Dissertation By

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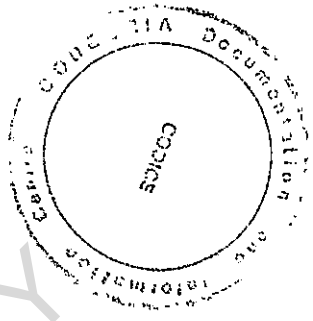
Socio-economic and cultural factors influencing maternal mortality in Tanzania: A case study of MBeya region

June, 1997

SOCIO-ECONOMIC AND CULTURAL FACTORS INFLUENCING MATERNAL MORTALITY IN TANZANIA

A Case Study of Mbeya Region



By

Tumaini Nyamhanga

A dissertation submitted in partial fulfillment of the requirements for the degree of Master of Arts (Development Studies) of the University of Dar es Salaam.

University of Dar es Salaam
June, 1997

CERTIFICATION

The undersigned certifies that he has read and hereby recommends for examination this dissertation entitled: Socio-economic and Cultural Factors Influencing Maternal Mortality in Tanzania.

.....Shao.....

Prof. I.F. Shao

(SUPERVISOR)

Date: June 30, 1997

DECLARATION

AND

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I, Tumaini Nyamhanga, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other University for a similar or any other degree award.

Signature .....

ACKNOWLEDGEMENT

This dissertation is the product of contributions from various individuals and institutions. I sincerely thank all of them. However, the following deserve a special mention.

Before all, I am very grateful to Professor I.F. Shao for the arduous work he has done in supervising and working with me throughout this study. I particularly thank him for agreeing to assume a supervisory role on a topic which, to many social scientists, appears to be the domain of medics.

Secondly, I wish to express my sincere appreciation to the Council for the Development of Social Science Research in Africa (CODESRIA) for financing writing of this dissertation.

Thirdly, I would like to thank the government leaders from the regional to the village level for doing the needful while I was in the field. Fourthly, my sincere hearty thanks go to the respondents - particularly relatives of the deceased for agreeing to participate despite the fact that our study subjected them to painful memories.

Likewise, in a special manner, I thank Ms. Sarah Ambakisye for accepting to be my interpreter. In fact, her role went beyond interpretation. Being a native, her presence instilled confidence in the relatives of the deceased who otherwise could have probably hesitated to share information on such a sensitive matter (death).

Last, but not least, I would like to thank Ms. S.A. Dege and Mrs. Belinda Michael for doing the secretarial work.

DEDICATION

This work is dedicated to the memory of my loving and trusting mother. Her untimely death denied her a chance of realising the returns of the investment she made in my education. May God rest her soul in eternal peace. AMEN.

ABSTRACT

The main concern of this study was to explore socio-economic and cultural factors associated with maternal mortality in Mbeya Region. Four hypotheses guided this study. Through them the study sought to establish empirically the influence of household income, government expenditure, family planning practices, and utilization of maternity services on maternal mortality. To accomplish this task, a descriptive and comparative (case/control) design was employed. A sample of convenience was used. Data was collected through interviews and focus group discussions - involving relatives of the deceased, mothers who delivered safely, traditional birth attendants, religious leaders, and heads of health institutions.

The results obtained confirmed our hypotheses. That is, it has been demonstrated that most of the deceased belonged to the low income households as compared to women who survived. Further that, the decrease of government expenditure, coupled with a decline in income, contributed significantly to the increase of maternal deaths. Moreover, the study illustrated that failure to practice family planning and non-utilization of maternity services predisposes women to the otherwise unnecessary deaths.

The study identified men's negativism, backed by

socio-cultural traditions, as being a stumbling block in family planning practice. On the other hand, ignorance, unfriendly attitudes of the staff towards their clients, and witchcraft beliefs - among others, have been implicated in women's failure to utilize maternity services effectively.

Ultimately the study concludes that maternal mortality is not just a medical problem, it is much more broader. Recommendations for improvement of the situation and for further research are also provided.

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CHAPTER ONE

INTRODUCTION

1.1 Background

The tragedy of maternal mortality and ill health has been largely neglected in the development programme of Third World Countries (Starrs, 1987). It was not until 1987 that the International Safe Motherhood Conference was held in Nairobi. At the conference the goal was set to reduce maternal mortality by at least half by the year 2000 (Ministry of Health, 1992). Explaining the motivation for the conference, the Director General of the World Health Organisation (WHO), (quoted in Starrs, 1987: 3) Dr. Halfan Mahler said: "Maternal mortality is neglected because those who suffer it are neglected people, with the least power and influence over how national resources shall be spent; they are poor, rural peasants, and above all women." Maternal mortality, therefore, is at the heart of the crisis of gender inequality from the household to the national level. It (maternal death) is the culmination of events that begin when a girl is born and are linked with her position in the society - particularly so in a developing country.

Thus, there is maternal mortality differential between developing and industrialized countries. The WHO estimates that 99% of 585,000 annual maternal deaths in the world

occur in developing countries; and less than 1% occur in developed countries ((WHO, 1996). See table 1.1 for further illustration.

Table 1.1: Maternal Deaths and Maternal Mortality Ratios*, by Region 1990.

	Maternal Deaths	Maternal Mortality Ratio
Sub-Saharan Africa	226,649	990
India	147,062	572
China	22,462	95
Other Asia	96,403	499
Latin America	22,336	200
Middle East	58,228	359
Developed	5,242	31
Less Populous Countries	757	
World Total	587,803	431

Source: Women's Health Journal 1/96, January - March 1996.

* Regional maternal mortality ratios calculated as the sum of the estimated number of maternal deaths divided by the sum of all live births in the region.

The unequal distribution of deaths in the world as shown above, reflects unequal socio-economic development between the North and the South. Because of uneven development, maternal mortality differential is also found

within regions and even within countries. For instance, in Africa maternal mortality rates are highest in West Africa with 700 deaths and lowest in Northern Africa with 500 deaths (Maggid, 1992).

The table below shows variation in East Africa.

Table 1.2: A Comparison of Maternal Mortality Rate in East Africa in 1990.

Country	Maternal Mortality Rate Per 100,000 live births
Uganda	300
Tanzania	340
Kenya	170

Source: Maggid, 1992

Likewise, there is maternal mortality variation by region within the same country. For instance, in Tanzania according to 1994 data, whereas Mbeya region recorded the highest rate (436), it was lowest in the Coast region (70). (See table 1.3). It is important to note that maternal mortality rate (MMR) reflects the risk of death a woman faces each time she becomes pregnant. The lifetime risk of death during pregnancy or childbirth for women in Tanzania is up to 200 times higher than the risk faced by women in Northern Europe (The United Republic of Tanzania and United Nations Children's Fund [UNICEF], 1990).

Table 1.3: Maternal Mortality Rate by Region for Three Consecutive years (1992, 1993, and 1994).

Region	MMR		
	1992	1993	1994
Arusha	102	158	114
Coast	209	111	70
Dar es Salaam	220	398	237
Dodoma	197	214	208
Iringa	311	321	276
Kagera	304	343	190
Kigoma	144	155	105
Kilimanjaro	126	46	107
Lindi	262	289	193
Mara	67	59	106
Mbeya	67	361	436
Morogoro	289	172	190
Mtwara	264	212	161
Mwanza	221	186	266
Rukwa	172	294	243
Ruvuma	225	189	186
Shinyanga	143	188	199
Singida	242	171	238
Tabora	151	185	130
Tanga	255	172	220
Total	199	211	197

Source: Ministry of Health, Health Statistics Abstract, 1996.

This data, however, only reflects deliveries and deaths that are reported by health facilities; about 40% of deliveries take place outside the health facilities (Ministry of Health, 1992). This reflects inadequacy and underutilization of community based maternity services - despite their cruciality, in early diagnosis of pregnancy complications. For instance, it has been established that although 90% of pregnant women have at least one check up at an MCH (Maternal and Child Health) Clinic, a smaller proportion of women report more than once for antenatal

care and there is very little follow up by the staff (The Government of the United Republic of Tanzania and UNICEF, 1990). The reasons behind this inadequate provision and utilization of maternity services are yet to be explored sufficiently. This is important because whereas it is now more than two decades since Family Planning was integrated into the national MCH programme, the expected results are yet to be seen. The maternal mortality has increased to everybody's disappointment. It is hypothesized that socio-economic and cultural factors have a bearing on the inadequacy - in terms of provision and utilization of maternity services, and hence an increase in maternal deaths.

The impact which Structural Adjustment Programmes (SAPs) have had on the health sector and on socio-economic development of the poor people in Tanzania provides a clue of the importance of socio-economic factors. Through SAPs, the government of Tanzania has been compelled to reduce its expenditure on basic social services and shifted the costs to families and individuals (Shao, et al, 1992). There has been an erosion of real incomes. As such, in Zimbabwe, as Chinema and Sanders (1993) argue, the user charges have had an impact on health seeking behaviour for the care of non acute conditions, including maternity care. As a result, the number of women who booked for ante-natal care and eventually delivered in the health facilities

seemed to decrease. This impact of SAPs has not been sufficiently assessed in Tanzania.

It is interesting to note that whereas the trend of maternal mortality has been on the decline between 1961 and 1985, from 1986 to 1994, and probably todate, during the period of the restructuring process, there has been an upward trend of the maternal mortality (Kiwara, 1994). This is illustrated below.

Table 1.4: The Trend of Maternal Mortality in Mainland Tanzania, 1961 - 1994

Year	Maternal Mortality per 100,000 Births.
1961	453
1964	343
1967	351
1970	262
1972	252
1974	187
1985	167
1986	197
1987	190
1990	190
1991	215
1992	199
1993	211
1994	197

Source: Bureau of Statistics and Ministry of Community Development, Women Affairs and Children, 1995, and Ministry of Health, 1996.

However, most of the studies done such as those of Murru, 1987; Raphael et al, 1990; and Urassa et al, 1994; have had an incomprehensive view of maternal

mortality. These studies point a finger at immediate causes - such as anaemia, sepsis, haemorrhage, obstructed labour and malaria - disregarding the underlying and basic causes. Such studies look at the problem as manifested at the phenomenal level. They could have, for instance, looked into socio economic conditions leading to anaemia in pregnancy which must be resolved before the problem of lack of blood for transfusion can be solved. The studies of this group (Murru, Raphael, et al, Urassa et al, among others) in the final analysis, boil down to descriptive surveys rather than critical analyses. Thus the suggestions they raise to solve the problem of maternal mortality are inadequate because they have missed the essence of the problem.

1.2 Statement of the Problem

The health sector has failed to decrease maternal mortality rate during the past decade. This suggests the incomprehensive nature of the intervention strategies. The few studies done on maternal mortality in Tanzania stem from the medical profession and stress "clinical causes". The underlying and basic-socio-economic and cultural-risk factors have not been adequately explored and analysed. This study was an attempt to correct this deficiency.

1.3 General Objective

The major aim of this study was to explore the socio-economic and cultural factors associated with maternal mortality in Tanzania in general and Mbeya in particular.

1.4 Specific objectives

1. To find out the extent to which the household income has contributed to maternal mortality.

2. To find out the extent to which the decrease of government expenditure on health sector has affected maternal mortality.

3. To explore how family planning practices affect maternal mortality.

4. To explore how utilization of maternity services during pregnancy, delivery, and post-delivery affect maternal mortality.

5. To suggest policy options towards preventing maternal deaths.

1.5 Social Significance of the Study

1. This study goes beyond the most immediate apparent reasons for maternal deaths. It is a response to the

call to look at maternal mortality holistically. Its results, therefore, will have important implications for preventive programmes.

2. The goal set at the international Conference in Nairobi (1987) on Safe Motherhood: reducing maternal mortality by at least half by the year 2000, is not likely to be met in Tanzania-given the current trend of maternal mortality rate. Knowledge of the realities obtaining at the local level may contribute to re-establishing the desired strategy.

3. It will contribute to the available literature on maternal mortality in Tanzania.

1.6 Hypotheses

1. As household income declines maternal mortality rate increases.

Justification

The rising cost of living and drop in real income predisposes women to malnutrition - particularly anaemia in pregnancy. This is because, although general poor socio-economic status is the root cause of poor health for women and men alike, the inferior position of women (being denied access to resources) makes their situation truly precarious. That is, there are sex differences in susceptibility to

diseases of socio economic origin. Women are vulnerable because of their relatively great nutritional needs due to heavy workload (Kavishe, 1990:3). More importantly, the nutritional needs of a woman during pregnancy are greater than at other times because she is building up in her body the tissues and organs of a new humanbeing (Latham, 1965:66). Thus, whereas during pregnancy women need special consideration in terms of diet, poverty renders them no choice of what food is available at any meal. Moreover, a decline in income means less power to pay for health services.

2. As government expenditure on the health sector decreases maternal mortality rate increases.

Justification

The economic crisis and its accompanying SAP measures have had a severe impact on the health sector in Tanzania. For instance, the share of health in the national budget declined from 7.23% in 1977/78 to 4.62% in 1989/90 (Lugalla, 1995). As a consequence, it has been difficult for the government to maintain its priority on rural health care and the preventive approach to health which started in the early 1970s. There have been lack of resources and qualified personnel, thereby diminishing the quality of services

provided. For instance, on 5 June 1988, the Daily News reported that during the first thirteen weeks of the year, 71 mothers died during labour in the Muhimbili Medical Centre; this number was four times the death rate of previous years (Vuorella, 1992).

3. Because the majority of women in rural and urban areas do not have access to family planning practices, maternal mortality rate increases.

Justification

Most women, particularly the poor and less educated ones, lack control over their own reproductive destiny (Hatcher et al 1989). Overfrequent pregnancies and childbearing at very old and very young ages are more often than not the consequence. Overfrequent pregnancies without adequate nourishment deplete women's energy and nutrient reserves. They become physically exhausted - a phenomenon known as "maternal depletion syndrome" (The Government of United Republic of Tanzania and UNICEF, 1990). As such, a large number of previous pregnancies (five or more) is associated with an increased risk of complications. High fertility, therefore, increases the number of times a women faces the risks for pregnancy and childbirth (Ministry of Health, 1992).

On the other hand, poverty and socio-cultural realities inherent in a patriarchal society, including Tanzania, predisposes teenage girls to premature or rather unwanted pregnancies (Chambua et al, 1994). This is because daughters are generally viewed as a source of wealth for the family. Thus parents (fathers) encourage or rather force early marriage (Tobisson, 1980). Such teenage wives lose control over their own reproductive destiny. It remains for the husband to determine the timing of pregnancy and the number of children to be born. Below the age of 20, expectant mothers have not attained full skeletal (pelvis) development to support safe delivery.

