BREASTFEEDING AND FAMILY PLANNING IN AN URBAN POPULATION

A CASE STUDY OF KAWANGWARE, NAIROBI.

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A thesis submitted in partial fulfilment for the Degree of Master of Arts in Population Studies, University of Nairobi, August 1981.

DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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ABSTRACT

This study was concerned with one of the factors which influence population growth in any area, that is, family planning. Women in Kenya have always achieved adequate birth intervals by breastfeeding their infants for long periods and avoiding sexual intercourse during most of the time they were breastfeeding. The high levels of population growth currently experienced in Kenya are largely a phenomena of development.

Development has brought with it urbanisation and an urban population which tends to look down on traditional practices like prolonged breastfeeding and sexual abstinence but which may be slow in adopting the more drastic new inventions like modern contraceptives. The result is an increase in fertility levels especially in poor urban populations.

In this study, it was hypothised that breastfeeding is declining in Kawangware and birth intervals are becoming shorter, especially among younger women. If this is true, then the conclusion would be that breastfeeding has left a gap which has not been filled by modern family planning.

It was found that the majority of young mothers in Kawangware, 15 - 19, 20 - 24, years' old are breastfeeding for short durations, averaging 8.7 months but

start using artificial feeds early. These women are losing the contraceptive benefit of breastfeeding but, as yet, are not replacing it with modern contraceptive methods. The result has been very short birth intervals, averaging 20.4 months which result in very high fertility.

Also emerging from this study was the realisation that most women, 98.5%, in this study, are not aware of the contraceptive effect of breastfeeding and only 2% of the women currently breastfeeding reported that they were doing so to avoid conception.

Although 70.5% of the women said that family planning is good, only 19.9% of the women at the risk of becoming pregnant reported that they were using some form of contraception.

Of the variables expected to influence breastfeeding and family planning, only education at the highest level, 8 or more years, and length of stay in Kawangware seemed to have a recognisable effect. Those with eight or more years of education breastfed least but used contraceptives most. Those with short stays in Kawangware breastfed least and used contraceptives least and these made up the majority of residents in Kawangware.

This study also supports W. H. Mosley's observation that as breastfeeding declines in Kenya,

marital fertility will go up by about 25%. The average live birth interval in Kawangware is 21.7% shorter than the national average reported by the Kenya Fertility Survey and total fertility resulting from the Kawangware birth interval will be 28% higher than that of the national average unless the declines in breastfeeding are compensated for by contraceptive use.

From this study, it has been recommended that efforts to promote family planning be intensified. It has also been recommended that breastfeeding should be promoted further by the Family Planning Association of Kenya as a means of contraception. For Kawangware, breastfeeding needs to be promoted further because the population cannot support safe bottlefeeding also.

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ACKNOWLEDGEMENTS

A number of people have assisted in this study in various ways. My most sincere thanks go to my two University Supervisors, Prof. W. H. Mosley and Prof. T. E. Dow Jr., whose guidance, criticism and assistance have been immeasurable.

My sincere thanks also go to the Gildersleeve Foundation in California for financing my university education, to Family Planning International Assistance and Breastfeeding Information Group, Kenya, for providing financial support through the research period.

I am also very grateful to Mrs. M. Verkley and L. van Ginneken who have supported me all along in various ways.

I cannot forget the Project Director, Nursing Sister and Healthcare-Takers at the Kabiro Healthcare Outpost who took interest in the work and assisted in every way they could. My sincere thanks also go to the 332 women who gave their time to respond to the questionnaire.

To Julie and Sophie who have typed the work, I also say a very humble thank you.

Last, but not least, to my husband Edward and my sister Rebecca whose support all along has been

very encouraging and to my children who have had much less of me in the last two years but seemed to understand.

I cannot list everybody who has helped me but to all of you, I am very grateful.

CHAPTER ONE

INTRODUCTION

1.1 Introduction:

In all human societies, the newborn infant is initially fed on milk from the mothers breast. This is called 'Breastfeeding, Lactating or Nursing'. The lengths for which infants are breastfed vary from society to society and even for individual children of any one woman.

Many children in African and Asian societies are breastfed to well beyond their first birthday[1,2,3]. In some parts of West Africa, eg. Yorubaland, some are breastfed for as long as four years[4,5]. The production of breastmilk and maintainence of its supply depends amongst other things, on the suckling ability of the infant and the mother's ability to breastfeed as influenced by physical, social and economic factors.

It has been observed by various studies that breastfeeding among human societies is on the decline in both intensity and duration [6,7,8]. This decline began in Europe and America in the 1930's, so that by the 1960's and 70's many mothers in these regions were not initiating breastfeeding at all and most of those who initiated it had given it up by the time the infant was 6 months old.

Such a decline is now underway in the less developed parts of the world. Most mothers in these regions initiate breastfeeding eg. 97% in Kenya[9]. The declines are occuring in both intensity and duration especially in urban and peri-urban areas[10,11,12,13].

Breastfeeding, although natural, is not costless or effortless for many mothers. This had been realised in most traditional societies where the new mother, especially one nursing her first child, was given help, advice and support by relatives and friends, especially those who had nursed before. In most of these societies eg. Kikuyu and Baganda, such a mother was also put on a special diet for sometime to establish her milk production[14]. In the urban setting, such help and attention is often lacking.

Nursing time is enjoyable and intimate for most infants. However, for a mother to breastfeed properly she must have enough time to allocate for it. It has been suggested that ten minutes on each breast is enough to ensure that it has been properly emptied, or the milk production starts to decline. It is therefore necessary for a mother to be able to sit or lie comfortably for at least 30 minutes per feed. Nowadays, with changing economic systems, many mothers have a lot of other demands on their time and it is hypothised that this is one of the reasons why breastfeeding is on the decline[16,17,18,19].

The decline is further accelarated by the availability on the market, of alternative foods for the infant. Infant formula and baby cereals along with the bottle and teat are very popular especially in urban areas and this has made it possible for the infant to be adequately fed even while the mother is

absent. Today, many mothers are convinced that infant formulas and cereals are superior to breastmilk and so, they allow their breast milk to dry up in favour of the artificial alternative.

Breastmilk, apart from providing a cheap (in terms of money) and easily digestable nourishment, provides the infant with protection against gastro-intestinal and other pathogens especially in the first few days but also for a long time afterwards. Many infant formulas on the market today claim equivalence or even superiority to breastmilk but this is questionable.

Together with the benefits mentioned above, breastfeeding also offers protection, to a certain extent, against a subsequent pregnancy. It has been reported that during the infants first year of life, on the average, every 2 months of breastfeeding prolongs post-partum amenorrhoea by approximately 4 to 6 additional weeks[20]. It has also been confirmed that when a woman is fully breastfeeding, her normal ovulatory cycle is supressed from between ten weeks to as much as twenty six months[21]. In some women poor nutrition and health status may also prolong their post-partum amenorrhoea but the contribution of breastfeeding in this direction cannot be ignored[22,23,24].

Associated with breastfeeding is a period of sexual abstinance in many less developed socities,

Kenya included[25,26,27,28,29]. This was facilitated through a polygamous system of marriage; by a woman living with her parents during the abstinance period; by husband and wife having separate sleeping quarters and by fear of bad luck or punishment that may befall a couple not observing this period. Through this practice and breastfeeding, birth intervals in societies where fertility was completely natural[30] were lengthened. Now-adays, many couples no longer observe the abstinance period. This is because many of the men can no longer afford to marry more than one wife at a time. Couples, especially in urban areas are also forced to live in the same quarters all year round. Further education and enlightment have also increased people's understanding about conception so ill luck is no longer feared. This means that where traditionally breastfeeding and abstinance helped to lengthen the birth-interval, now a days alternative means such as use of modern family planning techniques have to be used.

'Family Planning' essentially means planning the births of children in any one family by conscious effort so that each child comes at the time when it is wanted, not by chance. Our forebearers used breastfeeding and post partum sexual abstinance amongst other methods to achieve this. Today, more effective methods, such as the pill, inter-uterine device (IUD), condoms, diaphram etc. are available.

Although Kenyan women have been 'planning' their families for centuries, today the term 'Family Planning' has come to mean the use of scientific means to prevent conception.

Currently, there are very few women in Kenya at the risk of conception who are using any effective method of contraception. The Kenya Fertility Survey reported only 4.5% of the sample as currently using an 'effective' method of contraception and another 2.6% as using 'traditional' contraception although 23% of the women interviewed reported that they did not wish to have another child.

The Kenya Fertility Survey has indicated that the period of sexual abstinance after delivery is now so short that it is insignificant[31]. It has also been observed in the same survey that very few women at the risk of becoming pregnant use any effective method of contraception. Finally, it has been hypothesized that the practice of breastfeeding is also declining. All these mean that the birth intervals become shorter and fertility goes up. W.H. Mosley[32] has indicated if this goes on, Kenya's marital fertility will go up by about 25%. He goes on to say that this increase is expected to be highest among younger women in their early reproductive years. It is also felt that prospective and more recent immigrants into urban and peri-urban areas will also suffer increased fertility. This is

because these populations are more aware of and attracted to modern ideas and practices such as bottle feeding and use of modern contraception. It has been reported that 'Modernisation' influences natural fertility in various ways, namely:-

(i) Increasing the proportions of women who do not breast feed their children;

(ii) Increasing the proportion of women who resume menstruation within a short period after child birth;

(iii) Decreasing the duration of lactation and period of post-partum amenorrhoea;

(v) Decreasing the period of lactation beyond the resumption of menstruation after delivery;

(vi) Increasing average fecundability[33].

The forces of modernisation are highly operative in Kawangware which consists of a population largely made up of recent immigrants and young women. This population is highly at risk of experiencing a decline in breastfeeding and an increase in fertility. It is, therefore, very appropriate for this study.

1.2. Introduction to the Study Area:

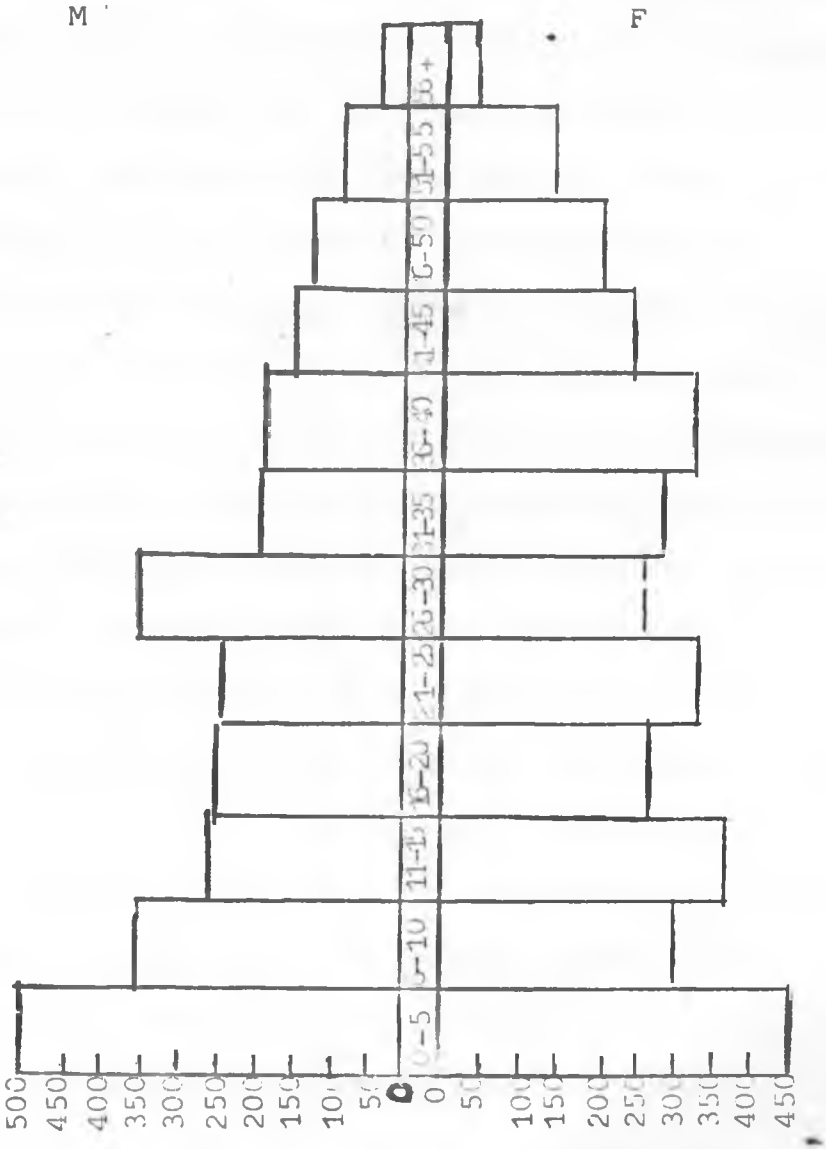
Nairobi is the capital of Kenya and like other growing cities in the third world, is attracting a lot of people in search of jobs, better opportunities or just the bright lights of the city. To date, urbanisation in Kenya is at a rate of 14.6% annually.

This is made up of natural increase (births-deaths) and immigration. Nairobi has 37.6% of Kenya's urban population[34]. It is projected that Nairobi's population will top one million by 1984 and 2.8 million by the year 2000 A.D.[35]. Such a rapidily growing population intensifies problems especially in the provision of services such as housing, health, education and transportation. Scarcity of jobs is also a common factor in such situations. All this results in a stratified population living in distinctly different residential areas. In Nairobi, the rich live in areas such as Muthaiga, Lavington and Loresho. The middle, relatively rich group lives in Buru Buru, Ngumo, Jamhuri etc., while the lower middle income groups live in areas such as Kariobangi South, Umoja, Huruma and Dandora. Finally the low income groups and the unemployed live in slum areas like Mathare Valley, Majengo, Kawangware and Soweto.

Kawangware is a poor residential area with very few services from Nairobi City Council. It is part of Waithaka Ward. The population structure shown in figure 2 is based on the findings of the Baseline Survey [36]. About 50% of this population is under age 15 while only about 3% is over age 45. Nearly 50% of the adult population in Kawangware are immigrants from various rural areas of Kenya, especially Nyanza and Western Provinces. The majority of the population are Kikuyu, and the main religion is christianity

which is divided into various denominations like Catholics, Protestants, Salvation Army and so on. The population pyramid in Figure 1 shows figures from Kabiro Village in Kawangware.

Figure 1.i Kabiro's Population Pyramid



Source: Unpublished Data of the Baseline Survey by M. Verkley. Breastfeeding Information Group (1979), Nairobi.

The population in Kawangware is poor. The average income per household was estimated at (shs. 600.00) Six hundred shillings a month[36]. In about 60% of the households, at least one person will be paid at the end of each month. Those employed are mostly in low paying jobs such as watchmen, carpenters and builders. In the other 40% of the households, incomes are irregular and at times involve illegal transactions like selling 'changaa', a local spirit whose sale was banned by law in 1979. For the past 10-12 months, there has been a network of modern tarmaced roads under construction in the area and these have also provided work to some people on a daily basis. Most of the women are not in paid employment. Few houses in the area have running water or electricity. Nairobi City Council has erected water taps in various spots within Kawangware. Water from these taps is purchased at thirty cents (cents 30) per container of approximately 2 gallons. Besides these taps, there are streams and ponds in the area but their water is not good for human use if it is not treated. However, in the absence of money, these provide water for very many households.

Sanitary conditions in the area are also extremely poor. The major means of disposing of human waste is by use of pit latrines. Not every house has one and the children hardly use the

latrines at all. Another problem is the fact that the hard, impermeable rock is very near the surface in this area. So, although Health Officials demand that a pit latrine be a minimum of fifteen feet (15ft) in depth, the people in Kawangware with their simple tools can only dig half that depth. The latrines are usually simple structures, just a pit surrounded by cardboards or sack cloth. Flies and unpleasant stenches are common, and the latrines are liable to flood during the rainy seasons.

The houses are let to the occupants by various land lords. Some of them live in Kawangware themselves. Most of the houses are wooden structures with tin or corrugated iron sheeting roofs. Most of the families rent a single room for which they may pay as much as eighty shillings (shs.80.00) a month, which is about 13% of the salary. This room would serve as sleeping, cooking and eating quarters as well as residence for the family animals like goats, sheep, chicken and, sometimes, dogs.

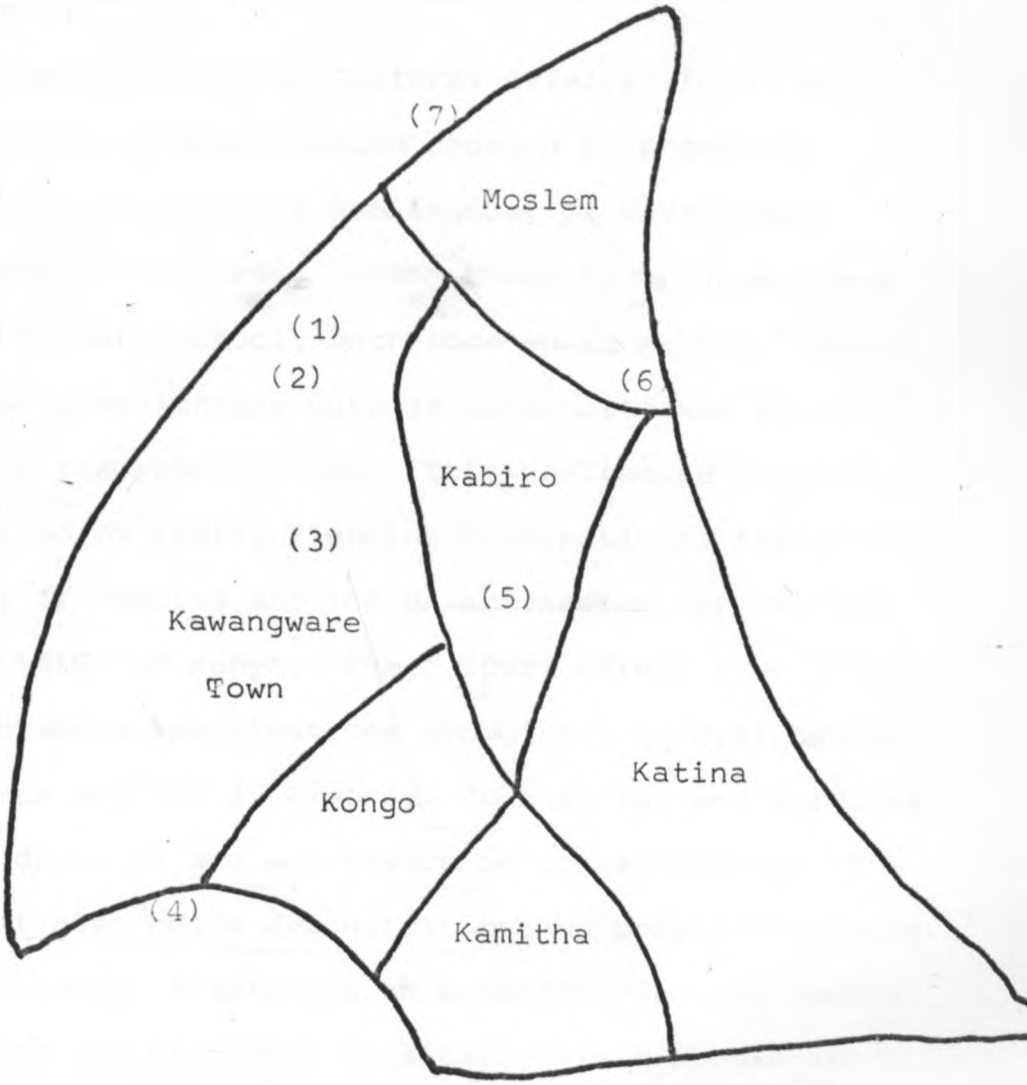
Most of the cooking is done by charcoal stoves, (jiko). Some people use firewood while the more priviledged use kerosene stoves. A family may use about (60.00) sixty shillings worth of charcoal a month or even more. This is 10% of the salary.

The houses are not erected in any orderly fashion nor are they numbered.

Kawangware is divided into six major villages and this study used the same divisions. Each village is further subdivided into stakes.

Figure 1.2: A Sketch Map of Kawangware

Source: I.C.A.



Key

1 = Kawangware Market

2 = ICA Offices and Residence

3 = City Council Primary School

4 = Lusinga House School

5 = Kabiro-Kawangware Health Care Outpost, ICA School

6 = Mama Mumbi Maternity Home

7 = Riruta Health Center, Nairobi City Council

Kabiro is the central village and the poorest but the differences in the six villages are not very distinct.

