THE ROLE OF LONG ACTING AND PERMANENT METHODS OF

CONTRACEPTION IN FERTILITY REGULATION AMONG WOMEN

IN KENYA

by

MOSE ANDREW OMWOYO

STUDENT ID: 51213005

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DECLARATION

I, MOSE ANDREW OMWOYO, hereby declare that this thesis is a true presentation of my original investigations and analysis. Any other supportive information and contributions from other persons and sources; published, and unpublished, have been acknowledged and cited appropriately.

I therefore submit this thesis to the Graduate School of Asia Pacific Studies Ritsumeikan Asia Pacific University in Japan for the partial fulfilment of the requirements for the acquisition of the Degree of Master of Science in International Cooperation Policy (ICP), Public Health Management (PHM).

DEDICATION

I am dedicating this thesis to my late parents, mother Mary Nyang'ono Moses and father Moses Kinara. I can't help wetting my eyes with tears when I look back at what you sacrificed in order for me to be what I am today. Your love, care, compassion, belief and faith in me have been the cornerstones and the main pillars in my life. It has helped me focus in life, and it's the strength that motivates me each and every day to reach for greater heights. It's unfortunate that you are not here with me now, but I know you are always there with me and will always provide the sense of reason whenever I am at crossroads. I believe and trust that the Almighty God will keep watching your beautiful souls until we meet again. I will forever cherish you and live according to the ideals you instilled in me and always endeavor to let your legacy of fortitude, hard work, compassion and forthrightness live on forever.

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LIST OF ABBREVIATIONS

U N	United Nations
N G O	Non-Governmental Organization
G D P	Gross Domestic Product
K N B S	Kenya National Bureau of Statistics
C O M E S A	Common Market for East and Southern Africa
G N I	Gross National Index
P P P	Purchasing Power Parity
O C	Observed Count (Chi-Square)
E C	Expected Count (Chi-square)
W B	World Bank
E R S	Economic Recovery Strategy
W E C	Wealth and Employment Creation
T F R	Total Fertility Rate
C B R	Crude Birth Rate
C D R	Crude Death Rate
I M R	Infant Mortality Rate
K D H S	Kenya Demographic and Health Survey
C B S	Central Bureau of Statistics
I E A	Institute of Economic Analysis
K H P F	Kenya Health Policy Framework
M O H	Ministry of Health
K H P F I A P	Kenya Health Policy Framework Implementation Action Plan
H S R S	Health Sector Reform Secretariat

H M I S	Health Management Information System
N H S S P	National Health Sector Strategic Plan
G o K	Government of Kenya
P H C	Primary Health Care
M T R H	Moi Teaching and Referral Hospital
K N H	Kenyatta National Hospital
W H O	World Health Organization
I C P D	International Conference on Population and Development
S R H	Sexual and Reproductive Health
H I V	Human Immunodeficiency Virus
A I D S	Acquired Immunodeficiency Syndrome
C P R	Contraceptive Prevalence Rate
F P	Family Planning
N P P S D	National Population Policy for Sustainable Development
N C P D	National Council for Population Development
A P H R C	Africa Population and Health Research Center
P R S P	Poverty Reduction Strategy Paper
L A R M	Long Acting and Reversible Method of contraception
L A P M	Long Acting and Permanent Method of contraception
S A M	Short Acting Method of contraception
O C	Oral Contraceptive
I U D	Intra Uterine Device
I U S	Intra Uterine System
I E C	Information, Education and Communication

A R P	At Risk Population
S T Is	Sexually Transmitted Infections
S S A	Sub-Saharan Africa
U D H S	Uganda Demographic and Health Survey
M M R	Maternal Mortality Rate
F G D	Focus Group Discussion
S E S	Socio-Economic Status
U N F P A	United Nations Population Fund
P D P	Population Development Program
S A D H S	South Africa Demographic and Health Survey
U S A I D	United States Agency for International Development
D H S	Demographic and Health Survey
N A S C O P	Kenya National AIDS and STI Control Program
N C A P D	National Coordinating Agency for Population and Development
N A C C	National AIDS Control Council
K E M R I	Kenya Medical Research Institute
U N I C E F	United Nations Children's Emergency Fund
N A S S E P	National Sample Survey and Evaluation Program
K A I S	Kenya AIDS Indicator Survey
K M I S	Kenya Malaria Indicator Survey
M I C S	Multiple Indicator Cluster Survey
V C T	Voluntary Counselling and Testing
C T	Contingency Table

OPERATIONALIZATION OF TERMS

Age: Self-reported age of respondent at the time of survey

Parity: Number of children ever born to the respondent

Educational attainment: Highest education level attained; none, primary, secondary and higher than secondary.

Residence: Current place of residence: Urban, rural

Married: Respondents who were legally married or living together as married

Unmarried: Women not living with a partner at the time of survey

In union: All married women and those living with partner as married

Not in union: Women who were single, separated, widowed, or divorced

Injectables: All contraceptive products administered regularly by injection

Pills: All contraceptive products taken by mouth; both estrogen and progestin

IUD: All contraceptive products inserted in the uterus

Implants: Contraceptive products used sub-dermally to prevent conception

LAPM: Male sterilization, Female sterilization, IUD and Implants

SAM: All other modern methods of contraception not falling in the LAPM

Modern contraceptives: All contraceptive methods and practices that entail alteration of body functions; either hormonal or a foreign body

Traditional methods: Rhythm (periodic abstinence), withdrawal and abstinence.

ABSTRACT

Introduction: Contraception as a means of fertility regulation is a widely acknowledged element in population studies and has been the center of focus in the recent past. Making the decision freely and responsibly about the number, spacing, and timing of children is a basic human right (Tawiah, 2002). Each year, about 184 million pregnancies occur in the developing world, and 40 percent of these, (74 Million) are unintended because they occur when women want to avoid or delay the pregnancy. These unintended pregnancies end up in abortions (48 %), unintended births (40 %) or miscarriages (12 %) with detrimental health and economic effects for the women, their families and the economy as a whole (Singh, 2010).

Significance of the study: Contraceptive use has increased worldwide but less than one in every seven Sub-Saharan African women (14%) uses any modern method of contraception (PRB, 2006). Approximately 25 percent of women in sub-Saharan Africa have an unmet need of FP. Kenya was among the first African countries to recognize the importance of Family Planning and incorporated it in the national development policy. The aim of the FP program was to improve access to FP services and reduce population growth. Kenya has an annual population growth rate of 2.9 with a total population of 44 million people. This study aims to examine the role of LAPM in fertility regulation in Kenya and determine factors that positively influence the use of LAPM.

Methodology: This study was an analysis of the KDHS 2008 survey. The relative roles of social, individual, environmental, and FP program factors in influencing decision-making were explored, and relationships with each other probed. They were divided into demand factors, demand-generating factors, demand sustaining factors and supply factors. The main objective of the study was to ascertain the use of LAPM, establish the role of government

and FP program in enhancing their uptake and determine factors that influence the use of LAPM. Data was analyzed using SPSS version 22 and Microsoft Excel.

Main Findings: Kenya has a young population with more than 70% aged below 30. It has a total population of 44 million people and an annual population growth rate of 2.9%. Many women initiate childbearing early (85% by age 25). There is a high awareness of contraceptives (95%) but utilization is low (46%). Knowledge of LAPM was low (65%). Female sterilization was the most popular LAPM with 4.8 % while Implants were used by 1.9% of married women. In the determinants of LAPM use, In the determinants of LAPM use, level of education, wealth quantile, number of children, residence and contraceptive source were the main determinants. Majority of FP users relied on public sources for their LAPM product. Budgetary allocation to the MOH was declining, and the main source of financing health care is out of pocket. Less than 10% of women had any form of insurance cover.

Conclusion: Broadening the choice of contraceptives increases their overall prevalence. Arming and empowering women with good health, adequate information and knowledge of reproductive health issues paves way to responsible and planned parent-hood and provides them the all-important opportunity to make responsible life decisions and lead a quality lifestyle.