4. There is an inverse relationship between utilization of maternity services and maternal deaths.

Justification

Maternity services from the time of pregnancy to 42 days after delivery are very crucial for mothers' survival. However, these services have not be utilized optimally. It has been documented that a small proportion of women report more than once for antenatal care (The government of the United Republic of Tanzania and UNICEF, 1990). As a result, most of the women are not monitored adequately for identification of danger signs of pregnancy - related

complications. Furthermore, 40% of deliveries take place outside the health facilities (Ministry of Health, 1992). These deliveries are assisted by Traditional Birth Attendants (TBAs) under unsanitary conditions which expose women to life threatening infections. Besides, complicated deliveries require expertise which TBAs can not provide.

Finally, the cruciality of post-partum care need not to be overemphasized. Following delivery, many women are weakened to the extent that sickness and disease can easily take its toll. If care is not provided, sepsis and anaemia (secondary to blood loss) are the most common killers during this period (Safe Motherhood Newsletter, 1994).

1.7 Definition of Terms

a) Maternal mortality - refers to death of a woman while pregnant or within 42 days of the termination of pregnancy (WHO, 1987).

b) Maternal mortality rate - is the number of maternal deaths per 100,000 live births (WHO, 1987)

c) Safe Motherhood - is a state of affair; it is well-being of the mothers that expands from the time of pregnancy to 42 days after delivery. Any death that

occurs during those days is categorised as "maternal death" (Omari, 1991).

d) SAPs refer to a set of stabilization and adjustment programmes which have been adopted by all key global development agencies (Multilateral and the G7 bilateral agencies) as the model development strategy for developing counties (Mbilinyi, 1994).

e) Family Planning- refers to practices that help individuals or couples to attain certain objectives: to avoid unwanted births; regulate the interval between pregnancies; to control time at which births occur in relation to ages of the parents; and to determine the number of children in the family (Silberschmidt, 1991).

CHAPTER TWO

LITERATURE SURVEY

2.1. Introduction

One of the most important outcomes of the United Nations Decade for Women (1976-1985) was the international recognition of women's contribution to life and development of their families, communities and nations. As such, the International Safe Motherhood Conference that took place in Nairobi, 1987, marked the international commitment to improve women's health and reduce high rates of maternal mortality in Africa, Asia, the Middle East, and Latin America (Starrs, 1987).

The World Health Organisation (WHO, 1989) argues that: while few women in the North imagine they will die in childbirth; for the majority of Southern women the prospect is all too real. WHO further notes that, in the Third World countries, besides being generally underdeveloped, women are socially, economically and culturally disadvantaged. As a result, Posada (1996) corraborates this by saying that 99% of the worldwide annual maternal deaths (500,000) take the lives of women in the South.

The conclusion espoused from the above narratives seems to point towards the the fact that maternal mortality is a human development indicator that most starkly exposes

contrasts between industrialized and developing worlds (McCathy and Maine, 1992). It is argued that in Africa, for example, one in 21 women is at risk from death from complications linked to pregnancy and childbirth, whereas in Northern Europe the figure is one in 9,850 as the table below indidcates:

Table 2.1: Estimated Lifetime Chance of Dying from Pregnancy - Related Causes by Region (1975 - 1984)

Africa	1	in 21
Asia	1	in 54
South America	1	in 73
Caribbean	1	in 140
United States	1	in 6,366
Northern Europe	1	in 9,850

Source: Jacobson, J.S. Safe Motherhood in SADCC Region - The Challenge of Survival. New York: Family Care International and the World Bank, 1991.

2.2 The Causes of Maternal Mortality

The problem of maternal mortality is said to be multifactorial and as such it has been advanced that its causes can be categorized as immediate, underlying and basic (TGNP, 1993). However it seems that, most of the studies in developing countries have focused on identifying

the immediate causes of maternal deaths, and worse still most of them have been hospital based. For instance, studies done in India (Juneja et al, 1994); Malasya (Abdullah et al, 1995); Pakistan (Fikree et al, 1994); Turkey (Tuncar et al, 1995); Ghana (Martey et al, 1994) Zimbabwe (Fawcus et al, 1995) among others, identified principal causes as being: haemorrhage, eclampsia and sepsis. However, there was very little attempt, if any, by these studies to identify underlying and basic risk factors leading to maternal deaths.

In Tanzania, studies done on maternal mortality are very few. The most common immediate causes of death, according to these studies, have been haemorrhage, sepsis, abortion, hypertension, and anaemia (Murru, 1987; Everret 1974; Price, 1983; and Urassa et al, 1994). In addition, lack of blood for emergency transfusion, late arrival at health institutions, and lack of self discipline and commitment among health personnel have been reported as important contributing factors (Justesen 1985; Roosmalen, 1988).

Inspite of being useful in assessing the quality of health care, to a large extent, the above cited Tanzanian studies have given the impression that maternal deaths are mostly due to hospital associated causes. They exclude crucial risk factors which may be operating at the

community level. Among the very few, if any, studies which tried to identify such risk factors are those of Maggid (1992) [done in Dodoma] and Urassa et al (1995) [done in Ilala]. They describe lack of transport, inadequacy of personnel and equipment, and illiteracy as factors contributing to maternal deaths. Apart from being inexhaustive, these studies lack "proper" contextualization - in that they assume away existence of the impact of current SAPs, thereby lacking an indepth analysis of causation of maternal mortality. Moreover, and more specifically, none of the two studies (Maggid and Urassa et al) examines the impact of household income and family planning practices on maternal mortality.

2.2.1 Feminisation of Poverty and Maternal Mortality

Conable (1987) advances that death resulting from complications of pregnancy and childbirth are distressing symptoms of poverty and childbirth. Posada (1996) asserts, that as a result maternal mortality and female poverty are parts of the same equation. She, therefore, adds that maternal mortality affects primarily the poor - those whose social and economic conditions deny them access to adequate services during pregnancy and childbirth. This is because, as Fuente (1996)argues, women in the poorest strata of the society are likely to have been from birth the least previleged in nutrition, housing, education and social amenities. Kwast (1989) reports that the community based

study in Addis Ababa showed that the risk of dying for poor women, maid servants, divorced and widowered women was 3 to 6 times that for those with income above poverty line and for married women. Furthermore, a study done in India by Bhatia (1985) found that maternal mortality rate of 2166 (deaths) per 100,000 live births occured in most socio-economically deprived villages, compared to 516 in the most developed ones.

Moreover, a report by Omari (1991) that anaemia in pregnancy is the leading cause of death among women in Tanzania gives us one of the serious consequences of poverty among women. Thus, Tobison (1980) correctly observes that whereas during pregnancy women need special consideration in terms of diet, being denied control of household income, poverty renders them no choice of what food is available at any meal. As such, Kaisi (1989) advances, the advice given at the health facilities about the measures to remedy a problem - like pregnancy anaemia - may not be adhered to; and that, as a result, women's health seeking behaviour is discouraged. Consequently, as Kwast (1989) and Szmoisz et al (1995) argue, because men care little about health issues arising from pregnancy, they always take their wives to the health facility in a moribund (very sick) condition, only to die at the entrance.

2.2.2. Family Planning and Maternal Mortality

Sai (1986) observes that whereas Japanese and American women complete childbearing within a period of 3 - 4 and 4 - 5 years respectively, the average women in tropical Africa take 19 - 21 years. This is because, as Hatcher et al (1989) argue, most women in Africa and the developing world as a whole, lack control over their own reproductive destiny. Chambua et al (1994) attribute this to poverty and socio-cultural realities inherent in a patriarchal society. Berer (1996) adds that, being economically disadvantaged, teenage girls resort to sex as a means of earning a living; and as a consequence, some become pregnant and resort to illegal abortions. Hatcher et al (1989) warn that such abortions are certainly likely to cause maternal death from sepsis. This is supported by studies done in Tanzania which show that post-abortal sepsis was among the leading immediate causes of mortality (Urassa et al, 1994; Kaisi, 1989). However, these studies fail to explore the underlying and basic forces leading to these fatal abortions.

Tobison (1980) further argues that, in a patriarchal society, including Tanzania, daughters are viewed as sources of wealth for the family. He adds that under such circumstances, parents (particularly fathers) encourage or rather force early marriages on their daughters. The

decline in real incomes and consequent rising cost of living, as a result of SAPs, has aggravated this tradition (TGNP, 1994). However these authors (Tobison, TGNP) do not go a step further to examine the impact of this practice on maternal mortality.

Moreover, Kwast (1989) advances that, for fear of divorce, married adult women carry as many pregnancies as their husbands wish. Omari (1987) adds that social dependence has far reaching effect on family planning programmes; and that it increases the capacity for men to influence certain decisions including the use and non-use of modern methods on family planning. In this light, Magambo (1988) notes that males' attitudes influence female partners' decision in terms of whether to use Family Planning method or not. He adds that, in cases where there is active disapproval by the male partner, the female partner has to stop the use of Family Planning methods.

But why do men behave the way they do? Why do they have negative attitudes towards birth control? Stokes (1980) asserts that they (men) fear their partners' promiscuity and loss of power to father an unlimited number of children. As such, Kwast (1986) observes that despite the consequent maternal deaths being tragic, inevitability of the event is culturally supported and endured.

Unfortunately, however, most studies on fertility stem from the field of demography and, as has always been the case in most Third World Countries, their main concern has been socioe-conomic consequences of population explosion (Kambwegere, 1977; Orubuloye, 1977; Caldwell, 1977). Little attempt is made by these studies to place fertility in the perspective of maternal mortality and women's health in general. Thus, Silberschmidt (1991) rightly advances that even Family Planning Programmes have been mainly considered as a measure to control births and NOT as a measure for women to control their own fertility and improve their health (and thereby prevent maternal mortality). Stokes (1980) adds that little has been done to empower them (women) to gain control over their own reproductive destiny. She further argues that Family Planning Programmes have not, to a large extent, aimed at addressing deeply rooted socio-cultural obstacles; instead, the approach has always been to link uncontrolled fertility with ignorance of mothers, ignoring the role of men. Vuorela (1993:20) puts this more succinctly when she quotes a group of women as having said:

> *Actually the barrier is the husband. It remains to inform the men, women fail because men <u>do not understand</u>; education should be given to men also; you can not rely on women only, the men are more powerful in the family, the man is the barrier, he is everything in our society, we have no status, no economic position; shall we start with adult education for men? (emphasis my own).*

In the final analysis as Rukonge (1989) notes - given the patriarchy and organizational bottlenecks - many women die of pregnancies they did not want because Family Planning services are absent, poorly understood and/or provided. He adds that a quarter of a million of maternal deaths would be avoided if Family Planning services were available and utilized by those at risk. A study done in Indonesia, the Philippines, and Thailand by Viegas et al (1992) found that more than a third of the mothers who died were in the age groups generally associated with increased risk: that is, under 20 and over 35 years. Their lives, the study concludes, could be saved if they could have access to Family Planning methods.

2.2.3 Accessibility to Maternal Health Services and Its Impact on Maternal Mortality

Roosmalen (1988) has argued that the 20th Century has seen great changes for the better in the industrialized world. Maternal mortality rates have been reduced from 3 - 5 per 1000 live births in 1930 to 0.3 in recent years; a situation far from that is still prevailing in Third World Countries. As such, Viegas et al note that childbirth in the poor countries is still the leading cause of deaths in women of reproductive age.

Mandara and Msamanga (1988) observe that while considerable progress has been made in formulating and implementing strategies for child survival following the declaration of the goal of "Health for All by the Year 2000", maternal health has been relatively neglected by the health programmes of developing countries. As such, Herz and Measham (1990) have reiterated, Maternal and Child Health (MCH) programmes have had a limited impact on maternal mortality. In fact, some authors have asked "where is the "M" in MCH?" (Rosenfield and Maine, 1985; Sai, 1986).

Consequently, as Kaisi (1989) observes, while child care has shown a fair improvement, judging from infant and underfives mortality rates, maternal mortality rates in Tanzania have remained high. He adds that the situation has been so despite existence of MCH/Family Planning Programme since 1974. Mannathoko (1992) and TGNP (1993) have implicated economic crisis and the accompanying SAPs in the noted upward trend of maternal mortality. Lugalla (1995) advances that as a result of SAPs, the government commitment to the health sector has diminished, thereby creating many problems in terms of intersectoral allocation of resources. He further argues that, as a consequence, it has been difficult for the government to maintain its priority on rural health care and preventive approach which started in early 1970s and that a large share of money kept

going to recurrent rather than to development expenditure. See table 2.2 for illustration.

Table 2.2: The Summary of Public Expenditure Towards Health Sector

	Recurrent			Development		
	1993/94	1994/95	1995/96	1993/94	1994/95	1995/96
	Actual Expenditure	Approved Estimates	Estimates	Actual Expenditure	Approved Estimates	Estimates
Ministry of Health						
-Hospital Services	10098827474	12390807300	9894345000	493694000	443200000	675700000
-Preventive services	850137273	1434606600	995322000	113553000	107000000	175000000
Sub-Total	10948964697	13825413900	10889667000	607247000	550200000	850700000
Regions						
-Hospital services	2663545900	2619187000	1327605300	501259000	402149000	471738000
-Preventive services	119252767	24671300	11667200	115650000	146776000	110028000
Sub-Total	2782798667	2643858300	1339272500	61690900	548925000	581766000
Total	13731763364	16469272200	12228939500	1224156000	1099125000	1432466000

Source: Ministry of Health: Health Statistics Abstract, 1996

Shao et al (1993) advance that most hospitals in the country including national consultant hospitals - Muhimbili, KCMC, Bugando and over 3000 dispensaries had to go without drugs or diagnostic inputs. TGNP (1993) has attributed the increase in maternal mortality to the diminished quality of services (as a result of SAPs) Vuorela (1992) has corroborated this by saying that 71 maternal deaths which occurred at Muhimbili Medical Centre, during the first 13 weeks of the year 1988, were mainly attributed to shortage of blood and essential drugs such as lasix, diazepam, ergometrine, pitocin and hydrallazine. Vuorela asks: if this was the situation at the University hospital in the capital city, what about those already disadvantaged health centres and dispensaries in the rural areas?