The Institute of Cultural Affairs (ICA), an international organisation engaged in promoting community development has anumber of development projects in the area. Among these is a Nursery and Lower Primary School, both located in Kabiro. There is also a Healthcare Outpost here, situated in one room of the school house. This healthcare outpost is supported by Family Planning International Assistance (FPIA) of America and the Breastfeeding Information Group (BIG) of Kenya. The outpost offers a well baby clinic where immunisations are given, general health services and family planning counselling and services plus education and assistance on breastfeeding. The outpost also holds demonstrations on prepairing foods for children, film shows on breastfeeding and family planning and its staff physically visit people in their homes to educate them in general health, family planning and breastfeeding. The Outpost was opened in March, 1980. It has two full time Nursing Sisters, 11 female and 2 male Healthcare takers (HCT) and a doctor who goes there twice a week. Most of the work for this study was based at this healthcare outpost.

1.3: Significance of the Study:

Kenya is currently faced with a population growth rate of 4% annually[37] which is well beyond what her economic development can cope with. This is largely a result of declining mortality rates and rising birthrates resulting mainly from advancements in medical technology. The development plan for 1978-83[38] outlines methods of fertility regulation and reduction is clearly indicated.

Coupled with a rapidly growing population is an even more rapidly growing urban population. Nairobi, the capital city of Kenya, is currently growing at a rate of over 8% largely as a result of in-migration but natural increase also plays a large part[39]. Such a rapidly growing population occuring in urban areas where medical benefits are more readily available poses many problems.

This rapidly growing urban population has its advantages and disadvantages. The chief advantage is that the urban society is more receptive to modern ideas, innovations and practices. Although this receptivity is selective, through this population new ideas diffuse into the rural areas so that development is achieved. The chief disadvantage, as far as this study is concerned, is the adoption of new ways of life which are ill-fitted to the economic and social status of the people and the forsaking of the old practices which, in all respects, served the

people better than the new ideas they adopt. In this study, the chief concern is the decline in the duration and intensity of breastfeeding in favour of artificial infant feeding and the slow adoption of modern contraceptive use.

Breastfeeding is the best source of food for the infant,[40,41,42,43,44]. It has nutrients which no infant formula has been able to reproduce and it is safe from contamination, readily available, cheap and comes in a very attractive package[45]. In Kawangware, most of the infants cannot have safe artificial feeding.

Theoretical Structure

More relevant to the current situation in Kenya is the fact that breastfeeding delays a subsequent pregnancy by suppressing ovulation and prolonging post-partum amenorrhoea. It has already been mentioned that marital fertility in Kenya is currently 25% lower than it would be solely due to the practice of breastfeeding[46]. It has also been hypothesized that every 2 months of breastfeeding prolongs post-partum amenorrhoea by 4-6 additional weeks in the infants first year of life[47]. Rosa estimates from his study in the Phillippines that the additional 5.5 months protection afforded by lactation adds up to 590,000 Couple Years of Protection (CYP) which compares very favourably with the 607,000 CYP provided to two million acceptors of contraceptives from the National Family Planning Programme[48].

Traditionally, women in Kenya breastfed intensively for almost 12 months and often combined this with sexual abstinence to avoid an interruption of their breastfeeding by another pregnancy. Today, post-partum sexual abstinence has been reduced to an insignificant period averaging 3 months and, as such has no contribution to fertility regulation among Kenyan women as a whole[49].

If mothers in Kawangware are to protect their breastfeeding and achieve birth intervals comparable to those of the traditional Kenyan women, they will either have to fully breastfeed for more than the 2 months reported by the Kenya Fertility Survey or use modern contraceptive methods. It would be even better if they combine both.

As currently only 4% of the women at the risk of becoming pregnant are using any effective method of contraception (KFS) and the national concern is to reduce the population growth rate, this study aims at identifying the trend of breastfeeding in Kawangware, its effect on birth interval plus knowledge, attitude and practice of family planning.

It is also hoped that locally, recommendentions will be made to help the health care outpost in its effort to promote both practices. Nationally, it is hoped that this study will identify useful implications for the national population policy and family planning programme. Internationally, it is hoped

that the finding from this study will help in the solution of similar problems in similar societies.

1.4 Objectives of the Study:

1. To identify the trend in breastfeeding intensity and duration in this area.
2. To identify the extent of knowledge, attitude and practice of modern family planning in the area;
3. To identify the factors contributing to the trend in (a) breastfeeding and (b) use of modern family planning in Kawangware;
4. To establish the relationship between breastfeeding and family planning use in Kawangware;
5. To make suggestions and recommendations for the promotion of (a) breastfeeding and (b) use of modern family planning in the area.

1.5 Research Hypothesis:

1. It is hypothesized that breastfeeding is declining in duration and intesity in Kawangware.
2. It is further hypothesized that breastfeeding duration and intesity

decline more rapidly while use of modern contraceptive methods is increasing with:-

(i) Higher levels of education

(ii) Higher employment status

(iii) Increasing length of stay in an urban area.

3. It is also hypothesized that birth intervals are becoming shorter for the woman in Kawangware. This is based on the postulate that many mothers in the area use breastfeeding as the only protection against a subsequent pregnancy and do not combine it with use of modern family planning methods.

In order to test these hypotheses data collected from the field will be analysed. Factors like:-

Knowledge and attitude towards family planning methods modern and traditional;

Influence of traditional family life and the modern urban life through relatives, friends, neighbours and medical personnel;

Demands on the woman's time, will also be looked at in order to identify factors contributing to the findings from the hypotheses.

1.7 Summary of Chapters:

This study has been written up in seven chapters. In chapter 1 the general introduction to the topic and detailed introduction to the study area have been given. Objectives for the study and Research Hypotheses have been stated and the approach to the study briefly given.

Chapter Two is devoted to Literature Review. In Chapter 2 section one, Literature on the nutritional value of breastfeeding is reviewed, in section two, that about the contraceptive value of breastfeeding is reviewed, in section 3, abstinence and breastfeeding are reviewed, in section 4, literature on the economic value of breastfeeding is reviewed and in section five, literature on factors contributing to the decline are reviewed. In section 6, literature relevant to Kenya is reviewed.

In Chapter 3, methods of Data collection are discussed. The selection of the sample is dealt with in detail, the designing of the questionnaire, content of the questionnaire, problems encountered and solutions taken are discussed. After this, methods of analysis are dealt with.

Chapter Four, is divided into two parts. In Chapter four, part one, the general characteristics of the sample is discussed. In part two of the same chapter, fertility levels of the women are described. Chapter Five, deals with the womens knowledge and

practice of breastfeeding and contraception. A lot of the discussion in this chapter is based on the last closed and current open intervals.

Chapter Six, the findings from chapter five are looked at in relation to the hypotheses for the study and its objectives. Chapter Seven, gives the summary and recommendations.

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CHAPTER TWO

REVIEW OF RELATED LITERATURE

2:1 Introduction:

A lot has been written about breastfeeding; its nutritional value, its contraceptive contribution and its economic value. There are also a number of studies on the determinants of breastfeeding and on factors contributing to its decline, especially in the developing parts of the world. Some of these studies were mentioned in passing in Chapter One but here they are discussed in more detail.

2:2 Nutritional Value and Aid to Infant Health

Buchanan R[1] provides an exposition of breastfeeding as an aid to infant health and fertility control. He says that breastfeeding is:-

> "Highly nutritious, providing all the elements needed for the infants health during the first six months of life and many of those needed for months thereafter;
> Protective, due to its compesition and its content of immunologic substances, against bacterial infection of the gastro-intestinal tract, allergies, obesity and certain metabolic and other disorders;

Both these advantages are not provided by any other milk.

> "Safe from bacterial or other spoilage-common in tropical areas where refridgeration of food and sterilisation of equipment is often not possible;
> Convenient, since the mother can feed the infant on demand."

Both are very important especially for a mother with plenty of other work.

Martine, C. and Chaves, A[2] also report that it has been regarded traditionally that during the first year of life, breastfeeding protects the infant from infection. They, however, go on that there comes a time when the milk supply will decrease despite the high demand and increased need and this is the time when weaning should commence. They warn that weaning is not an easy process.

B. Winikoff[3] warns us of some of the dangers associated with weaning. She provides data to show that a weanling is at a higher risk of mobidity and mortality especially in less developed countries. This is because the removal of breastmilk from his diet deprives the child of nutritional protection. The child may be put on a diet deficient of his nutritional needs and, infant formulas, which are often used as the substitute, may be improperly prepared and this might result in nutritional marasmus, diarrhoea and so on.

J. Harrington[4] produces comparable data for Upper Volta to show the risk of mortality for non-breast-feeding infants. The shorter the breastfeeding duration, the higher the mortality.* See Table 2.1.

* As reproduced by T.E. Dow Ref:4

Table 2:1

Proportion Surviving of Children Ever Born Alive by the Length of Time they were Breastfed: Upper Volta(1969).

Sample	Length of Lactation (Months)						
	1-5	6-11	12-17	18-23	24-29	30-35	36+
Ougadougou	.187	.489	.685	.838	.804	.852	.848
Bobo-Dioulasso	.071	.578	.859	.798	.880	.833*	.800*
R.U. Fringe	.159	.167*	.526	.756*	.724	.878	.786
Rural	.029	.097*	.313	.662	.734	.724*	.832

* Based on less than 45 births

Source: Harrington, 1969

Breastfeeding, although a natural process, requires a lot of practice, patience, encouragement and advice especially for a mother nursing her first child. In many cultures, relatives and friends who have breastfed before, provide the needed information, advice and emotional support. In urban areas, this support is often lacking and many mothers are only advised by medical personnel whose attitude cannot be assumed to be supportive.

Establishment of an emotional and physical state fit for a mother to breastfeed is very important if she is to have successful breastfeeding. Buchanan[5] lists four processes on which breastfeeding depends:

"Development of milk production tissues in the breast;
Initiation of milk production after delivery;
Maintainance of milk production;
Milk ejection (the 'let down' or'draught' reflex)."

These are further enhanced by:-

The infant's ability to suckle
The mother's physical and emotional capacity to breastfeed and
The possibility that the woman can have the child with her at adequate intervals for breastfeeding.

2:3 Problems of Artificial Feeding:

Many mothers, when they can't or when they choose not to breastfeed, have to revert to artificial means of feeding the child. These may involve the use of cow's milk or infant formula fed to the infant through a bottle and teat, cup or spoon. These feeds have to be prepared by adding water to them and, sometimes, a sweetener to suit the taste of the infant. There are many problems associated with artificial feeding and Buchanan[6] Jelliffe and Jelliffe[7], Lathman[8] and others list the most common ones, namely:

"A mother who finds cows milk or infant formula expensive may dilute the preparation to a point where it is no longer nutritionally adequate or may use other liquids such as rice water instead; Clean water for preparing the formulas may not be available."

Both these are true in Kawangware where the cheapest tin of infant formula costs 22 Shillings. Clean water is also not readily available.

"Some mothers may have difficulty following written instructions for prepa the formulas; Hygienic facilities for sterilizing and storing bottles and nipples may be lacking."

Illiteracy rates in Kenya are still high and instructions on preparing formulas are often given in English which very few women can read.

(Ibid: Buchanan)

Added to these may also be the problem of finding enough fuel to boil the water, warm the feeds and sterilize bottles and teats. The result of these problems will be an inadequately fed infant or a sick one.

Although breastfeeding is highly valuable in the infants diet, it has to be supplemented with other foods sometime after 6 months. The mother should continue to breastfeed him after this and delays in introducing supplementary foods have been known to lead to malnutrition[9].

2:4 Contraceptive Value:

That breastfeeding has a contraceptive benefit and the extent of this benefit has been an interest of many studies. A Turkish demographer[10] has reported that women in Turkey often breastfed their infants as a means of birth control, believing that it will delay the next pregnancy. Knutson and Mellbin[11] report that in Ethiopia, a frequent reason for the early termination of breastfeeding was that "otherwise the mother will not have more children". R. Buchanan[12] reports that breastfeeding is "effective in prolonging post-partum amenorrhoea and therefore, in providing some protection against pregnancy; which, in fully breastfeeding women may last for 9 months or longer following delivery." He quotes recent studies as showing that breastfeeding women average 10 months of post-partum amenorrhoea as

compared to 3 months for non-breastfeeders. Rosa[13] has also shown that the contribution of breast-feeding compares very effectively with other family planning methods in providing couple years of protection.

Jelliffe and Jelliffe[14] explain that prolactrin and other hormones of lactogenic complex secreted by the anterior pituitary as a response to sucking the breast inhibit ovulation. Ovulation and menstruation, they say, are delayed for at least 10 weeks and even up to 26 months provided breastfeeding is complete, successful and unrestricted. Its effect is reduced if it is partial and supplemented too early. They quote a study in Phillippines, a Catholic community, where 21-24 months birth spacing interval was achieved in 51.2% of the mothers who nursed their infants 7-12 months as opposed to only 30% of the mothers whose infants were artificially fed. The latter group had much shorter intervals. They also quote a study from Rwanda, Central Africa where sexual intercourse is culturally permitted from approximately 8 days after delivery, but prolonged lactation produced amenorrhoea in 50% of the women for over one year and was also responsible for an overall delay in birth intervals of 15 months.

Knodel[15] reports that where the infant did not survive to weaning, the average birth interval rose steadily according to the length of survival of the

child. Example, the birth interval following:-

A still birth was 1.43 years

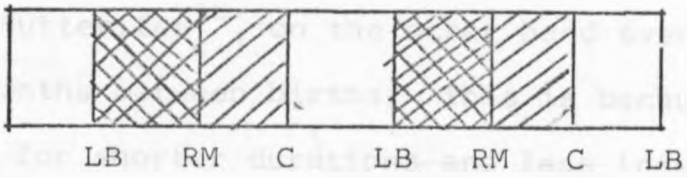
Death below 0.1 year was 1.70 years

Death 0.4-1.0 year was 2.43 years.

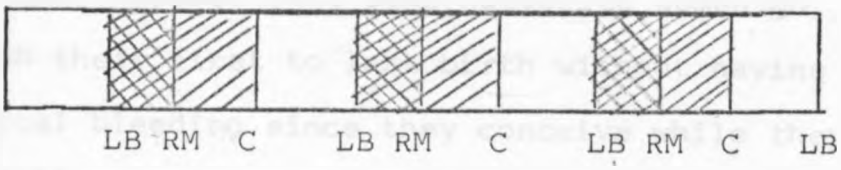
J. Van Grinneken[16] discusses the components of the birth interval and the contribution of breast-feeding to it. The contribution of breastfeeding is largely through the lengthening of the period of post-partum amenorrhoea and suppressing ovulation. He compares the components of the birth interval of lactating and non-lactating women. This comparison is reproduced in Figure 3 below.

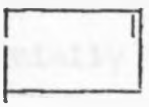
Fig. 2:1 Components of the Birth Interval

Lactating Women.

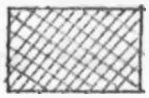


Non-Lactating Women

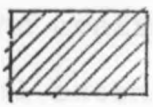




Gestation



Post-partum Amenorrhoea



Menstural Cycle

LB = Live Birth, R.M = Resumption of Menses, C = Conception.

Reproduced from; Nutrition and Human Reproduction Edited by W. Henry Mosley. Page 181, Fig Figure 1.

In another study[17] an average birth interval of 32.64 months was observed and this interval is broken down into:

10.78 months of Post-partum amenorrhoea.

10.7 months of menstruation

9.00 months of gestation

2.16 months of pregnancy wastage

These women breastfed for about 12 months on average.

The Hutterites[18], on the other hand averaged only 26 months between births. This is because they breastfed for shorter durations and less intensively. They give supplementary foods as early as 2 months. This study reports that some Hutterite women go through their first to last birth without having menstrual bleeding since they conceive while they are still amenorrhoeic. They average 11 children.

Van Ginneken concludes that where use of modern contraception is limited, birth intervals are substantially longer for nursing than for non-nursing mothers.

The contribution of breastfeeding to the birth interval extension after menstruation resumes is not yet clear. Van Grinneken suggests that "the pregnancy preventing capacity of prolonged breastfeeding is probably to a large extent limited to the amenorrhoeic period." After the resumption of menses there is no clear difference in the rate of conception between

nursing and non-nursing mothers, but he suggests that further research in this area is needed.

In a study covering 5,000 married, fecund, non-contracepting women in Taiwan, Jaim A.K., Hermalin and Sun[19] found that approximately 45% of the women who breastfed beyond resumption of menstruation became pregnant within the 6 months following that point as compared to 68% of those who did not breast-feed beyond first menstruation post-partum. Only 6% of the women in the sample became pregnant while still amenorrhoeic. They, therefore, concluded that the effect of lactation on birth intervals is not only in post-partum amenorrhoea but even beyond by:-

Continuing to delay ovulation for approximately 2 months after resumption of menses,

Increasing the likelihood of menstrual cycles unfavourable to the initiation of pregnancy lasting long enough to be recognised and reported by the woman eg.

(i) Increasing the likelihood of the fertilized ova being lost between the ovary and tubes or

(ii) Increasing the likelihood of a defective ova non-susceptible to fertilization.

(iii) Increasing the likelihood of spontaneous abortions.

B.M. Popkin[20] says that breastfeeding is a major source of couple months of protection against additional births in many nations and some women breastfeed partly for this.

Knodel[21] estimate that the reduction of the birth interval associated with the substitution of bottle feeding for breastfeeding, in the absence of any practice of birth control, is equivalent to a 16-64% rise in fertility.

Latham[22] echoes the observation of many writers when he points out that lactation is not a satisfactory alternative to modern contraceptive techniques but in the absence of positive family planning methods and, other things being equal, mothers who breastfeed will, on average, get pregnant less soon than those who do not .

2:5 Abstinence:

In many African and Asian communities, there traditionally existed a period of sexual abstinence following a birth. The lengths of abstinence varied from community to community. In some societies, this lasted throughout the breastfeeding period. This was common in so ieties like in Zaire[23], Baganda in Uganda, Luo in Kenya[24], where the normal diet of these non-cattle keeping societies included little milk. Henry[25] suggests that an early pregnancy causes an interruption in the breastfeeding which in turn leads to poor health or death of a prematu-

rely weaned child. So these societies protected each infants breastfeeding through abstinence. In some other societies like Rwanda, some in Zaire, Ankole in Uganda where cows milk was plentiful, sexual abstinence was almost non-existent and if it did exist, this was mainly for hygienic reasons.

The Kenya Fertility Survey[26] reports an average duration of abstinence of 3 months despite the fact that most societies in Kenya had traditional abstinence periods usually lasting until the child was old enough to recognise his father[27], walk or eat with other members of the family[28]. In the light of this, W.H. Mosley[29] concludes that sexual abstinence no longer plays a recognisable role in birth control in Kenya since its duration is much shorter than post-partum amenorrhoea.

2:6 Economic Value:

That breastfeeding is highly economical cannot be disputed. Jelliffe and Jelliffe[30] point out that declines in breastfeeding in present day Asia would need to be compensated for by approximately 114 million cattle additonal or an increase of 40% of cows milk production in the area. In 1963, it was estimated that if Tanzania shifted to bottlefeeding, it would cost her 22 million dollars per year which was then much higher than her Ministry of Health budget.

In his article, William Butz[31] discusses the economic aspects of breastfeeding in detail. He says that, it is an unnecessary strain on family and national resources when mothers substitute other infant foods for their own milk. Breastfeeding, Butz says, is not a costless activity to many women. It requires time and nutrients both of which are only available at a cost. So he suggests that the fact that women undertake to breastfeed shows that it also produces benefits that people value such as survival and improved development of the child as well as a delay of a subsequent pregnancy. He develops a model in which he discusses the economic status of breastfeeding in relation to the woman's time and cost of substitute goods. Once the woman's time is more valuable elsewhere, less and lesser of it will be devoted to breastfeeding while substitute foods are used more and more.

The Kenya Rural Child Nutrition Survey[32] estimated that feeding a 3 month old infant on formula would take up 20% of the minimum wage in Kenya and this percentage goes up as the infant grows older.

It is, therefore clear from the brief review above that breastfeeding is cheaper in many ways and much better and safer for the infant as compared to formulas and other infant feeds.

2:7 Factors Contributing to the Decline:

If breastfeeding is so beneficial to child, mother and nation, then women should be breastfeeding more, not less. The fact that the trend is towards less breastfeeding has prompted a number of studies to to determine the factors responsible for the decline. Most studies like Buchanan[33], van Guinneken[34], Jelliffe and Jelliffe[35], Rohde[36] and many more, list 4 major factors as being responsible, namely:

The vigorous commercial promotion of milk formulas and other foods for infants;

Lack of strong medical support for breast-feeding;

Changed perception of the acceptability and social status of breastfeeding;

Increased employment of women in places outside the home where little provision is made for breastfeeding.