CHAPTER 1

INTRODUCTION

1.1 Background Information on Kenya

1.1.1 Geography

Kenya is located on the East coast of the African continent. It lies between 5 degrees North, and 5 degrees south, almost bisected by the equator, and between 24 and 31 degrees longitudinally.

Figure 1.1 The Map of Africa
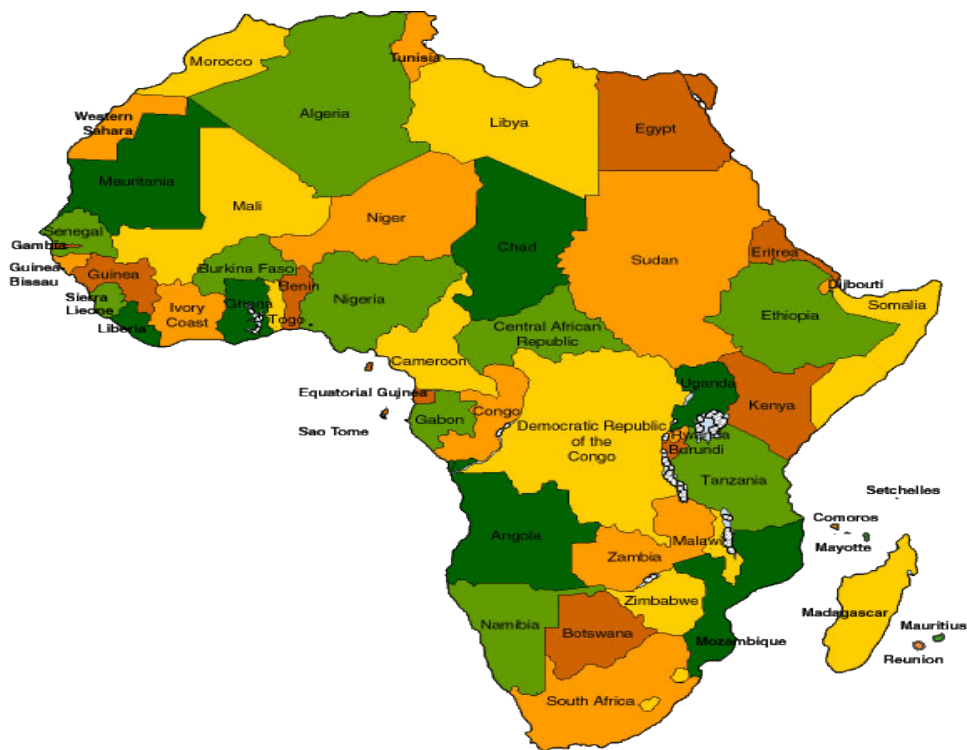
Source: Adapted from KNBS, 2010

Kenya is bordered by Somalia to the East, to the north by Ethiopia, South Sudan to the Northwest and, Uganda to the West, and Tanzania to the Southwest while the Indian Ocean lies to its Southeast border having a coastline extension of 536 kilometers. It is the 47th largest country in the world with a total area of 582,646 km^2 with 571,466 km^2 forming the land area. Approximately 80% of the land area in Kenya is either Arid or Semi-Arid making it agriculturally less productive. The country has diverse physical features divided into low lying arid and semi-arid lands, coastal belt, plateau, highlands, and the lake basin.

Figure 1.2 The Map of Kenya

Source: Adapted from KNBS, 2008

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In the physical features, there is the Great Rift Valley running from northern Kenya to southern Kenya. It extends for 8,700 km on the Earth's surface from the Dead Sea in Jordan to Beira in Mozambique. Mount Kenya with an altitude of 17,057 feet above sea level is the highest mountain in Kenya and second highest in Africa, after Mt. Kilimanjaro. Mt Elgon, which is another mountain in Kenya, lies across the border between Kenya and Uganda and harbors a diverse population of wildlife, archeological treasures and a wide variety of bird and plant species. Lake Victoria, the largest fresh water lake on the continent and which is shared among Kenya, Uganda, and Tanzania forms a major landmark and an important source of water for the communities living around it. In addition, it is also the source of River Nile, which is the longest river in the world, extending all the way from Ethiopian highlands to the plains of Egypt. It is greatly relied upon by countries lying on its course especially Egypt, for food production as it is predominantly a desert country. Other important natural features in Kenya include numerous lakes namely Magadi, famous for its Soda ash, Lake Nakuru, destination of choice for most tourists because of its Flamingoes, lake Bogoria famous for the Geysers and hot springs among many other fresh water and salty lakes. Kenya also has a number of big full time and seasonal rivers including Yala, Nzoia, Athi, Tana, and Mara among others. There are also numerous wildlife reserves with thousands of different animal and bird species. In addition, there are varying fauna spread across the country forming a major tourist attraction thus making Kenya a destination of choice for many tourists from all over the world.

The country falls into two regions; lowlands (coastal and Lake basin lowlands) and highlands extending on both sides of the Great Rift Valley. The country experiences tropical climate with the coastal lowlands enjoying high amounts of rainfall and temperatures throughout the year.

It is hot and humid at the lowlands, temperate in the inland and dry at the north and northeast. It has four seasons in a year; two rainy seasons and two dry seasons: short rains (March to April)

and long rains (July to October). The dry seasons are from May to June for the short dry season and from November to March for the long dry season.

1.1.2 Economy

Kenya is predominantly an agricultural dependent country with an infant service, industrial and manufacturing sectors. The agricultural sector contributed over 30% of the GDP immediately following independence until around the year 1980. However, the contribution of the agricultural sector, by 2002 had fallen to 25% of the GDP and continued to fall further to less than 23% by 2008 (KNBS 2009). The main agricultural exports are Tea, Coffee, and Horticultural products (flowers, fruits, and vegetables). The three commodities combined, accounted for almost half of the country's total export earnings in 2008 (KNBS 2009).

Table 1.1 Kenya's Economic Indicators 2009-2013

Variable	2009	2010	2011	2012	2013
GNI per capita, PPP (CI$)	1,950	2,030	2,110	2,180	2,250
Population (Total) (,000s)	39,825	40,909	42,028	43,178	44,354
GDP (CI$) (Millions)	30,716	32,440	34,313	40,264	44,101
GDP growth (annual %)	3	6	4	5	5
Horticultural exports ('000 tn)	-	228.3	216.2	205.7	213.8
Manufacturing output(Ksh Bn)	-	842.5	1,015.5	1,049.3	1,097.1
Tourism earnings(Ksh Mn)	-	73,700	97,890	96,020	93,970
Petroleum consumption('000tn)	-	3,765.7	3,857.9	3,638	3,707.9
Electricity consumption(GWh)	-	5,754.7	6,273.6	6,414.4	6,928.1
Life expectancy at birth, years	59	60	60	61	64

Source: World Development Indicators, World Bank, 2014.

