Household: All daughters-in-law were pregnant at some point during the year and both Adama's mother's sisters-in-law were not available for household tasks during the 40 day period of seclusion after their births giving her even more household duties. In addition, as described above, recognition of their pregnancies caused both Adama's twin sister (who died in May 1990) and cousin (aged 20 months) to be weaned early and to be fostered to their paternal grandmother to prevent 'heat' from their mothers' stomachs giving the children fever. **Aminata's Household:** Although Aminata's mother's sister-in-law gave birth during the year, there were enough healthy women to carry on with household tasks during the period of seclusion. The under-fives in this household were noticeably less 'mobile' and did not move from the care of one individual to another as in Adama's household.

VII Health Expenditure:

Adama's Household: Frequent payment for health related items as three children and two adults chronically or repeatedly sick. **Aminata's household:** Although the fact that many of the children, particularly the fostered child were repeatedly ill, the high expenditure was often met by the household head or his first wife who ran the 'bed and breakfast' service and gave money to her husband when he asked for it. Because of the nature of their more 'egalitarian' intra-household support, the women in this household had more time and freedom to seek free treatments or to borrow treatments from extra-household sources.

VIII Absent Husbands:

Adama's family: Frequent absences of economically active young men, on unprofitable labour migration. **Aminata's family:** Continual presence of educated household head (Aminata's father) and fairly lucrative return of his brother from weaving in Mopti.

IX Influence of Elderly People:

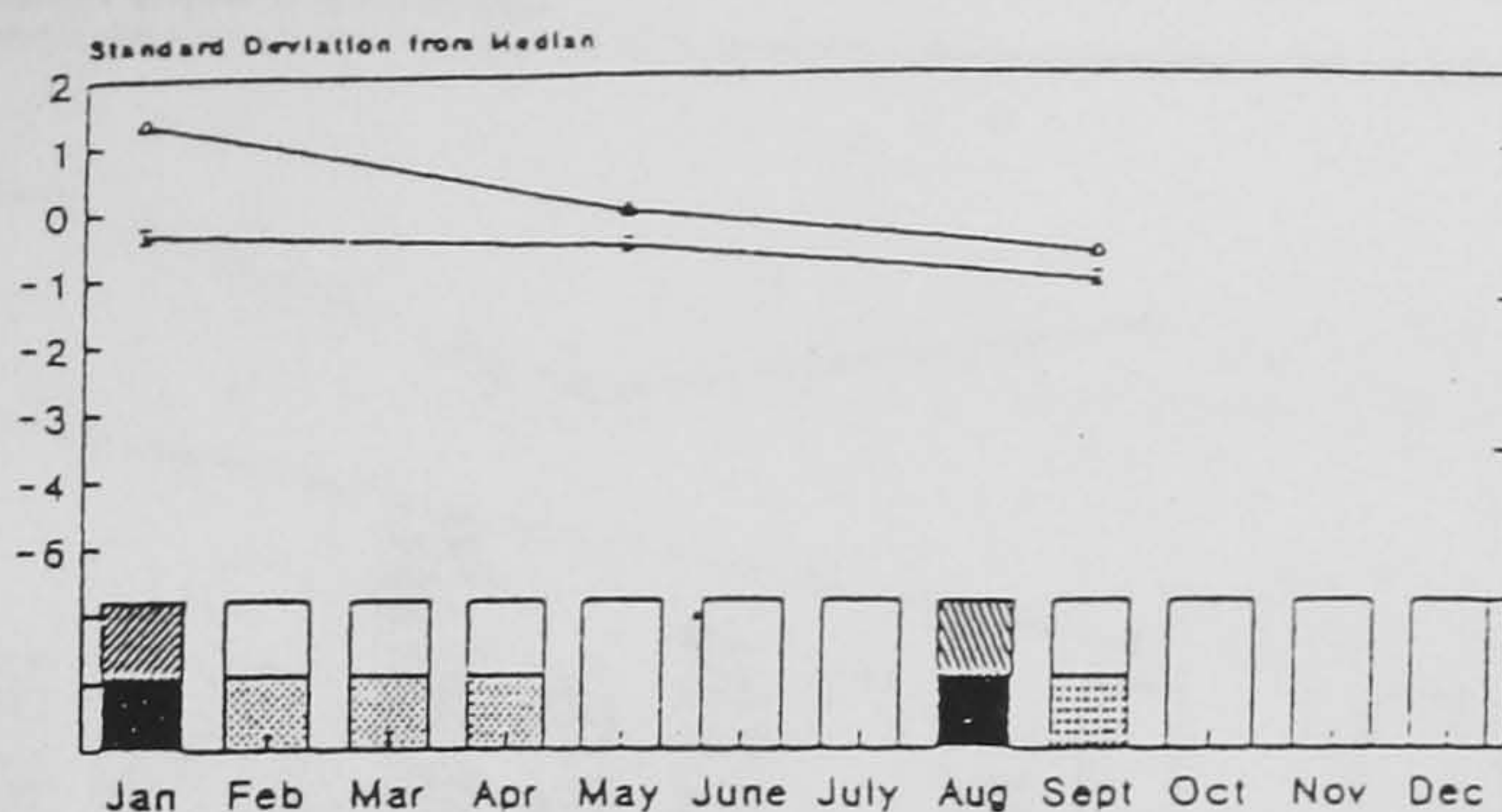
Adama's family: Presence of elderly head and two elderly wives meant that the autonomy of the daughters-in-law in treating illness was undermined, although they still took responsibility for administering preventive medicine. Consultation about health issues was largely within the household between junior and senior members rather than between peers in external household

situations.

Aminata's family: The one elderly lady present in household was mentally and physically frail so that decisions about children's health were discussed between the co-wives and sisters-in-law who exchanged knowledge of diagnoses or traditional remedies whilst the educated husband advocated and paid for clinic treatments in the more serious cases.

Illness Profile - AMINATA (Aged Six Months In January)

HI for Age
 Wt for HI
 Skin Disease
 Diarrhoea
 Conjunctivitis
 Fever
 Weight Loss
 No Illness Reported



	January	February	March	April	August	September
Duration of symptoms (Days)	7	15	30+	30+	20	21
First person consulted	Husband	Sister-in-law	Sister-in-law	Sister-in-law	Husband	Whole family
Mother's diagnosis	Foundou	Eye infection	Eye infection	Eye infection	Diarrhoea	Don't know
Treated Y/N	Yes	Yes	Yes	Yes	Yes	Yes
1) First person to treat child	Child's mother	Child's mother	Child's mother	Child's mother	Child's mother	Child's mother
1) Medicines used	Chloroquine	Antibiotic eye ointment	Antibiotic eye ointment	Antibiotic eye ointment	Suundu balejo	Gun powder
1) Method of administration	Oral	Apply to eyes	Apply to eyes	Apply to eyes	Give orally with butter and	Apply to infected areas
2) Second person to treat child	Traditional healer	Child's mother		Child's mother	Child's mother	Child's mother
2) Medicines used	1. Powder (coals) 2. Powder (drink) 3. Cord 4. Recitation/spit in water	Garure (red dye)		Suundu balejo	1. Toupai 2. Chloroquine	Butter
2) Method of administration	1. Breathe in 2. Oral 3. Wash 4. Oral	Apply to eyes		1. Wipe eyes with leaves 2. Give as a drink	1. Oral	Oral
2) Cost	CFA 100	Treatment kept in house		Free	CFA 75	Given free by neighbour
2) Paid by	Husband				Child's father	
3) Third person to treat child		Child's mother			Child's mother	Child's mother
3) Medicines used		Suundu balejo			Soured up bark from acacia, alocasia & quava leaves	Pommace (mango)
3) Method of administration		Wipe eyes with crushed leaves			Oral	Apply to infected areas
3) Cost		Free			Free	Borrowed from neighbour
3) Paid by						
4) Fourth person to treat child					Traditional healer	Child's mother
4) Medicines used					1. Powder 2. Recitation/Soil in water	Blue powder used to whiten laundry
4) Method of administration					1. Breathe in 2. Oral	Apply to infected areas
4) Cost					CFA 250	Borrowed from neighbour
4) Paid by					Child's mother	

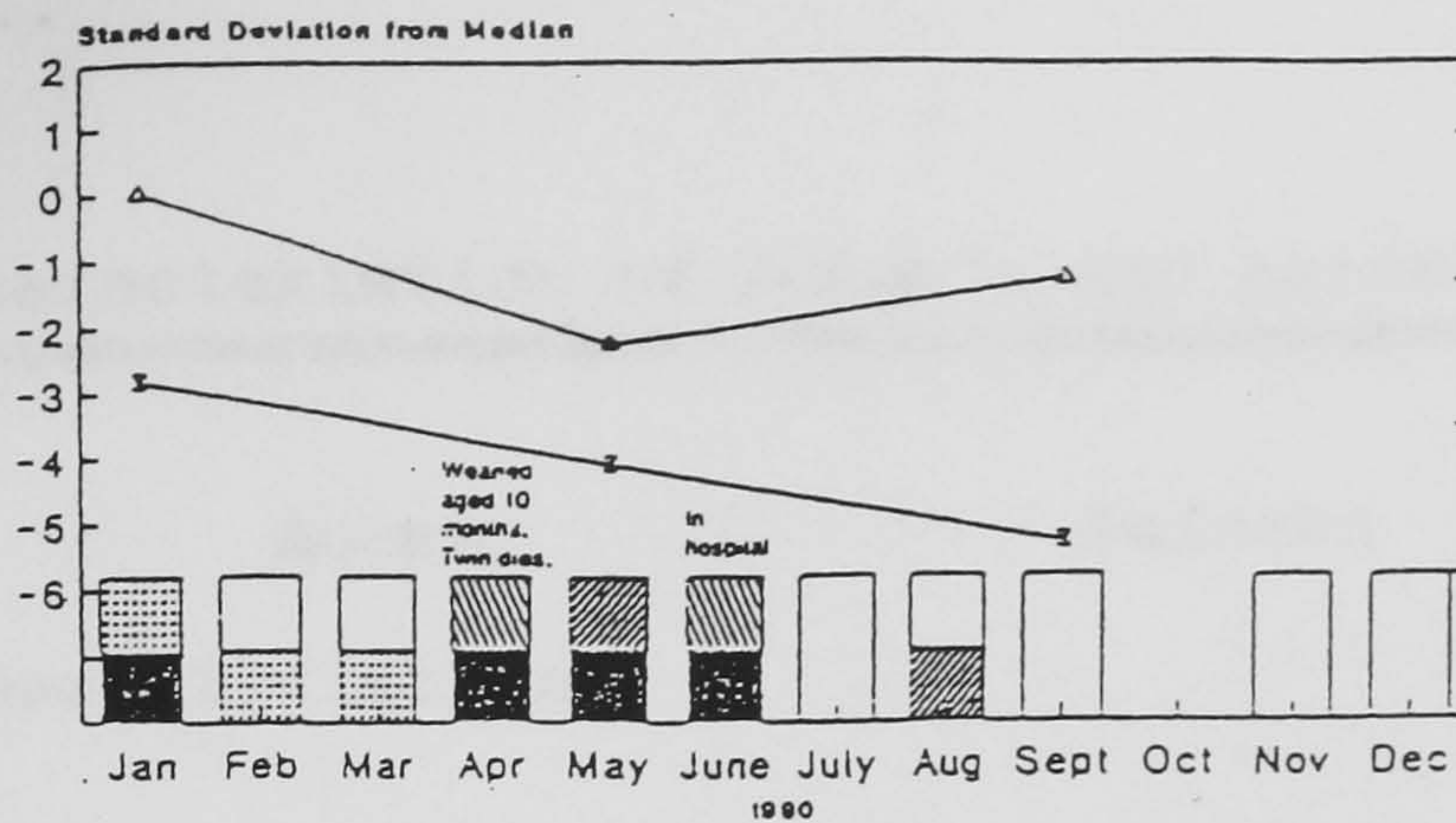
Mother's health: Mar (Cold), June (Weight loss), July (Weight loss), Nov (Cold)

Father present? Jan (Present) →

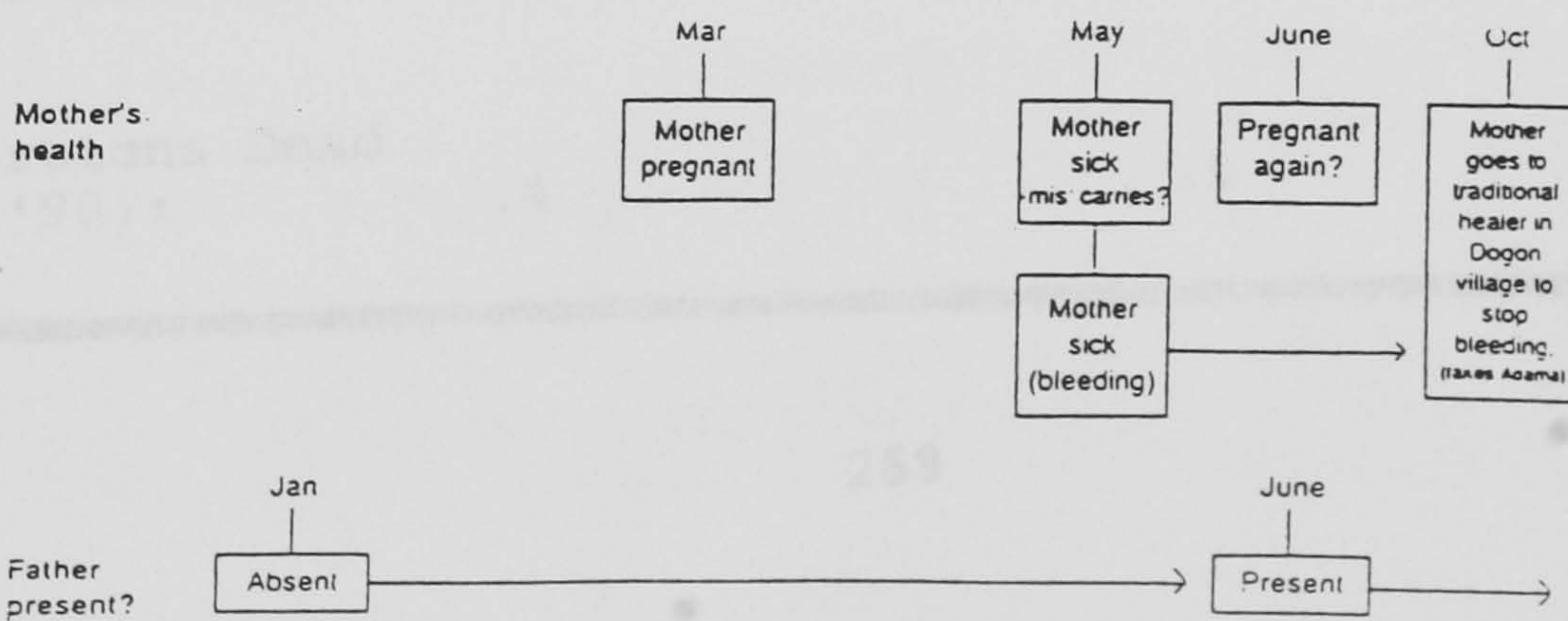
18. Suundu balejo given not because of eye infection but because the child's stools turned yellow indicating that the child was lacking his regular preventative dose of Suundu

- Illness Profile - ADAMA
(Aged Six Months In January)

Ht for Age
 Wt for Ht
 Diarrhoea
 Weight Loss
 Fever
 Skin Disease
 No Illness Reported



	January	February	March	April	May	June	August
Duration of symptoms (Days)	60	30+	30+	7+	7	30+	7+
First person consulted	No one	No one	No one	No one	No one	Mother-in-law	No one
Mother's diagnosis	Diarrhoea/ Skin infection	Skin infection	Skin infection	Diarrhoea	Diarrhoea	Opere/ Diarrhoea	Jonten
Treated Y/N	Yes	Yes	Yes	No	Yes	Yes	No
1) First person to treat child	Traditional healer	Child's mother	Child's mother		Clinic	Clinic	
1) Medicines used	1. Powder (coals) 2. Powder (drink) 3. Cord	Chewed up kola nut	Chewed up kola nut		Chloroquine	ORT, High energy bouille, Chloroquine Metronidazole	
1) Method of administration	1. Breathe in 2. Swallow 3. Wear	Put on child's head	Put on child's head		Oral	Oral	
1) Cost	CFA 100	Free	Free		Don't know	CFA 3500	
1) Paid by	Child's mother				Household	Researcher	



Characteristics of Adama's and Aminata's Households.

	Adama	Aminata
Household Characteristics:		
Ethnic Group:	Fulani	Fulani
Social Class:	Rimaibe (not free)	Rimaibe (free)
Wealth Ranking:	Richest	Richest
Household Size:	17	16
Dependency Ratio:	1.1	1.4
Number of Women 15-49:	3	5
Number of Men 15-49:	2	2
Number of Women +49:	2	1
Number of Under Fives:	7 + 2 affiliated to household	4 + 1 affiliated to household
Maternal Characteristics:		
Household Status:	One of Several Daughters-in-Law	Wife of Household Head with Other Wives of 'Head' Status
Husband's Marital Status:	Monogamous	Polygynous (Rank 3)
Age of Mother:	28	29
Proportions Dead (Jan '90):	.4	.5

APPENDIX XI: CASE HISTORY OF FOSTERED CHILD.

Oumou Amadou and her 'Tokora' (Namesake) Oumou.

Oumou Amadou was an elderly Pullo woman of about 60 whose husband had died several years previously. She had subsequently been taken on by her late husband's younger brother as his fifth wife. He was a rich and well respected man but lived in a nearby town and rarely came to visit her. He did however buy her condiments each Sunday market and Oumou also gained money from selling goats' milk from the large number of animals she had inherited from her late husband. Oumou's only companion within her household was a male cousin of about fifty who was mentally retarded and who could barely speak, but who could usefully herd the goats. Oumou used to complain that he would burst into tears if there was nothing to eat at mealtimes!

Oumou had had two live births of her own over twenty years ago, but both had died within the first week of life. She had fostered two other girls many years previously but one had died and the other was taken away from her when her husband died. Oumou explained that this child 'belonged' to her husband's family and that if she remarried the child would 'belong' to another family which would be unacceptable to the child's real parents who were relatives of her late husband. The child was not returned to her even when she married her late husband's brother.

As she was by herself and growing older, Oumou requested a child from her female cousin in the neighboring village of Dallah. This woman's husband was Oumou's brother, and her father and Oumou's father had the same father but not the same mother. The baby was named after Oumou and was therefore her tokora (namesake). Sadly, the child was born on a Friday, and the next day her father died. Before his death, he had however, promised Oumou that she could raise the child if it was a girl even before she was born.

The child was raised by her biological mother in Dallah until her weaning which occurred when it was noticed that she could walk without assistance. Although Oumou did not know her exact age at weaning, she knew it was sooner than usually practiced, but put this down to the child's ability to walk early. In May 1990, when the child came to live with Oumou, she was about 23 months old.

The child's mother has yet to remarry but lives in Dallah with one son who is the foster child's real brother, and three boys and one girl from a previous marriage.

Oumou was very happy that the girl had come to live with her and said that she hoped that in the future she would be able to help her out around the house - for example, by pounding millet and fetching water for her. Even now the child collected dried manure

to use as cooking fuel which made her foster mother very pleased. One disadvantage Oumou cited was that it was possible in the future that if she asked the child to do something, she could refuse by saying 'you can't tell me to do that - you're not my real mother'!

The child's real mother sent her to Oumou with clothes and shoes but no money - and nothing else has been received since. The child's real mother even came to visit several months after the child had been installed in her new home, but grew angry because the child appeared not to recognize her. Oumou says she will not make a specific point of telling the child that she is not her real mother, but the child will understand this anyway from what she hears from other women in the village.

Oumou intends to keep her tokora until the little girl grows up and marries and says both she and the real mother will contribute to the child's dowry when the time comes. In addition, the child will inherit jewelry, and in particular gold, from both her real mother and her foster mother - a considerable advantage.

Oumou was happy with the arrangement - 'girls bring more good than boys' she said. However, despite the great affection she showed for the child, the living arrangements were amongst the most spartan and primitive in the village. When the child arrived in May 1990 she looked fairly robust and healthy and was lively and animated. The anthropometric data however showed a decline from -2.88 Weight for Age Z-Score in May to -3.02 in September and 5 prolonged episodes of diarrhoeal disease in between. Further observational data on the child is presented in the next section and shows that she was very passive and dependent, spending long periods alone or with her foster mother - rarely with other caretakers.

The fact that Oumou is a female head of household means that her duties often take her away from the village. One day when her goats had been impounded by angry Dogon villagers up the road whose fields they had trampled, Oumou went overnight to negotiate their release, locking Oumou in the hut by herself until she came back in the morning, as she had no one else in the household to look after her.

Further details of Oumou's home environment are presented in Appendix XII (Child Number 13).

APPENDIX XII: DESCRIPTIVE ACCOUNTS OF THE MOTHER-CHILD PAIRS AND THEIR HOME ENVIRONMENTS.

THE HEALTHIEST CHILDREN AND THEIR MOTHERS:

1. Djeneba Boura (Mother) and Mariam (Child): Despite the isolation of their hut - several kilometers away from the main village, there was a very pleasant family atmosphere. Djeneba was helped by her two teenage daughters to fetch water from the village well where she washed Mariam daily. In the hut itself she had a very organized system of platforms to keep her calabashes and bowls out of the reach of animals, and had built a kind of cage to protect her mat making equipment. Small details of her caretaking practices indicated her high degree of diligence and concern for her children. For example, her other child aged five ate out of a separate bowl at each meal time so Djeneba could see how much she had consumed. It was also noticed that when there was only a small amount of food or milk available for breakfast, it would be given to the five year old, and the parents and older children would go without. On cold days Djeneba tied Mariam on her back to keep her warm, and even warmed her pants over the fire before she dressed her. Unlike other women who said they could not tell when a baby was asleep on their back, Mariam's mother said that she could feel it which seemed to confirm her attentive and sensitive style of mothering. She also encouraged Mariam to sit up, digging a hole in the sand where she placed her in a sitting position so she could see what was going on around her.

2. Talata Pate and Ai: This house was much prettier and better decorated than any other in the village. It had curtains and black patterns painted on the walls - even the mosquito net was ornate! The house and concession were constantly swept, and most importantly the scoops for the clay water pot were washed with soap. Like her sister-in-law (the mother of child number 12), Talata spent a lot of time alone inside her house with Ai and other young girls from the extended family, but rarely with other adult women. Occasionally she ventured out to visit her own mother nearby with whom she made mats. Talata was helped a great deal by her 8 year old daughter who washed and dressed Ai and played with her. Like Djeneba, described above, Talata constantly encouraged Ai to sit up and commented on stages of her motor development. In addition, Talata seemed aware of potential sources of contamination, and explained in detail on one occasion how if flies got into a bowl of food, this would be bad for the child's health and it was therefore necessary to cover it.

3. Oumou Salmana and Fatoumata: Oumou's husband had been away on labour migration in Cameroon and it was uncertain when he was coming back. She had had a number of quarrels with her marital family and moved back in with her own parents. Her father-in-law who had called her a thief and a liar was subsequently found guilty of stealing a sheep, keeping it inside a granary and selling it for his own gain! Her suudu baba had, by comparison, an extremely sociable and relaxed atmosphere as Oumou was a hairdresser and women were constantly in and out of the house having their braids redone. Most of them played with, or paid attention to, Fatoumata who was, as a result very active and sociable and rarely cried. Fatoumata was highly adorned - with earrings, beads, a ring and a bracelet which was unusual for a girl so young. Oumou was extremely hygienic - even washing her hands after collecting dung for cooking fuel which no one else was observed to do. She also washed everything when she washed Fatoumata - including scrubbing her fingernails and the various items of jewelry with soap! As noted, she filtered the water through a cloth before pouring it into the clay storage jar which she then covered. Interestingly, most mothers only cited household tasks done by their children when asked to think of something the child had done that had made them happy. It was commonly agreed that small children were unable to do anything to really please their mothers until they could carry out such chores. Oumou, by

contrast, said that the occasions when Fatoumata merely sat close to her, made her extremely contented. In addition, because her hands were frequently occupied with hair plaiting, Oumou constantly distracted Fatoumata by talking to her or giving her items from her 'beauty parlor' - such as the plaiting tool, to play with which were comparatively clean.

4. **Boye Amadou and Oumou:** Boye's house was extremely disorganized - the shelter outside was falling down and the hut had a very cramped, dark interior, which during the winter was filled with wood smoke. There was lots of cow dung everywhere, although the immediate areas outside the house were swept. It was felt that although Boye was well meaning and very affectionate to her child she failed to notice or react to unhealthy or contaminating situations (9 out of her previous 10 children had died). She was observed strapping the child to her back in uncomfortable positions and, on one occasion was only forced to wash the child after it had defecated by an insistent relative. Another time, the child knocked over money into the sand that Boye made from milk selling. This did not seem to greatly concern her and indeed, at the end of the day, not all the money was recuperated. Despite these short comings, the child was one of the healthiest children of that age group although, the score, compared with children of other ages does not reflect this.

5. **Fatoumata Tambora and Seydou:** Fatoumata's house was also clean and well swept and his mother was seen washing and airing blankets which was a rare occurrence in other families. Due to the arrival of a new baby, Seydou was cared for largely by his father and unmarried paternal aunt aged 10. His unmarried paternal uncle would also take him off to play in the garden area and amuse him with rides on his bicycle! Great concern was paid to what and how much Seydou ate as he usually shared a bowl with just his father. On one occasion, despite missing out on a meal because he was asleep, a portion was saved and put in a separate bowl for him to eat when he woke up.

6. **Ai Hamidou and Allay:** The main feature of Allay's house was that it was always deserted! Ai was off selling milk nearly every day, or else sent her 12 year old daughter, Koumba to do so. Allay's father, who had a severe and constant tremor, sat in the village making rope or tended cattle with his partially blind brother. Allay therefore was frequently in the care of his mentally retarded brother, Samba who was aged about 15. Samba looked after the little boy extremely diligently, talking to him constantly, playing games with him and taking him on adventures outside the village. Allay on the other hand defended his brother when other children teased him because of his mental deficiencies. It became apparent that the father, who was disabled by his tremor, was frustrated with Samba who was old enough to work but who could not be relied upon to finish tasks properly and who preferred to play games with his young brother. Interestingly, Ai said that when Allay grew up, she hoped he would have just one wife and one child, as the expense of raising any more was too great.

7. **Koumba Nouh and Safiatou:** Safiatou spent more time at her maternal grandmother's house than she did at her own home. The grandmother's house was in a state of disarray with mat making material everywhere. There was however, a latrine where the child was washed vigorously each day with soap by her older sister. Safiatou's own home was more organized, and during one observation Koumba chastised her husband vehemently for putting the scoop from the water pot on the floor! Her apparent irritation with him was confirmed during one conversation when she admitted later she was not happy in the marriage and was thinking of seeking a divorce, but had not yet told her mother. She had three closely spaced children under five and was away every other day selling milk, taking the breastfeeding child with her and leaving her mother in care of the others.

In the market Koumba was an extremely aggressive saleswoman, and seemed to enjoy the company of the other milk sellers who sat together in the same shady area. When she was observed here it was noticed that she was much less well dressed than the other jom kossam despite her comparative wealth. She was, on another occasion, unable to go to a village dance because she said, she did not have a pretty enough dress. Instead, her money appeared to be spent on treats for her children who were all fairly well nourished - at the end of each day's milk selling, she returned with fruit or peanuts for each of them. Like the mother of child number 3, Koumba said that even when her baby smiled, this made her happy. Significantly, young infants smiling, laughing or responding to stimulation were not cited by any other mothers being pleasurable experiences - all referred to the child's ability to perform household tasks as being the most pleasing actions they could think of. Most importantly, Koumba had been to school for five years, and although illiterate and saying she did not understand French, it is more than likely that her education is linked to her extremely attentive behavior.

8. Hadiato Goro and Fatoumata Nouh: This child, according to the scoring system was the healthiest child in the village. She was one of two young girls in the large family and was often involved in rough and tumble play with boys. She was entirely fearless and when, on one occasion a car came to the village, she was the only child to run up and touch it, despite many much older children being afraid to do so. She would ask for food when she was hungry and complain if it was not enough, or that she was not full, and had all the women of the household running round catering to her needs. When eating with them she made a separate pile of nyiri in her area of the bowl which she carefully guarded. Extremely assertive, she was, due to her good health, able to carry out household tasks such as child care and run errands for her aunts and grandmother.

THE SICKEST CHILDREN AND THEIR MOTHERS:

9. Djeneba Djibrilou and Boukary: Boukary was the son of the imam and was the third of three closely spaced children. His mother was ill during most of her pregnancy with him and sent her oldest child back and forth from her maternal grandmother's house for temporary fostering during this time. This was one of the few families to have a latrine, built she said because the almamy (imam) did not want his wife venturing out into the bush to defecate with other villagers. Djeneba repeatedly stressed how she was unable to go out of the house without her husband's permission, but was observed on several occasions walking freely around the village and even going into Douentza to visit me or her own family. Despite Boukary's poor health in September 1990, he soon regained the weight he had lost and appeared, by December to be fit and alert. Like Djeneba Boura and her husband, Djeneba Djibrilou and the imam were observed giving any available food to their children at breakfast and not eating anything themselves. Despite his rather intransigent religious stance, the imam (who would not talk to me at length because I was a woman) was in the habit of sweeping the compound, seemingly not embarrassed by the fact that this is usually considered to be women's work!

10. Adama Bilaly and Arsike: Adama had one 28 month old girl as well as Arsike. The former was 'given' to the paternal grandmother within the same household for weaning, who had four other children under five sleeping and living 'with her arm' most of whom were sick. Arsike's sister became so malnourished and developed night-blindness, that she was hospitalized on several occasions at my insistence. Even when discharged she was unable to walk or to feed herself. Arsike became ill with a cough which was 'treated' an elderly woman who made incisions into his chest, after which there was some improvement. Adama, who had herself been hospitalized with TB, said she had 'treated and treated' both her children and was 'tired' - 'if God wanted them

to live then they would', she said. Despite both their health problems, Adama spent most of her time at a family of Tamasheqs in the village, where she sat and drank tea nearly every day, only returning to her marital family to prepare meals. It was noted that Adama behaved very differently to her extremely malnourished and passive daughter compared with her son who although sick, was still alert and responsive. She played with him and talked to him constantly. By contrast, she chastised and hit her daughter, who at one stage was so weak she could barely crawl, on several occasions telling her she was bad. It was also observed during other visits that she failed to clean up her excrement after defecation. During another episode, before Arsike was born, despite crying plaintively, the daughter missed out on a family meal because noone noticed that she had not been brought to the family bowl.

11. **Aljouma Samba and Oumou:** Aljouma Samba had been divorced and had been living in her natal family for some time. In September, she married the deaf and dumb head of another household who had a daughter-in-law who did much of the food preparation. Her new marital household was extremely untidy and unkempt - particularly the cooking area where pots were left upturned in cow dung. In addition, the other women in the household were very aggressive and demanding, causing constant petty quarrels and arguments. Although Aljouma fed Oumou by putting food in her hand, she rarely noticed what the child did with it, and it often ended up on the floor. On other occasions she gave her food that was too hard for her to eat. In addition, unlike the mothers of the healthier children, Aljouma never checked that Oumou was full at the end of a meal or encouraged her to eat more. The greatest praise Oumou received was when she succeeded in filling a cup of water and carrying it back to her mother - Aljouma commented during one interview that she was happiest when Oumou was quiet and playing out of her way!

12. **Fatoumata Bilaly and Ousmane:** Fatoumata Bilaly and Talata Pate (mother of child number 2) were married to brothers and lived in the same extended family. Fatoumata's husband had a tabal and was usually inside his hut drinking tea and chatting with other men. Fatoumata, despite living in a large extended family, like her sister-in-law was nearly always alone, and seemed very quiet and despondent compared with the other women in her household. It was noted, for example, when she took trips to the well (which most women used as an excuse to meet and gossip outside their households) that she made the journey to and fro barely speaking to anyone and never paused to greet other women or to chat. Ousmane appeared to be constantly hungry seeking out the breast and solid food on his own initiative. It was noticed that at meal times when other women were encouraging their small children to eat more even when they said they were full, Fatoumata paid little attention to whether Ousmane had finished eating and did not persuade him to continue. Like Aljouma Samba, Fatoumata said Ousmane made her happiest when he was sitting and playing by himself so she could get on with her work.

13. **Oumou Amadou and Oumou:** Oumou and her adopted daughter are described in Appendix XI. Their house which they shared with a mentally retarded uncle was dark and untidy. In addition, the many goats they kept were often inside the small cramped hut defecating and urinating on the dirt floor. The most noteworthy characteristic of the child was the way that her health declined as soon as she started to be fostered by the elderly woman. She arrived in May 1990 looking plump and healthy in a crisp and clean frilly pink party dress. By December she had become increasingly thin, was constantly grumpy and subdued, and wearing the same dress which was by now ragged and dirty.

14. **Hawa Salmana and Adama:** Hawa Salmana and Adama Bilaly (the mother of child number 10) were married to brothers and lived in the same extended household. The characteristics of this family are described in Appendix III which notes that Hawa had been pregnant and miscarried, and then became pregnant again very quickly. Hawa's dominant characteristic was that she was extremely feisty

and querulous. She appeared to consider her extremely malnourished child rather a burden, never visiting him, even when he was hospitalized for a month. Although she fed him separately, she rarely oversaw what, or how much, he was eating. On one occasion food that was put down in a bowl on the floor for him was eaten by another child (the malnourished sister of Arsike - child number 10) before he could reach it - being weak and passive, Adama could do little to protest. During other instances, Hawa appeared to be impatient with him, snatching food from him before he had really finished eating it. Although she attempted to distract him with objects to play with, these frequently consisted of old tin cans and lumps of dirt which usually ended up in his mouth.

15. **Aminata Samba and Hama:** Hama was 'with the arm' of his paternal grandmother who actually spent very little time with him (see Section 6.7). He appeared very slow and reserved, and although he spent a lot of time in the company of other children, he rarely joined in their games and was often on the sidelines of their main activities. He always seemed to be several paces behind and was rarely an integral or leading part of the group. Unlike Seydou (child number 5) Hama also slept through a meal during one observation, but his father, having failed to wake him, continued eating and did not save him any food.

16. **Fatoumata Nouh and Allay:** Fatoumata Nouh and Koumba Nouh (the mother of child number 7) are sisters. Although both use their mother as an informal babysitter for all their children when they are away selling milk, Fatoumata was fostered away as a child, unlike her sister who was brought up by their mother. Allay's father was a marabout who, although amiable, contributed little to the household economy. Allay, as the only son, was expected to follow in his footsteps and even had a 'pretend' koran which he clutched almost obsessively. Fatoumata, by contrast, was probably one of the hardest working women in the village. From dawn to dusk she was either hair plaiting or milk selling - both activities taking her away from home for long periods. Allay was left on these occasions with his maternal grandmother where he was usually the only male in the household and commanded little attention. His teenage sisters, female cousins (including Safiatou) and grandmother being preoccupied with mat weaving and with giving each other various beauty treatments. This created a lively and stimulating atmosphere but one in which he could not really participate. In fact, the majority of verbal inter-actions with him were usually to tell him off or to tell him to get out of the way! He was often to be found playing by himself, usually in the rubbish tip which was one of his favorite spots, and seemed anxious for his mother's return. On one occasion he burst into tears as his sister joked that their mother had come back from milk selling when actually she was still absent! When she did reappear he ran back to greet her and seemed overjoyed to see her.

APPENDIX XIII : THE 'HEALTHIEST' AND 'SICKEST' CHILDREN IN SUB-SAMPLE.

	Parity	Sex	Social Class (Fulbe/ Rimaibe)	Age in Months (Sept 90)	Breast- fed?	Wt/Ht Z-Score	Wt/Age Z-Score	Prop. of Diarr- hoeal Episodes	Wt/Ht/ Diarr- hoeal Disease Score
Healthiest:									
1.	08	F	F	3	Y	.61	-.13	0	-4
2.	05	F	R	2	Y	.22	.13	0	-3
3.	02	F	R	10	Y	-.71	-2.03	.1	36
4.	11	F	F	8	Y	-.46	-3.37	.1	37.5
5.	03	M	R	31	N	-.34	-1.62	0	-8
6.	07	M	F	35	N	-.20	-.92	0	-3
7.	04	F	F	62	N	1.31	-2.20	0	-3
8.	*Fos	F	F	50	N	.44	-.95	0	-9
Sickest:									
9.	03	M	F	6	Y	-2.10	-1.28	.2	108
10.	04	M	R	5	Y	-3.13	-2.42	0	71
11.	02	F	R	17	Y	-3.53	-3.24	.4	133
12.	05	M	R	13	Y	-2.55	-3.00	.5	141
13.	*Fos	F	F	27	N	-.69	-3.02	.6	105
14.	05 (Twin)	M	R	13	N	-1.27	-4.64	.4	94
15.	01	M	R	54	N	-1.25	-1.98	.3	72
16.	06	M	F	49	N	-1.98	-3.37	.2	72

NB These were the 'healthiest' and 'sickest' children selected according to the scoring system described in Appendix II from four different age groups:

1. Breastfeeding Children Less than Six Months Old.
2. Breastfeeding Children More than Six Months Old.
3. Weaned Children Less than Thirty-Six Months Old.
4. Weaned Children More than Thirty-Six Months Old.

APPENDIX XIV: HOUSEHOLD CHARACTERISTICS:

	Mother's Age	Father's Age	Proportions Dead	Mother's Number of Under Fives	Mother's Status	Polygynous?	Women aged 15-49 in household	Number of 'Helpers' (Daughters + 8 years old).	Wealth Ranking
Healthiest Children:									
1.	35	44	.25	2	Alone	No	0	2	Poorest
2.	31	34	.4	2	One of Several Daughters-in-Law	Yes	3	1	Richest
3.	24	31	0	2	Natal Family	No	0	1	Rich
4.	41	49	.73	1	Alone (but with widowed sister-in-law)	No	1	0	Poorest
5.	31	33	.33	2	Alone	No	0	0	Rich
6.	35	46	.43	1	Head with Others	No	1	1	Poor
7.	30	34	.16	3	Alone (but with divorced sister-in-law)	No	1	1	Rich
8.	60	66	...	1	Head with daughters-in-law and own daughters	Yes	3	0	Richest
Sickest Children :									
9.	22	31	0	3	Alone	No	0	0	Poorest
10	28	34	.2	2	One of Several Daughters-in-Law	Yes	3	0	Richest
11	23	48?	.5	1	Head with Daughters-in-Law**	No	3	0	Rich
12	28	37	.4	1	One of Several Daughters-in-Law	No	3	0	Richest
13.	59	NA	1.00	1	Female Head	***Yes	0	0	Poor
14.	25	36	.4	2*	One of Several Daughters-in-Law	No	3	0	Richest
15.	23	24	0	3	One of Several Daughters-in-Law	No	1	0	Richest
16.	36	51	.57	1*	Head with Others	No	1	2	Poor

* + 1 additional death of another child within previous six months.

** Woman was divorced and residing in her natal family until Sept 1990, when she married the head of another household whose son's wife subsequently worked for her. Thus where the child became sick and malnourished and where she was observed are two different households where she occupied two different status positions.

*** Husband and co-wives do not live in same village.

APPENDIX XV: HOUSEHOLD ENVIRONMENT:

	Child Eats With?	Child Sleeps With?	Latrine?	Well or Pond Water	Water Storage Pots Covered?	Pots/ Calabashes Hung Up?	Mosquito Net?
Healthiest:							
1.	NA	Mother	No	well	yes	yes	no
2.	NA	Mother	No	well	yes	no	yes
3.	Mother	Mother	No	well (filtered!)	yes	no	no
4.	Mother/ Neigh- bour	Mother	No	pond	no	yes	yes
5.	Father/ On Own	Mother	No	well	yes	no	no
6.	Mother/ Mat. Grand- mother	Father	Yes	well	no	yes	yes
7.	Mat. Grand- Mother/ Mother	Mother	(At Grand- mother's)	well	no	yes	no
8.	Foster Mother	Foster Mother	No	well	no	no	no
Sickest:							
9.	NA	Mother	Yes	well	yes	no	no
10.	NA	Mother	No	well/pond	no	no	no
11.	Mother- puts food in her hand	Mother	No	well/pond	yes	no	yes
12.	Out of own bowl- not over- seen	Mother	No	well	yes	no	no
13.	With foster mother/ on own	Foster Mother	No	pond	yes	no	yes
14.	On own	Mother	No	well	yes	no	yes
15.	With Other Children	Pat. Grand. Mother	No	well	no	no	yes
16.	Mat. Grand- Mother	Mother	No	pond	yes	yes	yes

APPENDIX XVI: SOCIAL DIFFERENCES IN LIFE EXPERIENCE AND EXPECTATIONS.

	Mother's Mother Alive?	Mother Brought up By?	Suudu Baba in Village?	Been Where?	Mother's Hopes/Aspirations for Child:
Healthiest Children:					
1.	No	Mother	No	Kikora (40km)	Wants her to marry a marabout and to follow God dutifully.
2.	Yes	Mother	Yes	Segou	To grow up, follow God and make a good marriage.
3.	Yes	Mother	Yes	Konna	Wants her to get whatever she wants and to have a husband who will love her.
4.	No	Mother	No	Kunari	That she grows up and has lots of friends and lots of money to spend on them!
5.	Yes	Grandmother	Yes	Douentza+ villages	That she grows up and has a good character - she herself will do everything she can to ensure this.
6.	Yes	Grandmother	Yes	Fatoma/ Kunari	Wants him to have just one wife and child - any more than this is too expensive.
7.	Yes	Mother	Yes	Mopti/ Bourgou	Wants her to be loved by everyone and to have a good husband.
8.	No	...	Yes	Mecca	Wants her to be in good health and have lots of children and that everyone who meets her likes her.
Sickest Children:					
9.	Yes	Mother	No	Douentza	Wants him to have a lot of money and to marry a lovely wife who can pound millet for for her!
10.	No	Mother	No	Douentza	To grow up, make his fortune and to marry a good woman.
11.	Yes	Grandmother	Yes	Burkina Faso	To be well and have long life - to have a lot of gold and clothes; to find a capable man (<u>baudo</u>) who will give her everything.
12.	Yes	Mother	Yes	Douentza+ Villages	Just wants him to grow up and be happy.
13.	No	Grandmother	No	Douentza+ Villages	Want her to have a good 'education' - mustn't lie or to steal; wants her to be married but not away from this village.
14.	No	Mother's Co-Wife	No	Douentza+ Villages	That he lives and grows up and that he finds a good woman.
15.	No	Grandmother	No	Douentza+ Villages	Hopes that he cultivates and that his fields produce lots of millet!
16.	Yes	Grandmother	Yes	Mopti/ Bourgou	Hopes that he will become a marabout like his father and that he has lots of garibou (koranic students).

FULFULDE GLOSSARY.

(NB. The singular and plural of nouns and verbs in Fulfulde are different).

Ardobe	Former leaders of the Fulani who nomadically roamed the Empire of the Dinna before the arrival of Islam.
Baudo	Someone who is capable/competent.
Biliteki	Topical anti-biotic for eye infections.
Biradam	Fresh milk.
Birgul	'Education' or training for life.
Bombe	Invisible spirits.
Bourgou	Pasture of the inner Niger delta to where the Fulbe transhume seasonally.
Bourgourou	Straw hut constructed in some villages but especially in the Bourgou.
Cheode	Measles.
Chuudi (sing. suudu)	House/dwelling.
Cobal	Millet gruel composed of millet (boiled), salt, hot pepper and sometimes sugar and soured milk.
Diaudi	Wealth - Lit. 'Cattle'.
Dimadjo (pl. Rimaibe)	'Freed' Fulani - former slave or dependent.
Doua	Illness caused by lack of something in the diet that the child is used to.
Dourma	A Cold/Respiratory infection.
Doyru	Cough
Eme	Diarrhoea with blood.

Galle	Extended family whose members may or may not all eat and cultivate together.
Garure	Red vegetable dye used in leather work and often put on eye infections.
Foroba (Bambara word)	Lit. 'big field' - production and consumption unit enumerated in survey.
Foundou	Lit. 'bird' but in illness taxonomy refers to the owl which is the main cause of death of breastfeeding children.
Fulbe (sing. Pullo)	'Free' Fulani (usually cattle owning).
Futte	Bridewealth (animal component).
Garooje	Illness caused by teething.
Ginneji	Dowry - usually composed of pots, pans, mats, water storage jars etc.
Habe (sing. Kado)	'Non-Fulani' - in this case Dogon.
Hakkilo	An element of Pulaaku comprising self-discipline.
Hendu	Lit. 'wind' but in illness taxonomy refers to sorcerers and spirits.
Humbebe (sing. Kumbedjo)	Clan of 'Ongoiba' Dogon around Douentza.
Ibe	(Bot. ficus gnaphalocarpa) -bark used to treat diarrhoea.
Jammore	Clan name.
Jom	Head/Chief
Jom Kossam	Milk Seller - Lit. 'Head of the milk!'
Jonte	Fever/Malaria
Jungo	Arm - 'e jungo nedo' - to be with a person's arm ; ie - to be taken care of by this person.
Kadam	Soured milk.

Kado (pl. Habe)	'Non-Fulani' - in this case Dogon.
Kaarke	Dowry - lit. 'baggage' (see ginneji).
Kefi	Illness often preceding 'jonte' characterized by vomiting up a substance 'yellow as the yolk of an egg'.
Kerngol	Illness making the nose fall in - probably corresponding to congenital syphilis.
Kodo	Guest - see Njaatigi. The njaatigi/kodo relationship has special significance,
Korga	Field given to Rimaibe women on marriage by their fathers-in-law as usufruct.
Kumbedjo (pl. Humbebe)	Clan of 'Ongoiba' Dogon around Douentza.
Kunari	Ancient Kingdom near Bandiagara to where the Fulbe now transhume seasonally.
Lawbe	Caste of woodworkers who also 'praise-sing'.
Lekki	Medicine - Lit. 'trees'.
Macari	Local condiment made from 'polle', possibly hibiscus.
Mbarkaweri	(Bot. pilostigma reticulatum) - bark used to treat diarrhoea.
Muynal	An element of 'Pulaaku' comprising stoicism.
Ndoggu reedu	Lit. 'running stomach' - diarrhoea.
Nebam	Butter.
Ngouhoumi	(Bot. Combretum micanthum) - leaves given as a preventive medicine from birth until weaning.
Njaatigi	Host

Nyiiiri oro	Staple millet dish of paste-like consistency with dried baobab leaf sauce.
Opere	Diarrhoea and weight loss associated with a child breastfeeding from a pregnant mother.
Pulaaku	Code of Fulani behavior.
Pullo (pl. Fulbe)	'Free' Fulani (usually cattle owning).
Rimaibe (sing. Dimadjo)	'Freed' Fulani - former slave or dependent.
Saare	Cultivation hamlet or Rimaibe village.
Safande	Bridewealth (cash payment).
Semteende	An element of Pulaaku comprising modesty and reserve.
Souka	Child.
Souka Bamba	Fostered Child.
Suundu	Preventive medicine given from around six months until after weaning
Suudu (pl. chuudi).	House/dwelling.
Suudu Baba	Natal family - lit. 'father's house'.
Sukunyabe	Sorcerers
Tane	(Bot. balanites aegyptica) - date plant - roots used as preventive medicine and to treat fever.
Tchaiki	(Bot. acacia albida) - bark used to cure diarrhoea.
Teegal	Lit. 'a gathering of people' - in this case marriage celebration.
Tokora	Namesake/Homonym.
Troni	Clan of village of Beni.
Wuro	Fulbe or Fulbe/Rimaibe village.

Yaarai

Milk cows lent between kin during
times of difficulty.

Yonki

Soul

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