Knodel[37] also lists the same factors but warns that although prolonged breastfeeding is still usual in rural areas, improving transport and communication is bound to change life there too. The substantial migrations from rural to urban areas now underway will assure a further reduction in the proportion of mothers in the contemporary third world who practice extended breastfeeding.

B.M. Popkin[38] examined patterns and determinants of breastfeeding practices in low income ountries and they also list the same (4) determinants as the others. They then go on to discuss factors postulated to affect breastfeeding and these are:-

(i) Time allocation - if a mother's time is more valuable elsewhere, she is likely to substitute formula for breastfeeding.

(ii) Prices of breastmilk substitutes and weaning foods. Here they considered both direct (money) costs and indirect (time) costs involved in purchasing, preparing and feeding the infant on substitutes.

(iii) Urbanisation where life styles change and breastfeeding is viewed as an inferior food or traditional practice in the face of modern, readily available substitutes. In urban areas information and knowledge about infant feeding may also be prejudiced against breast-feeding.

(iv) Family size, child spacing and parity, it is hypothesized that duration of lactation is positively

influenced by the number of children the woman has already had (parity) if breastfeeding is used as a contraceptive. However, Heller and Drake[39] found in Colombia that younger children received less breastfeeding than those born before them. This could be a result of the other younger children's demand on the mother's time so that she has less in which to breastfeed the youngest. On the other hand, it could be a result of the availability of older children who can bottlefeed the infant while the mother is engaged elsewhere.

(v) Publicly subsidised and free infant foods such as the distribution of milk powder in child Welfare Clinics may also contribute to the decline in breastfeeding.

That declines in breastfeeding have started in urban areas is therefore not surprising because all the factors listed above are more operative in urban than in rural areas.

2:8 Relevant Literature on Kenya:

A number of studies about family planning knowledge, attitude and practice for Kenya exist. The most recent is the Kenya Fertility Survey of 1978-79. There is, however, very little on breastfeeding and its place in family planning.

In her book, A. Molnos[40] explains that having many children in East African communities is regarded as a blessing from God and an insurance in old age while in between, the parents will get rich as their daughters get married, (through payment of dowry or bride price). A woman who produced many children was loved by her husband and his clan. The woman with no child, on the other hand, was to be pitied, scorned, avoided etc; she is cursed and not loved by God, her husband or his clan. She was a misfit in the society. A woman with few children, that is, 1, 2, or 3, fared a bit better than the one with none but she is not held in the same esteem as the one with many.

Having children and the number of children one had were in the hands of God. Planned family limitation was shocking to a majority of Molnos' respondents. The couple, she tells us, is thought to be stupid in that they pretend to plan something which depends on natural and divine forces. Their attempt is, at the same time, sin. Only 16.1% of her respondents approved of planned family limitation

and these only if the couple cannot support the children. Others said that parents who limit their families are the selfish ones who want to live in urban areas and enjoy life.

Molnos also points to the fact that there is a strong belief that contraceptives destroy fertility. The young couple would, therefore, only begin to practice contraception only if they have had enough children i.e. at least 5.

In summing up she says that some respondents recognise the necessity of limiting the number of children. The main reasons are poverty and desire for education. The small planned family is rarely seen as an ideal life pattern on its own. On the other hand, there is much psychological resistance to the idea of deliberate limitation of the family size. This resistance is rooted in a combination of traditional beliefs about life and death and prejudices against contraceptive methods which are believed to destroy fertility. These attitudes are still strong in many African cultures so that the use of modern contraceptive methods has caught on very slowly while practices such as polygamous marriages, post-partum sexual abstinence and prolonged breast-feeding have tended to decline with modernisation.

The Central Bureau of Statistics (CBS) of Kenya undertook a Child Nutrition Survey in rural Kenya[41] which provides detailed data on the breast-feeding situation in Kenya. Unfortunately, children

under one year of age were not included in this survey nor is there any information on formula feeding, supplementary foods for a lactating child. The average length of breastfeeding for all rural women recorded by this survey is 15 months. 20% of the children were breastfed for longer than 18 months while only 7% were completely weaned by 6 months. There are variations by ethnic linguistic groups and these are shown in the table below.

TABLE 2:2 LENGTH OF BREASTFEEDING BY DISAGGREGATED ENTHINIC LINGUISTIC GROUPS

Linguistic Group	Meru	Luo	Kalenjin	Kissii	Kamba	Luhya	Kikuyu	Chonyi
Length of Breastfeeding	17.1	16.0	15.3	15.2	15.0	14.9	13.9	12.7

Breastfeeding length given in months.

Reproduced from Table 1.4-3 of Child Nutrition in Rural Kenya. CBS.

Other information from the same report show that families not owning land nor operating a holding nor employed in agriculture as a main occupation breast-fed for short periods. This supports the view that introducing rural families into the modern sector reduces breastfeeding. Using data from the KFS, Mosley, Werner and Becker[42] analyse the effect of modernisation on birth spacing and marital fertility in Kenya. They say that at present modernisation is resulting in higher birth rates among some groups of women in Kenya.

The average birth interval following a live birth is 33.7 months for all women but by age groups it is only 28.6 for those under 25 years while it is 35 months for those over 35 years of age.

Mean post-partum amenorrhoea is 11.2 months for all women but for those under 25 years it is 9.2 months while for those over 35 years it is 14.5 months.

This variation with age suggests that there has been a secular decline in the duration of breast-feeding and correspondingly, in the duration of post-partum amenorrhoea for younger women. They, however, point out that this could be further understood by socio-economic variables.

The breastfeeding situation in the country is still quite good. The mean duration for all women is 16.5 months but for those below 25 years it is

14.3 months while for those over 35 years, it is 20.6 months. The traditional practice of sexual abstinence after a birth was estimated at only 3.4 months and the authors concluded that this practice made no contribution to the birth interval in contemporary Kenya.

The average birth interval reported is equivalent to a Total Marital Fertility (TMF) of 8.9 which shows that a large percentage of a Kenyan woman's potential reproductive life is spent in a marital union. Table 3 below shows the variations in the major components of marital fertility by ethnic groups.

Table 2.3: Marital Fertility and its Major Components by Ethinic Groups for all Women.

Ethnic Group	MFR	Duration in Months			% Contra-cepting	Number of Women
		BF	A	M		
Kalenjin	.382	16	9	8	2.8	359
Kisii	.354	16	12	6	1.3	378
Kikuyu	.347	14	10	9	8.3	1255
Meru/Embu	.331	18	11	10	9.9	344
Luhya	.319	16	10	10	3.0	872
Kamba	.307	18	11	10	4.4	573
Luo	.269	17	11	15	2.5	1098
Mijikenda	.207	23	17	19	2.1	334
Other	.238	24	18	11	2.3	303

Reproduced from: Modernisation, Birth Spacing and Marital Fertility in Kenya. W.H. Mosley, L.H. Werner and S. Becker Table 2 Pg.8

Use of modern contraceptive methods is only 4.5%, largely for spacing purposes. So, if prolonged breast feeding increases the live birth interval by 11.2 months, then a decline in breastfeeding could result in a 25% rise in fertility unless it is accompanied by an increased use of modern contraceptives.

The authors explain that the current high fertility associated with modernisation among young women, coupled with the more sustained high fertility among older traditional women, will result in rising levels of fertility. They go on to explain that the current situation is not typical only to Kenya but that many other African countries, such as Nigeria, are also going through this "Fertility Transition". The fertility transition involves a slight fertility decline among very young women due to later marriage, a substantial increase in the birth rate in earlier reproductive years due to less spacing and then, a significant fertility decline among older women due to lower family size desires and increased contraceptive use. Kenya, they say is in the very early stages of the transition. How rapidly and how much fertility may decline as these younger women get older will depend upon a combination of social and economic changes that may influence family size desires in conjuction with the effectiveness of the National Family Planning Programme in providing information and means.

2.9: Summary:

There is a lot of material written on family planning and breastfeeding. In this study, an attempt will be made to establish a link between these two practices in Kawangware and compare the findings with those reviewed in the section related to Kenya.

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35. See Reference 7

36. J.E. Rohde, "Human milk in the Second Year, Nutritional and Economic Considerations", p.p. 5-6

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40. See Reference 24

41. See Reference 32

42. See Reference 29.

CHAPTER THREE

METHODS OF DATA COLLECTION AND ANALYSIS

3:1 Introduction:

This study was undertaken to ascertain the trends in the practice of breastfeeding in Kawangware; to determine the degree of knowledge, attitude and practice of modern family planning and to determine the link between breastfeeding, family planning and fertility in Kawangware.

After this, the aim was to identify factors contributing to the trends in breastfeeding and to identify those contributing to the possession or lack of knowledge and practice of family planning. Finally, the study hopes to recommend appropriate means through which use of modern family planning methods and breastfeeding could be promoted. Although the means are designed primarily with the participation of the Kabiro-Kawangware Healthcare Outpost in mind, it is hoped they may have broader relevance as well.

In order to do the above, information had to be obtained from women resident in Kawangware who were of child-bearing ages, i.e. 15-49 years of age. From the Baseline Survey[1], it was estimated that there were roughly 6,000 women in the area falling in this age group. Time and finances did not allow for the collection of the required information from all the women so a sample had to be drawn from the eligible population. In the Study Area, most of the people are within the same economic scale and

socially do not differ very much. There are 5 households which are totally different from the rest. These belong to rich men working in the city and they were excluded from the sample.

3:2 The Sample:

A study dealing with populations, be they of people or animals, often requires a sample on which the study is done. The sample must be representative of the parent population if the findings from it are to be applied confidently to the parent population. For this reason, statistical tools for selecting different types of samples have been developed.

There are different types of samples to serve various needs in different studies. Most common are those arrived at through probability sampling techniques which fall into four basic types, namely; Random sampling, Systematic sampling, Stratified sampling and Cluster sampling. A probability sample is that in which every individual in the parent population must have a known probability of being included in the sample. This is done by using sampling fractions, weights and so on. In Non-probability sampling, there are no sampling fractions etc.. The interviewer is free to interview anybody he feels will give him the information he requires.

3:3 The Study Sample:-

Selecting the sample for this study posed a number of problems. First, the total population

eligible for the study was only estimated. Secondly, although the study area is divided into villages mentioned earlier on, it was not known how many people or how many households exist in any one village. Third, is the fact that no detailed map of the area exists and lastly, the households are not numbered or identified in any way. ICA at one time attempted to identify the houses by putting a number on the front door but the residents rubbed them off as they suspected the motives behind the procedure. Most of them thought it was done for the police.

From the problems mentioned, it is clear that some sampling techniques like random and systematic sampling, which require a complete list of the population, could not be used. It was also thought unnecessary to use stratified sampling for this study as it would serve no useful purpose. Time and finances could not allow for the listing of the population to facilitate use of random or systematic sampling. It was also felt that a non-probability sample would be inadequate for this study, so 'crude' methods of selecting clusters were used.

The Director of the Healthcare Outpost, One Youth Motivator, who is a resident of Kawangware and had done much work in the Baseline Survey, plus the writer, walked through each village with the intension of understanding composition, density and lay-

out. The area is divided into six villages and each village is further subdivided into geographical units called 'stakes'. The number of stakes per village is determined by the size of the village. Most households are within what one could term 'Clusters', separated from each other by either roads paths, ditches or empty space. Also most households are a single room which is part of a long structure. A structure could have as many as 10 rooms which is approximately 10 households.

The Kikuyu tribe is intermingled with the other tribes in residence but other tribes tend to occupy whole structures in a cluster and nearly all Moslems interviewed were found in Moslem village. It was finally decided that one cluster be selected from each stake. If the stake was too big or too densely settled, two clusters were picked. The chosen cluster was the one thought to be most representative by way of ethnic composition. Most of the clusters picked, therefore, happened to be the largest in each stake. Initially, it was intended that eight interviews be done from each cluster.

After selecting a cluster, a pair of interviewers was assigned to it. They then counted the households in it and then, starting from any point they chose randomly, they were to interview the woman from every eight house. The distribution of stakes per village, clusters per stake and expected interviews are shown in Tables 3.1 and 3.2 below.

TABLE 3:1

Distribution of Stakes, Clusters and Interviews per Village.

Village	Stakes per Village	Clusters per Village	Expected Interviews	Actual Interviews done
Kabiro	6	7	56	70
Kamitha	4	6	48	45
Kongo	3	5	40	40
Katina	7	8	64	78
Moslem	6	6	48	40
Kawangware Town	9	7	68	60
TOTAL	35	39	320	333

Table 3:2

Distribution of Clusters per Stake and Households per Cluster

Name of Village		S T A K E									Total
		1	2	3	4	5	6	7	8	9	
Kabiro	Clusters Households	2 172	1 85	1 76	1 81	1 84	1 72	*	*	*	7 570
Kamitha	Clusters Households	2 116	2 133	1 76	1 54	*	*	*	*	*	6 379
Kongo	Clusters Households	2 145	2 123	1 81	*	*	*	*	*	*	5 349
Katina	Clusters Households	1 92	1 167	1 83	2 172	1 75	1 81	1 98	*	*	8 708
Moslem	Clusters Households	1 74	1 63	1 77	1 71	1 65	1 79	*	*	*	6 429
Kawangware Town	Clusters Households	1 82	1 85	1 68	Omitted	1 75	Omitted	1 58	1 71	1 79	7 518

The differences between the expected interviews and actual interviews done was a result of higher or lower concentration of households. In Kawangware Town, Stake 4 was excluded because it is the market place and major shopping centre, not truly residential. Stake 6 of Kawangware Town was also omitted because a large part of it is the school and its grounds and another part of it was being demolished to make way for a new road.

At this point one can'point out that this sample is not truly random nor are the sampling fractions known because the totals are not known. Efforts were directed at getting a good geographical coverage of the area which was quite well done. The unit of study is the individual woman and the intension is finding out her characteristics as regards breast-feeding, family planning and what variables influence her practice of these two. It is therefore felt that the sample as it is, is adequate for this study.

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CHAPTER FOUR

GENERAL CHARACTERISTICS OF THE WOMEN

4.1 General Characteristics of the Women:

Age and Marital Status:

The women interviewed ranged in ages from 15-49. 30.1% of these reported themselves as never married but only 18% of the women in the sample had never lived with a man as his wife. The difference between these figures is a reflection of the degree to which loose, non-binding relationship between men and women in urban areas abound in Kawangware. Table 4.1 below shows the distribution of the women by age and marital status.

AGE GROUP	MARITAL STATUS				TOTAL
	Single	Married	Widowed	Divorced or Separated	
15-19	39	34	-	4	77
20-24	43	71	-	6	120
25-29	12	51	2	12	77
30-34	3	20	-	5	28
35-39	1	12	2	2	17
40+	2	5	2	4	13
TOTAL	100	193	6	33	332

The proportion single falls with increasing age.

Table 4.1 Distribution of Women by Age and Marital Status.

4.2 Ethnicity and Religion:

38.2% of the women in the sample are Kikuyus. This is so because the predominant population in Kawangware is Kikuyu. The dominant religion is Catholic, 47% of the sample belong to this. The smallest of the major religions groups is Moslem and most of them live in the Moslem Village. Tables 4.2 and 4.3 below show the distribution of the women by ethnic groups and religions affiliation. Apart from those listed, other tribes are Kiisi, Meru, Wagisu, Taita etc and 'other' religions include Salvation Army, Israelis, Legion Maria, Jehova Witnesses and so on.

Table 4.2:

Ethinic Distribution

Tribe	Number of Women	Percentage
Kikuyu	127	38.2
Luhya	84	25.4
Luo	62	18.7
Kamba	27	8.1
Masai/Somali	10	3.0
Other	22	6.6
TOTAL	332	100.0

Table 4.3

Distribution by Religious Affiliation

Religion	Number of Women	Percentage
Catholic	156	47.0
Anglican/PCEA	60	18.1
Moslem	21	6.3
Other	81	24.4
None	8	2.4
No Response	6	1.8
TOTAL	332	100

56.6% of the women reported that they lived with their husbands daily. For the majority of the rest, the man may come home odd days during the week while a few of the men have to travel out of Nairobi in the course of their work. Some of the women also go home to the rural areas during the peak periods of agricultural activity so they also do not live with their husbands all year round.

4.3 Length of Stay in Kawangware:

Table 4.4 below shows the distribution of the women by the period they have so far stayed in Kawangware. The population in the area as mentioned in Chapter 1 Section 3, is transient. 58.1% of the women in the sample had been in Kawangware for less than 1 year. 7% had stayed for 1-3 years. Surprisingly, the next group of women 7.2% had all stayed for 10 or more years while the rest were born in the area.

Table 4.4 Length of Stay in Kawangware by Age of Woman

Length of Stay	AGE IN YEARS						Total
	15-19	20-24	25-29	30-34	35-39	40+	
0-11 Months	43	71	53	17	8	1	193
1-3 Years	4	9	4	3	3	-	23
10 Years but born elsewhere	2	13	6	2	1	-	24
Lifetime - Born here	28	24	10	4	5	12	83
No response	-	3	4	2	-	-	9
TOTAL	77	120	77	28	17	13	332

As far as length of stay is concerned, the population is dichotomons. The two groups will hencewith be; short term Residents 0-3 years and long term Residents over 10 years and Lifetime.

Connected with length of stay is area of origin The women were asked where each had been staying prior to coming to Kawangware. The response, therefore, is not essentially the area she was born in, The responses are shown in Table 4.5 below.

TABLE 4.5

Residence Before Kawangware:

Place	No of Women	Percentage
Born in Kawangware	75	22.6
Other similar Nairobi Surburb	12	3.6
A Higher class Nairobi Surburb	19	5.7
Other Urban Area	44	13.3
Nyanza and Western Kenya (Rural)	95	28.6
Rift Valley and Central Kenya (Rural)	61	18.4
Eastern and Coastal Kenya (Rural)	22	6.6
No Response	4	1.2
TOTAL	332	100.0

9.3% of the respondents had been living else where within Nairobi, 13.3% had been living in another urban area within Kenya. The rest of the respondents i.e. 53.6% came to Kawangware direct from rural areas.

The women were also asked how often they visited their home areas in one year. The purpose of this question was to help in determining the strength of the link between the woman and her rural relatives. Only 10.2% seem to have a weak link, in that, they no longer visit the rural area. Most of the women i.e. 58% had not yet stayed one year. For the rest, the link with the rural area is maintained through visits. It is also most probable that relatives from the rural areas also come to visit in Kawangware.

Table 4.6 Frequency of Visits Hom e Per Year

Frequency of visits	No: of Women	Percentage
Does not go	34	10.2
Has not stayed one year	193	58.0
1-2 times	20	6.0
3-6 times	6	1.7
7+ times	6	1.7
Not applicable	75	22.4
TOTAL	332	100.0

4.4 Education Attained and Occupation Status:

It is generally believed that a person's life-style is influenced by her educational attainment. Educational opportunities have been expanding rapidly in Kenya since independence so that younger women are more likely to have had more education than the older ones. Below is Table 4.7 showing the eeducational attainment categorised as reported by the respondents.

255 women also gave information concerning their husbands.

Table 4.7 Percentage Distribution by Years of Schooling Attained

Years of Education	Husbands	Wives
None	11.2	33.1
1-5	12.4	19.0
6-7	33.5	32.5
8+	39.2	14.8
No response	3.7	0.6
	100	100

Table 4.8 shows the educational attainment of the women by current age. Of these with no education, 41.8% are single and about half of them are aged below 24 years. Only 14.7% of the women received 8 or more years of schooling as compared to 39.2% of the man. All these women are under age 29.

Table 4.8 Current Age by Education Attained:

Age Group	YEARS OF EDUCATION					TOTAL
	None	1-5	6-7	8+	No Response	
15-19	18	11	34	14	-	77
20-24	33	21	43	22	1	120
25-29	30	14	19	13	1	77
30-34	10	9	9	-		28
35+	19	8	3	-		30
No: of women	110	63	108	49	2	332

Closely associated with education is occupation. some jobs require a certain level of education. Table 4.9 below shows the percentage distribution of husbands and women by their occupation status. House wives are listed as unemployed. It was observed that most of these women make baskets (Kiondo) knit or crotchet things for sale but since this is not done on a regular basis, they are reported as unemployed.

Table 4.9 Percentage Distribution of Employment Status:

Occupation Group	Husbands	Wives
Not employed	2.1	66.6
School girl	*	2.7
Professional/White collar	5.8	2.7
Business/Trader	47.0	19.0
Manual (Skilled and unskilled)	36.4	-
Casual Labourer	6.2	-
Wife doesn't know	2.5	*
No response	-	9.0
TOTAL	100	100
Number	255	332

* Cell logically empty.

Only 2.1% of the husbands were reported as unemployed. To this add 6.2% casual labourers and 2.5% whose wives do not know what the husbands do. This gives just over 10% of the families with no regular income.