Figure 1.3 Kenya's Economic Indicators (2009 – 2013)
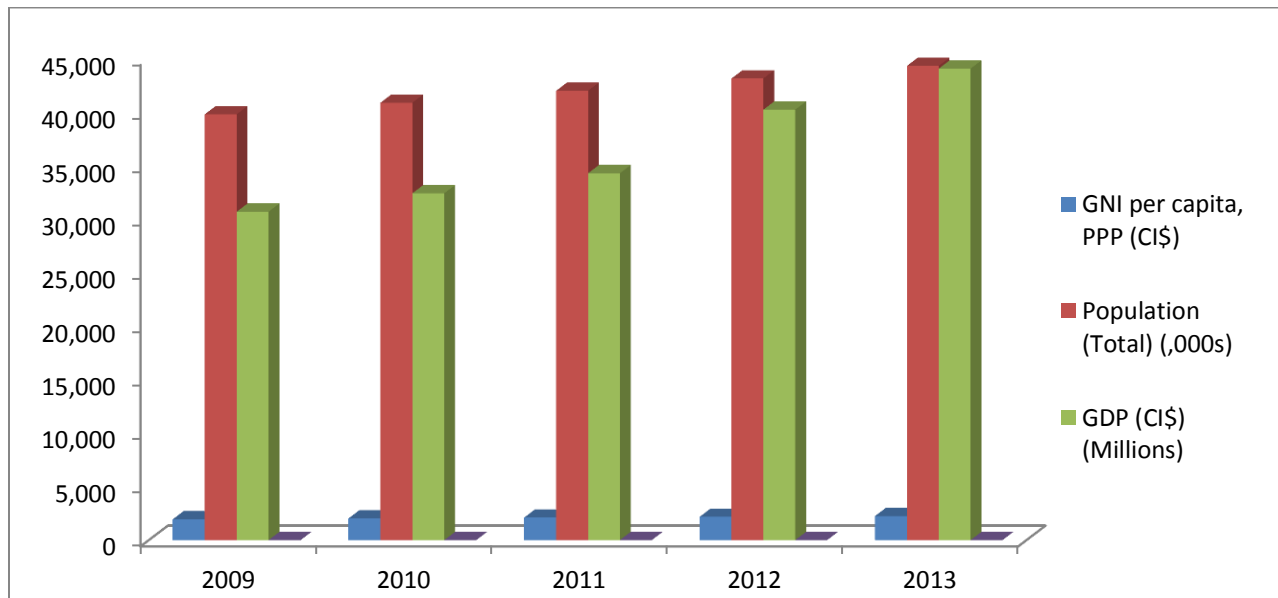
Source: Kenya National Bureau of Statistics, 2014

The economic performance of the country has been mixed. There was an initial rapid growth averaging 7% per annum in the first decade following independence, which was mainly due to expansion in the manufacturing sector, and improvement in agricultural production as a result of improved farming techniques and expanding marketing opportunities. However, the period following the initial rapid growth was characterized by a consistent decline in economic growth. The lowest recorded GDP growth of 0.2 % was recorded in the year 2000. This was attributed to poor governance, external economic instabilities, poor planning, and internal structural weaknesses within the government. This decline in economic growth resulted in deterioration in the living standards and of the Kenyan people. The economy was unable to adequately maximize on the skills and potential of its populace. In order to reverse this trend, the then newly elected Kenyan Government in 2003 came up with the Economic Recovery Strategy for Wealth and Employment Creation ((ERSWEC).

The main objectives of ERSWEC were investing in human capital, strengthening institutions of governance, restoring economic growth, in addition to restoring and expanding the infrastructure. As a result of robust measures put in place under the ERSWEC, there was marked improvement in governance and governing structures and the economy was jump-started and started growing again at a steady pace from a paltry 0.2% in 2002 to 2.8% in 2003, to 5.1% in 2004, 5.9% in 2005, 6.3% in 2006 and 7.1% in 2007. However, this trend could not be sustained for long due to both domestic and external factors. This included the global financial crisis, post-election violence in Kenya which led to a decline in economic growth. However, the economy is showing signs of recovery with expansion and diversification of the economy.

Figure 1.4 Kenya's Annual GDP Growth 2003 - 2013
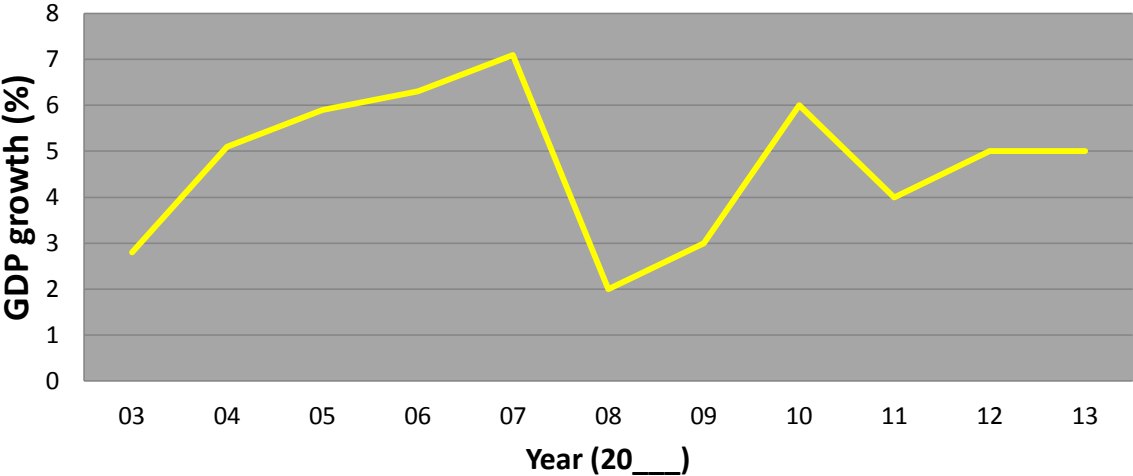
Source: *Kenya National Bureau of Statistics, 2014*

1.1.3 Demography

The demographic composition and structure of the population helps in the planning for current and future programs in the provision of services. The rates of change over time, gives an indication of the present status and help in forecasting for the future.

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1.1.3.1 Demographic Characteristics

Table 1.2 Demographic Characteristics

Indicator	1969	1979	1989	1999	2009
Population(millions)	10.9	16.2	23.2	28.7	39.4
Rate of change (%)	-	48.6	43.2	23.7	37.3
Density (pop/km^2)	19.0	27.0	37.0	49.0	67.7
Urban Population (%)	9.9	15.1	18.1	19.4	21.0
TFR	7.6	7.8	6.7	5.0	4.6
Crude birth rate	50.0	54.0	48.0	41.3	34.8
Crude death rate	17.0	14.0	11.0	11.7	
IMR (per 1000 births)	119	88	66	77.3	52.0
Life Expectancy at birth	50	54	60	56.6	54.1

Source: Kenya National Bureau of Statistics, 2011

The population of Kenya currently stands at slightly over 44 million people (World Bank, 2014). When compared to its population in 1969, which stood at 10.9 million people, it shows almost a four-fold increase in population over a span of 40 years. Previous national censuses indicated that Kenya's population growth rate was 2.9% for the period 1989-1999, a slight decline from the 3.4% reported for the preceding 1979-1989 inter-censal periods. Currently, the population growth was estimated in 2009, at 2.8% for the period 1999-2009 showing a marginal decline in the rate of growth, a near stagnation or leveling off.

The fertility levels have been declining from highs recorded in the 1970's of 8.1 births per woman to the current 4.6 births per woman national average and a marked reduction in urban

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fertility to as low as 2.9 births per woman (KDHS, 2009). The crude birth rate (CBR) has been on the decline from a high of 54 per 1,000 in 1979, reducing to 48 per 1,000 in 1989 and later to 34.8 per 1,000 by 2009 indicating overall change in fertility preferences and changing dynamics in population growth.

1.2 Health Policy and Healthcare in Kenya

1.2.1 Health Policy in Kenya

Health is widely accepted as a major determinant of economic advancement. Many countries have made it a priority and laid great emphasis on the provision of quality and accessible health care. Health enhances human capital development and contributes a great deal to the economic advancement of a country.

The GoK appreciates that good health is a necessity to socio-economic development. This is demonstrated by the emphasis it lays on improvement of health status of all Kenyans through policy formulations and national development plans. Kenya's health policy is designed to create an efficient and high quality health care system that is affordable, accessible, sustainable, and equitable. The Ministry of Health lays emphasis on the provision of integrated high quality, promotive, preventive, curative, and rehabilitative health care services.