Chinemana and Sanders (1993) report that, in Zimbabwe, the unsatisfactory delivery of maternal health services have become a disincentive to women's health seeking behaviour. Moreover, as Farah and Ghonayel (1994); Adetero (1991); and Makokha (1991) observe, failure to seek medical (maternity) care because of illiteracy and/or distance to the facility have been associated with maternal mortality in Yemen, Nigeria, and Kenya. That is not all. Herz and Measham (1990) and UNICEF (1989) advance that inaccessibility to health services is aggravated by women's lack of decision to seek medical attention; and that for

the poor women, the decisions are made by the husbands and/or elder family members. In the final analysis, therefore, the Ministry of Health (1992, Tanzania) reports that 40% of pregnant women are inevitably delivered by traditional birth attendants or family members. Kaisi (1989) reiterates that most of such deliveries take place under unsanitary conditions, thereby contributing to maternal deaths as a result of infection.

2.3 Conclusion

Following review of the available literature, one notices that the need to make maternal mortality a priority public health issue is almost lacking. While most of the publications express concern for the persistently high rates of maternal mortality; they concentrate mostly on diseases. Relatively little is known about non-medical factors - which are equally and sometimes even more important. Furthermore, although some works by social scientists provide information on the impact of adverse socio-economic and cultural forces on women, they lack an explicit and deep linkage with maternal mortality. For better understanding of the nature and causal factors of maternal mortality, therefore, the existing gap between the medical profession and social disciplines must be filled. This infact constitutes the major domain and task of our study.

CHAPTER THREE

DEVELOPMENT OF MATERNAL MORTALITY IN TANZANIA: A HISTORICAL PERSPECTIVE

3.1 Introduction

In Tanzania, and the rest of Africa, there is very little, if any at all, national demographic data for both pre and colonial periods. As a result major demographic events -like maternal mortality are difficult to quantify (Maddox, 1996). Consequently, very little or no attempt has been made to deal with maternal mortality per se. The little literature available, mostly by demographic historians, has dealt with the subject (mortality) in a general context (Kuczynski, 1949; Koponen, 1988) - except in a few areas where qualification is made.

The absence of tangible data, however, does not mean that maternal deaths were not occurring. It could rather be a reflection of poor or no record keeping, particularly so in the pre-colonial period - given a low level of education and socio-economic development in general. In the colonial period lack of record means more than just poor record keeping. It may be a pointer to the neglect of the problem -given the class nature of medicine under capitalism (Doyal and Pennel; 1979) Ferguson, 1980). It may also reflect the racial nature of the society in that even if there were maternal problems on the Tanzanian

African, it never concerned the white colonial government.

Since mortality is the eventuality of ill-health, to understand its historical development, one has to examine socio-economic, political, and cultural forces that prevailed in a particular period under consideration. More specifically, it is imperative to analyse components of population dynamics (fertility, migration), changes in the mode of production, the impact on the ecology, changes in disease patterns, changes in family patterns of life, and the power of women (Turshen, 1987). In this chapter, our discussion will centre around three periods, namely: precolonial, colonial and post-colonial.

3.2 Precolonial Period

The society was made of hunter-gatherers, settled agriculturalists and pastrolists. Their way of life determined the demographic pattern. For instance, Turshen (1987) argues that hunter-gatherers had fewer children-spaced further apart, lower infant mortality, and longer life expectancy than agriculturalists.

The differences can be related to labour demands, disease pattern and ecological niches. Agriculture on well-watered plains and plateaus supported larger populations than did herding in dry areas. Since agriculturalists were more dependent on their immediate environment, lived in constant contact with their own refuse-they experienced more

diseases thus making them more vulnerable during food shortages. However it is argued that availability of land in pre-colonial Tanganyika suggests that famines were localized and of short duration.

On the other hand, herders, who were often nomads, had little contact with their refuse (immediate environment) as they moved from one place to another looking for better pasture. As a result, their environment was more sanitary, and since they lived in relatively self-contained groups - having little contact with others - they developed immunity to many communicable diseases. In addition, their food supply was adequate and rich in protein (Kjekshus, 197).

All in all, as Trushen (1987) seems to conclude, during this period mortality was highest among the very young and the very old, sparing young adults of child bearing age. Indeed, since women were the principal agriculturalists - and enjoyed a great deal of autonomy - they maintained control of their reproductive destiny. Further than that although labour was divided along gender lines, there is little evidence to show that women were treated as inferiors as after European conquest (Turshen 1987).

3.3 The Colonial Period

Colonialism - the product of capitalism - disrupted

socio-economic and cultural norms that existed before. This had an impact on fertility and mortality. The colonial government, in pursuit of their economic motive, established large scale farming-emphasis being on cash crops (at the expense of food crops) for export (Mangao, 1980). This was preceded by forceful eviction of the natives from their fertile pieces of land. As if that were not enough, income tax was established. Thus, most of the natives - mainly men - had no alternative for survival except by becoming labourers on the newly established plantations (Onimode, 1988). Trushen (1987) argues that the new mode of production provided couples with incentives for larger families (due to increased demand for labour). She questions whether higher fertility was associated with increased maternal and infant mortality. She however, notes that there were higher female than male mortality in adulthood in areas where men migrated to work in another environment and women remained in the original environment to bear and raise children.

The rising mortality among women in the labour reserve areas might be attributed to, besides more pregnancies, increased workload and poor nutrition.

Moreover, cultural destruction resulting from colonization might account for increased female mortality. It is argued that pre-colonial societies had cultural controls which may have kept fertility low. Turshen (1987)

cites an example of Ngoni whose men and women, following inauguration of the pattern of labour migration under colonialism, began to marry at younger ages (below 30 for men and less than 25 for women) and that, adultery and premarital sexual relations became more common, as more and more men were absent for longer and longer periods of time (Turshen, 1987). Under such a situation, it is possible that early and unplanned pregnancies and sexually transmitted diseases (STDs) were on the increase - suggesting increased chances for mortality.

3.3.1 Impact of Western Medicine Under Colonialism (Maternal Health Services in Tanganyika)

Western medicine was first brought to Tanzania (Tanganyika) by missionaries, in 1877. Health care units were built in areas where the missions were established, main focus being on mission workers and very few community members around (Ministry of Health, 1991). Likewise in the subsequent years - under German and British Colonial rules -low priority was given to the health care of the natives. As Ferguson observes, medical facilities were created in the colony for the small European ruling class and the minority of Africans and Asians directly in their service. In addition, emphasis was more on curative rather than preventive medicine and the facilities were situated in the towns and cities (Ferguson, 1980; Kiwara, 1982).

Besides, maternal and child health services were more biased towards child welfare, rather than maternal well-being. Kuczynski (1948:367) quotes the 1925 medical report for Dar es Salaam, as having stated "Maternity and child welfare work has made some progress under Miss Allardes, whose energies are however, directed more towards the child welfare than the maternity".

Given the scarcity of modern medicine, and its biases under colonialism, maternal health continued to be, almost entirely, under the care of Traditional Birth Attendants (TBAs). TBAs, who have looked after the health of their communities since precolonial period, were elderly married women. They were respected and entrusted to care for the pregnant women and perform deliveries (WHO, 1985; Leadam 1985). Thus, inspite of absence of documentary evidence it can safely be argued that, western medicine played a very insignificant role - both positively and negatively - regarding the question of mortality in colonial Tanganyika.

3.4 Maternal Health Under Post-colonial Tanganyika (Tanzania)

The early years of independence inherited a capitalist health system. That is, curative care for the minority, leaving the majority, including women, unattended. The situation went like that until 1967, during Arusha Declaration, when a landmark health policy was adopted

(Kaisi, 1989). Among other things, the policy insisted on provision of comprehensive (curative and preventive) health care and equity - urban vs rural in terms of budget and in humanpower allocation.

Moreover, a special programme for women MCH/FP (Maternal and Child Health/Family Planning) - was established in 1974. The primary aim was to make maternity services -antenatal, delivery, and postnatal - accessible to the majority so as to reduce morbidity and mortality (Ministry of Health, 1992). Again, in 1985 a programme was launched to train TBAs - to integrate them into the modern maternity care.

However, the above measures have had a minimal impact on maternal mortality because the inherited colonial 'wounds' -poverty, malnutrition, gender inequality, high fertility, among others-are yet to be cured.
A downward trend of maternal mortality rate was noted only from 1961 - 1974. Since then, probably because of economic crisis and consequent SAPs, there has been a generally upward trend. See table 1.4.

3.5 Conclusion

Documentation on maternal mortality - in colonial and pre colonial periods - is literally lacking, very scanty in terms of magnitude of the problem. However, given socio-

economic and cultural evils that colonialism impacted on Tanganyika, we suspect that women suffered more during this era. Our suspicion, then, constitutes a gap of knowledge crying to be filled by a thorough and comprehensive historical research.

CHAPTER FOUR

METHODOLOGY

This chapter provides the methodology employed in the study. Description is given on the design, study area (and justification), data collection, target population, the sample, analysis of data, and limitation of the study.

4.1 Design

The design of this study was descriptive and comparative (case/control). It was retrospective in direction; that is, it involved looking backward in time at deaths that have already happened for the past five years. Being a case/control study it compared women who died to other women who delivered safely. In other words, among other things, our study sought to determine how women who died differed from those who did not.

4.2 Study Area and Justification

The study was conducted in Mbeya region. This region was selected because the most recent statistics obtained from the Ministry of Health (Health Statistics Abstract, 1996) indicate that Mbeya recorded the highest rate (436) in 1994 (refer table 1.3). Besides, Mbeya had had a marked increase in maternal mortality from the lowest (67) in 1992 to the highest in 1994 - something which attracted my interest.

However, because of financial and time constraints, the whole region was not studied. Instead, after having gone through the medical records at Mbeya consultant hospital and regional health offices, those areas with high concentration of mortality cases were selected. These were Mbeya (Urban) and Mbozi districts. Five villages (settlements) in Mbeya (U) and seven in Mbozi were involved in the study. The selected Villages in Mbeya (U) were: Nzowe, Mbalizi Road, Soweto, Simike, and Majengo. Those in Mbozi were: Itaka, Ruanda, Msuto, Ukwile, Ihanda, Zelezeta and Ilembo. Convenience in terms of distance and transport was further considered during the selection.

4.3 Data Collection

(a) Secondary Sources

These comprised research reports, published and unpublished works obtained from the University library, medical library, and documentation centres at the campus. Other sources included libraries at the country offices of UNICEF, WHO and at TGNP.

(b) Primary Source

(i) Confidential information obtained from the medical records - through ward books, death registries and case notes.

(ii) Interview

The interview guide (questionnaire) was a major tool for data collection. It was semi structured. That is, apart from having a series of questions that could be answered by either YES or NO, or by selecting from a series of alternative choices, the interviewer probed more deeply (where necessary) using open ended questions. Since obtaining good information about maternal mortality is a delicate task, the interviewer established good rapport prior to embarking on the subject matter itself. In so doing, we were able to obtain information that the subject would not have revealed under other circumstances (like in the case of self administered or of a mailed questionnaire) Borg and Gall, 1983).

(iii) Focus Group Discussion

This was also a source of information - particularly when we sought clarification and/or deeper views on socio-cultural and religious factors influencing maternal mortality. It was conducted among the TBAs, religious leaders, and women who delivered safely. Particular topics for focus group sessions were based on the data from the survey. Discussion sessions consisted of four to six persons.

4.4 Target Population

The target population consisted of widowers and/or close relatives of the deceased; postnatal mothers (who delivered safely) attending MCH clinic at the locality of the deceased; TBAs, religious leaders and heads of respective health facilities (dispensary, health centre, hospital).

4.5 The Sample

The sample of convenience (purposeful) was used because of difficulty encountered in following up the homes of the deceased. Sometimes the relatives of the deceased could not be found through their addresses found in the hospital records. In such circumstances we had to ask the village and/or ten cell leaders if they knew a home where maternal death had occurred within the past five years. In extreme situations we had to select another mortality case obtained in a different locality. Ultimately - thanks to the village leaders - we were able to get in touch with 30 relatives of the deceased.

From the target population, 110 respondents were involved in the study. That is, apart from 30 relatives of the deceased mentioned above, others included: 60 mothers who delivered safely, six (6)TBAs, 4 religious leaders and 10 heads of health facilities.

Two mothers who delivered safely (controls) were compared against one deceased woman (case). Having more than one control for each mortality case ensured a better chance of having statistically significant finding even though the number of maternal deaths in the study area was relatively small (WHO, 1987).

4.6 Analysis of Data

Statistical procedures were used in summarising the data and its interpretation. As such, descriptive statistics - frequencies, percentages, and mean were computed. The mean was specifically used to compare the income levels of the deceased women and those who delivered safely. Inferential statistics - chi-square (x^2) and Odds Ratio (OR) were also employed. The x^2 was used to test statistical significance of the difference between cases and controls regarding family planning practice, ante-natal attendance, and delivery or seeking medical care a at the time of crisis in the course of pregnancy. Furthermore, the OR was used to measure the strength of association between the above mentioned independent variables and the dependent variable (maternal mortality).

4.7 Limitation of the Study

(a) The data on income were based on respondents' honesty. Usually most people are reluctant to let their actual incomes known. Therefore, it is

difficult to really be sure that respondents earned what they pronounced. This setback might limit the validity and accuracy of the data. To minimise this effect, where deemed necessary and applicable, the researcher had to compute financial value of cash and/or food crops harvested annually.

(b) The study used a purposeful sample. Generalization of the study findings, therefore, should be made with caution.

(c) Financial and time constraints compelled us not to study the whole region. This may limit generalization of the results to other areas which were not involved in the study.

(d) Obtaining good information about maternal mortality is a delicate task. This is because the death of any family member is likely to be a sensitive subject particularly if it were recent and unexpected. Thus, emotional feelings of the close relative-like a husband - might have impaired the expected optimum cooperation. However, the researcher tried to minimize this effect by establishing good rapport prior to the interviews.

(e) Language

The researcher hails from a different region in the country, hence he is not informed of native languages in the study area. This necessitated employment of a native interpreter, who facilitated communication between the researcher and some of the respondents who were unable to speak Kiswahili. As such, lack of direct questioning from the researcher himself (in some situations) might have impaired the quality of data obtained. To correct this deficiency, the researcher trained the interpreter such that she became conversant with the content of the interview guide. Questions noted to have been misunderstood were repeated.

All the same we still believe that the data we collected was valuable, valid and useful for the study and the results produced after the interpretation give us a picture of what is happening in the location of the study but could also be generalised in the Mbeya Region and even in Tanzania but with caution.

CHAPTER FIVE

MBEYA: REGIONAL PROFILE[1]

This chapter provides a description of the regional profile. It is presented under eight sections, namely: location, administrative structure, topography, climate, population, economic status, social sector and the status of maternal mortality.

5.1 Location

Mbeya is one of the twenty regions of Tanzania mainland. Located in the southwestern corner of the southern highlands, it shares borders with Zambia and Malawi to the immediate south, Rukwa region to the west, and Tabora and Singida regions to the east. The region (Mbeya) covers an area of 60040 km^2, lying between latitudes $7^0 0'$ and $9^0 31'$ south and between longitudes 32° and 35° east. Its headquarters (Mbeya town) is situated 860 km away from Dar es Salaam.

5.2 Administrative Structure

Essentially, there are two administrative hiarachies: the central government (at both regional and district levels) and local governments (at district level). The

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[1] Except where specified, most of the material presented in this chapter has been summarized from a document obtained from RC's Office titled "Rolling Plan and Forward Budget - 4. Makisio ya Matumizi ya Kawaida na Mpango wa Maendeleo 1996/97 - 1998/99"

central government, headed by Regional and District Commissioners (RC and DCs), deals with administrative matters. The local governments headed by District Executive Directors (DEDs|) are responsible for social services. Each DED heads the main governing body - the district council. For easy of management, the region is divided into 8 districts, namely: Chunya, Ileje, Kyela, Mbarali, Mbeya (R), Mbeya (U), Mbozi and Rungwe. Each district is further sub divided into divisions, wards and villages.

5.3 Topography

The major part of the region is within the Rift Valley. As such, the major topographic features are: (a) the low elevation Western Rift Zone encompassing Lakes Rukwa and Nyasa; (b) the Eastern Rift Zone represented by Usangu flats and neighbouring parts of Ruaha trough; (c) the southern extremity of the great central plateau of Tanzania; (d) the greatly dissected southern highlands extending from Poroto mountains in the east through Rungwe peak (2981m) to Ngozi (2621m) and Mbeya peak (2834m) then southwards through Mbogo (2458m) to Kisiba (2180m) and Isoko.

5.4 Climate

The climate is generally tropical with sharply defined dry and rainy seasons. The dry season lasts from June to

November. Rainfall distribution is unimodal - lasting from November to May. However, occassional displacement southward of the intratropical convergence zone can result in a bimodal rainfall distribution with an intervening short drier period in February.

The mean annual rainfall ranges from over 2,600mm on the northern shore of Lake Nyasa and the higher parts of Rungwe District to less than 650mm in parts of Usangu Plains in Mbeya Rural district and parts of Chunya district. Temperatures vary substantially according to elevation, topography and precipitation patterns.

5.5 Population

According to the 1988 census, the region has a total population of 1,476,278 people. This number is the sum of 706894 males and 769384 females. Among them, children (under fives) are 242137 in number. The population per square kilomitre is 30 people (Bureau of Statistics, 1988).

5.6 Economic Status

The economy of the Region relies, to a large extent, on agriculture. Other economic activities include animal husbandry, industrial production, mining and business. The Regional Gross Domestic Product is estimated to be Tshs. 63 Billions. The per capita income is Tshs. 60,000/=. Various food and cash crops are grown in the Region as shown below:

Table 4.1 Food Crops - (Production in Tons)

Name of Crop	1990/91	1991/92	1992/93	1993/94	1994/95
Maize	434,111	451,290	436,152	517,623	572,631
Paddy	105,529	120,945	107,817	120,240	139,185
Beans	13,667	18,432	20,246	19,462	18,091
Sorghum	30,760	14,786	12,976	12,351	15,529
Bananas	181,798	166,435	197,217	212,148	171,678
Finger Millet	7,209	13,618	10,914	9,270	12,446
Record Potatoes	66,375	83,700	77,955	41,776	54,520
Sweet Potatoes	46,135	61,345	119,739	76,020	107,380
Cassava	27,866	55,560	57,899	79,228	61,602
Ground Nuts	9,779	5,655	10,801	10,060	13,604
Wheat	143	330	206	357	520
Vegetable	20,000	18,640	197,983	22,806	10,685

Source: Regional Commissioner's Office, 1996.

Table 4.2 Cash Crops: (Production in Tons

Name of Crop	1990/91	1991/92	1992/93	1993/94	1994/95
Coffee	16,996	14,694	10,337	17,954	17,709
Tea	4,150	3,154	2,946	3,875	3,975
Pyrethrum	4,427	7,220	737	1,846	1,776
Cotton	4,725	6,780	7,900	7,800	8,900
Cadamon	43	21	82	102	94
Sunflower	-	-	11,187	4.059	3,748
Cocoa	3,050	2,430	1,034	4,152	3,816
Tobacco	1,000	1,620	1,620	1,680	1,120

Source: Regional commissioner's Office, 1996.

5.7 Social Sector

The health Sector is established from dispensary to the referral level. Meta Maternity hospital, a department of Mbeya Consultant Hospital, is a referral centre for gynecological and obstetric problems in the Region. The regional headquarters (Mbeya town) has neither regional nor district hospital. Thus residents in Mbeya Municipality are privileged to use the consultant hospital as their immediate referral point.

In Mbozi, there are two referral points at the district level, namely: Mbozi Mission hospital and Vwawa district hospital.

The Education sector is also well established. There

are primary schools, secondary schools and colleges. However, according to 1988 census, whereas the literate female population constituted 45% of total female population 5 years and above, the male literate population was 60% of total male population 5 years and above (Bureau of Statistics, 1988). The picture might be different at the moment given that many years have gone by and the Structural Adjustment Programme may have changed the situation to the contrary.

5.8 Status of Maternal Mortality

Despite efforts made by the health sector in Mbeya, maternal mortality rate, in the 90s has remained high. Table 6.7 illustrates this observation. It is unfortunate that data for the 1970s and 80s could not be obtained due to poor record keeping.

The causes of maternal deaths as found in the documentation and from interviews with regional officers were, as expected, largely medical; that is, sepsis, post-partum hemorrhage, anaemia, malaria, malpresentation, rupture of the uterus, local herb intoxication, and sexually transmitted diseases (STDs), including AIDS. Most of the above mentioned causes conform, to a large extent, to those reviewed in the literature (chapter 2). However AIDS is an exception. Previous studies that we have cited, make no mention of AIDS as a cause of maternal

mortality. This reflects the fact that AIDS is a relatively new phenomenon and its disastrous impact is being noticed as years go by.

CHAPTER SIX

FINDINGS, DATA ANALYSIS, and DISCUSSION

6.1 Introduction

This chapter presents the results of a study done in the two selected districts of Mbeya Region, namely: Mbeya (Urban) and Mbozi. The districts were selected because of having many cases of maternal deaths compared to the other districts for the past five years as indicated below

Table 6.0: Situation of Maternal Mortality by District:

District	Annual Number of Maternal Deaths				
	1991	1992	1993	1994	1995
Mbeya (U)	32	48	49	57	47
Mbozi	26	12	16	23	17
Mbeya (R)	5	1	-	2	-
Rungwe	9	8	13	8	6
Chunya	5	10	5	2	6
Ileje	9	1	1	5	2
Kyela	7	10	1	10	4

Source: Regional MCH - Coordinator's Office, 1996.

It was envisaged, therefore, that factors influencing maternal mortality would be more prevalent in Mbeya (U) and Mbozi. The villages involved in the study in Mbeya (U) were: Nzovwe, Mbalizi Road, Soweto, Simike and Majengo. And those in Mbozi were Itaka, Ruanda, Msuto, Ukwile, Ihanda, Zelezeta, and Ilembo.

The findings obtained are analyzed and discussed according to the research hypotheses and objectives provided in chapter one.

6.2 The Influence of Household Income

It was hyothesized that as household income declines maternal mortality rate increases.

The objective here was to show the extent to which household income has contributed to maternal mortality. The data were collected from 30 relatives of the deceased (21 husbands, 4 mothers, 3 mothers in law and 2 sisters) and 60 mothers who delivered safely. The findings are presented in the following table:

Table 6.1: **Household Incomes (Tshs) - Where Maternal Deaths Occured.**

Case No.	Respondent's Average Annual Income for Three Years: 1993,1994 & 1995	Estimated Income of the Deceased
1.	60,000.00	60,000.00
2.	118,333.33	80,000.00
3.	150,000.00	150,000.00
4.	159,333.00	≤10,000.00
5.	65,000.00	50,000.00
6.	43,000.00	40,000.00
7.	21,666.00	25,000.00
8.	68,333.33	20,000.00
9.	58,333.33	35,000.00
10.	136,000.00	80,000.00
11.	72,000.00	40,000.00
12.	86,666.66	65,000.00
13.	38,333.33	25,000.00
14.	61,666.66	50,000.00
15.	61,666.66	20,000.00
16.	40,000.00	30,000.00
17.	171,000.00	300,000.00
18.	50,000.00	30,000.00
19.	41,666.66	40,000.00
20.	730,000.00	300,000.00
21.	61,666.66	50,000.00
22.	46,666.66	50,000.00
23.	86,666.66	150,000.00
24.	50,000.00	50,000.00
25.	73,333.33	60,000.00
26.	250,000.00	100,000.00
27.	65,600.00	40,000.00
28.	50,000.00	30,000.00
29.	35,000.00	20,000.00
30.	333,333.33	150,000.00
TOTAL	3,285,265.60	2,150,000.00
	$X = 30$; $\overline{X} = 109,508.85$	$\overline{X} = 71,666.66$

Source: Survey Data, 1996

Table 6.1 shows that the mean of the average annual income of the relatives was Tshs. 109,508.85, and that of the estimated income of the deceased was Tshs. 71,666.66.

Table 6.1.1 Classification of Average Annual Income for the Households where Mortality Occured

Incomes (TSHS.)	Number	%
10,000 - 60,000	12	40
61,000 - 110,000	10	33.33
111,000 - 160,000	4	13.33
161,000 - 210,000	1	3.33
211,000 - 260,000	1	3.33
261,000 - 310,000	0	0.00
311,000 - 360,000	1	3.33
361,000 - 410,000	0	0.00
461,000 - 510,000	0	0.00
511,000 and above	1	3.33
Total	30	100.00

Source: Survey Data, 1996.

The above table indicates that the majority of the households (40%) had an average income ranging from 10,000 - 60,000 (Tshs).

Table 6.1.2 **Classification of Estimated Annual Income of the Deceased (Cases).**

Incomes (Tshs)	Number	%
10,000 - 60,000	21	70
61,000 - 110,000	4	13.33
111,000 - 160,000	3	10.00
161,000 - 210,000	0	0
211,000 - 260,000	0	0
261,000 - 310,000	2	6.66
Total	30	100.00

Source: Survey Data, 1996

Table 6.1.2 shows that the majority (70%) of the deceased had an estimated annual income ranging from 10,000 - 60,000.

Table 6.2 Categorization of the Relatives of the Deceased According to the Mean ($\bar{X}$) Income

Incomes	Number	%
Income < 109,508.85	22	73.33
Income > 109,508.85	8	26.67
Total	30	100.00

Source: Survey Data, 1996

From the above table one notes only a few relatives (26.67%) had an income above the mean.

Table 6.3 Categorization of the Deceased According to the Mean of Estimated Income

Incomes	Number	%
< 71,666.66	23	76.67
> 71,666.66	7	23.33
Total	30	100.00

Source: Survey data, 1996

Table 6.3 shows that most of the deceased had income below the mean.

Furthermore, according to the regional (Mbeya) economic development report, per capita income was Tshs. 60,000/= (= US $ 155, established in 1993). Basing on this very economistic view (other factors remaining constant) subjects can be categorized as under:

Table 6.4 Categorization of the Deceased According to the Per Capita Income

Income	Number	%
= 60,000	2	6.67
< 60,000	20	66.66
> 60,000	8	26.67
Total	30	100.00

Source: Survey Data, 1996

One notes from table 1.5 that only 26.67% of the deceased had an income above the regional per capita income.

Table 6.5 Annual Average Income (for Three Years: 1993,1994 and 1995) for Mothers who Delivered Safely (Controls).

No.	Income (Tshs)	No.	Income (Tshs)	No.	Income (Tshs).
1	60,000.00	21	233,333.33	41	70,000.00
2	116,666.66	22	60,000.00	42	80,000.00
3	106,666.66	23	133,333.33	43	133,333.33
4	108,333.33	24	183,333.33	44	75,000.00
5	126,666.66	25	93,333.33	45	68,333.33
6	70,000.00	26	72,000.00	46	183,333.33
7	123,333.33	27	98,333.33	47	150,000.00
8	500,000.00	28	58,333.33	48	115,000.00
9	66,666.66	29	600,000.00	49	50,000.00
10	50,000.00	30	10,000.00	50	266,666.66
11	333,333.33	31	74,000.00	51	158,333.33
12	96,666.66	32	86,666.66	52	110,000.00
13	125,000.00	33	116,666.66	53	23,000.00
14	98,333.33	34	123,333.33	54	83,000.33
15	200,000.00	35	86,666.66	55	36,666.66
16	98,333.33	36	436,666.66	56	200,000.00
17	91,666.66	37	38,333.33	57	175,000.00
18	60,000.00	38	71,666.66	58	150,000.00
19	80,000.00	39	93,333.33	59	156,666.00
20	100,000.00	40	106,666.66	60	250,000.00
Total 7,921,999.41 ; $\bar{X}$ = 264,066.65					

Source: Survey Data, 1996

The above shown table indicates that the Mean (X) of the annual average income for the mothers who delivered safely was 264,066.65

Table 6.5.1 **Classification of Annual Average Income for Mothers who Delivered Safely (controls).**

Income (Tshs)	Number	%
10,000 - 60,000	10	16.66
61,000 - 110,000	25	41.66
111,000 - 160,000	15	25
161,000 - 210,000	5	8.33
211,000 - 260,000	1	1.66
261,000 - 310,000	1	1.66
311,000 - 360,000	1	1.66
361,000 - 410,000	0	0
461,000 - 510,000	1	1.66
511,000 and above	1	1.66
Total	60	100

Source: survey Data, 1996

The above shown table indicates that the majority (41.66%) of the mothers who delivered safely had an average income ranging from 61,000 - 110,000 (Tshs).

Table 6.5.2 **Categorization of the Controls According to the Per Capita Income (60,000/=).**

Income	Number	%
= 60,000/=	3	5
< 60,000/=	7	11.67
> 60,000/=	50	83.33

Source: Survey Data, 1996

From the above indicated table one notes that the majority (83.33%) of the controls had an income above the per capita income.

Discussion

"Maternal mortality and female poverty are parts of the same equation" - Posada (1996:48). Basing on the calculated mean annual incomes and regional (Mbeya) per capita income, the afore presented results validates the above quoted statement, and hence proves our hypothesis. As can be noted in table 6.2, 73.33% of the relatives of the deceased had annual income below the mean (Tshs. 109,508.85). Table 6.3 also shows that 76.67% of the deceased had an income (estimated) below the average (Tshs. 71,666.66). Furthermore, basing on the regional per capita

income (60,000/=), table 6.4 indicates that 66.66% of the deceased had an income below that level.

This suggests, from economistic point of view,other factors remaining constant, that the majority of the deceased were the people who could not afford to meet their subsistance - particularly nutritional needs, leave alone paying for health care services. Implicitly most of them were not in a position to buy basic drugs and equipment (for example gloves, sanitary pads) required in the delivery process so as to supplement the shortage in government facilities resulting from budget-cuts. In addition, it is obvious that such people (women) could neither afford to bribe the 'hungry' government health personnel nor go for better quality privatised care.

Regarding mothers who delivered safely, a look at tables 6.5, 6.5.1 and 6.5.2 reveals that they were relatively better off. They had a mean ($\bar{X}$) annual income of Tshs. 264,066.65 (table 6.4) and 83.33% of them had an income above the regional per capita - and therefore they were relatively in a better position to meet their health care needs, including nutrition. Moreover, the impact of low income can easily be seen when one looks at table 6.6 below:

Table 6.6 Distribution of the Deceased According to the Cause of Death - Per Medical Records

No.	Cause	No of Cases
1.	Anaemia	9
2.	Sepsis	6
3.	Rupture of uterus	4
4.	Local herbs intoxication	4
5.	Postpartum haemorrhage	4
6.	Eclampsia (hypertensive disorder in pregnancy)	1
7.	Unknown (did not seek medical attention)	2
	Total	30

Source: survey Data, 1996

The above indicated table shows that anaemia - basically nutritional was the leading cause of deaths. This suggests that these poor women might not have been able to buy animal protein (meat, milk - for example) which are rich in iron (an important element in the formation of blood haemoglobin). Most of them as evidenced from the interview, ate mainly starchy food (stiff porridge) and beans twice a day. Their dietary pattern did not differ from that of the rest of family members, suggesting lack of

due consideration during this critical moment of pregnancy.

Moreover, a look at the following table shows that a large family size might have made the situation of some of these women truly precarious.

Table 6.6.1 **Distribtioin of the Number of the Deceased According to Family Size (number of children) They Had**

Number of Children	Number of the Deceased
0 - 4	17 (56.66%)
5 - 10	13 (43.33%)
Total	30 (100%)

Source: Survey Data, 1996.

The above indicated table shows that 13 (43.33%) deceased women had a family size ranging from 5 to 10 something which put their health at risk nutritionally. This is because naturally mothers unlike fathers - at times of crisis, tend to focus more attention on the well-being of their children rather than on themselves.

6.3 The Impact of Budget - cuts

It was hypothesized that as the government expenditure

on the health sector deceases maternal mortality rate increases. The aim was to find out the extent to which the decrease of government expenditure on health sector has affected maternal mortality. The results are presented in two levels, namely: institutional (actual amount of money spent and leaders' views) and household (views of the relatives of the deceased).

(a) **Institutional Level**

Table 6.7: The Regional Trend of Maternal Mortality

Year	Number of Maternal Deaths	Number of Live Births	Maternal Mortality Rate (Deaths/ 100000 live births)
1990	75	24762	303
1991	93	26926	345
1992	90	28373	317
1993	85	26842	317
1994	107	24549	436
1995	82	24779	331

Source: Office of Regional MCH-Coordinator

The above indicated table depicts a generally upward trend of mortality.

Table 6.8 Regional Financial Situation for the Health Sector

Year	Health Sector General Expenditure (Tshs)	Other Charges (out of general expenditure)	
		Amount	%
1990/91	83,765,646.00	37,438,701.00	44.69
1991/92	125,551,128.10	61,471,093.00	48.96
1992/93	187,858,718,05	92,369,816.75	49.17
1993/94	197,444,790.60	9,600,848.60	48.63
1994/95	257,397,857.25	72,245,857.00	28.07
1995/96	212,385,987.70	196,053,600.00	7.69

Source: Office of the Regional Administrative Secretary (Mbeya)

A close look at table 6.7 and 6.8 shows that there is a relationship between government expenditure and mortality trend. Table 6.7 shows a general upward trend of Maternal Mortality Rate (MMR), although table 6.8 shows a seemingly fairly stable allocation of funds from 1991/92 - 1993/94. The observed stability, however, falls within the zone of gross inadequacy as evidenced by a response of all heads of health facilities that for the said year, quality of services has been deteriorating. See table 6.9 below:

Table 6.9: **The Impact of Government Funding on Health Care Services - According to the Heads of Health Facilities**

Response	Number	%
- Deteriorating quality of services	10	100
- Decreasing morale of workers		
- Under utilization of staff	2	20
- Stoppage of outreach programme		
	1	10
	1	10

Source: Survey Data, 1996

Note that the above shown numbers do not total up to ten (10) because some leaders mentioned more than one impact.

Furthermore, the relationship between government expenditure and maternal mortality is clearly visible when comparing MMR in 1994 (436/100,000 live births) [table 6.7] and funds allocated for "other charges" in 1994/95 (28.07% of general expenditure) [table 6.8]. That is, a sharp decline in expenditure was followed by an abrupt upsurge of MMR. It is interesting to note that this is the year (1994) that Mbeya region recorded the highest MMR in the country-something which attracted the interest of the researcher.

b) Household level

Table 6.10 Distribution of the Number of Relatives of the Deceased According to Their Description of the Life Situation for Specified Periods.

Period	Life situation			
	Fair	Difficult	Very Difficult	Don't know
From 1970s-1985	25			1
From 1985-1990s	1	15	14	

Source: Survey Data, 1996

From the above shown table, one sees that out of 30 respondents 25 (83.3%) were of the opinion that the life situation from 1970s to 1985 was fair. However, 15 (50%) and 14(46.6%) of them held that from 1985 to 1990s the life situation has been difficult and very difficult respectively. This suggests that people's living standards have been getting worse as years went by. The favourable economy in the 1960s and mid 70s was reflected in good-free of charge- health services. This was possible because of socialist policies which took care of the poor's health needs. The signs of economic crisis started to emerge from mid 70s and the situation was getting critical towards the 80s. However, the government did not give up its social welfare policies until 1986 when it inevitably adopted SAPs

- prescribed by the World Bank and the IMF. The expenditure on the health sector was drastically reduced. The burden, then, had to be shifted to the families whose real incomes- again as a result of SAPs - had declined.

Low income and government's reduced expenditure also affected the personnel- Doctors and Nurses. The government could not pay adequate salaries. Doctors' allowances were either not paid or given very late. The consequent doctors and nurses' strikes that characterized consultant hospitals, including Mbeya, in the 1990s must have claimed some women's lives. In fact, one of our respondents in Mbeya charged that his wife did not get immediate necessary attention because it was the day that doctors were on strike. Perhaps a study has to be done to ascertain the nature and impact of these strikes countrywide. Apart from financial claims, it is possible that, to some extent, these strikes might have been prompted by few administrators who fail to discharge their duties optimally, thereby unnecessarily leading to loss of innocent women's lives.

6.4 Family Planning Practices and Associated Factors.

It was hypothesized that because the majority of women in the rural and urban areas do not have access to family planning practices, maternal mortality rate increases. The purpose was to explore how family planning practices

affect maternal mortality. The results are presented in the table below:

Table 6.11 **Comparison of Cases of Maternal Mortality and Controls for Family Planning Practices.**

Maternal Age (years)			Use of family planning methods	
Case No.	Case	Mean of 2 controls	Case	Control
1.	36	25	No	2/2
2.	22	22	Yes	1/2
3.	35	25.5	Yes	0/2
4.	17	19	No	0/2
5.	31	21	No	1/2
6.	19	28.5	No	2/2
7.	24	33	No	1/2
8.	21	21	No	1/2
9.	24	31	Yes	1/2
10.	19	22.5	Yes	0/2
11.	24	29	No	2/2
12.	32	28.5	No	2/2
13.	18	22.5	No	0/2
14.	28	22	No	1/2
15.	20	34	No	1/2
16.	23	24.5	No	1/2
17.	32	20	No	0/2
18.	38	24	No	1/2
19.	29	29	No	1/2
20.	32	31	Yes	1/2
21.	25	24.5	No	1/2
22.	40	24.5	No	1/2
23.	27	32.5	Yes	2/2
24.	20	29	No	1/2
25.	30	23.5	No	1/2
26.	33	22	No	1/2
27.	26	26.5	No	1/2
28.	41	35.5	No	1/2
29.	29	22.5	No	1/2
30.	30	28.5	No	1/2
Total			6/30 (20%)	31/60(51.6%)
Mean	27.33	26.06		

Source: Survey Data, 1996.

Table 6.11 shows that only 6(20%) cases and 31 (51.6%) controls practised family planning.

Analysis and Discussion

a) Statistical Test of Association

Use of family Planning method(s)	Cases	Controls	Total
No	24 (a)	29 (b)	53 $m_1 = a+b$
Yes	6 (d)	31 (d)	37 $m_0 = c+d$
Total	$n_1 = a+c$	$n_o = b+d$	90 $n = a+b+c+d$

Let us take the null hypothesis that the use of family planning method(s) has no influence on maternal mortality.

Calculation of X^2

$$X^2_y = \frac{n(|ad-bc| - n/2)^2}{n_1 n_0 m_1 m_0} \qquad \text{(Petrie, 1987)}$$

$$X^2 = \frac{90(|24x\ 31 - 29x6| - 90/2)^2}{30x60x53x37}$$

$$= 7.03$$

$$df = 1$$

The table value of X^2 at 5% level of significance = 3.84. The calculated value of X^2 is higher than this table value and thus statistically significant. The null hypothesis is rejected. Furthermore, Odds Ratio (OR) - a measure of the strength of association between non-practice of family planning and mortality-was calculated and found to be 4.275. That is non-users of family planning method(s) had about a 4 fold higher risk than users.

In essence, the above findings suggest that unregulated fertility predisposes women to death. The data presented below further supports this assertion.

Table 6.12 **Age Distribution Among Women who Died.**

Age (years)	Number of cases	%
15 - 19	4	13.33
20 - 24	10	33.33
25 - 29	5	16.67
30 - 34	7	23.33
35 - 39	2	3.33
40 - 44	2	3.33
Total	30	100.00

Source: Survey Data, 1996

The above indicated table reveals that 19.99% of deaths could have been avoided if the victims had access to contraceptives (other factors remaining constant). That is, we learn from the table that 13.33% had teenage pregnancies, and 6.66% had pregnancies at the age of 35 and above - which is risky.

Nevertheless, this study went further to look into men's position regarding family planning practices. The following table displays the picture.

Table 6.13: **Distribution of Number of Husbands of the Deceased (Cases) and of Controls Whether they Accompanied their Wives to MCH/FP Clinic and Practiced Family Planning (FP).**

Cases			Controls	
Company to MCH/FP Clinic	NO	YES	NO	YES
	19	2	40	11
Use of FP method(s)	20	1	40	11

Source: Survey Data, 1996

The data shown above provides that among the 21 husbands of the deceased who were interviewed, 19 (90.5%) admitted that they did not accompany their wives, hence had

no opportunity to listen to health education provided at the clinic. Twenty (95.2%) of them did not use any family planning method. Likewise 40 (78.4%) women who delivered safely responded that their husbands never accompanied them. Nor have they (husbands) been practising family planning.

When we refer back to table 6.11 and see the number of women who did not use any contraceptive, we quickly realise that most of the husbands displayed in table 6.13 were not only non-users themselves but also discouraged their wives from engaging in such practices. In fact some of the mothers who delivered safely and were using contraceptives charged that they did so secretly. When asked about the reasons for such negativism, husbands of the deceased responded as shown below:

Table 6.14: Responses of Husbands of the Deceased Regarding Non-practice of Family Planning

Reason	No. of respondents	%
It is a concern for women	12	57.14
Suspicion that a wife may turn to be promiscuous	7	33.33
Do not know about available methods for men	3	14.28
It is going against God's mission	1	4.76

Source: Survey Data, 1996

Note that the above indicated numbers do not add up to 21 husbands because some of them mentioned more than one reason.

It can be noted from the above shown table that 57.14% of the husbands thought that the use of family planning methods is a concern for women, and not men. This group was followed by another which held that allowing the use of family planning methods to women is equivalent to allowing female promiscuity. Furthermore, whereas some (28.57%) claimed that they were not aware of existance of family planning methods for men, only 1 (4.76%) held that the use of modern family planning methods was against God's mission.

The afore presented findings suggest that men seem not to be involved in health problems arising from pregnancy - particularly family planning practices. The reproductive health is perceived to lie exclusively in the women's domain despite men's contribution in the making of pregnancy. We argue that men seem not to care because it is "somebody else" who carries pregnancy and the risks associated with it. They do not bear the physical and psychological pains involved, why should they bother? Theirs is a concern for children - who are traditionally, in most of African societies, regarded as father's property.

The value attached to children by men at the expense of maternal health was testified by one interviewee whose wife died as a result of complications of the 10th pregnancy. The old man said that provided his wife gave birth at the interval of 2 years (for the previous 9 children), he could not see the reason for using contraceptives. That is, given the interval of 2 years the babies could be breastfed adequately and, above all, the father was economically able to feed and cloth them. Yes! we agree but what about the health of the mother?

Furthermore, the argument that the practice of family planning encourages promiscuity only shows, to a large extent, the patriarchal dominance within the households. Some men hold the view that "fear" of becoming pregnant is a determinant of marital faithfulness. Therefore, if a woman is sure of not getting pregnant, following having access to the contraceptives, she can less fearfully engage in extramarital sexual relations. However, men harbour such hazardous suspicion knowing very well that their counterparts can not use the same 'weapon' (fear of becoming pregnant) to regulate their sexual behaviour. That is, by their very biological nature, they (men) never get pregnant however promiscuous they might be.

Moreover, the observation that 28.57% of the husbands claimed not to be aware of the existance of family planning

methods for men deserves a comment. It is quite true that a significant section of men may be ignorant of the available contraceptive measures- including those for women. This may be due to the fact that from its establishment, family planning programme in Tanzania has, to a large extent, targeted women alone. Men's role in influencing women's decision has not been adequately considered. That is, it is only women who are being mobilized to attend at the clinics, leaving men behind. Consequently, as our study found out, very few men ever accompany their partners to the family planning clinics. The presence of men at the clinics would help make them learn about contraceptive methods available for both sexes. This could enable effecting concrete decision making by BOTH parties involved, thereby minimizing marital conflicts arising, to a great extent, out of ignorance of men and which ultimately make the family planning practice a difficult exercise.

Last, but not least, a response by one husband (4.76%) of the deceased that the use of contraceptives goes against God's mission suggests that religious beliefs might have an impact on female fertility and therefore mortality. However, results obtained from our sample population show that the influence of religion was statistically insignificant as shown below.

Table 6.15: Distribution of Respondents According to Religion

Religion	Case	Control
Christian	Roman Catholic 1	10
	Protestant 28	50
Moslem	0	0
Pagan	1	0
Total	30	60

Source: Survey Data, 1996

The above displayed table shows that all of our respondents were christians except one.

Analysis: X^2

a) Being a Catholic

	Case	Control	Total
YES	1	10	11
NO	29	50	79
Total	50	60	90

$$X^2 = \frac{(90\ (\backslash 50 - 290\backslash - 45)^2}{11x79x30x60}$$

$$= 2.19$$

The calculated value is less than table value (3.84) at 5% significance, and at df = 1. Hence, being a catholic was not a risk factor.

b) Being a protestant

	Case	Control	Total
YES	28	50	78
NO	2	10	12
Total	30	60	90

$$X^2 = \frac{90(\backslash 280 - 100\backslash - 45)^2}{30x60x78x12}$$

$$= \underline{0.98}$$

Again, the calculated X^2 is much less than the table value (3.84). Thus being a protestant was not a risk factor.

It follows that despite the afore presented results of our study, a discussion held with a few religious leaders (Catholics and Protestants) revealed that the Catholics in particular are not in favour of modern contraceptive methods. It is argued that modern methods interfere with God's natural plan. The church, instead, advocates natural family planning. The resultant antagonism-government advocating modern or artificial methods and the church advocating natural ones - might in the long run confuse the believers. Perhaps further research is needed in this regard. Suffice it to say that if harmony is not established women may suffer while efforts to save them are being lost to the confusion between public policy and religion.

6.5 Utilization of Maternity Services

It was hypothesized that there is an inverse relationship between utilization of maternity services and maternal deaths. The objective here was to explore how utilization of maternity services during pregnancy, delivery and post-delivery, affect maternal mortality.

Findings and Analysis

Table 6.16: Distribution of Cases Basing on Utilization of Maternity Services

Antenatal Attendance		Delivery/seeking medical help at the health facility	Post-natal attendance*
	Case Control	Case Control	Case Control
Yes	21 59	18(60%) 54(90%)	0 20
No	9 1	12(40%) 6(10%)	7 40
Total	30 60	30 60	7 60

Source: Survey Data, 1996

Analysis:

a) Ante-natal attendance

Using the result shown above (table 6.16) X^2 was calculated as under:

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* Among the deceased, only 7 died within 40 days after delivery and thus deserved post-natal care which they did not get.

Calculation of X^2

a) Ante-natal attendance	Cases	Control	Total
NO	9	1	10
YES	21	59	80
Total	30	60	90

Let us take the null hypothesis that ante-natal clinic attendance has no influence on maternal mortality.

$$X^2 = \frac{90(|9 \times 59 - 21 \times 1| - 90/2)^2}{30 \times 60 \times 10 \times 80}$$

$$= 13.51$$

The table value of X^2 for df = 1 at 5% level of significance is 3.84. The calculated value is much higher that this table value. The results therefore reject the null hypothesis. We can thus conclude that ante-natal clinic attendance is effective in preventing maternal mortality, and that, therefore, non-attendance constitutes a risk factor. This was further confirmed by the Odds Ratio, OR, obtained from the above data as being 25.29. That is, women who did not attend at the ante-natal clinic had about a 25 fold higher risk than women who did attend.

When asked the reasons for non-attendance the interviewees responded as indicated below:

Table 6.17: Reasons Provided by the Respondents Whose Late Pregnant Mothers Did not Attend at the Ante-natal clinic

Reason	Number
Long distance	3
Not being sick	6
Total	9

Source: Survey Data, 1996

It can be noted from the above table that whereas 3 relatives attributed non-attendance to distance, 6 of them said the deceased was not sick and therefore had no reason for attending. This suggests that there are still some areas in this country which are still very far from where health facilities are situated. An example obtained from this study is that of Itaka dispensary which serves 9 distantly placed villages. Moreover, the above responses point to the fact that some women (and men) are still ignorant of the importance of antenatal care - suggesting a need for more health education at the community level.

However, this study's revelation that 70% of the mothers who died had attended at the antenatal clinic deserves a comment. It shows that most women are aware of

the importance of ante-natal care. However, as realised during the interviews, some of the victims attended very late. On the other hand, inspite of a fair attendance, lack of diagnostic equipment defeated the purpose. For instance, the researcher discovered that until recently most rural dispensaries had no Blood Pressure and Haemoglobin measuring instruments. The two are very important in early diagnosis of hypertensive disorders and anaemia in pregnancy- which are among the common killers.

b) Delivery or Seeking Medical Attention at the Health Facility

The results presented in table 6.16 were analyzed as shown below:

	Case	Control	Total
NO	12	6	18
YES	18	54	72
TOTAL	30	60	90

The calculated $X^2 = 9.45$. The table value for df = 1 at 5% significance, that is, 3.84, is smaller than this calculated value. Thus $X^2 = 9.45$ is statistically significant - suggesting that failure to deliver or seek medical help at the facility is hazardous. This conclusion was further confirmed by calculation of Odds Ratio, OR, found to be 6. That is, those who did not seek medical help had about a 6 fold higher risk than those who sought. It is

important to elaborate at this point that ten out of 12 deceased women presented in table 6.16 as having not sought medical attention were actually taken to the hospital very late in a moribond condition. Not much could be done to save their lives.

As a whole, however, the interviews revealed that this group of 12 women who died and that of 6(10%) who delivered safely sought assistance from either a traditional birth attendant (TBA) or a traditional healer. Whereas on the one hand this suggests inaccessibility to health services in terms of distance, on the other hand it implies confidence which a significant number of women have in TBAs. This study found that this confidence goes hand in hand with witchcraft beliefs regarding problems of pregnancy and childbearing. When the opinions of the respondents-relatives of the deceased, and mothers who delivered safely-were sought most of them (55.55% refer table 6.19) mentioned that a witch may "tie" the fetus with "strings" (kamba) in its mother's womb. And that, therefore, one has to go to the TBA and/or traditional healer who then diagnoses and provides medication to untie the said strings. The medicine is said to hasten labour so much so that a patient gets intoxicated and more often than not the uterus ruptures, and if no emergency service is available death ensues.

The above indicated situation is substantiated by four deaths which were reported in Mbozi mission hospital. The deceased were brought to the hospital from a distant village in a very serious condition. In this village called Itaka there is a male TBA who gave them (women) the drug to untie the strings. Despite the fact that this TBA leaves close to the dispensary, a number of women prefer going to him rather than to the health facility. It is when the condition gets out of his control that the relatives decide to rush the already seriously weakened mothers to the hospital. At this critical moment there is no choice but to struggle by all means to save life. It is at this point that other factors - like long distance and lack of quick transport to the referral centre come in and complicate the matter, thereby reducing chances for survival.

To wind up the discussion on the role of TBAs, we are not saying that every woman who seeks assistance from them dies. Rather, we acknowledge that most of the women do survive-albeit luckly. TBAs have saved the health of their communities for generations and they will probably continue to do so for many years to come as long as modern facilities remain inaccessible to everybody. Therefore, whereas efforts are being made to train TBAs on safer ways of service delivery, the public should be educated on the extent to which witchcraft beliefs and subsequent management by untrained TBAs endanger their survival. In

fact, both training of TBAs and promotion of public awareness need to be stressed now - because as health services become more expensive under SAP more and more women will definitely turn to TBA's.

(c) **Post-partum Care**

We learn from table 6.16 that seven (7) women who died did not get post-natal care. They were taken to the health facility when they were already very sick. The relatives who were interviewed said they were not informed of the need for post-natal care (check-up) by the personnel in the maternity ward. Neither were the deceased educated as they were attending at ante-natal clinics.

However twenty (20) women who delivered safely claimed that they received post-natal care. When the heads of health facilities were asked on the services they provide, they responded as shown below:

Table 6.18: Responses of Heads of Health Facilities

Care provided	Response			
	YES		NO	
	Number	%	Number	%
Antenatal	10	100	0	0
Delivery	8	80	2	20
Post-natal	9	90	1	10

Source: Survey Data, 1996

What the above results tell us is that, important as it is, post-partum care has been neglected not only by the community but also by the health care system. The lives of 7 women who died within 42 days after delivery might have been saved if they were taken for post-natal check-up. Most women (and men), as revealed by our study, are not aware of the need for post-partum care- suggesting a need for education at the community level. More often than not

mothers are brought to doctors' attention when they are already sick with sepsis and/or anaemia.

Actually in a group discussion with mothers who survived and claimed to have gone for post-natal care, it

was revealed that they did so after having felt sick. Therefore, responses by most of the heads of health facilities, as seen in table 6.18, that they have been providing post-natal care are suspect. It appears their major concern is curative (intervention at the moment of crisis) rather than preventive aspect of care - which is actually what it should be. In fact, one head of health facility was honest enough to admit that post-natal care is not being provided (in the sense of disease or crisis prevention). Casual conversation with some of the staff also confirmed this observation.

6.6 Community Perception of Causes of Maternal Mortality

For better understanding of the causes of maternal mortality, views of the respondents-relatives of the deceased and mothers who survived were sought. Some of these, as depicted in the table below, have reinforced our study hypotheses.

Table 6.19: People's Views on Causes of Maternal Deaths

Cause		Number of Respondents	%
1.	Witchcraft belief: the foetus being tied with 'strings' in its mothers womb, and subsequent over dosage with local herbs.	50	55.55
2.	Women engaging in extra-marital relations	5	5.55
3.	New diseases, like AIDS	15	16.66
4.	God's wish.	3	3.33
5.	Bad luck, it is just a death like any other.	3	3.33
6.	Violence from the husband during pregnancy	5	5.55
7.	Unregulated fertility and women's workload.	28	46.66
8	Delay to seek medical attention because at the onset of labour the mother in law and other elder women take time to demand that the woman should mention her sexual partner(s) -besides her husband.	3	3.33
9.	Some men's behaviour of preventing their wives from practising family planning	5	5.55
10.	Doctors and Nurses' strikes	5	5.55
11.	Delay to get attended to at the health facility when one has no money to bribe the personnel	5	5.55
12.	Nurses' unfriendly attitudes towards the patients	20	22.22
13.	Doctors' negligence	10	11.11

Table 6.19 (continued)

Cause		Number of respondents	
14.	Lack of transport from distant places	6	6.66
15.	Lack of drugs and equipment which the staff instructs their clients go to and buy	40	44.44
16.	Getting pregnant without being certain of social support and consequent psychological shock	1	1.1
17.	Lack of family life education	1	1.1
18.	Education at the community level on maternal health is still inadequate	1	1.1
19.	Girls are desparate over the possibility of getting married. Thus they simplify themselves before boys or men who, however, have no real marriage intentions. Theirs is sexual pleasure	1	1.1
20.	Excessive loss of blood during delivery as a side effect of contraceptive drugs	2	2.22
21.	Poor nutritional status	14	15.55
22.	Some mothers are stubborn, they do not obey instructions given to them by care givers during delivery	1	1.1

Table 6.19 (continued)

Cause	Number of Respondents	%
23. Failure of or late attendance at the Antenatal clinic	5	5.55
24. Polygamy: makes the husband not to be fully responsible to each of the wives	3	3.33
25. Arbitrary rejection by the husband- the wife decides to take poison in order to kill the foetus. As a consequence both the foetus and the mother die	1	1.1

Source: Survey Data, 1996.

Note that the number of respondents presented do not total up to 90 (30 relatives of the deceased and 60 mothers who survived) because most of them mentioned more than one cause.

The opinions presented in the above shown table summarize a range of socio-economic and cultural factors operating both at the grassroot and institutional levels. Some of the issues raised, however, may be explored and analysed further by future researchers.

6.7 Conclusion

The results obtained from this study have supported our hypothese. The influence of income, government expenditure,

family planning, and utilization of health care services on maternal mortality has been clearly demonstrated. We have been able to prove that decline in incomes, as a result of SAPs, has in one way or the other contributed towards an increase of maternal mortality observed in the 1990s. Moreover, we have shown that men's negative attitudes towards family planning and the reasons they advance are hazardous to maternal well-being. As a result therefore, most of maternal deaths could be avoided if men showed a serious concern over the question of reproductive health. This means socio-cultural traditions that push men to behave the way they do must be discredited through massive community education.

Moreover, our study has revealed that availability of health facilities is one thing and effective utilization of the same is another thing altogether. We have found that obstacles to the utilization of health services include: ignorance, long distance, unfriendly attitudes of the staff towards their clients, and witchcraft belief.

As a whole, this study has confirmed that maternal mortality is not just a medical problem. It is much more broader.

CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

This chapter draws conclusions from the study and provides recommendations for improvement of the situation of maternal mortality in Mbeya Region, and in Tanzania as a whole. It also suggests areas for further research.

7.1 Conclusions

Maternal mortality is a major manifestation of underdevelopment in the South -regional and country variations notwithstanding. However, development programmes in these counties (Southern) have not treated the problem with the urgency and comprehensiveness it deserves.

Whereas most of the previous studies have expressed concern for the persistently high rates of maternal mortality; they have concentrated mostly on diseases, thus overlooking equally important non-medical factors. Historically, though very little has been documented, it can be infered from this study that colonialism did more harm than good to maternal health situation in Tanganyika.

Finally, the findings tell us that behind the diagnostic (clinical) categories lie risk factors - low income, unregulated fertility, inaccessibility to maternal health services - which need to be addressed for any safe

motherhood program to succeed. That is, it is now evedent that the problem of maternal mortality goes beyond the medical view.

7.2 Recommendations

Basing on the findings of this study, it is recommended that:-

1. Efforts being made to improve national economy should continue so as to increase household incomes in real terms. Of importance also, we need to sensitize men on equity regarding ownership of resources - so as to make women more autonomous regarding their nutritional status and health care in general.

2. Implementation of SAPs should be done cautiously-particularly regarding maternal health services. These should be budgeted for separately as opposed to the current practice (as we found out in our survey). This is because it is now clear that pregnant women are more vulnerable to the consequences of arbitrary budget-cuts. As such, there is a need to strengthen community based and referral maternity services - in terms of drugs and equipment. This should also go hand in hand with financial motivation of the staff.

3. Post-natal care (in the sense of disease prevention) should be established as it seems to be lacking.

Women need to be educated on its importance at the ante-natal clinics and just before being discharged from the maternity wards.

4. Family planning services must be made accessible to all women of reproductive age. To achieve this, there is a need to revise the approach to family planning campaign so as to increase its acceptability. Firstly, before even thinking about availability of contraceptives, women must be empowered through community education. They must, as a result, rise to the great heights of having control over their reproductive destiny. This is because it is currently ironic that despite women being exposed to the risks of pregnancy, it is men, in most of African societies, who have the sole right to decide whether and when to have a child. Therefore, women must be sensitized regarding the right to decide on the fertility pattern. Similarly, men should be educated that unregulated fertility is fatal to mothers. Very few common men appreciate this fact. The said education can be carried out through posters, drama, mass media and public meetings.

Secondly, there is a need to establish dialogue between the government and religious leaders regarding the importance of family planning. The latter can play an

important role in enhancing acceptability of family planning campaign because they are much trusted and have high convincing power. Following such a dialogue, churches and mosques can be used as fora for furthering reproductive health campaigns. Such an approach would enable the message to reach both males and females together as opposed to the present one where campaigns are reaching mostly the females who attend clinics. We also believe that religious leaders have power to make men abandon socio-cultural traditions that jeopardize women's health, just as early missionaries convinced our grand- fathers to abandon traditional religions.

5. There is a great need to establish Village Safe Motherhood Committees. Currently such committees are confined at regional and district health institutions - playing mainly a curative role. People at the grassroots are not involved, thereby leaving socio-cultural factors operating at the community level untackled. The proposed committee, therefore, will be made of representatives from all sectors obtained at a particular locality (village); that is, for example, village government, health personnel, primary school teacher(s), agricultural and livestock expert, religious leaders, TBAs, traditional healer(s) and influential elders.

Among other things, the committee would conduct a massive community education on the totality of maternal mortality. Through the committee, posters aimed at discrediting hazardous socio-cultural traditions and witch-craft beliefs would be designed and put at the shopping centres, market places, churches and mosques. The point is that messages on maternal health should not be confined at the clinics. Furthermore, it is high time that seminars and workshops on safe motherhood shifted from regional and district level to the grassroots - to get people's participation in the struggle for maternal health. For instance, at one village in the study area TBAs complained that they assisted deliveries without gloves. They were therefore appealing to the district authorities to send them the same. Fine. But this shows lack of involvement of villagers themselves and their government. We believe that if people were enlightened, no one would take his wife to the TBA without gloves - given the risk of infection, leave alone the AIDS threat.

7.3 Suggestions for Further Research

As it has already been indicated in the previous chapters, this study has not been exhaustive. Thus, the following areas, it is proposed, need to be studied for better understanding of factors influencing maternal mortality.

(a) The nature and impact of doctors and nurses' strikes which characterised consultant hospitals in the 1990s.

(b) Knowledge, Attitudes, and Practice (KAP) of family planning among men.

(c) The nature and impact of antagonism regarding positions held by the government and religious institutions on family planning practice.

(d) The magnitude of maternal mortality and factors associated with it in the precolonial and colonial periods.

(e) A similar study with a larger sample size, adequate time, and financial resources need to be conducted - for further filling up of the gap existing between the medical profession and social disciplines in relation to maternal mortality.

BIBLIOGRAPHY

1. Abdullah, A; J.H. Mahmood and N. Adeeb. Maternal "Mortality Rate in the Obstetric Unit of Universtiy Kebangsan Malaysia: 1981 - 1990" in Journal of Obstetrics and Gynaecology, Vol.21 No.3 1995: pp 299 - 303.

2. Adetero, O.O "Maternal Mortality in Obstructed Labour at Ilorin, Nigeria," in Journal of Obstetrics and Gynaecology of Eastern & Central Africa. Vol. 9 No. 2 1991: pp 82.

3. Berer, M. "A Good Time to (Re) Turn to the Grassroots", in Women's Health Journal 1/96. January - March 1996: pp 39 - 42.

4. Bhatia, J.C. Maternal Mortality in Ananthapur District, Andhara Pradesh, India. Bangalore: Indian Institute of Management, 1985.

5. Borg, W.R. and M.D.Gall. Education Research: An Introduction. New york & London: Longman, 1983.

6. Caldwell, J.C. "Towards a Restatement of Demographic Transition", in The Persistence of High Fertility (ed) Caldwell, J.C. Canberra: Department of Demography, The Australian National University, 1977.

7. Chambua, S.E., M.K. Rwebangira, R. Liyestrom and E.Y.N. Urassa. Facts Abort and Images of Teenage Girls in Tanzania", in Chelewa Chelewa: The Dilemma of Teenage Girls (eds) Tumbo-Masabo, Z., and R. Liyestrom, Stockholm: Nordiska Afrikainstitutet, 1994.

8. Chinemana, F. and D. Sanders, "Health and Structural Adjustment in Zimbabwe," in Social Change and Economic Reform in Africa. (ed) Gibbon, P. Uppsala: Nordiska Afrikainstitutet, 1993.

9. Conable, B.B. "Safe Motherhood", in World Health Forum. Vol. 8 No. 2 1987: pp. 155 - 160

10. Doyal, L.and I. Pennel. The Political Economy of Health.London: Ploto Press, 1979.

11. Everett, V.J. Maternal Mortality in Tanzania, in Dares Salaam Medical Journal. Vol. 6 No. 1 1974: pp 7 - 8.

12. Farah, A.M. and H.B. Ghonayel. "To Many Births, Too Many Deaths", in World Health Forum. Vol. 15 No. 1 1994: pp. 78-81.

13. Fawcus, S., M.T. Mbizvo, G. Lindmark and L Nystrom. "A community Based Investigation of Causes of Maternal Mortality in rural and urban Zimbabwe, Maternal Mortality Study Group," in Central African Journal of Medicine. Vol. 41 No. 4 1995: pp 105 - 113.

14. Fikree, F.F., R.H. Gray, H.W. Berendes and M.S. Karim. "A Community Based Nested Case - Control Study of Maternal Mortality", in International journal of Gynaecology & Obtetrics. Vol. 47 No. 3 1994: pp 247-255.

15. Fuente, M.D.L. "No other Indicator Expresses Cruelty and Oppression More Eloquently", in Women's Health Journal 1/96. January - March 1996:pp 43-44.

16. Ferguson, D. "The Political Economy of Health and Medicine in Colonial Tanganyika," in Kaniki, M. (ed). Tanzania Under Colonial Rule. London: Longman, 1980.

17. Hatcher, R.A; J. Dobrag, F.J. Guest, J. Trusell, F.H. Stewart, G.K. Stewart, S.C. Bowen and W.Cates. Contraceptive Technology. Atlanta, GA: Printed Matter Inc, 1989.

18. Herz, B and A.R. Measham. The Safe Motherhood Initiative. Proposals for Action. Washington D.C: The World Bank, 1990.

19. Jacobson, J.L Women's Reproductive Health: The Silent Emergency. Washington D.C: World Watch Institute, 1991.

20. Juneja, Y., U. Goel and M. Sood, Changing Trends in Maternal Mortality Over A Decade", in International Journal of Gynaecology and Obstetrics. Vol. 46 No. 3 1994: pp 265-269.

21. Justesen, A. "An Analysis of Maternal Deaths in Muhimbili Medical Centre, Dar es Salaam. July 1983 to June 1984", in Journal of Obstetrics and Gynaecology East & Central Africa. Vol. 3 1984 pp. 103-110.

22. Kabwegere, T. "Determinants of Fertility: A Discussion of Change in the Family Among the Akamba of Kenya", in The Persistence of High Fertility. (ed) Caldwell, J.C. Canberra:Department of Demography, The Australian National University, 1977.

23. Kaisi, M. "The Safe Motherhood Initiative in Tanzania" Paper prsented at the PHC Annual Meeting in Dodoma 22nd - 25th August 1989.

24. Kaisi, M. and F. Mrisho. The Safe Motherhood Initiative in Tanzania:Review of Actions, Assessment of Unmet Needs, Recommendations & Proposed Activities. Dar es Salaam: Ministry of Health, 1980.

25.Kavishe, F.P. Malnutrition in Tanzania: A Situational Analysis. Dar es Salaam: TFNC Report No. 1322, 1990.

26. Kiwara, A.D. The Crisis in the Preventive HealthServices of Tanzania: A Case Study of Morogoro Rural District. M (Dev. Studies), Institute of Development Studies, University of Dar es Salaam, 1982.

27. Kiwara, A.D. "Health and Health Care in a Structurally Adjusting Tanzania," in Development Challenges and Strategies for Tanzania. An Agenda for the 21st Century (eds) Msambichaka et al. Dar es Salaam: Dar es Salaam University Press, 1994.

28. Kjekshus, H. Ecology Control and Economic Development in East African History. The Case of Tanganyika 1850 - 1950. London: Heinneman Books, 1977.

29. Koponen, J. People and Production in Late Precolonial Tanzania. History and Structures. Uppsala: Scandnavian Intitute of African Studies, 1988.

30. Kuczynski, R.R. Demographic Survey of the British Colonial Empire. Volume II. London: Oxford University Press, 1949.

31. Kwast, B. "Prevention of Maternal Mortality Forum Interview," in World Health Forum Vol.7 No1 1986: pp 50 - 55.

32. Kwast, B.E. "Maternal Mortality: Levels, causes and Promising Interventions," in Health Intervention and Mortality Change in Developing Countries. (eds) Hill, A.G. and D.F. Roberts. Cambridge: Parkes Foundation, 1989.

33. Latham, M.C. Human Nutrition in Tropical Africa. New York: FAO, 1965.

34. Leedam, E. "Traditional Birth Attendants: Resource for the Health of Womnen," in International Journal of Gynaecology and Obstetrics. No. 23 1985: pp 249 - 274.

35. Lugalla, J.L.P. :The Impact of Structural Adjustment Policies on Women's and Children's Health", in Review of African Political Economy Mp.6 1995: pp 43 - 53.

36. Maddox, G. "Environment and Poulation Growth in Ugogo, Central Tanzania," in Custodians of the Land: Ecology and Culture in the History of Tanzania. (eds) Maddox et al. Dar es Salaam: Mkuki na Nyota, 1996.

37. Magambo, F. "Family Plnning: Its Implication to Maternal Health and Nutrition". Paper Presented to the Zonal Editors (Rural Press) Held in Morogoro: 29th Feb - 5th March, 1988.

38. Maggid, M.H. The Impact of Socio - Cultural and Health Factors on Maternal Mortality: A Case Study of Selected Areas in Dodoma Rural and Urban Districts. MA (Demography) Dissertation, University of Dar es Salaam, 1992.

39. Makokha, A.E. "Medico-social and Socio-demographic Factors Associated with Maternal Mortality at Kenyatta National Hospital, Nairobi Kenya," in Journal of Obstetrics and Gynaecology of Eastern & Central Africa. Vol. 9 No. 1 1991: pp: 3 - 6.

40. Mandara, M.P and G.I Msamanga. "Maternal Mortality in Mainland Tanzania Before and After Alma Ata", in Ten years of Alma Ata Declaration: Tanzania's Experience, Proceedings of the 7th Annual Scientific Conference, Arusha, 8th - 11th Nov. 1988.

41. Mangao, A.J. Migrant Labour in the Colonial Era: The Makonde Case of Newala District.History Dissertation, University of DaresSalaam 1980.

42. Mannathoko, C. "Feminist Theories and the Study of Gender Issues in Southern Africa", in Gender in Southern Africa: Conceptual and Theoretical Issues. (ed) Meena, R. Harare: SAPES Trust, 1992.

43. Martey, J.O; J.O. Djan, S. Twum, E.N. Browne and S.A. Opuku. "Maternal Mortality and Related Factors in Ejisu District, Ghana," in East African Medical Journal Vol. 71 No. 10 1994: pp 656 -660.

44. Mbilinyi, M. "The Restructuring of Agriculture in Tanzania: Gender and Structural Adjustment". IDS Seminar Series Paper. University of Dar es Salaam, January, 1994.

45. McCarthy, J an D. Maine. "A Framework For Anlyzing the Determinants of Maternal Mortality", in Studies in Family Planning. Vol. 23 No. 1 1992:pp 23-32.

46. Ministry of Health. Safe Motherhood Strategy for Tanzania. Dar es Salaam, March 1992.

47. Ministry of Health, Report of the Workshop on Midwifery Education: Action for Safe Motherhood. Iringa, March, 1991.

48. Murru, M. "Maternal Mortality: How Much Is Known About It?", in MCH, Family Planning - Monitoring and Evaluation Proceedings of the 6th Annual Scientific Conference. Morogoro, 2nd - 4th Nov. 1987.

49. Omari, C.K Social-Cultural Factors in Modern Family Planning Methods in Tanzania. Ontario: The Edwin Mallen Press, 1989.

50. Omari, C.K. "Safe Motherhood in Tanzania: Issues & Perceptions". Paper Presented At the Annual Seminar, Demographic Unit, University of Dar es Salaam. July 11th - 13th, 1991.

51. Onimode, B. A Political Economy of the African Crisis. London: Zed Books Ltd., 1988.

52. Orubuloye, T. "High Fertility and Rural Economy: A Study of Yoruba Society in Western Nigeria", in The Persistence of High Fertility. (ed) Caldwell, J.C. Canberra: Department of Demography, The Australian National University, 1977.

53. Petrie, A. Lecture Notes On Medical Statistics. Oxford: Blackwell Scientific Publications, 1987.

54. Posada, C. "Maternal Mortality and Female Poverty Are Part of the Same Equation", in Women's Health Journal. 1/96. January - March 1996: pp 48 -49.

55. Price, T.G. "Preliminary Report on Maternal Deaths in Southern Highlands of Tanzania in 1983", in Journal of Obstetrics and Gynaecology of Eastern & Central Africa. Vol. 3 No. 3 1984 pp: 103-110.

56. Raphael, P.S., J.R. Budotela, F. Maeda, and S.Mtelekesya. "Factors Influencing High Maternal Deaths in Songea". A Research Report for the Ministry of Health, Dar es Salaam, 1990.

57. Roosmalen, J.V. Maternal Health Care in the South Western Highlands of Tanzania. Gravenhage: Drukkerji J.H. & Pasmons B.V's, 1988.

58. Rosenfield, A and D. Maine. "Maternal Mortality, A Neglected Tragedy: Where is the M in MCH?", in Lancet 1985: pp 83 - 85.

59. Rukonge, "Family Planning and the Safe Motherhood Initiative", Paper Presented at the National MCH/PHC Coordinating Meeting - Dodoma 21st - 25th August 1989.

60. Safe Motherhood Newsletter. "Postportum Care is Crucial for Health and Survival" Issue 13 November 1993 - February 1994.

61. Sai, F.T. "Family Planning and Maternal Health Care: A Common Goal", in World Health Forum Vol. 7 No. 4 1986: pp 315 - 324.

62. Shao, I., A. Kiwara and G. Makusi. "Structural Adjustment in A Socialist Country: The Case of Tanzania", in Structural Adjustment Programmes in SADC: Experience and Lessons From Malawi, Tanzania, Zambia and Zimbabwe. (ed) Mwanza, A.M. Harare: SAPES Books, 1992.

63. Silberschmidt, M. Women's Position in the Household and Their Use of Family Planning and Antenatal Services. A Case Study From Kisii District, Kenya. Copenhagen: Centre for Development Research, 1991.

64. Starrs, A. "Preventing the Tragedy of Maternal Deaths". A Report on the International Safe Motherhood Conference, Nairobi, February 1987.

65. Stokes, B. Men and Family Planning Worldwatch Paper 41. Washington D.C: Worldwatch Institute, 1980.

66. Szmoisz, S., S.E . Vuegen, A.S. Plaza, R. Barracchini, S. Checa, A. Derlindati, D.A. Espinola and E.C. Rugolo. "Argentina: risk factors and Maternal Mortality in La Matanza, Province of Buenos Aires, 1990", in World Health Statistics Quarterly - Rapport Trimestriel de Statistiques Sanitaries Mondiales. Vol. 48 No. 1 1995: pp 4-7.

67. Tanzania Gender Networking Programme (TGNP). Gender Profile of Tanzania. Dar es Salaam: TGNP, 1993.

68. Tanzania Gender Networking Programme (TGNP). Structural Adjustment And Gender Empowerment or Disempowerment. Symposium Report, Dar es Salaam, 26th February 1994.

69. The Government of the United Republic of Tanzania and UNICEF. Women and Children in Tanzania: An Overview. Dar es Salaam, November 1990.

70. Tobison, E. Women, Work, Food and Nutrition in Nyamwigura Village, Mara Region, Tanzania. Dar es Salaam: TFNC, 1993.

71. Tuncer, R.A., S. Erkaya and T. Sipalu. "Maternal Mortality in a Maternity Hospital in Turkey," in Acta Obstetrica et Gynaeconologica Scandinavica. Vol. 74 No. 1 1995: pp 604 - 606.

72. Turshen, M. "Populatiion Growth and the Deterioration of Health. Mainland Tanzania, 1920 - 1960," in African Population and Capitalism. (eds) Cordell, D and J.W. Gregory. Voulder and London: West View, 1987.

73. UNICEF "Safe Mothermood For Rural Women in Tanzania" Paper Presented at the MCH/PHC Meeting in Dodoma 22nd - 25th August, 1989.

74. Urassa, E., S. Massawe, H. Mgaya, G. Lindmark and L. Nystrom. "Female Mortality in Reproductive Ages in Dar es Salaam, Tanzania", in East African Medical Journal Vol. 71 No. 4 1994: pp 226-231.

75. Urassa, E., G. Lindmark and L.Nystrom."Maternal Mortality in Dar es Salam, Tanzania: Socio economic, Obstetric History and Accessibility of Health Care Factors", in African Journal of Health Sciences Vol. 2 No. 1 1995: pp 242 - 249.

76. Viegas, O.A.C., G. Wiknsosastro, G.H. Sahagun K. Chaturachinda and S.S. Ratnam. "Safe Childbirth Needs More Than Medical Services", in World Health Forum Vol. 13 No. 1 1992: pp 59 - 65.

77. Vuorela, U. Food and Women: Hidden Agenda of Food and Nutrition Policies, Research in Colonial and Neocolónial Tanzania. Dar es Slaam: TFNC, 1993.

78. WHO. Report of the Consultation on Approaches For Policy Development For Traditional Health Practioners, Including Traditional Birth Attendants. Geneva, 1985.

79. WHO. Studying Maternal Mortality in Devloping Countries: A Guide Book. Geneva: WHO, 1987.

80. WHO. "Focus: Maternal Mortality - A Silent Tragedy", in Journal of Obstetrics and Gynaecology of Eastern & Central Africa. Vol. 8 No. 2 1989: p 71.

81. WHO. "Mortality Figures Underestimated", in Women's Health Journal. 1/96. January - March, 1996: p 37.

Appendix A

Maternal Death Sheet

(Information to be collected from medical records)

1. Name of the collector . . . . . .
2. Date of collection . . . . . .
3. Name of the deceased..... Age . . . .
4. Address . . . . . .
5. Marital status . . . . . .
6. Occupation . . . . . .
7. Parity . . . . . .
8. If delivered (i) Place of delivery . . . . . .
   (ii) Date of delivery . . . . . .
9. Gestational Age at delivery or death . . . . . .
10. Antenatal Care
    . Clinic attended . . . . . .
11. Delivery care and/or circumstances surrounding death.
    - Date of admission
    - Name of hospital/health centre
    - Seen by - Midwife . . . . . .
      - Doctor . . . . . .
      - Other . . . . . .
    - Diagnosis made . . . . . .
    - Cause of death as stated in notes or in other records . . . . . .

Questionnaire for the Relative

of the Deceased

Date of Interview.....

1. Identification

. Name of the Village (place of interview)

. Interviewer's name . . . . . .

. Respondent's relationship to the deceased . . .

. The deceased's - Marital status.....Religion.....

- Age at the time of death.....

- Number of children(alive and dead).....

- Occupation.....

- Educational level .....

. Respondent's occupation . . . . . .

. Respondent's educational level . . . . . .

2. Can you describe how it happened?

3. When did she pass away?

- Before labour

- During labour

- After delivery

4. For how long did she stay at home after the on set of labour?

5. Who first attended her when labour started.

- Traditional Birth Attendant (TBA).....
- Family member.....
- Any Other.....

6. Was she taken to the nearby health facility?

   Yes ..... No .....

7. If No, what were the reasons for not taking her to the health facility? . . . . . .

   . . . . . .

8. If Yes, how far is that facility from her (place of residence). . . . . .

9. How long did it take to arrive at the health facility?

10. What means of transport did she use?

11. Was she immediately attended at the health facility?

    Yes..... No.....

12. If No, why?

13. Was she referred to another health facility?

14. If Yes, to which facility was she referred?

    - Health Centre
    - District hospital (government)
    - Private hospital
    - Any Other.....

15. What was the reason for referral?

16. What means of transport did she use to the second facility?

    - On foot

- Bicycle
- Vehicle
- Any Other.....,

17. How far is that facility from the first one?

18. Was she attended immediately?

Yes..... No .....

19. If No, what were the reasons for delayed attention?

.....

.....

.....

.....

20. Was she attending Ante-natal clinic (ANC) at a nearby health facility?

Yes ..... No .....

21. If No, what were the reasons for not attending ANC?

22. If Yes, at what stage of pregnancy did she register .....(nth month).

23. How much time does it take to arrive there?

. . . . . .

24. (If died within 40 days after delivery) did she attend, at least once, for post-natal care? Yes ..... No .....

25. If No, why?

. . . . . .

26. Was she using any family planning method?

Yes..... No .....

27. If Yes, which method(s) was she using?
    - Pills
    - Loop
    - Injectable contraceptive
    - Abstinence
    - Any Other
28. Did you ever accompany her to the Maternal Health/Family Planning clinic. Yes ..... No. .....

29. How about you (husband), were you using any family planning method? Yes ..... No.....
30. If No, why?
31. If Yes, which method(s) were you using?
    - Condom
    - Abstinence
    - Vasectomy
    - Any Other
32. What significance do you attach to family planning practice?
33. At what age did she get married?
34. Traditionally, at what age does marriage take place?
35. Do parents play any role in deciding when and whom to marry?
36. What food crop(s) do you grow?
37. What is your staple food?
38. How many meals did she have a day when she was

pregnant?

39. How many usually when she was not pregnant?

40. What kind of diet was the deceased eating when she was pregnant?

41. How did it differ from the usual family dietary pattern?

42. Is there any food taboo for a pregnant woman?

43. Was she ever advised, at the health facility, on dietary requirements? Yes ..... No ..... Don't know.....

44. If Yes, how was she advised?

45. Did she follow the advice? Yes..... No .....

46. If No, why?

47. What cash crop(s) do you grow?

48. How much do you harvest annually (in terms of tins/bags)?

49. Was she participating in cash crop production?

50. Did she have access to the income accruing from both food and cash crops. Yes ..... No .....

51. If No, why?

52. If Yes, to what extent?

53. Can you estimate her annual income?

54. Did she have a bank account? Yes ..... No.....

55. If Yes can you estimate the amount deposited annually?.....

56. What has been your average annual income for the past 3 years (1993..... 1994..... 1995.....).

57. How can you describe the life situation

- from 1970s to 1985.....
- from 1985 - 1990s (todate) .....

58. What are your views about causes of maternal deaths?

. . . . . .

. . . . . .

. . . . . .

. . . . . .

Appendix B

Questionnaire for Mothers who Delivered Safely (Controls).

Date of interview:.....

1. Identification

   . Name of the village . . . . . .

   . Interviewer's name . . . . . .

   . Name of the interviewee . . . . . .

   . Age . . . . . .

   . Marital Status.....Religion

   . Educational level . . . . . .

   . Occupation . . . . . .

   . Age . . . . . .

   . Number of children (alive and dead) . . . . . .

   . Husband's Age . . . . . .

   . Husband's Occupation . . . . . .

2. When did you deliver your youngest child?

3. Where did you deliver him/her?

   - at home
   - at the health facility - dispensary
   - health centre
   - hospital

4. Did you have any problem in our last pregnancy:

   - Before labour Yes .... No .....
   - During labour Yes .... No.....
   - After delivery Yes .... No .....

(Mention the problem, if any).

5. If Yes, was the problem managed immediately? Yes ..... No .....

6. If Yes, who managed the problem?

- Doctor
- Nurse/midwife
- Family member
- Traditional Birth Attendant
- Any Other

7. If delivered at the health facility, who took you there?

8. Was the decision to seek medical attention your own?

Yes ..... No .....

9. If No, who decided to take action?

- Husband ..... Father .....
- Mother ..... Any other .....

10. How far is the health facility from your residence?

11. What means of transport did you use to reach there?

- On foot
- Bicycle
- Vehicle
- Any Other

12. Were you immediately attended at the health facility?

Yes ..... No.....

13. If No, why?

14. Were you referred to another health facility?

15. If Yes, to which facility were you referred?

- Health Centre
- District hospital (government)
- Private hospital
- Any Other

16. What was the reason for referral?

17. What means of transport did you use to the second facility?

- On foot
- Bicycle
- Any other

18. How far is that facility from the first one?

19. Were you attended immediately?

Yes..... No.....

20. If No, what were the reasons for delayed attention?

.....

.....

....

21. Were you attending Ante-natal clinic (ANC) at a nearby health facility?

Yes ..... No.....

22. If No, what were the reasons for not attending ANC?

. . . . . .

23. If Yes, at what stage of pregnancy did you register? .....(nth month).

24. How much time does it take to arrive there?

25. Have you ever attended, at the health facility, for post-natal care? Yes..... No. .....

26. If Yes, how many times.....

27. If No, why?

28. Have you been using any family planning method? Yes ..... No.....

29. If Yes, which method(s) .....

- Pills
- Loop
- Injectable contraceptive
- Abstinence
- Any Other

30. Did your husband ever accompany you to the Maternal Health/Family Planning clinic?

Yes ..... No.....

31. Has your husband been using any family planning method?

Yes ..... No.....

32. If No, Why?

33. If Yes, which method has he been using?

- Condom

- Abstinence
- Vasectomy
- Any Other

34. What significance do you attach to family planning practice?
35. At what age did you get married?
36. In your tribe at what age does marriage take place?
37. Do parents play any role in deciding when and whom to marry?
38. What food crop(s) do you grow?
39. What is your staple food?
40. How many times do you normally eat a day?
41. How many times did you eat a day when you were pregnant?
42. What kind of diet were you eating during pregnancy?
43. How did it differ from the usual family dietary pattern?
44. Is there any food taboo for a pregnant woman?
45. Were you ever advised at the health facility, on dietary requirements? Yes..... No.....
46. If Yes, how were you advised?
47. Did you follow the advice Yes ..... No .....
48. If No, why?
49. What cash crop(s) do you grow?

50. How much do you harvest annually (in terms of tins/bags)?.

51. To what extent does your husband participate in food and cash crop production?

52. Do you have access to the income accruing from both food and cash crops? Yes..... No.....

53. If No, why?

54. If Yes, to what extent?

55. Do you have a bank account?

Yes ..... No.....

56. If Yes, can you estimate the amount deposited monthly/annually?

57. What has been your average annual income for the past 3 years (1993,....., 1994.....; 1995.....)

58. How can you describe the life situation

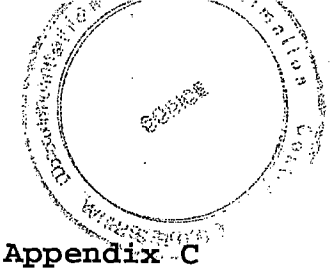
- from 1970s to 1985.....
- from 1985 - 1990s (todate).....

59. What are your views about causes of Maternal Mortality?

. . . . . .

. . . . . .

. . . . . .



Appendix C

Questionnaire for the Heads of Health Facilities

1. Date of the interview . . . . . .
2. Name of the interviewer . . . . . .
3. Name of the interviewee(head) . . . . . .
4. Position of the head.....Qualification . . . .
5. Village/Ward/Division/District in which the facility is found . . . . . .

   . . . . . .
6. Name of the facility . . . . . .
7. Does your facility provide maternity services?
   - Ante-natal. Yes/No
   - Delivery. Yes/No
   - Post-natal. Yes/No
8. If yes, do you have qualified staff?
   - How many are they . . . . . .
   - Do you have enough equipment and drugs? . . . .
   - Other problems (specify) . . . . . .
9. If No, what are the reasons for not providing maternity services? . . . . . .

10. What is your source of funds for running this facility? - government
    - private

11. How much money have you been receiving? . . . . . .

12. What percentage have you been allocating for maternal care? . . . . . .

13. If the source is the government, have there been changes in amount (decreasing/increasing/constant for the post 3 years)? . . . . . .

14. How has the situation in q. 13 affected your activities? . . . . . .

. . . . . .

15. Comment on the situation of maternal health:

a) Deaths.....(number)

Historically - 1970s - 1980s.....

- 1980s - 1990s.....

b) Causes

c) Who are mostly affected

- illiterates
- low income group
- middle income group
- high income group

d) What measures were taken to alleviate the situation.....