Most of the husbands are engaged in trade. Those with shops or kiosks do fairly good retail business selling comodities like sugar, milk, bread soap, baby foods and so on. Others are outdoor traders who sell vegetables especially cabbages, "Sukuma wiiki" and potatoes in the market on market days but who try to spread their goods at strategetic points within the area to maximise sales on other days of the week. Most of the other men employed are within the minimum wage bracket employed as watchmen, bricklayers, carpenters etc. On average the husband earn much less than one thousand shillings each, per month.

Most of the women i.e. 66.6% are not in cash employment. Only 2.7% are in the white- collar job category and nearly all of these are currently unmarried. Others are engaged in trade similar to that of the men. Most of the women who work do so at home or somewhere else within Kawangware. There is, therefore, no or little need for most of the mothers to be separated from their infants for long periods during the day.

4.5 Family Size:

88.3% of the women interviewed had had at least one livebirth. This percentage is higher than the percentage of ever-married women or ever lived with a man. This shows that there is much child-bearing in this population which is non-marital.

Tables 4.10, 4.11, 4.12 show the distribution of women by age and total number of living children. Mean number of children per house is 2.3. Many parents have left their older children back in the rural areas with relatives for various reasons.

Table 4.10 Age by Total Number of Living Children-Ever Married Women

Age Group	NUMBER OF CHILDREN										Mean $\bar{m}$
	0	1	2	3	4	5	6	7	8	9	
15-19	1	18	14	3	-	-	-	-	-	-	1.53
20-24	3	21	30	21	2	1	-	-	-	-	2.01
25-29	1	3	8	15	15	14	8	1	1	-	3.9
30-34	-	-	3	7	6	5	3	-	-	-	4.1
35-39	-	-	-	-	2	4	5	3	2	1	5.9
40+	-	-	-	-	2	1	3	3	3	-	6.3
TOTAL	5	42	55	46	27	25	19	7	6	1	3.9

Table 4.11 Age by Total Number of Living Children - Single Women

Age Group	NUMBER OF CHILDREN										Mean $\bar{m}$
	0	1	2	3	4	5	6	7	8	9	
15-19	21	14	3	-	-	-	-	-	-	-	.53
20-24	8	13	17	5	-	1	-	-	-	-	1.56
25-29	-	-	3	3	1	3	1	-	-	-	3.63
30-34	-	-	-	-	1	2	-	-	-	-	-
35-39	-	-	-	-	1	-	-	-	-	-	-
40+	-	-	-	-	1	-	-	1	-	-	-
Total	29	27	23	8	4	6	1	1	-	-	3.1

TABLE 4.12 Age by Total Number of Living Children - All Women

AGE GROUP	NUMBER OF CHILDREN										Mean $\bar{m}$
	0	1	2	3	4	5	6	7	8	9	
15-19	22	32	17	3	-	-	-	-	-	-	1.3
20-24	11	34	47	26	2	2	-	-	-	-	1.9
25-29	1	3	11	18	16	17	9	1	1	-	3.9
30-34	-	-	3	7	7	7	3	-	-	-	4.2
35-39	-	-	-	-	3	4	5	3	2	1	5.8
40+	-	-	-	-	3	1	3	4	3	-	6.2
TOTAL	34	69	78	54	31	31	20	8	6	1	3.9

The fertility of single women is lower than that of married women in the two youngest age groups but elsewhere the difference is very small as are the numbers. This further confirms the earlier comment on the substantial amount of non-marital fertility. For further discussion of fertility, no more attempt will be made to divide the women according to their marital status.

4.6 Desired Family Size:

Two questions were asked about desired family size. One was question 16 in which the women was asked what she thought was the best number of children for a couple living in Kawangware area. The mean number of children given to this question is 3.7. Question 17 asked the woman what her own desired family size was and the mean number given for this question is 3.4. Table 4.13 below shows the distribution of responses to both these questions. It is interesting to note that the two means are very similar. It seems to indicate a general desire for those women for 3 to 4 children. Family size desires for the women in this study are lower than the national ones as reported by the Kenya Fertility Survey[1]. They are also lower than th.se reported by T.E. Dow in 1966[2].

In this population only 10% of the women desired 7 or more children for themselves while 55.4% desired no more than 4 children.

Table 4.13 Desired Family Size

Number of Children	For Kawangware			For Women		
	Women	%	Cumm: %	Women	%	Cumm %
None	32	9.6	9.6	27	8.1	8.1
1-2	15	4.5	14.1	22	6.6	14.7
3-4	122	36.7	50.8	134	40.7	55.4
5-6	95	28.6	79.4	105	31.6	87.0
7-8	23	6.9	86.3	18	5.4	92.4
9+	15	4.6	90.9	15	4.5	96.9
Can't say/ Up to God	20	6.1	97.0	9	2.8	99.7
No response	10	3.0	100	1	0.3	100
TOTAL	332	100		332	100	

The response of "None" to both questions is quite similar. It was given mainly by younger girls still at school or who had one or two children.

52.4% desire an equal sex distribution among their children while 21.4% desire more boys and 21.1% more girls. So in this population one can say that boys are not more desirable than girls. In question 18, the women were asked the reason for their desired number of children. The responses are given in Table 4.14. A large majority, (63%), gave economic reasons. These included ability to provide school fees, to feed and to clothe. This was the main reason given by those desiring 6 or fewer children. Most of those desiring 5 or more children gave reasons grouped under 'Future security'. This included those who hoped that their children will look after them in the future when they grow old; those who hoped to get money by their daughters marriages and those who hoped that, at least one their offsprings would be successful in life and hence supply their needs. An equal proportion gave 'fear of mortality' as a reason for their desired family size as gave 'future security'.

Other reasons given included traditional influences such as the Kikuyu naming customs which demand a minimum of 4 children of balanced sex. Influence of the family size the respondent comes from was also given as a reason.

Table 4.14

Reason for Own Desired Family Size

Reason	Number of Women.	Percentage
Economic	209	63.1
Future Security	38	11.4
Fear of Mortality	38	11.4
Traditional influences	18	5.4
Own Parent's family Size	5	1.5
No Particular reason	8	2.4
No response	16	4.8
TOTAL	332	100

35.2% of the respondents have discussed their family size with their husbands.

4.7 Ideal Birth and Breastfeeding Intervals:

In question 20, the women were asked what they thought was the best age one child should be before the mother gave birth to another one. The mean ideal birth interval given was 24 months with the median at 20.4 months. This mean and median are very short responses not expected from African Society since, traditionally, children were not born this fast and in the modern societies such short intervals are not desirable.

The women were also asked what they thought was the ideal length for which the child should be breast-fed. Most of the women, 50.6% gave responses of 24 months and beyond. The mean ideal breastfeeding period was 22 months, the median 24 and the mode also 24. Table 4.15 shows the distribution of responses to this question.

Table 4.15

Ideal Breastfeeding Interval

Length in Months	No: of Women	Percentage
0	5	1.5
1-6	21	6.3
7-12	45	13.6
18-23	18	5.4
24+	168	50.6
Can't say	3	0.9
No response	17	5.1
TOTAL	332	100

1.5% of the women said that children should not be breastfed.

4.8 Use of Commercially Prepared Baby Foods:

Whether or not a mother uses commercial baby foods is important in the study of breastfeeding. Use of these foods encourages partial breastfeeding or even termination of breastfeeding since it is possible to give such foods to the baby at early stages of his life. For the three youngest births each woman was asked if that child was fed on any commercial baby food for any period. It was explained to the woman that these included tinned infant formulas, baby cereals like Cerelac, Farex, Nestum and other similar industrially prepared foods.

Table 4.16

Percentage Receiving Commercial Foods

Youngest Child	64%
2nd Youngest Child	53.3%
3rd Youngest Child	26.1%

The percentage for the youngest child here is lower than the actual one because at the time of the interview, some of these children had not yet received supplementary foods although their mothers intended to give them such foods.

The steady rise in the proportions of children receiving these foods might be an indication of the fact that while the mothers are residing in rural areas, they do not feed their infants on these foods. When they move into urban areas, they begin to use them.

The characteristics mentioned so far will be examined in relation to other variables in the following chapters.

Fertility:

Data on the fertility history of the women was obtained by completion of the table answering question 24. Information about each child was taken in detail. Information on children who died was also obtained from this same table.

4.10 Children Ever Born:

Table 4.17 shows the mean number of children ever born to Kenyan women as reported at censuses and surveys, including this one, by age of woman.

Table 4.17: Children Ever Born by Age of Woman:

Age at time of Census/Survey	1962 Census	1969 Census	1979 N.D.S.	1977/78 K.F.S.	1980 Kawangware
15-19	0.36	0.36	0.33	0.35	1.06
20-24	1.65	1.88	1.83	1.84	2.12
25-29	3.01	3.65	3.72	3.76	4.32
30-34	4.20	5.11	5.55	5.55	5.03
35-39	5.07	6.00	6.67	6.82	6.63
40-44	5.61	6.44	7.25	7.59	7.92
45-49	5.90	6.69	7.46	7.88	7.92

An examination of this table shows fertility much higher for all ages 29 and below for women in Kawangware. By age 25 they have 2.1 children which is much higher than that reported by other censuses and surveys. The older age groups, on the other hand, seem to have fertility slightly lower.

By age 49, the women in Kawangware have, on average 7.92 children which is very close to the National average of 8.1 children. In 1966 T.E. Dow[3] reported a present fertility* of 2.6 for Nairobi. This study has a present fertility of 2.9, which is an increase of almost 12%.

Like in the Kenya Fertility Survey, levels of childlessness are low. All women above age 30 have at least 2 children. The highest percentages of childless women are in the two youngest age groups, (see Table 4.12 in 4.5). This is apparently out of choice rather than out of infertility or sub-infertility. Only 2.2% of the married women are childless but some of them are currently pregnant, expecting their first baby.

4.11: Age Specific Fertility Rates:

Age specific fertility rates give the average number of births per woman in a given age group for the year. They are calculated from the number of births in a given year by age of woman and total number of women in that age group. Age specific

*Present fertility = average number of children per woman bearing children. (Excludes those of child bearing ages who have not yet given b

Fertility Rates of 1978, 1979 and 1980 for Kawangware are shown in Table 4.18 below. A mean is also calculated.

Table 4.18:

Age Specific Fertility Rates for the Last 3 Years by Current Age of Woman

Age Group	1978	1979	1980	Mean
15-19	.129	.246	.465	.28
20-24	.283	.283	.458	.341
25-29	.351	.324	.428	.367
30-34	.285	.178	.425	.296
35-39	.235	.353	.529	.372
40+	.077	.077	.077	.077
TOTAL	1.36	1.46	2.38	1.73
Total Fertility Rate	6.8	7.3	11.9	8.6

Initially, it was intended that fertility be analysed further using the mean age specific fertility rates. However, the results of this analysis show a skewed bias towards very high fertility probably influence by the 1980 rates. This is probably a result of the smallness of the sample. For this reason, no further discussion will be held on fertility levels or trends. However, the general impression is that fertility is very high especially amongst the two youngest age groups.

4.12 Age of Woman at Birth of First Child:

Age of woman at birth of first child is important in the study of fertility. The higher the age is, the lower the fertility of that woman is likely to be because she will have that much shorter a child bearing period. Many developing countries are making efforts to raise age at first marriage and hence at birth of first child. They are doing this by offering women educational opportunities at higher levels and giving fulfilling job opportunities. In this study, age at first marriage was not considered because of the large number of single women with children. Below is Table 4.19 showing the percentage distribution of women by age at birth of first child together with the mean for the four last groups.

Table 4.19

Percentage Distribution of all Women According to Age at Birth of First Child by Current Age.

Current Age	AGE AT FIRST BIRTH							Mean
	15-17	18-19	20-21	22-24	25+	No Birth	Total	
15-19	51.9	19.5	*	*	*	28.6	100	-
20-24	38.3	34.2	15.8	2.5	*	9.2	100	-
25-29	45.4	27.3	11.7	13.0	1.3	1.3	100	18.1
30-34	32.1	25.0	10.2	25.0	7.2	-	100	19.4
35-39	29.4	29.4	29.4	-	11.8	-	100	18.8
40+	23.1	23.1	23.1	23.1	7.6	-	100	20.3

* = Logically no cases - empty cells

- = No cases fell in this cell

Women aged 40 years and over have the highest mean age at first birth. The same thing is observed in the Kenya Fertility Survey. Since age at first birth was adjusted according to age of first born child, these older women are likely to have understated the ages of their first borns. It appears as if younger women are having their children early. 52% of the cohort 15-19 have had a first birth by age 17 which is a much higher proportion than in the other cohorts. This might lead one to conclude that mean age at first birth is falling but with the size of the sample in this study, such a conclusion will be misleading. The mean age at first birth for all women is 18.5 years with a standard error of 0.35.

T.E. Dow in 1966 reported a mean age at marriage of 17.1 years[4]. If one can assume that most women will have a child within the first year of marriage, mean age at first birth for Dow's study will be about 18.1 years. It appears, therefore, that efforts to raise age at first birth has not yet been effective.

4.13: Pregnancy Rates

The women were asked whether they were currently pregnant or not. It is felt that pregnancies, if not yet obvious to the observer, were under-reported for unspecified reasons. It is, however, typical of most African women to withhold this information especially from a stranger. Table 4.20 below shows

the distribution of percentages currently pregnant by current age both for the Kenya Fertility Survey[5] and this study. Once again, the 2 youngest cohorts display rates much higher than the Kenya Fertility Survey. The two middle cohorts lower while the 35-39 age cohort has a much higher rate than expected but, once again, this might be a result of sampling.

Table 4.20:

Percentage Reporting Pregnant

Current Age	Kawangware	K.F.S.
15-19	11.7	7.6
20-24	25.8	17.2
25-29	18.2	18.6
30-34	14.3	16.1
35-39	23.5	11.8
All	18.7	12.6

K.F.S. Data from Page 88 of First Report, Volume 1. K.F.S. 1977-78

4.14 Birth Intervals:

A birth interval is defined as the length of time between two live births. As already shown in the literature review this interval is divided into 3 parts, namely; Gestation, Amenorrhoea and Menstruation. Breastfeeding and Contraception both have an effect of lengthening the birth interval.

Using the K.F.S., Mosley, Werner and Becker[6] found an average birth interval of 33.7 months for all women in Kenya. This is roughly the same as that expected under conditions of natural fertility where breastfeeding, though not used for that purpose, prolongs the period of amenorrhoea and effects nidation for some time. The birth interval for Kenyan women varied by age of woman. It was only 28.6 months for those under age 25 but 35 months for all women over 35 years.

Table 4.21 shows the average length of the last 2 closed birth intervals in months for women in this study by current age of woman.

If no breastfeeding and no contraception takes place in a population, the birth interval will be between 17.5 to 20.5 months. This is broken down into:-

Gestation	9 months
Post-partum Amenorrhoea	1.5 months
Menstruation	5-8 months
Foetal Wastage	2 months
TOTAL	17.5 - 20.5 months

The menstruating period will range between 5 to 8 months depending on the health status of the women and coital frequency.

Table 4.21

Birth Intervals in Months by Age of Woman

Age Group	Last Closed Interval	2nd Last Closed Interval	Mean
15-19	19.3	21.6	20.4
20-24	23.9	23.3	23.6
25-29	26.3	26.9	26.6
30-34	31.7	27.2	29.4
35-39	27.0	26.9	26.9
40+	33.2	30.2	31.7
All	26.9	26.0	26.4

Bongaart's framework for analysing the proximate determinants of fertility has been used by Mosley, Werner and Becker[7] to analyse the birth interval for Kenya using the Kenya Fertility Survey. If data on breastfeeding durations is available, it is possible to get the period of amenorrhoea. For urban Kenya the period of amenorrhoea is .66 of the breastfeeding duration. During the last closed interval for this population, the women breastfed on average 10.8 months. The average birth interval for this population is 26.4 months. This can be broken down into its components:-

(10.8 x .66 = 7.12 Months)

Gestation	9 months
Post-partum amenorrhoea	7.12 months
Menstruation	8.30 months
Foetal wastage	2.0 months
TOTAL	26.42 months

The average birth interval of 26.4 months in this population is only 5.9 months longer than the biological maximum in the absence of breastfeeding which is 20.5 months. Since the menstruation period is 8.3 months, very similar to the 8 months in a non-breastfeeding population, it can be confidently said that the additional 5.9 months are largely a result of post-partum amenorrhoea resulting from the practice of breastfeeding. Contracept-

ion might be said to play a small role in lengthning the mensturation period from 5 to 8.3 months on average. For the age cohort 15-19, the mean birth interval is similar to that in a non-breastfeeding, non-contracepting population.

The birth intervals for all women in this sample are below the national averages from the Kenya Fertility Survey quoted above. This is another indication of high fertility in Kawangware. The percentage of women currently pregnant and the age specific fertility rates also tempt one to conclude that the current open interval is likely to be closed as quickly as the last one.

If mean age at birth of first child in this population is 18.5 years, then each woman will have about 27 years of child-bearing. Given the average birth interval of 26.4 months and all those years of child-bearing, each woman will have an average 12.2 births under these conditions.

4.15 Conclusion:

From this brief discussion, it is clear that fertility in Kawangware is very high. It is also clear that there is a great need to control it. In the following chapter, therefore, the practice of breastfeeding which has, for a long time helped to lower fertility in Kenya, will be examined. In the second part of the same chapter, practice of modern contraception will be looked at.

References:

1. Kenya Fertility Survey 1977-78. First Report Vol. 1, C.B.S., Nairobi, Kenya.

2. T.E. Dow Jr, as quoted in "Continuity and Change in Metropolitan and Rural Attitudes Towards Family Size and Family Planning in Kenya Between 1966/1967 and 1977/1978," Social Perspectives Vol.5, No. 1 Table 2, p.4

3. See Reference 2

4. See Reference 2

5. See Reference 1.

6. W.H. Mosley et all, The Dynamics of Birth-spacing and Marital Fertility in Kenya. p.11.

7. See Reference 6 p.p.4-6.

CHAPTER FIVE

KNOWLEDGE OF BREASTFEEDING AND CONTRACEPTION

5.1 INTRODUCTION

As mentioned in the Introduction and Literature Review, breastfeeding is very important in the lives of both mother and child in Kenya. It has also been shown that breastfeeding would be ideal for mothers in Kawangware.* pages 16 & 45 - 48

As reported by T.E. Dow[1], A. Molnos[2] and other, in most societies in Africa, a child was breastfed to well beyond his first birthday and a good number were breastfed up to their second birthday and beyond. Because of its perceived importance, rules and norms were set up to protect and promote breast-feeding.

5.2 BREASTFEEDING EDUCATION

To ensure that breastfeeding was successful, the nursing mother was taught how to go about it. In most Kenyan societies, a new mother was specially treated, especially if she was nursing her first baby. The duty of teaching the new mother how to breastfeed often fell on the mother-in-law or own mother, depending on whether the new mother lived at her husband's or parents' home after delivery. In the absence of these two, grand-parents, aunties, sisters or friends who had breastfed before fulfilled both roles of teaching and feeding the new mother.

In the light of this, the women in this study were asked whether, in their tribe, the mother for the first time was taught how to breastfeed and if so, by whom, (see Question 50). The women who had had a birth were also asked if they had received any guidance on breastfeeding when they had their first child and if they did, from whom they got this guidance (see Question 51). Table 5.1 below shows the distribution of answers to both these questions.

TABLE 5.1

BREASTFEEDING EDUCATION IN WOMAN'S TRIBE

Taught by:	In Her Tribe		For Her Self	
	No.	%	No.	%
Mother/Mother-in-law	144	43.4	146	44.0
Other Mothers	100	30.1	29	8.7
Nobody	39	11.7	76	23.0
Medical Personnel	10	3.0	35	10.5
Doesn't know/Not Applicable	10	3.0	34	10.2
No Response	29	8.7	12	3.6

Although 30.1% of the women indicate that 'other mothers' teach breastfeeding in their tribes, only 8.7% of the women have actually received their training from such mothers. This is probably a reflection of the breakdown in the communication system existing in urban areas where each individual is very much on her own. 3.0% reported that in their tribes medical personnel taught breastfeeding. This is not true anyhow. However, 10.5% of the women have

received their training from medical personnel which is once again a reflection of what is going on in urban areas. A higher proportion, 23% reported that nobody taught them breastfeeding as opposed to only 12% reporting that in their tribes, there is no breastfeeding education. These were largely young girls who had their first birth when they had already left their home areas, probably because they got pregnant at the wrong time.

Of all women who have had a birth, 37.2% (23 + 10.5 + 3.6) could be said to have had inadequate breastfeeding education.