Financing of public sector health services is generally heavily dependent on tax collection by the government to cater for recurrent expenditure while development partners finance a substantial portion of the development expenditure component. (IEA, 2008)

The Government of Kenya developed the Kenya Health Policy Framework (KHPF) in 1994 to act as the blueprint for the management and development of health services. It set out the agenda for the health sector and the long term strategic goals. The MOH established the Kenya Health Policy Framework Implementation Action Plan (KHPFIAP) and the Health Sector Reform Secretariat (HSRS) to be responsible for the operationalization and implementation of the KHPF.

As a follow up, the government developed the first National Health Sector Strategic Plan (NHSSP-I) in 1999 for the 5-year period 1999 – 2004, which incorporated views of various stakeholders in the health sector to improve the health status of the country.

There was an evaluation of NHSSP-I in 2004 by a team of independent consultants who noted the challenges and shortcomings of the program and its inability to make major breakthroughs in transforming the health sector in order to achieve the most significant health targets and indicators expected by the plan.

Following the NHSSP-I evaluation, in renewed efforts to transform and improve health care delivery, the MOH devised a new strategy to make it more effective, efficient and accessible to as many people as possible. The strategy was contained in the second National Health Sector Strategic Plan (NHSSP-II). This was to cover the next 5-year period from 2005 – 2010.

The National Health Sector Strategic Plan (NHSSP) is the Government's blue print in ensuring the quality of health care service is maintained, and improved. This policy framework lays more emphasis on the need to pursue the principles of Primary Health Care (PHC).

 The Primary Health Care (PHC) has the following goals

- To enhance the governments regulatory role in health care

- To manage population growth

- To increase cost effectiveness and efficiency in resource allocation and utilization

- To create an enabling environment for private sector and community involvement in health service provision and financing

- To increase and diversify financial flows to the health sector

- To ensure equitable resource allocation to adequately meet the people's health needs

Despite the a decline in the country's economic performance in the recent past, the cumulative impact and gains accruing from these measures and policies cannot go unnoticed as the basic health indicators have been improving steadily over time.

1.2.2 The Health Care System

The health sector in Kenya is comprised of the public health system through the MOH and the private sector through NGOs, missionaries, and private for-profit facilities.

Looking at ownership, management, and distribution of health facilities in the country, the Ministry of Health (MOH) is the major owner and manager of the health facilities in the country. There are about 7,000 health facilities in the country and the MOH runs 52 % of the facilities while the private sector, mission organizations, and Local Governments run the remaining 48%.

Health care services in Kenya are provided at a number of outlets namely health centers, sub-health centers, dispensaries, health clinics, maternity and nursing homes, medical centers and hospitals. The government controls about 79% of health centers, 92% of sub-health centers, and 60% of dispensaries. Health clinics, maternity and nursing homes and medical centers are predominantly run, and managed by Non-governmental organizations (NGOs) and private individuals and organizations for profit. The NGOs and private entities run approximately 94% of the health clinics, 90% of maternity and nursing homes, and around 86% of the medical centers (IEA, 2008). Both the government and the private sector have an almost equal control over the hospitals.

The public health delivery system is organized in a pyramidal structure with first level of care being provided at dispensaries, medical centers, and health clinics. These are majority in number, serving a smaller population per unit area and providing mainly ambulatory health services and preventive and curative services tailored to their local needs. They are followed at the second level by the health centers and sub-district hospitals, which have a relatively bigger scope in the

kind of services they can offer and are also well equipped. They have more and better trained members of staff and equipment for both diagnosis and treatment as compared to the lower level service providers. The third level of public health care provision is provided by the district hospitals and provincial general hospitals. These serve a wider population and are among the better equipped facilities dealing with a wide range of services including surgery and other specialized health services. They act as intermediaries between the national level and the local level. They oversee the implementation of the health policy at the local levels, maintain quality standards and coordinate health activities within their jurisdictions. There are only two national hospitals in the country, Moi Teaching and Referral Hospital (MTRH) in Eldoret, Western Kenya and the Kenyatta National Hospital (KNH) in the capital city, Nairobi. They form the apex at the last level of the healthcare delivery system and are generally for specialized diagnostic and rehabilitative services and handling referral cases. They not only serve patients from within the country but also from neighboring countries who come seeking specialized services at the facilities. Their equivalent private referral Hospitals are the Nairobi Hospital, the Aga Khan Hospital, the Mater Hospital and the Karen Hospital, which are all located in the capital city.

1.2.3 Health Facilities in Kenya

Table 1.5 shows the distribution of health facilities and hospital beds and cots per 100,000 populations from the year 2001 to 2004 and the most recent situation in 2014.

Table 1.3 Health Facilities in Kenya

Facility type	2001	2002	2003	2004	2014
Hospitals & Maternities	500	514	526	562	1,086
Health centers	611	634	649	691	1,227
Dispensaries	3,310	3,351	3,382	3,514	4,470
Total	**4,421**	**4,499**	**4,557**	**4,767**	**6,783**
Beds and Cots					
Number of beds and cots	58,080	60,657	65,851	65,971	-
Beds & cots per 100,000 population	18.9	19.2	19.5	18.1	-

Source: Ministry of Health, Kenya.

1.2.4 Registered Medical Personnel, 2010 – 2013

Figure 1.5 Registered Medical personnel

Source: Ministry of Health, Kenya.

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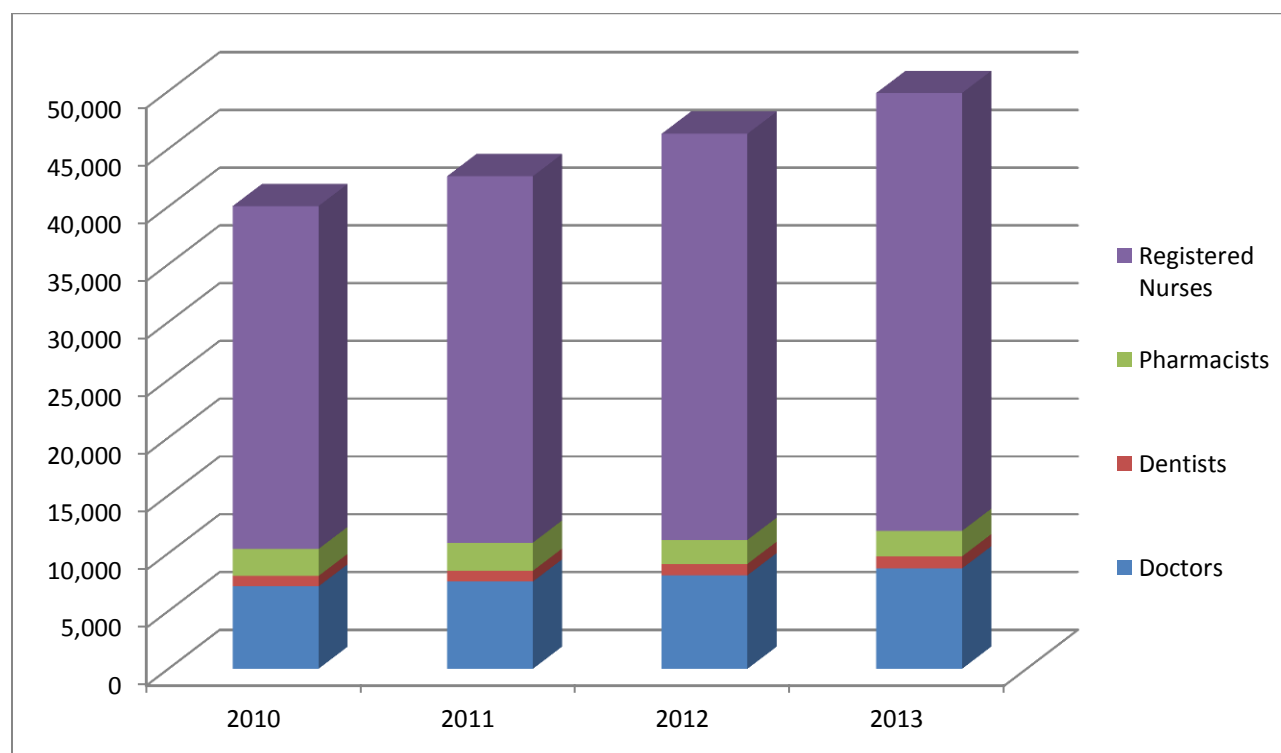
Table 1.4 Registered Healthcare Personnel per 100,000 population, 2010 – 2013

	2010	2011	2012	2013
Doctors	18	19	20	21
Dentists	2	2	2	3
Pharmacists	8	8	6	5
Bsc. Nursing	2	3	4	4
Registered Nurses	75	83	86	91
Enrolled Nurses	86	87	65	64

Source: Ministry of Health, Kenya

The healthcare workers ratio in Kenya falls below the recommended 230/100,000 population by the WHO but compares favorably to other countries in the region. The table below illustrates this

Table 1.5 Healthcare Personnel per 100,000 Population in Selected Countries

Country	Year	Doctors	Nurses	Total
Kenya	2003	15	128	**169**
Uganda	2004	8	73	**82**
Malawi	2004	2	26	**29**
Mozambique	2004	3	20	**34**
South Africa	2004	74	393	**468**
USA	2000	247	901	**1,147**
UK	1997	222	1,170	**1,552**
Japan	2002	206	910	**1,116**
WHO Minimum		**20**	**100**	**228**

Source: WHO, 2010

1.2.5 Health Indicators

Table 1.6 Health Indicators

Indicator	Value
Total population (2013)	44,353,691
Annual population growth rate (%)	2.9
Population proportion under 15 years (2012)	42.4
Population proportion over 60 years (2012)	4.3
Life expectancy at birth (years)	61.0
Crude birth rate (per 1,000) (2012)	35.5
Crude death rate (per 1,000) (2012)	8.6
Infant mortality rate (per 1,000 live births) (2012)	49
Under-5 mortality rate (per 1,000 live births) (2012)	73
Total fertility rate (per female) (2012)	4.46
Contraceptive prevalence rate (%) 2008	45.5

Source: WHO, 2014

1.2.6 Family Planning Policies and Programs

Making the decision freely and responsibly about the number, spacing, and timing of children is a basic human right (Tawiah, 2002). Family planning has been shown to decrease maternal and child mortality rates, empower women, reduce poverty and lessen stress on persons and political environments.

Kenya was among the first African countries to recognize the importance of Family Planning (FP) as a core element in economic and social development. While facing an annual population growth rate of 3 percent, the Government of Kenya (GoK) incorporated FP into the country's overall development policy in 1965, and initiated deliberate measures within the health care

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system, under the Ministry of Health to ensure the country's population growth was put under check. By mid 1980s, the efforts had started bearing fruit with decline in population growth.

The Kenya government adopted the National Reproductive Health Policy (NRHP), which provided a working and operational framework for reproductive health services within the country. Its main aim was guiding standardization, implementation, monitoring, and evaluation of reproductive health services provided by different providers. In the year 2000, GoK launched the National Population Policy for Sustainable Development (NPPSD) under the National Council for Population and Development (NCPD). This built on the already existing National Reproductive Health Policy and aimed to strengthen and guide its implementation to reflect the discussions and deliberations at the International Conference on Population and Development (ICPD) held in 1994 in Cairo, Egypt.

The policy provides a framework for equitable, efficient, and effective delivery of quality reproductive health services throughout the country targeting those who are more vulnerable and are at the greatest need of reproductive services. The policy emphasizes the priority actions for the attainment of the ICPD goals and the Millennium Development Goals (MDGs) of improving maternal health, reducing neonatal and child mortality, reducing the spread of HIV/AIDS and achieving women's empowerment and gender equality.

1.3 Health Care Financing

The health care sector is one of the most important sectors in the economic development of a country. It has a direct influence on almost all other sectors and therefore plays a critical role in the well-being of a country. It is important to understand how much resources are allocated to the health sector in order to predict how well health policies are to be implemented and health indicator targets and objectives are to be achieved.

Understanding the flow of resources from both public and private sources is essential for the efficient management and organization of the health care system. It is necessary to understand how funds flow through various agents and how different spending units utilize the funds.

The players in the RH and FP can be broadly categorized into four namely funding sources, financing agents, healthcare providers and the healthcare beneficiaries (APHRC, 2010)

It is worth noting that SRH and FP related policy formulation, resource allocation and planning agents in the government and other health sector stakeholders would greatly benefit from information relating to health sector financing, domestic and external resource allocation to various units and programs within the RH framework. This provides an avenue through which resource allocation can be examined against actual fund utilization and distribution within the various RH components.

1.3.1 Healthcare Financing Sources

Figure 1.6 Breakdown of Health Expenditure by Source of Finance
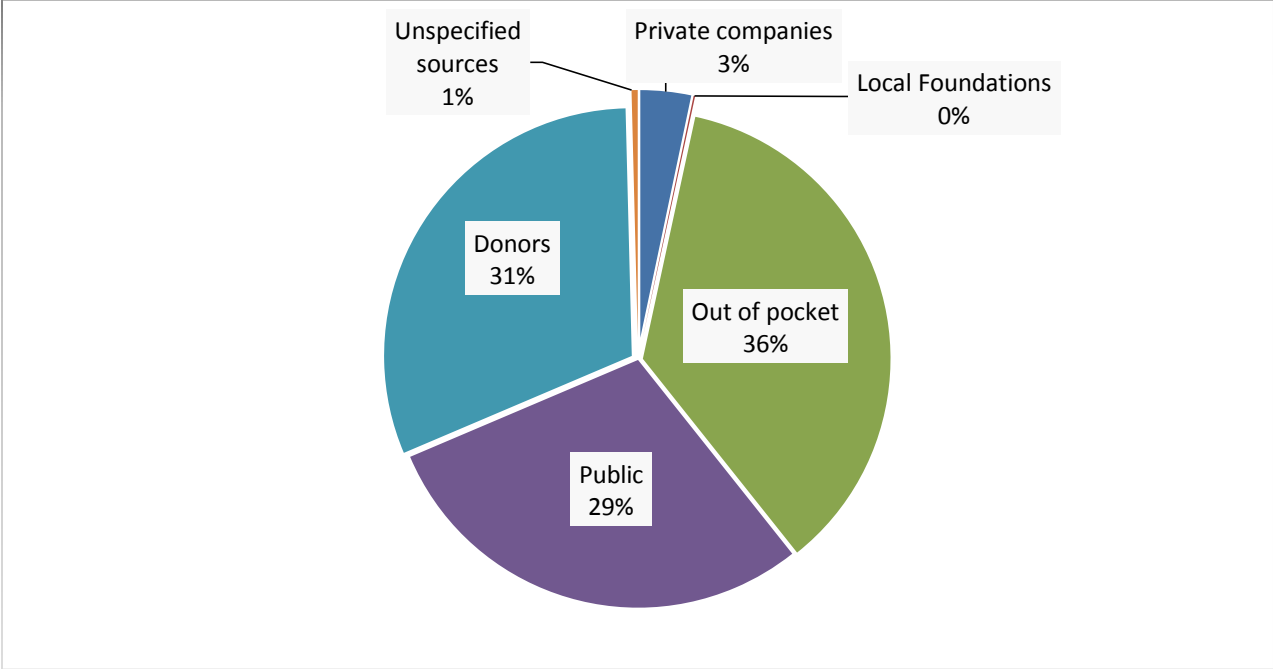
Source: GoK-HSA report, 2010

The health sector in Kenya is financed from three main sources; public (government), private (households) and donors. Households, through out of pocket payments, are the largest contributors of the health funds (35.9 percent), followed by government and foreign donors at around 30 percent each. Other sources include donations and charity from local sources.

1.3.2 Health Care Financing as a Component of the National Budget

The public expenditure review for the year 2007 indicated that the trend of the healthcare budgetary allocation was on the rise. The allocation increased from Kshs. 16.4 billion in the financial year 2003/2004, to Kshs. 34.4 billion in the year 2007/2008.

In terms of per capita expenditure, the health expenditure increased from Kshs. 481.97 in the financial year 2003/2004 to Kshs. 893.5 in the financial year 2005/2006, and Kshs. 1,120 in the financial year 2007/2008 (GoK financial estimate, 2008) .

The allocation to the health sector in the financial year 2007/2008 translated to 5% of the total government expenditure. This is way below the ERSWEC of 12% and the Abuja declaration, to which the Kenyan government, with other African countries committed to allocate 15% of their total public spending to the provision of quality and accessible health care to their population.

Table 1.7 Health Sector Financing 2003-2013 (Kshs. Millions)

Year	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2012/2013
Recurrent budget	15,438	15,952	20,209.70	21,610.70	22,745.00	53,527.4
Development budget	1,003	7,659	9,943.20	11,716.30	11,608.90	31,501.5
Total	**16,441.00**	**23,611.00**	**30,152.90**	**33,327.00**	**34,353.90**	**85,028.9**
As a percentage (%) of GoK Budget						
Recurrent	7.76	7.22	4.0	3.9	3.3	4.4
Development Budget	2.77	2.83	2.0	2.1	1.7	2.6
Total	**6.99**	**7.67**	**6.0**	**6.1**	**5.0**	**7.0**

Source; GoK estimate books, 2010 and Budget highlights 2013/2014

From table 1.10, it is evident that the development budget allocation gets lower with time. This may mean that there is less allocation for development programs and the necessary infrastructural development at health facilities may be lacking or inadequate. As a result, areas with shortage or inadequate health services may not have the required funds to improve their status, enhance the quality of their services and improve the condition of their facilities.

When looking at the health budget allocation vis-a-vis the social sector allocation, despite the increasing trend in the budget allocation to the health sector, the health budget as a whole is less than a quarter of the social sector allocation. This is despite the health sector being the crux of the social sector and the economy as a whole.

In the social sector, the health sub-sector in 2005/2006 financial year accounted for 21.7 % of the sector's budget, 22.5% in 2006/2007 and 20.4% in 2007/2008. This indicates that the GoK is not giving enough resources to the health sub-sector despite the role it plays in contributing to social and economic development.

This poses a challenge to the government's realization of various goals and targets as set out in the different development blue prints and the international commitment to the realization of the Millennium Development Goals (MDGs).

1.3.3 Health Budgeting by Levels of Expenditure

Looking at the health budget by levels of expenditure with regards to the main pillars of the GoK health policy of promotive, preventive, curative and rehabilitative services, the promotive and preventive health services budget show an increasing trend from 17.8% in 2005/2006 financial year to18.6% in 2006/2007 financial year to 21% in the 2007/2008 financial year. This may be as a result of the Poverty Reduction Strategy Paper (PRSP), which lays emphasis on the shift of focus from the provision of curative services to provision of preventive and promotive health services.

The major causes of morbidity and mortality in Kenya such as RTIs, and Malaria can be prevented. The prevalence rate of Malaria has been on the decline in recent years. The prevalence rate in 2003 was 36.5%, 34.5% in 2004, and 33% in 2005 but on the other hand, the prevalence rate of RTIs has risen slightly from 22.2% in 2003 to 24.7 in 2005.

However, the curative arm of the health care system continues to receive a huge proportion of the health budget with an average claim of 38% over the three- year- period (2003-2005). Out of the total health budget allocation, the referral hospitals' share still remain to be the single most beneficiary accounting for almost 20% of the health recurrent budget expenditure. KNH, which is one of the referral hospitals, received a budgetary allocation of 15.3% of the health recurrent budget in the financial year 2004/2005, 14.5% in the financial year 2005/2006 and 12.2% of the recurrent budget in the financial year 2006/2007.

Table 1.8 Health Budget by levels of expenditure 2005-2008 (Kshs. Million)

Level	05/06	% of MoH	06/07	% of MoH	07/08	% of MoH
General admin & planning	2,046.7	6.8	2,608.8	7.8	1,299.0	3.8
Curative services	11,497.3	38.1	12,257.6	36.8	13,485.4	39.3
Preventive & Promotive services	5,261.1	17.4	6,188.4	18.6	7,226.0	21.0
Rural health	5,380.0	17.8	5,476.1	16.4	5,247.8	15.3
Training &research	2,073.5	6.9	1,598.6	4.8	2,137.4	6.2
Medical supplies	322.0	1.1	355.2	1.1	585.6	1.7
KNH	2,858.0	9.5	4,058.0	12.2	3,516.8	10.2
MTRH	714.1	2.1	784.1	2.4	855.0	2.5
Totals	**30,152.7**	**100.0**	**33,326.8**	**100.0**	**34,353.9**	**100.0**

Source: IEA 2008 (GoK estimate books 2005/06, 2006/07, 2007/08)

1.3.4 Health Budget Allocation vs Actual Expenditure

The health budget absorption ability of the spending units has been an issue in the Kenyan health care system. The absorption capacity in the financial year 2005/2006 was 97.8% of the total health budget, which declined to 93% of the health budget allocation in financial year 2006/2007 (IEA 2008).

On closer inspection, the under-spending level is highest in the development component of the budget, earmarked for health infrastructural development and rehabilitation, financing of acquisition of health equipment and maintenance services for available equipment and facilities.

The inability to spend disbursed funds has variously been associated with lack of information on development resources available at the lower level of health care system, and the MoH disbursing only a fraction of the approved development budget. Poor planning and management reporting systems, and procurement difficulties have also been identified as bottlenecks in the successful utilization of allocated funds.

1.4 Research Problem Background

The study of contraception as a means of fertility regulation is a widely acknowledged and recognized element in population studies and has been the center of focus in the recent past. Several studies have been carried out in an attempt to achieve a clear and deeper understanding of the issues affecting fertility and factors that play a critical role in influencing fertility. Understanding contraceptives, their choice, use, trends in utilization and factors influencing their adoption and continued utilization from multiple dimensions provides insights which enable not only preparedness in fertility regulation but also adequate policy planning and policy formulation for both population control measures and economic advancement.

1.4.1 What is Contraception?

Contraception by definition is the practice of deliberately or intentionally taking measures, which can either be natural or artificial, aimed at preventing conception or delaying future conception (Blumenthal, 2011).

Contraceptive methods can be categorized into two broad categories of traditional methods and modern methods. Modern methods include the Long Acting Reversible Methods (LARM), Long Acting Permanent Methods (LAPM), and the Short Acting Methods (SAM) of contraception. These methods are classified based on their active duration on fertility regulation.

The modern contraceptives are either hormonal or non-hormonal and include the following methods: Oral contraceptives (OC), Intra-uterine devices (IUD), Intra-uterine systems (IUS), Female Sterilization, Vasectomy, Injections, Condoms, Implants, Spermicides, the Diaphragm among others. The Traditional methods include Withdrawal, Periodic Abstinence or Rhythm method, and the folk methods.

There are also a number of other practices which have been noted to have a direct impact on fertility and which have been used over time in population regulation. Most of these methods are widely used and have been noted to play a significant role in regulation of family size. They have been utilized more predominantly after child birth specifically for recuperation but to some extent, in other parts of the world, as the only method of contraception and thereby being relied upon to provide the benefits of regulated fertility to the populace by allowing them to limit their family sizes and space their children. Their effect of inhibiting fertility and consequently limiting the family size is widely acknowledged and appreciated as an important element in fertility regulation and are thus considered methods of fertility regulation.

1.4.2 The Need to Regulate Fertility

According to the UN World Population Prospects (2011), the world population is expected to be 10 billion in 2100. Starting from the middle of the last century, the world's population increased at a rate that was not only unprecedented but also unexpected. It increased from 2.5 billion to 7 billion between 1950 and 2011(UN, 2011).

A major contribution to these phenomena was the rapid increase in population across Asia, Latin America, and Africa. This was as a result of improved living conditions, increased access to quality healthcare, and rapid decline in morbidity and mortality in these developing countries. Whilst there was a continuous improvement in health care services and standards of living among the population, leading to a reduction in mortality, the birth rates were maintained at the initial levels, which were among the highest in the world. Many discussions have been held by world leaders in many different international fora in an attempt to address the situation. In some instances, the negative effect of population increase without accompanying corresponding increase in economic growth, has led to a loss of economic and social gains already achieved in these developing countries. The increase in population raises concern over future availability of resources and risk environmental degradation (Caldwell, 2010). It also leads to unhealthy competition for often scarce resources and low paying jobs, contributing to political instabilities (Cincotta et al., 2003). This has continued to pose an ever-increasing challenge to the governments and policy makers in mitigating the challenges they face. It has led, without a doubt, to a myriad of problems, which if not urgently addressed, would spiral into catastrophic and insurmountable magnitudes.

Several arguments have been fronted and considered. The most outstanding is whether radical policy intervention is necessary to check on the population growth and if so, whether it would effectively deal with the problem of population increase in developing countries.

1.4.3 Who is Most at Risk?

Many women in both low-income and high-income areas fail to use or have no access to contraception even though they want to practice family planning (Frost et al., 2007). According to the World Health Organization Guttmacher Institute (2007), two-thirds of unplanned pregnancies in low income countries occur to women who either have no access to contraceptives or have failed to use contraception.

Nearly one third of the world's population is between the ages of 10 and 24, with the majority being in the developing world (Creel and Perry, 2003). This poses an ever-growing problem because they are still young. As they grow and mature, they get more and more exposed to reproductive health risks such as sexually transmitted infections and pregnancy with the outcome being contracting infections and unintended pregnancy and childbirth.

Early sexual debut that has been observed in these areas, exposes the young men and women to a myriad of reproductive health issues, and at a tender age, when they are not only least prepared but also unable to effectively deal with the challenges they face. In the recent past, the incidence of teenage pregnancies and early-unintended motherhood has been observed to be on the rise in developing countries. The majority of the young men and women are neither economically empowered nor emotionally ready to deal with parental responsibilities. This has been noted to have a tremendous negative impact on population policies, the overall economic planning for the populations and the economic advancement of these regions' economies as a whole. Unplanned pregnancies disrupt a woman's life plans including education or professional ambitions, limit resources available to previously born children and jeopardize future financial security (Brown and Eisenberg, 1995).

Many countries, especially in the third world, are experiencing tremendous economic growth. The hitherto less populated and rural areas are changing into small towns and the small towns are

becoming cities with increasing populations and amenities (Nengomasha et al., 2004). In response to the economic advancement and the lure of increased opportunities, people migrate to areas that are more developed and with better living and working conditions. The urban experiences, according to Shapumba et al., (2004), exposes young people to higher sexual risks as a result of breakdown in family ties, change in social values, and traditional customs.

Sexually active women, irrespective of their age, need access to quality reproductive health services. In order to be able to live a happy and fulfilling sex live, devoid of the challenges of unwanted pregnancies, they must have access to quality family planning services. Khan& Rahman (1997) and Karim et al. (2003) argued that women also need encouragement and support not only from peers and family but also from the media in order to have motivation to use contraception more effectively and consistently, in addition to having access to the family planning services.

1.4.4 Global Response to Reproductive Health Challenges and Population Growth

A number of national and international workshops, seminars, and conferences have been held over time to highlight numerous sexual health challenges and reproductive health issues across the globe. They have attempted to address both existent and emergent issues mainly afflicting women of various age groups and tried to come up with programs and strategies that could address the issues identified. This is in cognizant of the fact that arming and empowering women with good health, adequate information and knowledge of reproductive health issues paves way to responsible and planned parent-hood and provides them the all-important opportunity and chance to make responsible life decisions (Tawiah, 2002)

In the last couple of years, partly due to the HIV/AIDS pandemic, there has been a great focus world-wide on reproductive health as a whole. Many international fora have been held in an attempt to address reproductive health challenges. Examples include the 1994 International

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Conference on Population and Development (ICPD) held in Cairo Egypt, The African Forum on Adolescent Reproductive Health held in Addis Ababa in 1997, and the World Youth Forum held at The Hague towards the end of the last century.

They were mainly concerned with specifically trying to address sexual and reproductive issues faced by women as a whole and young people in particular. Some of their recommendations included provision of reproductive health services within the primary health care (PHC) context. This laid emphasis on including, within the PHC framework, Family Planning counseling, provision of information, education and communication (IEC) on reproductive health, provision of reproductive and sexual health services like sex education, prevention of HIV/ AIDS and other STIs and prevention of unwanted pregnancies to at risk populations (ARP).

Governments were advised to actively engage communities in reproductive healthcare services to ensure access to reproductive health services. This was partly to be realized through reproductive health service decentralization and forming partnerships with Non-Governmental Organizations (NGOs) and private health care providers in order to effectively improve access to reproductive health services and deal with the challenges posed by population growth (UN, 1994)

1.4.5 The Changing Dynamics in Sexuality and Reproductive Health

A number of studies on sexual behaviors have reported a high level of sexual activity among younger women and have indicated a change in contexts of when, where and how the first sexual experiences take place as compared to those of the previous generations (Tawiah, 2002). A number of factors that have been identified, and seen as the main drive in these observations, include education, urbanization, and exposure to various media and foreign ideologies that lead to a significant decline in traditionally upheld values and value systems (Kinsman et al., 2000). However, it is worth noting that media, in the form of educational programs and entertainment,

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can be very effective in transmitting health behavior messages in a palatable, culturally sensitive, appropriate and acceptable manner to a wider population (Masatu et al., 2003)

Sexually active fecund women are at a high risk of pregnancy if they do not use contraception, if they use ineffective methods or if they use contraceptives incorrectly and inconsistently (Ross et al., 2003). Hormonal contraceptives are among the most reliable and effective methods of contraception that have been used by women for a long time. However, some of them, especially the short acting methods, i.e. Pills, and Condoms have been shown to have high rates of discontinuation as compared to LAPM (Pachauri & Santhya, 2003).

In order to improve and encourage the use of contraception, it is important for programs, service delivery, and policy makers to understand how different factors influence and motivate women to delay, postpone child bearing or avoid unintended pregnancy (Ross et al. 2011)

According to Magadi & Curtis (2003), the increase in the choice of contraceptive methods increases the overall contraceptive prevalence. They argue that the provision of a variety of methods to people in need of contraceptive services makes it possible, by increasing the chances, for individuals to find a method that best suits their needs and one that they feel comfortable using. This usually follows an informed decision making process and not because of lack of a better method, or limited choice and/or lack of information. Ross et al. (2001) showed that contraceptive prevalence is highest where the access to a wide range of contraceptive methods is uniformly high and does not vary significantly between urban and rural areas.

It has also been demonstrated, in other studies, that there is a significant role played by individual's and community's influence on the motivation, adoption, and utilization of contraceptives. This therefore underscores the need to have an all-inclusive approach in the quest to promote the regulation of fertility, improvement in women's reproductive health, in addition to their empowerment both socially and economically.

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1.4.6 How Does Demographic Transition Influence Fertility Regulation?

Demographic transition, a demographic model developed by the American demographer, Warren Thompson, has been used over time to help understand the transformations which populations go through as they change over time from high birth rates to low birth rates. The model has four stages. A majority of the developed countries have completed the transition or are almost completing (are in stage 3 or 4 of the model) whereas majority of the developing countries have just begun and have either reached stage 2 or 3, with a few exceptions which are still in stage 1 or pre-transitional stage.

Stage 1 of the model, is characterized by a balance between high fertility rates and high mortality rates. The approximate balance leads to a very slow population growth, often referred to as the "high stationary stage". The majority of the population is young (5-10 years), probably as a result of high rates of fertility as a natural response to the high mortality rates.

In Stage 2, death rates drop rapidly but without a corresponding fall in birth rate. Sometimes, there is increase in birth rates leading to a large increase in population, "population explosion" but not necessarily due to increase in fertility, but rather due to a decline in deaths. There is a corresponding change in population structure with a majority being more youthful.

In stage 3 there is not only low birth rate, but also low death rate as a result of which the population growth begins to level off and become more stable. At some point towards the end of Stage 3, fertility rates falls to replacement levels but the population growth continues due to the population momentum earlier developed.

In stage 4, there are both low birth rates and low death rates but birth rate may drop to below replacement level leading to a shrinking population, a phenomenon already being experienced in most developed countries characterized by an aged population and a below natural replacement rate leading to an overall population decline.

Figure 1.7 The Demographic Transition Model by Warren Thompson

THE DEMOGRAPHIC TRANSITION MODEL
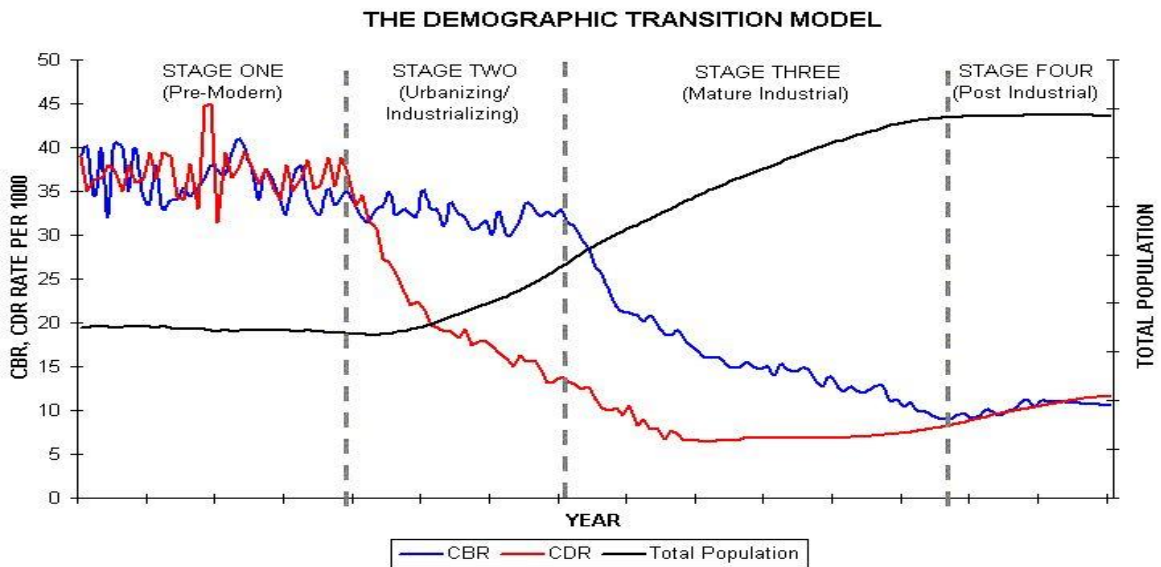
Source: Adapted from World Population Studies, 2008

Figure 1.8 The World Population Growth

HIGHLIGHTS IN WORLD POPULATION GROWTH

1 billion in 1804	3 billion in 1960 (33 years later)	5 billion in 1987 (13 years later)
2 billion in 1927 (123 years later)	4 billion in 1974 (14 years later)	6 billion in 1999 (12 years later)

Source: Adapted from World Population Studies, 2008

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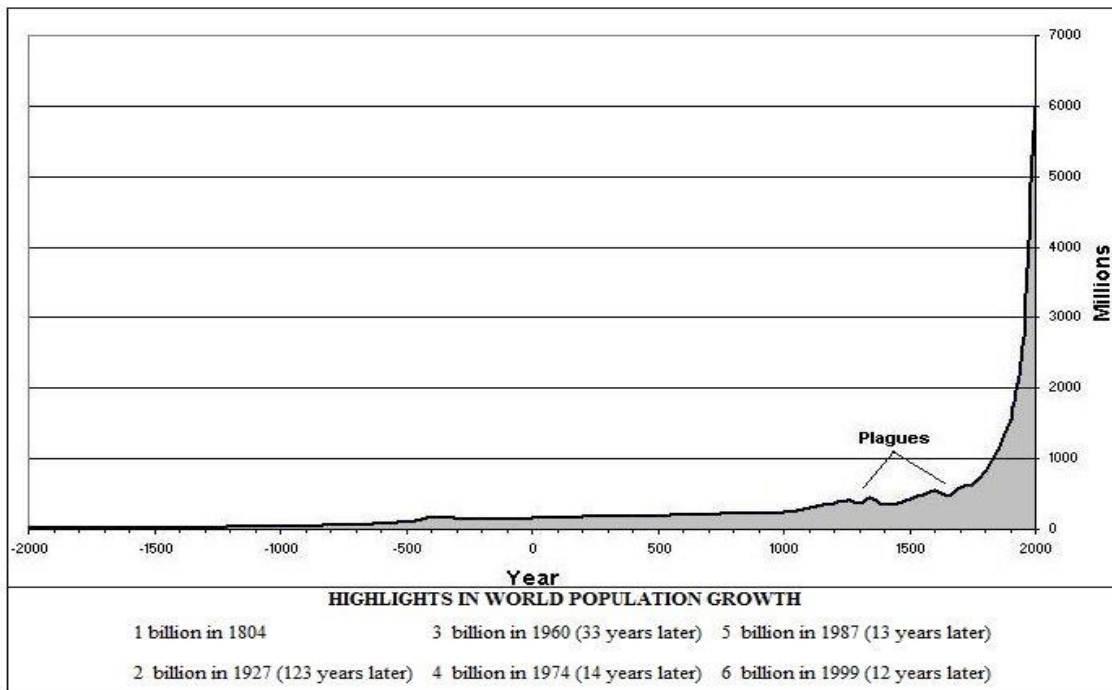
Fertility transition, that is, fertility decline usually towards the natural replacement level, as documented, first occurred in Western Europe from mid-19th century to mid-20th century before spreading to Southern and Eastern Europe then later spreading to other parts of the world including Asia and Latin America. In the recent past, fertility rates have been shown to be declining in most of the developing regions including parts of Sub-Saharan Africa.

Table 1.9 The Total Fertility Rates in Selected SSA Countries

Country	Year	TFR
Uganda	2006	6.7
Rwanda	2005	6.1
Malawi	2004	6.0
Tanzania	2004	5.7
Madagascar	2004	5.2
Kenya	2008	4.6
Namibia	2000	4.2
Lesotho	2004	3.5
South Africa	2003	2.3

Source: Uganda Demographic and Health Survey, 2006

From the table above, Uganda has one of the highest fertility rates in East and Southern Africa while South Africa has one of the lowest fertility rates in both East and southern Africa. Kenya on the other hand has a fertility rate that is moderate as compared to the other countries in the same region.

According to Bongaarts (2008), as a country passes through the demographic transition, four proximate determinants of fertility account for most of the differences between natural fertility and observed fertility. They include marriage patterns, changes in rates of induced abortion, changes in postpartum infecundity, and the use of family planning to space or limit births. The use of family planning with emphasis on LAPM is going to be explored in this study in an attempt to get a deeper understanding on the fertility regulation dynamics in Kenya.

In order to understand this transition phenomenon in Kenya, an examination of the dynamics, and factors at play, which contribute to these observations across the sub-groups and the inherent similarities and differences within and between the sub-groups when examined will give a clear understanding on the observed phenomena and how it affects or is affected by fertility regulation.

1.5 Significance of the Study

Contraceptive use has increased worldwide over the last decade. However, less than one in every seven Sub-Saharan African woman (14%) use any modern method of contraception (Population Reference Bureau, 2006). