Opposing trends in child mortality in sub-Saharan Africa . Are health care services adapted to needs ? The case of the construction of a new hospital in a rural area of Senegal.

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1. INTRODUCTION

The health and the maternal and infant mortality represent an important preoccupation in developing countries. In sub-Sahara area, more than elsewhere, difficulties of the health care services accessibility, particularly the rural zones, are considerable. These areas register the higher ratio of mortality (Pison, 1997). Since 50-60's, huge advances were observed (Hill, 1989, Barbieri and Vallin, 1996), but sub Sahara Africa stays – significantly – the most discriminated area regarding the economic and social plans, and especially regarding the health care : high level of infant mortality in a under 5 years old population, of maternal mortality, few vaccine cover, problem of malnutrition (Tabutin and Schoumaker, 2004). The variations between the north and the south become higher and higher. Infant and child mortality rates is now 7 times higher in Africa than in Europe, whereas it was 4.3 times higher in 1980 and 5.4 times in 1990 (Rapport OMS, 2005).

The maternal mortality has also an important problem of public health care all over this area. The maternal mortality ratio is 72 times higher in the sub-Saharan than industrial countries : 940 against 13 deaths per 100,000 live births (Rapport OMS, 2005).

Regarding to this persistently situation, some African governments try to improve populations' heath, especially in rural area. In Senegal, different health programs have been created. The "*Plan national de développement sanitaire*" (PNDS 1998-2007) and the "*Programme de développement intégré de la santé*" (PDIS 1998-2002) included in their main goals, the reduction of infant and child mortality. Strategies are the reduction of diarrhoea illness, malnutrition, all target diseases by the "*Programme élargi de vaccinations*" (PEV), acute respiratory infections (IRA), malaria and sexual infections (IST, HIV). Otherwise, new sanitary infrastructures have been opened in different zones where there was nothing. An increase concerning principally the primary health care services: medical houses; some hospitals were opened all over the country. However, the accessibility stays a problem regarding the distance, the lack of qualified agents and medicaments, the medicals' services cost that exclude poor people and the inexistence of specialises services (maternity, paediatric service…) (Sall *et al.*, 2003).

Is the augmentation of the health services offers enough to provide the universal health care accessibility? When we talk about health care services we analyze their accessibility and proximity (Vigneron, 2001). Regarding to that and in the improvement of the use of the health care services, it is necessary to provide their economic and geographic accessibility but also their socio-cultural accompaniment: mothers education, linguistic comprehension, take in consideration ethnic specificities…

2. RESEARCH QUESTION

In Africa, more than elsewhere, health care services remain insufficient. Construction of new medical infrastructures and improvement of health programs are a priority especially in rural areas. Are they sufficient to improve health when modern sanitary equipments are opened in non-equipped areas? We study here the case of the construction of an ultra-modern hospital in a rural area of Senegal, Bandafassi, whose population has been followed for more than 30 years.

The analysis of demographic surveillance data, which provide an accurate record of mortality trends in the population from the early 1970s until 2006, shows that this hospital has not reduced maternal and infant mortality. The analysis of complementary studies, based on the perception of this new hospital by the population and their way of using the health care services, gives some explanation to these failure.

3. THE AREA OF STUDY OF BANDAFASSI

3.1. Context of study

The demographic surveillance site of Bandafassi is in the south-east of Senegal, about 750 km from the capital Dakar. It is one of the poorest rural zones of the country. On March 31, 2006, the Bandafassi site had a population of 11,829 inhabitants. Nearly half of the population is less than 15 years old. There are 3 ethnic groups (Bedik: 25 %, Malinke: 17 % and Peul: 58 % of the population) who live separately in 42 villages.

The risk for a newborn baby of dying before the age of five years ($_5Q_0$) diminished, from 393 ‰ in 1981-1985 to 186 ‰, in 2000-2005. Vaccinations influenced the diminution of infant mortality (Desgrées du Loû and Pison, 1995). But mortality levels are important and higher than elsewhere in Senegal that count 220 ‰ in 1986 and 160 ‰ in 2005 (EDS-I, 1986 and EDS-V, 2005). Concerning the maternal mortality level, it stays high and represent 1050 maternal deaths per 100 000 live births during the period 1998-2005, when the national average, for the same period, is estimated around 400.

3.2. Therapeutic offer of cares

In Bandafassi, two modern medical systems (public and private) coexist side by side with traditional medicine used frequently by the inhabitants.

The private sanitary system is assured by some religious from the Catholic mission of Kedougou. From their installation since 1932 (Desgrées du Loû, 1996, Guyavarch, 2003; Kanté, 2003), they have give some care in Malinke villages and most Bedik villages located in the North, 16 of the 42 villages of the zone.

In 2002, medical services in this area were transformed by the opening of a private hospital in a remote part of the area, in the Bedik hamlet of Ninefescha. The services of this sanitary structure include two permanents units of general medicine and obstetric-gynaecology; and a chirurgical unit that depend on French doctors staying 15 days per trimester in the hospital. This hospital offers subsidized and high level care. It can deal with all kinds of emergencies, in particular, obstetric ones.

The public sanitary system is managed by the nurse of the dispensary of Bandafassi who provides care services in the majority of the survey villages, 26 of the 42 villages of the zone (Guyavarch, 2003). Otherwise, some restricted medical centres have been installed in different villages. They are managed by the community sanitary agents.

Next to these medical services offers, traditional medicine is often used by the inhabitants. In each village, one or more healers (*traditional practitioners*) do exist and are generally specialised in treatment of specific symptoms.

4. THE STUDY

4.1. Objective of study

This study describes the health behaviours in Bandafassi when a child is ill and a woman is pregnant. It also identify the reasons of non diminution of the infant and maternal mortality in Bandafassi.

4.2. Methodology and data

In March 2005, a qualitative survey was realized on around 60 persons. It was based on the perception of the new hospital available since 2003 in this area: Ninefescha's hospital.

In March 2007, a quantitative study/local survey has been realised with a sample of 1,000 children under 5 years old. The mother or the person in charge of the child was questioned on her health care habits when her child is ill.

Demographic surveillance site data complete the results obtain with this study.

5. RESULTS

5.1 Ninefescha's hospital: perception and use by the population

5.1.1. Difficulties encounter in Ninefescha's hospital

In this inaccessible zone, Bandafassi disposes of only 2 main roads. The Ninefescha's hospital accessibility represents the most frequently evocated obstacle by the population. However, other problems linked to the structure itself have been revealed by the respondents. In order, the most important is the absence of food for the patients in the hospital and of places for the family, the lack of information about that hospital then the high cost of the medicaments regarding to other structures in this area (Kanté, 2005).

5.1.2 Advantages of Ninefescha's hospital

Two advantages were mentioned by the respondents. The first is interested the quality of service through the good relational and the treatments quality in the hospital. The second concerned the financial advantages through the recent diminution of the consultation ticket price and the possibility of payments facilities for the poorest inhabitants (Kanté, 2005).

5.2. Evolution of delivery conditions

The conditions of delivery have few changed during the survey period in this area. Between 1981 and 2005, only 3 % of the deliveries happened in a maternity.

5.3.Analysis on health seeking behaviours data

This study describes the heath behaviours and also identifies the socio-economic and demographic factors which influence the use health care services of the population. These provide information on the disease (nature and symptoms), on the child (family relationship with the head of household, sex and age), on the parents (education, ethnic, residence, ownership of certain possessions) and on the village (health facilities and roads), do this factors have an impact on the type of the care, the waiting time before consultation, or the financial coverage of the care? In the same way, does it exist some traditional behaviour that limit the biomedical infrastructures use?

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