5.3 BREASTFEEDING DURATION

It has already been mentioned that most of the women, i.e. 50.6%, gave the ideal breastfeeding period as 24 months or more. Table 5.2 below gives the distribution of breastfeeding in the last closed interval. Only 21.9% of the women breastfed for 13 months or more, others had weaned before that. Only one woman in the sample had breastfed for more than 24 months. There is a clear discrepancy between the observed and the normative. pages 98 - 99

13.1% of the women breastfed for very short durations of 6 months or less. This is nearly twice the 7% reported by the Child Nutrition Survey in Rural Kenya[3]. The mean duration of breastfeeding in the last closed interval was 10.8 months for all women (see Table 6.1).

Connected with breastfeeding is supplementation. This is the giving of other foods apart from breast-milk to the infant while he is still receiving the breast milk. Breastfeeding by itself is said to be sufficient to provide all nutrients necessary for the growth of a child up to six months. After this, other foods are gradually added to the diet of the infant until breastfeeding is completely eliminated. This process is called weaning and the foods given are called supplementary foods. Once supplementary foods are given to the child, the amount of and number of times the child breastfeeds daily are reduced. Breastfeeding is now partial. It is believed that the contraceptive effect of breastfeeding is reduced once it is partial and the woman is likely to start ovulating and having menses earlier than if she were fully breastfeeding.

The women in this study were asked how old the child was, in the last closed interval, before he was fed on anything else apart from breast-milk. 39.4% of the children had received supplementation by the time they were 3 months old. By 4 months, over half, i.e. 56.3%, had received supplementation. The mean at which the infants received other foods is 4.6 months, 1.5 months earlier than they needed to. Table 5.2 shows the percentage distribution of the women by timing of supplementation in the last closed interval.

TABLE 5.2

TIMING OF SUPPLEMENTATION IN LAST CLOSED INTERVAL BY AGE OF WOMAN

GE OF IN YEARS	TIMING OF SUPPLEMENTATION IN MONTHS							TOTAL	MEAN	NUMBER OF WOMEN
	1	2	3	4	5	6	7+			
- 19	13.6	13.6	36.4	18	9.1	9.1	-	100	3.2	22
- 24	11.7	15.6	26	19.5	2.6	11.7	13	100	3.7	77
- 29	3.0	4.5	21.2	16.7	7.6	18.2	28.8	100	4.4	66
- 34	-	27	8	15.3	-	19.2	30.7	100	4.7	25
- 39	4.5	4.5	13.6	13.6	13.6	31.9	18.2	100	4.9	26
	-	-	8.3	8.3	-	16.7	66.7	100	7.2	12
	6.6	11.5	21.3	16.9	5.3	16.4	21.7	100	4.6	228

Younger women tended to supplement earlier than older women. Those aged 15 - 24 supplemented by nearly 4 months earlier than those aged 40 and over. While younger women tended to supplement early, older women, 40+, tended to delay their supplementation. 66.7% of their children were still only breastfeeding after 6 months, a point at which need for additional foods is indicated.

5.4 RULES REGARDING BREASTFEEDING

It was traditionally regarded as bad for a woman to have coition while she was breastfeeding. Caldwell[4], Molnos[5], Dow[6] and others explain that,

although the common explanation given was that the man's sperms would poison the mother's milk and hence, the nursing child, such populations were not ignorant about the physiology of human reproduction. Sexual abstinence ensured that the infant's breastfeeding was not interrupted prematurely by another pregnancy. In most African societies, it was also regarded as dangerous for a woman to breastfeed while she is pregnant. Most women, therefore, terminate their breastfeeding as soon as another pregnancy is suspected.

The women were asked whether they had a rule or law in their society about breastfeeding while the mother is pregnant. 40.7% responded that there is a law or rule, 35% said there wasn't and the remaining 24.3% did not know. After this, they were asked what they, themselves, thought about breastfeeding while pregnant. The responses are shown in Table 5.3

TABLE 5.3

OPINION ABOUT BREASTFEEDING WHILE THE MOTHER IS PREGNANT

Not good/should not be done	28.3%
Bad for mother	4.8%
Bad for child	46.4%
Alright if mother is able	3.9%
No response	16.6%

Majority of the women feel that it is bad for both the breastfeeding child and the foetus. Only 3.9% said it is alright if the mother can manage. 3 women told the writer that they had continued to breastfeed while pregnant. One did so because her husband had walked out on her and she had no money to buy milk for her young child. Another because her husband was unemployed at that time and therefore, could not afford milk.

The women were also requested to explain to us the nature of sexual abstinence in their tribes. Only 47.3% were able to give some sort of explanation of this practice in their tribes. 23.2% said there was no such practice in their tribes while 26.8% said that they did not know about it.

In most African societies, a couple was required to abstain throughout the period of breastfeeding or until the child began to walk, which would be about 12 months, or until the child was big enough to know and identify his father from other men. The general idea behind all these was to ensure that the child had grown enough to be independent of the mother before she became pregnant again. Unfortunately data on abstinence as practiced by the women in Kawangware was not obtained.

TABLE 5.4

NORMATIVE LENGTHS OF ABSTINENCE GIVEN BY RESPONDENTS FOR THEIR TRIBES

Length	Percentage
1 - 3 months	7.8
4 - 6 months	4.5
7 - 12 months	3.3
Through breastfeeding	3.9
Child identifies father	1.8
Couple agrees	14.5
Can't explain	12.1
Said no/doesn't know	47.9
No response	4.2

In this study, only 9% of the women mentioned abstinence periods comparable to traditional ones. This lack of knowledge about traditional practices so far mentioned may be a reflection of the breakdown in the strength of these same traditions.

5.5 KNOWLEDGE OF THE CONTRACEPTIVE EFFECT OF BREASTFEEDING

The women were asked whether they thought it was possible for a woman to get pregnant while she was breastfeeding and, if so, in which case this might happen, (see questions 54 and 55). The idea was to find out if the women know that breastfeeding has a contraceptive effect which is weakened by irregular and infrequent breastfeeding. 43.4% said that it was

possible to get pregnant while 35% said it was not and 19.6% did not know. Table 5.5 shows the distribution of responses to question 55.

TABLE 5.5

WHEN CONCEPTION DURING BREASTFEEDING IS LIKELY

Response	Percentage
Irregular/infrequent breastfeeding	1.6
No abstaining	4.5
Very fertile women	11.4
Too long breastfeeding/Not family planning	1.5
Cannot explain it	28.0
Does not know	47.3
No response	5.7

28% of the respondents are aware that one can get pregnant while breastfeeding and that there is a cause but they cannot explain it. 47.3% said that they do not know the cause. 4.5% blamed this on failure to abstain. This is much too low from what one would expect in an African population. Only 1.6% showed an awareness of the contraceptive effect of breastfeeding.

The women were also asked if they thoughtit was possible for a woman to conceive while she was still in the post-pactum amenorrhoeic period. See questions 58 and 59. The responses are shown in Table 5.6

TABLE 5.6

WHEN CONCEPTION DURING POST-PARTUM AMENORRHOEA IS LIKELY

Response	Percentage
Does not know about it	57.0
To very fertile women	5.4
For not abstaining	6.0
Too long breastfeeding and amenorrehoea	0.6
Cannot explain it	28.0
No response	3.0

57% of the women do not know that a woman can conceive during post-partum amenorrhoea and for those who know it can happen, they largely cannot explain why or how it happens. 6.0% of the respondents blame that on not abstaining.

5.6 KNOWLEDGE OF CONTRACEPTION

To find out how much the women know about contraception, a number of direct and indirect questions were asked. The women were told that there are women who conceive easily, and often when they have a very young child, still needing a lot of care; see question 60. The women were then asked what they thought such a woman should do to enable her child to grow sufficiently before she became pregnant again. The responses are shown in Table 5.7.

TABLE 5.7

HOW TO AVOID CONCEPTION

What to do	Women	Percentage
God's will, nothing can be done	44	13.3
Abstinence	20	6.0
Family planning	193	58.1
Mentions breastfeeding	2	0.6
Does not know	22	6.6
No response	51	15.4

Most of the women, 58.1% gave 'Family Planning" as a solution while 13.3% said that nothing can be done as that would be God's will. A small proportion of 6.6% said that they did not know what could be done while from 15.4% nc response was obtained. 6% mentioned abstaining and, once again, this is a very small proportion from an African population.

The women, regardless of their reply to the above question, were asked what they understood by the term "family planning". This was the first time the interviewer mentioned family planning in the interview. Once again, the majority 73.2% gave reasonable definitions. These are shown in Table 5.8 below.

TABLE 5.8

MEANING OF 'FAMILY PLANNING'

Meaning	Women	Percentage
Has not heard about it	3	0.9
To space children etc.	243	73.2
To have few children	47	14.2
To stop having children	12	3.6
Others	10	3.0
No response	17	5.1

The women defining family planning accurately are more than those who suggested it as a solution to conception in question 60. Only 0.9% of the respondents had never heard of family planning. This is much lower than that reported by T.E. Dow 1966[7].

Next, the women were requested to tell the different methods of contraception they knew of and from whom they learned about each method. Both modern and traditional methods were included. The methods were grouped as follows:-

1. Breastfeeding
2. Abstinence, rhythm, coitus interruptus, douching etc.
3. Condoms, sheath, jellies, creams, diaphram
4. Injection
5. Pill
6. Inter-Uterine-Device (I.U.D.)
7. Sterilization

TABLE 5.9

DISTRIBUTION BY NUMBER OF CONTRACEPTIVE METHODS KNOWN

Methods Known	Women	Percentage	Cummulative Percentage
0	72	21.7	21.7
1	51	15.4	37.1
2	34	10.2	47.3
3	62	18.7	66.0
4	27	8.1	74.1
5	37	11.1	85.2
6	40	12.1	97.3
7	5	1.5	98.8
No Response	4	1.2	100
All	332	100	

The least known method was sterilization followed by the I.U.D. The most known of the modern methods were the pill and injection. Among the traditional ones, breastfeeding, rhythm and coitus interruptus were rarely mentioned.

There were quite a number of women who knew of family planning but could not name any one method. These made up 20.8% of the respondents. Added to those who do not know 'family planning', those naming no method come up to 21.7%. This is a much higher proportion than the 12.2% reported in the KFS. Those who knew methods, knew an average 3.5 methods.

The women were asked from whom they learned about the methods they mentioned. The responses are shown in Table 5.10.

TABLE 5.10

SOURCE OF KNOWLEDGE ON CONTRACEPTIVE METHODS

Sorce	Women	Percentage
Parents	17	6.5
Friends	72	27.7
Kabiro Health Care Outpost	75	28.9
Other clinics	79	30.4
No response	17	6.5
All	260	100

Interesting to note here is the fact that, although Kabiro-Kawangware Healthcare Outpost had been in operation less than one year at the time of the survey, it had helped to inform an almost equal proportion of women about family planning as other clinics and friends. The other clinics are mainly Riruta Health Centre run by Nairobi City Council and Kenyatta National Hospital. Some women acquired their information from rural, home clinics. Parents do not seem to be an important source of such information although friends are.

After finding out how much they knew, the

respondents were asked what they thought of the practice of family planning. Most of the women i.e 70.5% think that family planning is good, while 4% think it is only good if the woman had had enough children. Only 5.4% outrightly disapprove of family planning.

To find out levels of contraceptive use, the women were asked whether they had used any method to avoid pregnancy after each of their children and, the method used. The responses are shown in Table 5.11. The percentages using no contraception at all seems to be declining as more women join child bearing. The proportions using traditional methods and breast-feeding have not changed very much. The proportion of women using the pill has been rising remarkably. There are still very few women using the I.U.D. and other forms of modern contraception though.

TABLE 5.11

PERCENTAGES WHO USE FAMILY PLANNING

AFTER EACH OF THE LAST FIVE CHILDREN

PARITY	NO. OF WOMEN	NO METHOD	TRADI-TIONAL	BREAST FEEDING	PILL	I.U.D.	OTHER	N.R.	TOTAL
Youngest	291	64.3	3.2	2.0	21.3	5.8	2.4	1.0	100
2nd Youngest	220	81.8	5.2	1.8	6.3	1.3	1.3	2.3	100
3rd Youngest	145	84.6	3.5	2.8	1.4	2.1	-	5.6	100
4th Youngest	89	85.4	4.5	1.1	1.1	-	-	7.9	100
5th Youngest	62	87.1	4.8	-	-	-	-	8.1	100

Table 5.12 shows the percentage distribution of women by ever use of contraceptive methods by current age of the woman.

TABLE 5.12

AGE BY EVER USE OF CONTRACEPTION

TYPE OF METHOD USED	AGE						
	15-19	20-24	25-29	30-34	35-39	40+	TOTAL
Never used	77.9	63.3	54.5	50.0	76.5	69.2	214
Traditional	2.6	2.5	7.8	3.6	5.9	15.4	15
Breastfeeding	-	1.7	10.4	7.1	-	15.4	14
Modern	19.5	32.5	27.3	39.7	17.6	-	89
Total	100	100	100		100	100	332

The most contracepting age group is 30-34 years. They have on average 4.2 children. The next group is the 20-24 year age group and they have on average 1.8 children. The 30-34 year age group have an age specific fertility rate of .428 while 20-24 year age group have .458. So despite higher levels of contraceptive use, fertility is still very high.

The majority of the respondents have never used any contraceptive method at all. This is true for both traditional, including breastfeeding and modern methods.

5.7 SUMMARY

With this background, it is now possible to look at the research objectives and hypotheses put forward in Chapter One Sections 5 and 6.

REFERENCES

1. T. E. Dow, Jr., Breastfeeding, Abstinance and Family Planning Among the Yoruba and other Sub-Saharan Groups. Patterns and Policy Implications pp 4 - 6
2. A. Molnos, Cultural Source Material for Population Planning in East Africa, Vol. II pp 42 - 44.
3. Child Nutrition Survey in Rural Kenya, 1977, C.B.S. p. 1.4 - 2.
4. Caldwell, as quoted by T. E. Dow Jr., Reference 1 p.1
5. See Reference 2.
6. See Reference 1.
7. T. E. Dow Jr., as reproduced in "Continuing and Change in Metropolitan and Rural Attitudes Towards Family Size and Family Planning in Kenya Between 1936/1967 and 1977/1978," Social Perspectives, Vol 5, No.1

CHAPTER SIX

EXAMINING THE HYPOTHESES

6.1 INTRODUCTION

In this chapter, findings from the study are looked at in relations to the hypotheses and objectives stated at the beginning. Most of the work in this chapter is descriptive. No elaborate statistical tests will be applied while testing the hypotheses because they will be superfluous. Examination of cross-tabulations, means and percentages serve the purpose just as well.

6.2 HYPOTHESIS 1

It was hypothised in this study that, "Breast-feeding is declining in duration and intensity in Kawangware". By 'duration', length of breastfeeding in months is meant. 'Intensity' here means full breastfeeding duration and frequency of breastfeeding per day. Table 6.1 shows the distribution of women by duration of breastfeeding in the last closed birth interval by current age of woman.

TABLE 6.1

DURATION OF BREASTFEEDING BY AGE OF WOMAN IN THE LAST CLOSED INTERVAL

AGE OF WOMAN	BREAST-FEEDING IN MONTHS				NO.OF WOMEN	AVERAGE IN THIS INTERVAL	KFS* AVERAGE
	1-6	7-12	13-18	19-24			
15-19	6	16	-	-	22	8.7	11.7
20-24	11	48	16	2	77	10.4	12.1
25-27	7	42	11	6	66	10.7	12.7
30-34	3	17	2	3	25	11.4	13.4
35-39	3	19	3	1	26	10.9	13.3
40+	-	6	4	2	12	12.5	13.8
All	30	148	36	14	228	10.8	13.0

* K.F.S. data from K.F.S., First Report, Volume 1, pp. 151, Table 8.7

The average duration of breastfeeding is 10.8 months for all women in this study. However, the duration increased progressively with age of the mother (except for the 35-39 age group). The oldest age group, 40+, breasfed almost 3 months longer than the youngest age group (15-19). All breastfeeding durations in this study are lower than the national ones reported by the K.F.S.[1] and Child Nutrition Survey[2].

All mothers in this study initiated breastfeeding. Only one woman breastfed for less than one month because she was sick after delivery. As mentioned in section 5.3, all breastfeeding durations in this study are lower than the national ones. Very few babies in Kawangware are breastfeeding beyond the first birthday, that is 22% while in the K.F.S.[3] nearly 40% were breastfed beyond the first birthday.

Data were collected on the breastfeeding patterns of children aged 18 months and under. Table 6.2 shows the distribution of these children by age at time of the survey and percentage distribution of their breastfeeding status.

TABLE 6.2

DISTRIBUTION OF CHILDREN AGED 18 MONTHS AND UNDER BY BREASTFEEDING STATUS.

Age in Months	No. of Children	% Breastfeeding
0 - 3	39	92.3
4 - 6	36	72.3
7 - 9	41	61.0
10 - 12	33	54.5
13 - 15	26	30.7
16 - 18	24	14.1
Total	199	

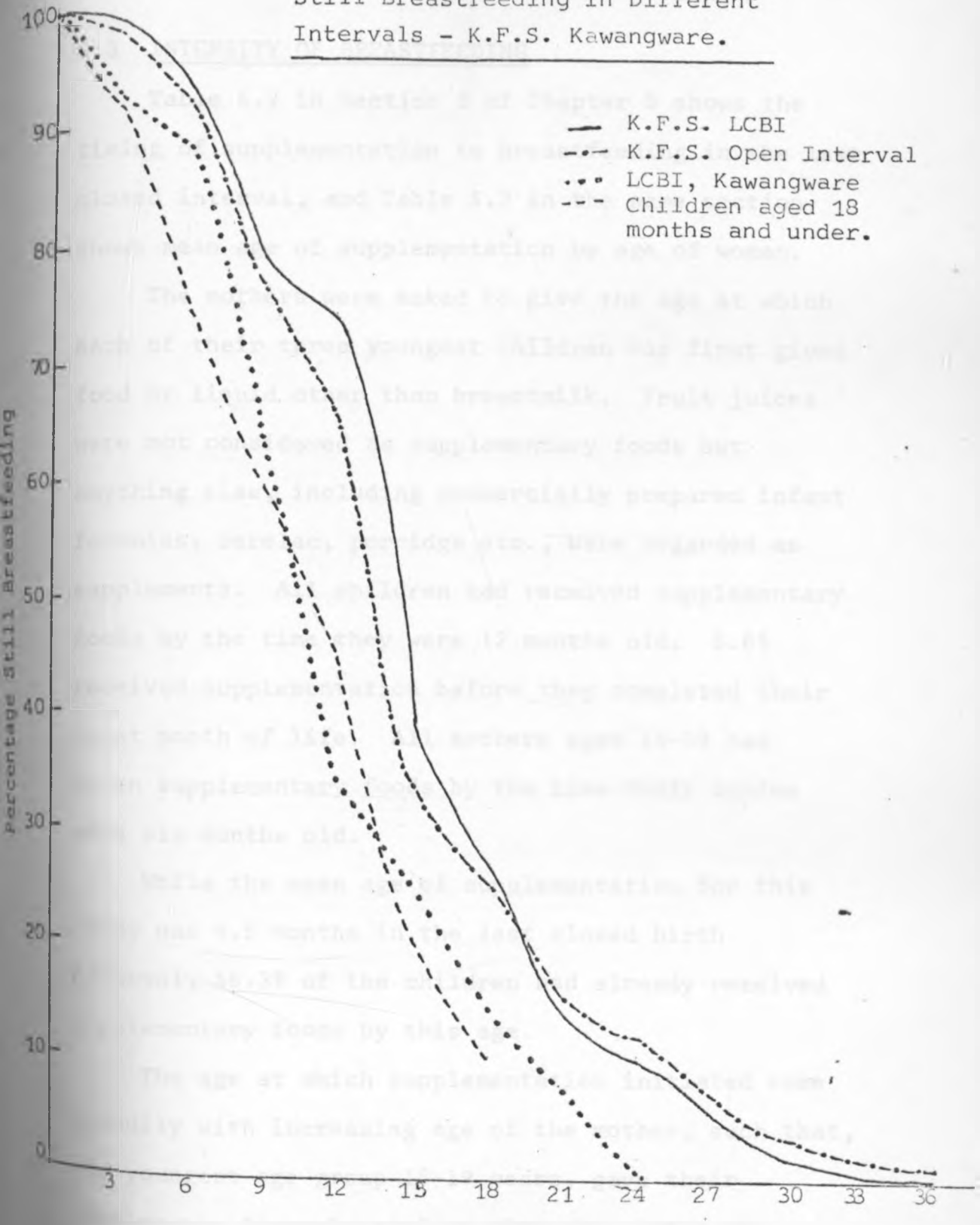
Of these children 24% of those over 12 months were still breastfeeding. This percentage is not very

different from the 22% who breastfed beyond their first birthday in the last closed interval. 17% of those aged 6 months and under were not breastfeeding and this is a higher proportion compared to the 13.1% who breastfed for 6 months or less in the last closed interval. The percentage still breastfeeding also drops quite rapidly with increasing age, so that only 14.1% were still breastfeeding in the age group 16 - 18 months.* * Based on Table 6.1 page 137

So from these observations, one can tentatively say that by the time this birth interval is closed, average breastfeeding durations will be no longer than those in the last closed birth interval. Figure 6.1 is a graph for the comparison of percentages of women still breastfeeding in different intervals in the K.F.S.[4] and Kawangware. Although an examination of Tables 6.1 and 6.2 may not lead one to believe that breastfeeding is declining rapidly in this population, this graph shows a sharper decline for Kawangware as compared to the K.F.S. It also shows that the decline is sharper in the current open interval for Kawangware than in the last closed interval especially for first 9 months and after the fifteenth month. So, breastfeeding durations in Kawangware are shorter than the national averages and, for Kawangware, durations in the current open interval 'appear' shorter than in the last closed interval.

Figure 6.1

Comparison of Percentage of Women Still Breastfeeding in Different Intervals - K.F.S. Kawangware.



K.F.S. Data from Figure 8.2 p.155

6.3 INTENSITY OF BREASTFEEDING

Table 5.2 in Section 3 of Chapter 5 shows the timing of supplementation to breastfeeding in the last closed interval, and Table 5.3 in the same section shows mean age of supplementation by age of woman.

The mothers were asked to give the age at which each of their three youngest children was first given food or liquid other than breastmilk. Fruit juices were not considered as supplementary foods but anything else, including commercially prepared infant formulas, cerelac, porridge etc., were regarded as supplements. All children had received supplementary foods by the time they were 12 months old. 6.6% received supplementation before they completed their first month of life. All mothers aged 15-19 had given supplementary foods by the time their babies were six months old.

While the mean age of supplementation for this study was 4.5 months in the last closed birth interval, 56.3% of the children had already received supplementary foods by this age.

The age at which supplementation initiated rose steadily with increasing age of the mother, such that, the youngest age group 15-19 years, gave their supplements 3 months earlier than the oldest age group. 40+. This is interesting when one remembers, that the youngest age group also breastfed, on

average, 3 months less than the oldest age group.

Of the 199 children aged 18 months and below, only 29.6% were fully breastfeeding at the time of the survey and all of these were found amongst the youngest, 0-6 months old. This proportion is less than the total proportion aged 0-6 months, so amongst this group, there is, at least, 10% who received supplementary foods before they needed to.

Table 6.3 shows the age distribution by which supplementary foods were introduced for the children aged 18 months and under. 66.8% of these children had received other foods by 6 months. Very few remained who got their first supplementary food after 7 months. All of those who were 9 months or more were receiving supplementation.

TABLE 6.3

DISTRIBUTION BY AGE OF INITIATING SUPPLEMENTARY FOODS FOR CHILDREN 18 MONTHS OR UNDER

Foods Introduced at	No. of Children	Percentage of Total	Cummulative Percentage
1 Month	33	16.6	16.6
2 "	24	12.1	28.7
3 "	21	10.5	39.2
4 "	29	14.6	53.8
5 "	7	3.5	57.3
6 "	19	9.5	66.8
7 "	3	1.5	68.3
8 "	3	1.5	69.8
9 "	1	.5	70.0
Not yet	59	29.6	100

TABLE 6.4

PERCENTAGE DISTRIBUTION OF AGE BREASTFEEDING STOPPED BY AGE BREASTFEEDING WAS SUPPLEMENTED IN THE LAST-CLOSED INTERVAL

AGE B.F STOPPED	AGE BREASTFEEDING WAS SUPPLEMENTED IN MONTHS									TOTAL
	1	2	3	4	5	6	7	8	9	
1 - 6	16.7	33.3	23.3	16.7	3.3	6.7	*	*	*	100
7 - 12	4.8	9.5	23.0	19.0	4.8	15.1	2.4	12.7	8.7	100
13 - 18	-	5.9	17.6	23.5	8.8	11.8	5.9	17.6	8.8	100
19 - 24	-	-	-	7.2	21.4	28.6	7.2	21.4	14.2	100
25+	-	-	-	-	-	-	-	16.7	83.3	100
No. of women	11	24	42	38	13	29	6	27	26	216

* Cells logically empty

In the last closed birth interval, for those who breastfed for durations of 13 - 18 months, only 5.9% received their supplementary foods by the end of their second month but 33.3% of those who breastfed for 1 - 6 months had received a supplement by 2 months. None of those who breastfed 19-24 months received other foods before 4 months and only 7% of them did so in the 4 months. After this, most of them received supplementary foods so that 57.1% were eating other foods by 6 months. Only 14% of them had not received other foods by 9 months.

This table shows a clear and direct correlation between early supplementation and early termination of breastfeeding. What is not clear is which of the two is the cause and which is the effect. Women may be supplementing early because they have little breast-milk and hence have to stop breastfeeding early because their milk was anyhow inadequate, or, women may be giving up breastfeeding earlier because they supplemented it earlier (although it was not necessary) which has led to less breastfeeding and finally, termination. A look at Table 5.2, however, shows that early supplementation associated with early termination of breastfeeding is largely limited to the younger women, 15-29 years. All of them cannot be lacking in breastmilk supply. This leads one to conclude that early supplementing of breastfeeding, especially among

the younger women, is leading to shorter durations of both full and partial breastfeeding.

Another aspect of intensity of breastfeeding is daily frequency of breastfeeding. If a child is fully breastfeeding, he will do so at an average interval of every 4 hours, hence breastfeed about 6 times in 24 hours, which is one day.

Many mothers in Kawangware indicated that they breastfed on demand, i.e., whenever the child indicated that he wanted to suckle. This included those mothers who used the breast as a pacifier to stop the child crying or lull him to sleep. Table 6.5 is the percentage distribution by frequency of breastfeeding per day.

TABLE 6.5

PERCENTAGE DISTRIBUTION BY DAILY FREQUENCY OF BREASTFEEDING FOR CHILDREN AGED 18 MONTHS AND AND BELOW

Frequency Per day	Children 0-11 months	Children 12-18 months	All Children
On demand	43.2	14.0	35.7
4 - 6	17.1	4.0	13.3
1 - 3	15.8	6.0	13.8
Not Breastfed	23.9	76.0	37.2
Total	100	100	100

Only 13.8% of all women reported that they breastfed 4-6 times daily, a frequency high enough for full breastfeeding. Most of the women 35.7% reported that they breastfed on demand but as mentioned above, conclusions based on this category may be misleading. Jelliffe and Jelliffe[5] say that for breastfeeding to perform its contraceptive job, it must be complete, successful and unrestricted. Currently much less than 50% (13.8% + 35.7% - those using breast as pacifier = less than 50%) are likely to have this contraceptive effect from breastfeeding. One can say that, this is only the 29% who were still fully breastfeeding at the time of the survey.

So far, it has been noted that average breastfeeding durations in the last closed interval were all lower than the national one reported by K.F.S. and Child Nutrition Survey. It has also been noted that younger women are breastfeeding for shorter durations than older women and giving supplementary foods much earlier. Also noted is the fact that durations of breastfeeding become longer with later introduction of supplementary foods or visa-versa. One can, therefore, deduce that breastfeeding in Kawangware is decreasing in both duration and intensity and is likely to do so even further as the younger women progress through their reproductive lives. In the following sections

of this chapter, some variables which are suspected to influence breastfeeding and family planning are going to be examined.

6.4 HYPOTHESIS 2

There are a number of variables which have been said to influence practices like breastfeeding and modern contraceptive practice. Some of these variables are education, employment status and urban residence. So in this study it was hypothised that, "breastfeeding declines more rapidly while use of modern contraceptives increases with:

(i) higher levels of education
(ii) employment status
(iii) increasing lengths of stay in an urban area".

In the following sections of this chapter, breastfeeding and contraceptive practice of the women in Kawangware are examined in relation to these variables.

6.5 BREASTFEEDING AND EDUCATION

It is generally recognised that education has a depressing effect on most traditional practices especially in developing countries. It is a fact that the more educated one is, the more receptive one would be to modern ideas and innovations. Since breastfeeding is regarded as a traditional practice, while the use of infant formulas, with the bottle and teat, plus the use of modern contraception are regarded as modern; it

is expected that women with more education will breastfeed less, use artificial feeds more and also use modern contraceptive methods more.

Education is divided into three categories in this study. Those with eight or more years of education being the most highly educated. All these are aged between 15-29 years, none beyond. The women with 1-7 years of education were grouped together because there is very little difference in the behaviour of those at the bottom of this category and those at the top. The last category is those who never went to school. Koranic School and Adult Literacy attendants were all listed in the 'no education' category since both these are not part of formal education. Table 4.7 in Chapter 4 section 4 shows the distribution of husbands and women by years of education attained. Table 4.8 in the same chapter and section shows the percentage distribution of women by age and years of education attained. Most of the women above 35 years, i.e. 63.3%, are in the 'no education' category. It, therefore, appears that there is a very strong relationship between age and education. This is not surprising because greater educational opportunities have only been made available in the last few years, and it is the younger women who have had the chance to enjoy them.

Table 6.6 shows the percentage distribution of age breastfeeding stopped in the last closed birth interval by woman's education. Woman's and not husband's education was taken in consideration because it is likely to affect the woman's life style more and it is the woman who breastfeeds and, to a large extent, uses contraception.

TABLE 6.6

PERCENTAGE DISTRIBUTION OF AGE BREASTFEEDING STOPPED IN LCBI BY WOMAN'S EDUCATION

YEARS OF EDUCATION	AGE BREASTFEEDING STOPPED IN MONTHS					TOTAL	B.F AVERAGE	NO. OF WOMEN
	1-6	7-12	13-18	19-24	25+			
None	7.7	56.7	22.1	12.5	1	100	10.96	104
1 - 7	8.8	70.8	16.0	4.4	-	100	10.95	113
8+	55.6	44.4	-	-	-	100	7.23	36
Number of Women	38	155	41	18	1		10.4	253

Women with no education breastfed for periods ranging from 3 - 25+ months. Very few of them 7.7% had terminated their breastfeeding by the sixth month as compared to 55.6% of those with 8 or more years of education. This is the only group of women who breastfed beyond 24 months.

Those with education of 1 - 7 years have very much the same pattern as those with no education.

8.8% of these terminated breastfeeding by the sixth month and none of them breastfed beyond 24 months.

Women with 8 or more years of education breastfed the shortest. None of them breastfed beyond 17 months.

If one controls for age, it appears that education at lower levels has no influence on breastfeeding. Its effect is only evident in the highest educated group which is breastfeeding for 3.72 months less than the others. It is useful to remember here that all the women in the highest education category are within the 15 - 29 age range.

6.6 EDUCATION AND CONTRACEPTION

It is expected that higher educational attainment will lead to higher contraceptive use. Table 6.7 shows the percentage distribution of women who have ever used contraception by educational attainment, controlling for age.

TABLE 6.7

PERCENTAGE OF EVER CONTRACEPTIVE USER BY EDUCATION

AGE IN YEARS	YEARS OF EDUCATION			TOTAL	% OF WOMEN IN AGE GROUP	NO. OF WOMEN
	NONE	1-7	8+			
15 - 19	16.1	64.5	19.3	100	40.2	31
20 - 24	43.7	43.7	12.6	100	40.0	48
25 - 29	35.7	46.4	17.9	100	36.4	28
30 - 34	33.3	66.4	-	100	21.4	6
35 - 39	83.3	16.7	-	100	20.0	6
No. of Women	33	68	18	*	35.8	119
% of Category	30.0	39.7	36.7	*	*	*

* Cells logically empty

N.B - Methods include traditional contraception

Ever contraceptive use varies substantially between education levels. It appears as if the 8+ years of education have lower use. This is because they form such a small part of each age group. Those with 1 - 7 years have more ever users than those with no education except for the 35+ age group. Overall percentage of ever users in each education category does not vary very much. 30% of those with no education, 36.7% of those with 8+ years of education.

and 39.7% of those with 1 - 7 years of education have ever used contraception.

The total percentage of ever-users in this study is 35.8% which is much higher than that reported by the K.F.S.[6] which was only 28.9%.

Since ever use of contraception does not show very much variations with education, it is essential to look at current contraceptive use. This is a more relevant factor if one is to understand the high fertility levels in Kawangware. Table 6.8 shows percentages of current users of modern contraception, controlling for age.

TABLE 6.8

PERCENTAGE OF CURRENT MODERN CONTRACEPTIVE USERS BY EDUCATION ATTAINED

AGE IN YEARS	YEARS OF EDUCATION				NO. ON WOMEN	ALL
	NONE	1-7	8+	TOTAL		
15-19	16.7	33.3	50.0	100	12	15.6
20-24	13.0	58.0	29.0	100	31	25.8
25-29	38.5	15.4	46.1	100	13	16.9
30-34	25.0	75.0	-	100	4	14.3
35+	60.0	40.0	-	100	5	16.6
All	13.6	16.9	42.8	-	-	19.5
No. of Women	15	29	21	-	65	19.5

Current contraceptive use within age groups varies considerably with age for the 15 - 19 years old. In this group, half of those with over eight years of education are currently practicing contraception while only 16.7% of those with no education are practicing. For age group 20-24 there are more current users in the 1-7 year education category and least in the none education category. Among those aged 25-29, there are more current users in the 8+ year education category and least in the 1-7 year education group. Overall, women with some education seem to be practicing more contraception than those without. The percentages within age groups tend to be slightly misleading because of the small number of women with 8+ years of education in each group.

A look at overall users by education categories gives a clearer picture. 42.8% of those with 8 or more years of education are currently using modern contraception. This percentage is only 16.9% for the 1-7 year education category and only 13.6% for those with no education at all. Overall, 19.5% of all women are currently using modern contraception. 72.2% of the current users are on the oral pill, 18.9% are using the I.U.D. while 8.9% are using either the injectable, male or barrier method.

The percentage currently using is higher in this study than the 5.9% in the K.F.S. This could be because this study has more women with above 8 years

of education i.e. 14.7% as compared to only 4% in the K.F.S. and these have been shown to be using contraception more.

6.7 SUMMARY

The hypothesis was that "breastfeeding declines more rapidly while use of modern contraceptives increases with higher levels of education". So far it has been found that the women with 8+ years of education are breastfeeding for shorter durations but they are higher proportions of them currently using modern contraceptive methods or who have ever used contraception. It can be said, therefore, that education has an influence on breastfeeding and contraceptive use but only at higher levels. It has very little effect among the women who have had only primary level education (1-7 years) whose practices are not very different from those with no education at all.

While considering this conclusion, one should remember that women with 8 or more years of education formed only 14.7% of the sample and only 5.9% in the K.F.S., so there are not very many of them in Kenya.

6.8 BREASTFEEDING AND EMPLOYMENT STATUS

The employment status of a person determines his social status and style of life. The employment status itself, is based on one's educational attainment.

While examining the influence of employment on a families' life style, one has to decide whether to take husband's or wife's employment. Most of the women in this study, i.e. 72% are not in 'paid' employment while for 8.7% there was no response as regards their employment status. This leaves only 19.3% of all women as engaged in paid employment. Of those who work, 27.4% do their jobs within their homes, 57.5% work within Kawangware and can have their children with them during working hours.

In order to test the influence of employment status on breastfeeding, husband's employment will be considered. Of the 220 women with 2 or more children, 178 were able to give information regarding their husbands employment. These are shown in Table 4.9 of Chapter 4 section 4.

Table 6.9 shows the distribution of age when breastfeeding stopped in the last closed interval by husband's employment status.

There does not seem to be much difference in average breastfeeding durations by employment status. Wives of men in the professional job category breastfed on average 10 months, which is, on average, 1½ months lower than other job categories. Between the others, the differences are minimal.

TABLE 6.9

HUSBAND'S JOB BY AGE BREASTFEEDING STOPPED

JOB CATEGORY	AGE B.F STOPPED IN MONTHS					B.F. AVERAGE
	1-6	7-12	13-18	19-24	25+	
Professional/white collar	5	11	2	-	-	10.0
Business - Trader	-	4	1	-	-	10.7
Manual worker	18	79	22	7	2	11.8
Wife does not know	1	8	4	2	-	11.6
No response	3	7	-	2	-	12.3
Total	27	109	29	11	2	

Manual workers include - skilled, unskilled and casual labourers.

6.9 EMPLOYMENT STATUS AND CONTRACEPTIVES

Table 6.10 shows the distribution of contraceptive use by husband's employment. This time, casual labourers are separated from other manual workers.

TABLE 6.10

CONTRACEPTIVE USE BY EMPLOYMENT STATUS

Job Status	Ever User	%	Current User	%	No. of Husbands
Professional/white collar	10	100	6	60	10
Business - Trader	8	9.5	5	5.9	84
Manual worker	49	76.5	33	51.5	64
Casual labourer	2	20.0	1	10	10
Wife doesn't know	2	50.0	2	50	4
No response	2	33.3	2	33.3	6
Total	73		49		178

All wives of husbands in the professional job category have ever used contraception and currently 60% of them are using contraception. However, this category which has the highest user rates accounts for only 5.8% of the men. Following these are wives of manual labourers. 76.5% of them have ever used contraception and currently 51.5% are using, This percentage is quite impressive as 36.4% of the husbands are in this job category. 50% of the wives who do not know what jobs their husbands do have ever used contraception and an equal proportion is currently using contraception. Wives of traders, who form 47%

of all, show the least use of contraception with only 5.9% current users.

A professional job seems to have an impact on the wife's contraceptive use but this effect is likely to remain minimal as there are very few men in this category. On the other hand, the job category where wives are contracepting least takes up the majority of the population. It is likely that most men in Kawangware will continue to be traders because it is the easiest job to get involved in once one has a few shillings. No employer is needed to get started here.

Wives of traders breastfed for almost a year in the last closed interval. This was only 2 months longer than wives of professional men. This difference is very small and it leads one to suspect even higher fertility among the least contracepting group of wives.

6.10 BREASTFEEDING AND LENGTH OF STAY IN KAWANGWARE

Table 4.4 in 4.2 shows the distribution of women by their lengths of stay in Kawangware. Length of stay is fairly evenly distributed through all age groups. Below is Table 6.11 showing age at which breastfeeding stopped in the last closed interval by length of stay in Kawangware.

TABLE 6.11

LENGTH OF STAY IN KAWANGWARE BY AGE B.F STOPPED

STAY IN YEARS	AGE B.F STOPPED IN MONTHS					MEAN B.F	NO. OF WOMEN
	1-6	7-12	13-18	19-24	25+		
Below 1 year	15	54	12	4	-	10.2	85
1-3 years	10	35	10	3	-	10.5	58
10+ years	1	24	4	4	1	14.0	34
Life time	6	17	15	3	-	11.5	41
Total	32	130	41	14	1		218

From this table, it seems that more recent arrivals in Kawangware, 0 - 3 years, are breastfeeding for shorter periods than those who have been in the area 10 or more years. However, those born in and have always lived in Kawangware breastfed about one month longer than the short-term stayees but about three months less than the long term stayees.

The longer duration of breastfeeding recorded for those who have stayed ten or more years could be due to the fact that they are more perceptive of the realities of modern life. They may know of better ways to use their money other than buying infant formula and they no longer get excited over new ideas like the more recent arrivals.

6.11 CONTRACEPTION AND LENGTH OF STAY IN KAWANGWARE

Table 6.12 shows contraceptive use by length of stay in Kawangware.

TABLE 6.12

CONTRACEPTIVE USE BY LENGTH OF STAY

LENGTH OF STAY IN YEARS	EVER USER		CURRENT USER	
	PERCENTAGE	NUMBER	PERCENTAGE	NUMBER
0 - 3 years	30.1%	69	18.8%	42
10+ years	46.6%	14	26.6%	8
Life time	52 %	41	36.7%	29

(Table includes traditional and modern contraception)

From this table, it appears that use of contraception increases with increasing length of stay with those born in the area using the most. This pattern applys to both 'ever users' and 'current users'. Only 30% of the 'short-stayees' (0 - 3 years) had ever used contraception while only 18.8% of them are current users. This compares poorly with those who have always lived in the area where 52% had ever used and 36.7% are currently using contraception. It must be remembered that short-term stayees make up 65% of the study sample.

One can therefore say that the women who are breastfeeding least are also using modern contraception least, and they are the majority. Longer stay leads to a higher likelihood of using contraception and longer breastfeeding. This could be a result of the fact that long-stayees may have had more than 2 or 3 children and hence feel the need to control their fertility.

While more recent arrivals in the urban area are tending to breastfeed for shorter durations, they are not taking on use of contraception as fast. This is a reflection of the fact stated by most writers such as Buchanan[7], Van Ginneken[8], Jelliffe and Jelliffe[9] and others that in urban areas, breastfeeding looses its acceptability and is regarded as a useless traditional practice. The result is an increase in fertility levels.

6.12 SUMMARY

The hypothesis was that breastfeeding declines more rapidly while use of modern contraception increases with increasing lengths of stay. This study shows that breastfeeding is longer and contraceptive use higher for those who have stayed longer. More recent arrivals are going to experience increases in their fertility levels.

6.13 HYPOTHESIS 3

Hypothesis 3 in this study stated that birth intervals are becoming shorter for the younger women in Kawangware. This was based on the postulate that many of the mothers in the area use breastfeeding as the only protection against a subsequent pregnancy and do not combine it with use of modern family planning methods.

Table 4.21 in Chapter 4.14 showed the average duration of the 2 last closed birth intervals and the overall mean by age of the woman and the text talks about these briefly. It is very clear that these intervals are very short. Table 6.1 in Chapter 6.2 shows breastfeeding durations by age of woman and the average for each age group. Table 6.13 shows the combinations of the above mentioned 2 tables.

TABLE 6.13

AVERAGE BIRTH INTERVAL, BREASTFEEDING AND INITIATION OF SUPPLEMENTATION BY AGE OF MOTHER

AGE OF WOMAN IN YEARS	NUMBER OF WOMEN	MEAN LBI IN MONTHS	MEAN BREAST-FEEDING IN MONTHS (WHOLE DURATION)	MEAN FULL B.FEEDING IN MONTHS
15 - 19	22	20.4	8.7	3.2
20 - 24	77	23.6	10.4	3.7
25 - 29	66	26.6	10.7	4.4
30 - 34	25	29.4	11.4	4.7
35 - 39	26	26.9	10.9	4.9
40+	12	31.7	12.5	6.2

Using the same ratio of post-partum amenorrhoea as being .66 of the breastfeeding duration as mentioned in Chapter 4.12, it is possible to break the birth interval into its components for each age group. This is done in Table 6.14.

TABLE 6.14

COMPONENT OF THE LIVE BIRTH INTERVAL IN MONTHS BY AGE OF MOTHER

AGE GROUP	GESTATION	POST-PARTUM AMENORRHOEA	MENSTRUATING PERIOD	FOETAL WASTAGE	TOTAL BIRTH INTERVAL	PERCENTAGE CONTRACEPTING
15-19	9	5.7	3.7	2	20.4	6.2
20-24	9	6.8	5.8	2	23.6	7.3
25-29	9	7.0	8.6	2	26.6	10.4
30-34	9	7.5	10.9	2	29.4	14.3
35-39	9	7.1	8.8	2	26.9	17.3
40+	9	8.2	12.5	2	31.7	0.0

The period of post-partum amenorrhoea depends very much on the intensity of breastfeeding and is to a large extent, a reflection of the period of full breastfeeding. The calculations here are based on the entire period of both full and partial breastfeeding.

The women aged between 15 - 19 breastfed least, gave supplementary foods earliest and averaged the shortest amenorrhoeic and menstruation intervals. Their average menstruating interval of only 3.7 months is an indication of non-contraceptive use and indeed, only 6.3% used some form of contraception in the last closed interval. The age groups 15 - 19 and 20 - 24, have birth intervals very similar to the Hutterites[10], who are regarded as the most fertile people in the world.

The lengths of post-partum amenorrhoea, menstruating interval and the whole birth interval rose with increasing age as did the percentage who used contraception. None of the women aged over 40 used any contraception but they averaged the longest birth interval. There is probably an age effect reducing fertility as the woman approaches the end of her child-bearing years. However, an explanation cannot be given in this study.

As mentioned in the introduction, each month of full breastfeeding prolongs post-partum amenorrhoea by 4-6 weeks. Supplemented breastfeeding does not

have this effect. Table 6.15 shows age when all breastfeeding stopped by length of the last closed birth interval in months.

TABLE 6.15

AGE BREASTFEEDING STOPPED BY LENGTH OF LCBI IN MONTHS

B.F STOPPED IN MONTHS	LENGTH OF LAST CLOSED BIRTH INTERVAL IN MONTHS						
	9-11	12-18	19-24	25-31	32-38	39-44	45+
1 - 6	4	12	4	7	4	-	-
7 - 12	3	13	22	34	15	16	3
13 - 18	-	2	4	16	5	3	5
19 - 24	-	-	3	5	6	5	7
25+	-	-	-	-	-	2	6
Mean	5.7	7.7	9.4	11.6	12.9	14.6	24.7

The birth interval became longer as average breastfeeding duration increased. However, for those who breastfed 6 months or less, the birth interval ranges from 09 to 38 months with a mean of 20 months. Some use of contraception is indicated here. It is essential to remember here that most of the women who breastfed for 6 or less months are young with 8 or

more years of education, a category which had the highest contraceptive use in this birth interval.

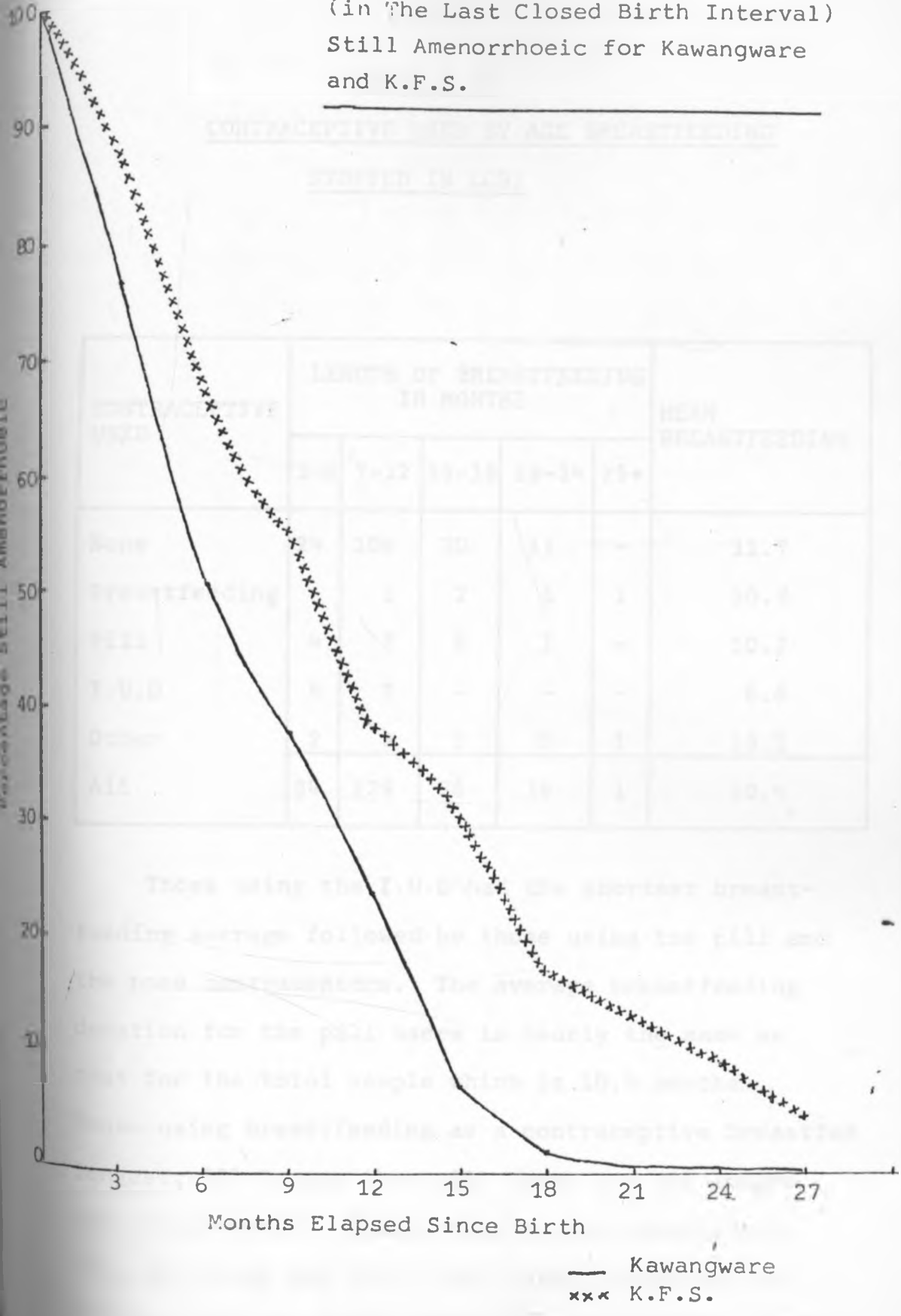
Figure 6.2 shows the percentage of women still amenorrhoeic for Kawangware and K.F.S.[11] by months elapsed since delivery in the last closed birth interval. Menses resume more rapidly in the Kawangware population than in Kenya as a whole. 50% of the women in Kawangware have resumed menses by the 6th month after delivery whereas, in the K.F.S., this happens between the 10th - 11th month, 4 - 5 months later. This is probably a result of less breastfeeding in the Kawangware population.

6.14 BIRTH INTERVALS AND CONTRACEPTION

So far, it looks as if breastfeeding does not have an effective impact on the birth interval for most women in Kawangware. It was, however, postulated that women in Kawangware do not combine breastfeeding with use of modern contraceptive methods. so, in Table 6.16, the distribution of the women's contraceptive use by age breastfeeding stopped in the last closed birth interval is looked at.

Figure 6.2:

Comparison of Percentage of Women (in The Last Closed Birth Interval) Still Amenorrhoeic for Kawangware and K.F.S.



K.F.S. Data from Figure 8.3 p. 160

TABLE 6.16

CONTRACEPTIVE USED BY AGE BREASTFEEDING STOPPED IN LCBI

CONTRACEPTIVE USED	LENGTH OF BREASTFEEDING IN MONTHS					MEAN BREASTFEEDING
	1-6	7-12	13-18	19-24	25+	
None	24	106	30	11	-	11.7
Breastfeeding	-	1	2	5	1	20.3
Pill	4	7	2	1	-	10.2
I.U.D	4	7	-	-	-	6.6
Other	2	8	2	2	1	13.1
All	34	129	36	19	1	10.4

Those using the I.U.D had the shortest breastfeeding average followed by those using the pill and the none contraceptors. The average breastfeeding duration for the pill users is nearly the same as that for the total sample which is 10.4 months. Those using breastfeeding as a contraceptive breastfed longest; 50% longer than pill users and 80% longer than I.U.D users. Those using no contraceptive at all, and these are 81% of the total, breastfed on average only one month longer than pill users. Only

4.7% of the women were using breastfeeding as a contraceptive and these did not combine it with another contraceptive method. They breastfed the longest. Table 6.17 shows current contraceptive use by age breastfeeding stopped for children aged 18 months and under at the time of the interview.

TABLE 6.17

CONTRACEPTIVE USED BY AGE BREASTFEEDING STOPPED

FOR CHILDREN AGED 18 MONTHS AND UNDER

B.F STOPPED IN MONTHS	TYPE OF CONTRACEPTIVE IN USE					PREGNANT WOMEN	ALL WOMEN
	NONE	BREAST FEEDING	PILL	I.U.D	OTHER		
1 - 6	0	-	3	1	-	8	12
7 - 12	6	-	7	-	4	8	25
13 - 18	2	-	-	-	1	1	4
Still b.f	105	3	32	10	1	-	151
All	113	3	42	11	6	17	192
Percentage	58.8	1.6	21.9	5.7	3.1	8.9	100

Of the women still breastfeeding, only 1.6% report that they are doing so to avoid conception. Of those who breastfed 1 - 6 months, 8 or 66.7% are already pregnant while 4 or 33.3% are using either the pill or I.U.D.

Of the 151 women who are still breastfeeding their infants, 113 or 69.5% are not using any method of contraception; 32 or 21.2% are using the pill while 10 or 6.6% are using the I.U.D

17 or 8.8% of women with children aged 18 months or under are already pregnant again and half of those pregnant breastfed for less than six months.

In the last closed interval only 19% of the women used some form of contraception. The postulate that the women do not combine breastfeeding with other contraception is only true to a certain degree. In tha last closed interval, 81% of the women used no contraception at all while only 4.7% used breastfeeding as a contraceptive. Currently, only 1.6% of the mothers with infants aged 18 months or less are using breastfeeding as a contraceptive. Most of the other women, as mentioned in Chapter 5, are not aware that breastfeeding has a contraceptive benefit.

Most of the other women using the pill, I.U.D or other means, largely the injectable, terminate breastfeeding when they introduce the other method. The Kawangware-Kabiro Healthcare Outpost is engaged in

encouraging the women to go on breastfeeding even after adopting use of the pill, I.U.D or any other modern method. Use of contraception is supposed to aid by prolonging the menstruating part of the birth interval and hence, the birth interval. Table 6.18 shows the percentage distribution of the length of the last closed birth interval by contraceptive used in that interval.

TABLE 6.18

LAST CLOSED BIRTH INTERVAL BY CONTRACEPTIVE USED

CONTRACEPTIVE USED	LAST CLOSED BIRTH INTERVAL IN MONTHS							TOTAL	MEAN INTERVAL	ALL WOMEN
	9-11	12-18	19-24	25-31	32-38	39-44	45+			
None	4.7	14.6	34.7	16.5	15.8	14	0.0	100	23.0	171
Breastfeeding	-	25.0	25.0	50.0	-	-	-	100	23.0	9
Other	-	15.6	15.6	15.6	21.1	11.1	21.0	100	24.0	16
Pill	-	6.2	12.5	25.0	12.5	6.2	37.6	100	30.3	15
I.U.D	-	-	-	5.0	10.0	15.0	70.0	100	33.4	10
No. of women	7	27	61	36	33	30	27	221	-	221

None contraceptive users and those using breast-feeding as a contraception had the shortest intervals. They were closely followed by those using 'other' means. Those using the pill have a mean interval which is about 7 months longer than the three groups mentioned earlier. Only 18.7% of the pill users had intervals shorter than 24 months. I.U.D users averaged the longest birth interval, 12 months longer than the None and Breastfeeding users. The last two categories where contraception is most effective unfortunately made up only 11.3% of the women, ($\frac{15 + 10}{221} \times 100 = 11.3\%$).

In the current open interval, 20% of the women are using the pill, I.U.D, injectable, condoms, jellies etc., as contraceptives. When this percentage is compared to 14.5% who used these in the last closed interval, one can hope that by the time the current open interval is closed, it will be slightly longer than the last closed interval.

A look at the menstruating interval in Table 6.13 shows that there is a great need to lengthen this interval if birth intervals are to become longer. Increasing full breastfeeding as a means of contraception will lengthen post-partum amenorrhoea but do little else to lengthen the birth interval. But, as mentioned in Chapter 5.5, only 1.5% of the women showed an awareness of full breastfeeding as a contraception. The majority of the women are unaware of this.

6.15 SUMMARY

All in all, it is true that birth intervals are shorter for younger women in Kawangware, not because they use breastfeeding as the only protection against conception but because they are fully breast-feeding for shorter periods and therefore, resume menstruation earlier, but do not, as yet, use other effective means of contraception.

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CHAPTER SEVEN

SUMMARY, CONCLUSION

AND

RECOMMENDATIONS

7.1 SUMMARY

The objectives of this study were to:-

(i) identify trends in breastfeeding intensity and duration.

(ii) identify the extent of knowledge and practice of family planning; and

(iii) identify factors influencing the practices of breastfeeding and family planning.

It has been observed that breastfeeding durations in the area, although lower than the national average, are still quite substantial, averaging 10.8 months in the last closed birth interval in which all women initiated breastfeeding. However, there is a decline in breastfeeding noticable among the younger women, such that the youngest age group, 15 - 19, breasfed about 3 months less than the oldest age group, 40+.

Also observed is the fact that the intensity of breastfeeding is declining. Kenyan women, on the whole, supplement breastfeeding very early. This was shown in the Child Nutrition Survey and has been confirmed in this study. Yet not all women supplement at the same time. Younger women in the present study gave supplementary foods on average 3.5 months earlier than older women. Among older women, a tendency to delay supplementation was observed

especially among those over age 35 years where nearly 40% of the babies were not given supplementary foods until after 7 months.

Another observation is the high correlation between early supplementation and early termination of breastfeeding. This led to a short duration of full breastfeeding which was further reflected in the lengths of post-partum amenorrhoea. The length of post-partum amenorrhoea in this study increased with age as did the length of the birth interval, in the last closed birth interval. The youngest group had the shortest post-partum amenorrhoea and birth interval.

Contraceptive knowledge in Kawangware is high; higher than the national levels reported by the Kenya Fertility Survey. Attitude towards use of modern family planning methods is also favourable. Use of modern contraception is also higher than that reported in the K.F.S. and an improvement compared to the level of use reported for Nairobi by T. E. Dow in 1966, but it is not high enough to have a major impact on fertility levels.

Another objective of this study was to identify factors influencing breastfeeding and contraceptive practice. Woman's education, husband's employment status and length of stay in Kawangware were the variables examined.

Only education seemed to have a significant effect on breastfeeding and family planning practice. This effect, however, is important only at higher education levels, i.e., 8 or more years of education. Women with lower educational attainment are not very different in their practices from those with no education at all in the present study. It was observed that the higher level education leads to shorter durations and intensity of breastfeeding but to higher proportions using modern contraceptive methods. As mentioned earlier, there are very few women in this education category in Kawangware and all of them are aged under 30 years.

Husband's employment does not seem to affect breastfeeding very significantly. Although wives of men in the professional job category breastfed least, this was only by about 1½ months less than the others. When it comes to contraceptive use, then husband's employment status did have an influence. Wives whose husbands are in professional jobs lead all other job categories in ever use and current use of modern contraception. The job category of 'Traders' which takes up most husbands shows the lowest levels of contraceptive use, with only 4% of the wives here as current users.

Wives of manual workers show higher use than wives of traders. A large proportion of husbands in

this job category, i.e. 35%, are domestic workers for rich people in Lavington, Hurlingham and other areas nearby. Their employers, it seems from what the wives reported, have advised or even assisted them taking their wives to family planning agencies. This apparently accounts for a higher proportion of users in this category.

Length of stay in Kawangware does not seem to have a significant effect on breastfeeding. Although the more recent arrivals breastfed for a shorter period than those born and continuously resident in the area, the difference was only two months. The more recent arrivals are also using contraception least while those born in the area have the highest proportions of ever and current use.

What has been observed so far can be summed up as follows; "with the exception of the highest education and professional job categories, the categories of the population breastfeeding least are also using contraception least with the result that their birth intervals are becoming shorter". These categories make up the largest part of the population.

A further objective of this study was to establish the relationship between family planning and breastfeeding in Kawangware. The idea was to find out if the women in the area are using breastfeeding as a

means to delay conception, just as it was traditionally used. It has been found that less than 2% of the women in this study used breastfeeding in this way. The majority of the women in the study were not even aware that breastfeeding can affect conception and, indeed, with their type of breastfeeding, it would have very little effect on conception.

Under these circumstances, with women not using the traditional breastfeeding practice to delay conception, it might have been expected that they would use something else such as modern contraception: yet it has been observed that the level of contraceptive practice is very low. Over 78% of the women currently exposed to conception are not using anything to delay conception. 2% are using traditional means while 20% are using modern means.

Of those still breastfeeding, 2% reported that they were doing so as a means of putting off conception. 21% of those still breastfeeding are using the pill while 6.6% of them are using the I.U.D. 70% reported that they were using nothing to delay conception. Unfortunately these women will have to terminate their breastfeeding if they conceive, and certainly many of them will.

Although 75 or 23% of the women report that they want no more children, 64% of these women are not

using any method of contraception. 30% are using either the pill or I.U.D. while 6% are using one of the 'other' methods. Obviously many of these women will have unwanted pregnancies.

In general then, with current fertility standing at 3 living children per woman and the mean number of children desired at 3.4, one would have expected higher levels of contraceptive practice, yet such practice was not observed.

7.2 CONCLUSIONS

What is evident in this study is a population in which modern family size desires co-exist with declining periods of breastfeeding. It is also a population which has been slow to adopt the modern practice of family planning to replace the declining contraceptive effect of breastfeeding. Under these circumstances, many women in Kawangware will not be able to achieve their desired family size.

In his discussion of the demographic transition theory, J. C. Caldwell[1] said that there are two types of fertility regimes;

(i) where there is no economic gain to individuals for restricting fertility .

(ii) where there is often or eventually ecpnomic gain from such restriction.

He adds that movement to a society characterised

by economically restricted fertility is essentially the product of social rather than economic change although with economic implications. It is clear that the society in Kawangware knows that it stands to gain economically from restricted fertility. This is reflected in the small desired family size of 3.4 children and a large percentage of 63% giving economic related reasons for their desired family size. However, the current rate of fertility restriction, i.e. contraceptive use, implies that many of the women in Kawangware will have more children than they desire.

The situation in Kawangware cannot be fully explained by economic change. Although higher education and job status are leading to higher rates of contraceptive use to replace the reduced contraceptive contribution of breastfeeding, there are women with lower education and with husbands in lower job categories who are breastfeeding for short periods and not practicing contraception. These, as predicted by W. H. Mosley[2], are experiencing increasing fertility. The fact that most of the women in this category are young suggests that there are factors, other than education and employment, experienced in urban areas which affect the decisions to breastfeed and family plan.

This further confirms the belief that traditions crumble more rapidly in urban settings. In this case breastfeeding looses its social status. The woman feels embarassed to breastfeed in public or to be seen breastfeeding a child who has teethed or taken his first steps. The women feel that in order to complete their 'urban image' their infants must feed on the bottle although their breasts may be swollen with milk. Post-partum sexual abstinence suffers the same fate as breastfeeding. In the process, menstruation and ovulation resume earlier, conception is not guarded against with the result that births occur more frequently.

In 1966, T. E. Dow Jr.[3] observed for Nairobi elements favourable to fertility control and attitudes and actions necessary to achieve it. He commented that "..... in the presence of broad based interest, knowledge and approval, one would be overly pessimistic not to anticipate a final stage of fertility control". The present study, as expected, shows improvements in desired family size and percentage using modern contraception as compared to the 1966 findings. However, in the light of Dow's optimistic conclusion, the rate of fertility restriction as observed 15 years later is not encouraging.

As mentioned earlier, many women, especially the younger ones, in Kawangware will have more children than

they desire. J. C. Caldwell[4] says that this gap between the actual and the desired family size is partly a result of the present unusual circumstances whereby change is at present so rapid in many societies that there is a fast increase in the number of people who will economically benefit from lower fertility. Other writers have blamed this gap on lack of informations, services and supplies; but all these are quite adequately met for the Kawangware population where nearly all women know of a place where they can get family planning services.

The writer feels that the situation in Kawangware is a reflection of a society caught at the cross-roads, where one should travel towards restricted fertility and one feels that one should do so but still feels reluctant and scared of taking the step towards using the 'mysterious' modern techniques. One should remember here that, although to most of these women, the term 'family planning' is familiar, the techniques of family planning are still mysterious, surrounded by rumours both good and bad, true and false, scaring and encouraging, from friends, neighbours and, may be, ill motivated family planning motivators.

In view of this, one can conclude that fertility will continue to be higher for the women in Kawangware especially the young, more recent arrivals. However, if

family planning education and breastfeeding counselling are intensified, one can hope for increases in breast-feeding instead of bottlefeeding and more contraceptive use even if it is only for spacing purposes. Women with eight or more years of education are few in Kenya and will not increase much in the next few years, nor will higher status employment whereas urbanisation will be even higher so that the population in Kawangware will be increasing instead of stabilising or declining. So, this is a situation in which one cannot afford to wait for economic development per se to affect fertility. Other ways and means of encouraging the women to use family planning methods have to be found and employed. The writer suggests more effort in this direction.

7.3 RECOMMENDATIONS

One of the aims of this study was to recommend ways by which breastfeeding and family planning could be improved in Kawangware. Attention was to be directed specifically to those ways in which the Kabiro-Kawangware Health care Outpost could participate.

On the basis of this survey, it was observed that a significant proportion (58.7%) of women were not aware of the Kawangware-Kabiro Healthcare Out-post's family planning and breastfeeding counselling services. This means that more organised and

intensified home visiting by healthcare takers from the outpost is needed. This healthcare outpost is an ideal source of service, especially for women whose husbands may not want them to use family planning. This is because it has an all week family planning service clinic unlike City Council clinics which only offer these services on a biweekly basis. Whoever goes to the City Council clinics on these days will be known to use family planning which may be inconvenient to some of the women.

Very high fertility levels have been identified by this study. This applies to all age groups but more so to the younger age groups, 15-24 years. Also identified is a low age at birth of first child and high non-marital fertility. Most of the mothers, especially more recent arrivals, are young. These are most likely girls who got pregnant while still at home or school and hence had to leave home and join their boyfriends in town. Most of them were ill-equiped for motherhood and all that goes with it especially in the poor environment of Kawangware. They are now living through a fertility pattern quite similar to that of the Hutterites. As the population in Kawangware is highly transient, this pattern of fertility is likely to continue as new immigrants come into the area. It would be most beneficial for

these immigrants if they could be helped in their breastfeeding and fertility control. Therefore, efforts should be made to narrow the gap between the rapid decline in breastfeeding and its contraceptive effect and the slow adoption of new methods of contraception.

This could be done by further utilization of the existing services at the Kawangware-Kabiro Healthcare Outpost. During home visits, mothers needing help in breastfeeding, family planning advice and services can be identified. A follow-up system could also be developed. It is also necessary to involve husbands in the activities of the outpost through inviting them to film shows, food demonstrations or involving them when the outpost staff are counselling on breastfeeding and family planning at the clinic or in homes.

These recommendations were made to the Kawangware-Kabiro Healthcare Outpost about five months ago and have already been put in practice. The Project Director reports that numbers of clients both for family planning and breastfeeding counselling have increased dramatically. While in the first 12 months of the project 172 family planning clients were served, between November 1980 and July 1981 248 new clients were served and the clinic had 70%

of the 1980 clients as continuing users. The impact of these increases on fertility levels however, is not yet known.

The pattern of high fertility, declining breast-feeding and low contraceptive use observed in Kawang-ware is apparently not peculiar to this location alone. It must be occuring all over Nairobi especially in areas similar to Kawangware. Where no health care Out-post like the Kabiro- Kawangware one exists in these areas, other organisations like the Family Planning Association of Kenya, Maendeleo ya Wanawake and others should make every effort to bring into these areas the family planning services which are greatly needed. It is important to remember that mothers or women in these areas may need family planning services but may fear to go out and look for them. It means that service providers will have to go to the women with these services. In the case of younger mothers, nursing their first or second child, it is important to start them on a family planning method around the sixth months after delivery. Most important of all, these services should be completely free as money in these populations is not plentiful.

Finally, there is a need to promote breastfeeding as a method of family planning in Kenya and as a best way of feeding the infant. If this is done effectively,

the current trend towards using infant formula and cereals at the expense of breastfeeding may be reversed and birth intervals may be lengthened by some months.

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APPENDIX I

English Version of the Questionnaire

Questionnaire for the Study of Breast-feeding and Family Planning in Kawangware

1. No. of Respondent .....
2. No: of Interviewer(s) .....
3. Household Identification .....
4. Name of Respondent .....
5. Age .....
6. Tribe of Respondent .....
7. Religion .....
8. Marital Status (tick appropriate one)

   Single..... Married ..... Widowed.....

   Divorced/separated.....
9. Have you ever lived a married life ? Yes....

   No.....
10. Are you now living with a man ? Yes.....

    No .....

    (Skip to 15)
11. Does your husband usually live with you ?

    Yes.....(ask 13) No..... (ask 12)
12. Is he staying with you at the moment or is he away for the time being or have you stopped living together for good ?

    Staying with..... Away for a time.....

    Separated for good .....
13. What is/was the tribe of your husband?.....
14. What is/was the religion of your husband?.....

15. Have you ever been pregnant? Yes... No.....

Children are a blessing and a source of happiness in many ways but they also bring some problems. Can you tell me:-

16. What you think is the best number of children a person living in Kawangware should have?.....

17. Imagine that you are a young girl, just married and going to begin your child bearing and rearing. If you could choose, how many children would you like to have? ..... How many boys? ..... How many girls? .....

18. Why would you like to have this number of children ? (write answer in full) .....
.....

Ask 19 to those married or living with a man

19. Have/Did you ever discuss with your husband the numberof children you should have? Yes... No...

20. How old do you think one child should be before the next one is born? .....

21. Some women do not breastfeed their babies or they breastfeed them for only very short durations. What do you think of these women?
.....

22. How long do you think a child should breastfeed?
.....

23. Have you ever given birth to a child ? Yes....
No .....(ask 52)

Now I would like to ask you some questions about each of your children in turn starting

with the youngest.

24. Interviewer, now complete the table for all the children the woman has given birth to even if they are not living with her at the moment. Make sure she does not include children living with her but were not born by her. Fill all columns for the 3 youngest children but for the others fill only 1,2,3,4,5,6,7,8, 11,12,. If the woman has no children skip to 52.

25. What is the total number of children now living in this house? .....

(Interviewer explain that children are anybody in the house below 15 years of age)

Ask 26a and b to mothers who have indicated that they have children who are still breastfeeding.

26a. How many times does this child breastfeed during day time? ..... b night time? .....

Ask Questions 27 and 28 to those mothers with children aged 18 months and below who are no longer breastfeeding. If the mother has two such children ask separately for each.

27. How old, did you say, this child was when you stopped breastfeeding him even once a day?

.....

28. Why was this child removed from the breast? (tick her answer)

(a) not enough milk .....

(b) old enough .....

(c) Mother unable to continue because of work,

Question 24. Record of Mother Breastfeeding and Family Planning Practice

Name of Child	Sex	Date of Birth Day Month Year	Age of child	Had a miscarriage, abortion or still-birth or death before birth of this one	Age when completely weaned (not b.f.even once a day)	Age when supplementary foods first added to child's diet.	Whether fed on Cerelac, Farex, tinned milk etc.	Whether used any contraceptive after birth of this child.	Method used
1	2	3	4	5	6	7	8	9	10

sickness etc. .....

(d) Child sick on breast milk .....

(e) Child stopped by himself .....

(f) Child liked other foods more than breast milk .....

(g) Another pregnancy .....

(h) Other .....

Ask 29-38 to all mothers with children aged 18 months and below

29. Is the child given any other milk apart from breast milk ? Yes ..... No ..... (ask 34)

30. Can you tell me the name or type of milk given?

.....

31. How do you give him this milk ? Cup .....

Spoon ..... Bottle and teat ..... Bowl .....

32. How old was the child when you started this method of giving the milk? .....

33. How many times a day does the child get this milk? .....

34. What other foods do you give this child?

.....

Interviewer, write the name of the food and age when each food was first given. Ask the mother the reason why she gave each food. Drinks, bread etc are food.

Food	Age	Reason

35. Did you notice any difference in your breast-milk when you started giving the baby other foods? Yes ..... No ..... (ask 37)

36. What difference ? .....

37. Did you notice any difference in the health of the child after you started giving him other foods? Yes ..... No .....

38. What difference ? .....

Ask 39-40 to All Women who have said they have children

39. What age do you think the child should be before you give him each of the following foods:-

Food	Age
Ugi/Porridge	.....
Eggs	.....
Bananas/potatoes	.....
Meat/fish	.....
Ugali	.....
fruits	.....

40. Since your last birth, have you resumed menstrual periods ? Yes ..... No ..... (ask 41 and skip 42).

41. Are you now pregnant? Yes ..... No .....
Not know .....

42. How many months after delivery did you resume your periods ? .....

43. If a mother has enough milk in her breasts to satisfy an eight month old baby, do you think she should still give the baby other foods ?
Yes ..... No .....

44. Why ? (Write answer in full) .....
.....

45. Did you have your last child at home ? .....
Hospital ? ..... Clinic ? .....

46. Did anybody give you advice about feeding that child ? Yes ..... No ..... (ask 48)

47. What advice were you given ? .....
.....

48. Have you ever received free baby foods like powdered milk, or tinned milk, cerelac etc.?
Yes ..... No ..... (ask 50)

49. From whom did you receive this food ?
Shopkeeper/salesman ..... Doctor .....
friend ..... Nurse/Midwife .....
Relative .....

50. In your tribe, who teaches the mother who has has had her first child how to breast feed?
.....

Ask only women with children

51. Is there anybody who taught you how to breast-feed when you had your first child? Yes .....

No..... Can't remember .....

(b) (If the answer was 'yes' ask) Who taught you? .....

52. In your tribe, do you have a law or custom about having sexual relations after birth of a child?

Yes ..... No ..... Don't know .....
(as 53) (ask 54)

53. Briefly tell me about it. .....

.....

54. Is it common, in your tribe, for a woman to get pregnant while she is still breastfeeding?

Yes ..... No ..... Dont know .....

55. When would this be likely to happen .....

.....

56. In your tribe, do you have a law/rule/norm about breastfeeding while the mother is pregnant?

Yes..... No..... Not known .....

57. What do you, yourself, think of a woman who breastfeeds while she is pregnant? .....

.....

58. Do you know whether it is possible for a woman to become pregnant again without resuming menstrual bleeding after delivery ? Yes.....

No.....(ask 60)

59. When is this likely to happen .....

.....

Some mothers get pregnant while they are still breastfeeding or still have a very young child who needs a lot of attention.

60. What, do you think, can be done to prevent this?

.....

61. What do you understand by the term "Family Planning". (tick her answer).

a) Spacing births so that each child comes at the right time.

b) Encouraging women to have few children

c) Encouraging women to stop having children

d) Methods used by prostitutes to avoid getting pregnant

e) Man interferring in God's work

f) Parents avoiding having children so they can have fun

g) Other.

62. Do you know or have you heard of anything a man and a woman can do to avoid pregnancy

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

(Interviewr, if answer to 62 is No, read the list below to her. Ask after each if she has heard about it and from whom. Write letter 'p' after her responses. For those who answer Yes to 62 ask)

63. Which ways/methods do you know of?

(Tick her responses off the list and after each ask if she has ever used it and from whom she heard/learned about it.)

Method	Know	Used	Learned from
a) Abstinence after delivery			
b) Coitus interruptus			
c) Prolonged breast-feeding			
d) Rhythm			
e) Condom/sheath			
f) Jellies/creams			
g) Diaphram			
h) Injection			
i) Pill			
j) I.U.D.			
k) Sterilisation			
l) Other			

64. What do you think of people who use family planning? .....

65. Are you now doing anything to avoid becoming pregnant ? Yes.... No.....

(If the answer is yes ask) What are you doing?

.....

66 - 74 (not relevant to the Study).

You have given me a lot of your time for which I am very grateful. I would now like to end by asking you a few questions about yourself.

75. Did you go to school? Yes.... No..... (ask 77 if married,83 if single)

76. What was the highest level of education you reached?

Standard 1-3..... Form 1-2,..... College.....

Standard 4-6..... Form 3-4..... Polytechnic..

Standard 7 ..... Form 5-6..... University..

79. Does your husband do a job from which he gets money? Yes..... No..... Dont know.....

80. How often does he get paid? Monthly..... Weekely..... daily..... when job is finished .....

81. What kind of job/jobs does he do? .....

.....

82. Where is your husband's job? .....

83. Do you, yourself, do any job/jobs from which you get money? Yes..... No.....(ask 88)

84. What kind of job/jobs do you do? .....

85 Where do you do this job/jobs?.....

86. Is it possible for you to take your children with you when you go to work? Yes..... No..... (ask 88)

87. Do you take them ? Yes..... No..... Sometimes..... only the youngest..... works at home.....

88. Were you born in Kawangware? Yes..... No..... (ask 92)

89. Where were you living before you came to Kawangware? .....

90. For how long have you now lived in Kawangware?

.....

91. How many times in a year do you visit the rural area/reserve/home town? .....

92. How old were you when you had your first child?

.....

93. Would you like to have another child in the future? Yes..... No..... Not sure.....

Up to God .....

Interviewing Plan:

To get the necessary information, specific questions were asked of the women. For this purpose, a structured questionnaire was designed and it was completed through personal interviews.

Designing the Questionnaire:

The questionnaire was initially developed in English. Here some guidelines were borrowed from the Kenya Fertility Survey Individual Core Questionnaire.

This discussion continues on the next page.

Two people, one of them a resident of Kawangware, then translated the English version into Kiswahili. Finally, the Swahili version was translated back into English by another person who had not seen the original English version. Comparisons and adjustments were made. The adjusted Swahili version was pre-tested on 12 women resident in Kawangware. As a result of this pre-test, some difficult or unfamiliar Swahili words were replaced by simpler equivalent ones, some questions were reworded and instructions to interviewers were made more specific. Two questions were removed all together. This new version was pre-tested again on 7 women who had come to the Healthcare Outpost.

Training Interviewers:

All people who did the interviewing, with the exception of the writer, were either Healthcare Takers or Youth Motivators working at the Healthcare Outpost. There are 13 such females. The six of them selected as interviewers can read, speak and write both English and Swahili and all are residents of Kawangware. Training was carried out at the Outpost.

The aims of the study and of each question were explained and the question worked through one by one. This took two mornings. On the third morning, the interviewers attempted an interview on the remaining seven female HCTs not under training.

Problems encountered were discussed. Next day, the interviewers were sent out each to interview one woman from Kabiro Village Stake One. The work of each interviewer was discussed. The interviewers requested the company of an older HCT each to reduce resistance they expected from men and older women. So, when actual interviewing began in the week after Christmas, the interviewers worked in pairs. Actual interviewing took three weeks. Throughout the period of data collection, each interviewer's work was closely checked.

Content of the Questionnaire

A copy of the questionnaire, i.e. English version, is available in Appendix 1.

Questions 1-15 gave the backgroup information on the respondent's residence age, ethinicity, religion and marital status.

Questions 16-23 Collected information on ideal family size, birth-interval, breastfeeding duration and sex preference.

Questions 24-25 Provided information on the woman's birth-history, breastfeeding and family planning, starting with youngest child.

Questions 26-39 Collected information on breastfeeding, duration, intensity and supplementary foods for all children aged 18 months and under (1½ years) at the time of the Survey.

Questions 40-49 Sought information on current pregnancy status, amenorrhoea, advice on infant feeding and exposure to commercial baby foods.

Questions 50-60 Asked for information on breastfeeding education, post-partum abstinence and taboos associated with breastfeeding and post-partum amenorrhoea in the respondent's tribe.

Questions 61-65 Gave information on knowledge attitude and practice of family planning.

Questions 66-74 Not relevant to the study.

Questions 75-87 Sought information on education and occupation of both respondent and her husband.

Questions 88-93 Collected information on length of stay in Kawangware,

area of origin, frequency
of visits to area of origin
etc..

Each interview took between 30-45 minutes.

Problems Encountered:

The problems encountered in selecting the sample have already been discussed in section 3 of this Chapter.

Fifteen of the households falling within the sample were found locked, but, since the interviewers were residents of the area, they made it a point to return to these houses until the occupant was seen. 7 of the 15 belonged to bachelors, in two of the others, the women refused to be interviewed while in three of the remaining six, the occupants could not be seen. So, in only three of the fifteen could an interview be done. No substitutions were made for the households in which an interview could not be done.

Refusal to answer questions was a problem only in the Moslem village, where seven of the women falling in the sample refused to be interviewed while another three refused to complete the interview. These partly completed questionnaires were removed from the analysis. Elsewhere most women were willing to answer the questions. Where two eligible women were found in one house, the interviewer interviewed only the older of the two.

Another problem was the withholding of information particularly on family planning. This problem was most pronounced if there was a male in the vicinity, who could hear the responses. It became known later that most men in the area are totally opposed to family planning and do not want their wives to use it.

In six cases, the woman falling within the sample did not know enough Swahili. This necessitated use of a third woman to translate if neither of the interviewers spoke her language. This happened for one Masai, two Somalis, one Akamba and two Luos. The accuracy of the translations in these cases can not be guarranteed.

All in all 332 interviews appear in the analysis. Refusal to participate in the interview was only 3.6% of the total number of interviews attempted. This is significant in that nearly all the refusals were from one village and mostly Moslems.

Methods of Analysis.

Before the information collected from the field could be used, it was necessary to compile it into manageable forms. This is done to enable one to apply statistical tests to it.

Editing: This was necessary so as to remove inconstencies in the information recorded on the questionnaires. It was specially important for facts requiring additons, sub-

tractions or divisions done rapidly in the field while the interview was in progress. The editing was done by the writer as the questionnaires were returned from the field daily.

Coding: Before the information could be used in the analysis, it had to be put in numerical form. Each variable was listed and all possible responses to it were recorded under each and assigned a value. As the data was going to go through the computer, these values had to be between 0-9. After a coding manual was compiled, the information from each questionnaire was entered on to code sheets. A lot of checking and cross-checking was essential at this stage to make sure that the correct information had been read off the questionnaire, assigned the appropriate number from the coding manual and entered under the right column on the code sheet.

Owing to the number of cases and variables in this study, it was essential to use a computer for analysis.

From the code sheets, the information was punched on cards. A programme was written using the Statistical Package for Social Sciences (SPSS) and the information was fed into the computer. From the computer print-out, frequency distributions, percentages, means, modes, medians and cross-tabulations for certain variables were given.

From here, interpretations and implications could be made about the variables the study is interested in.

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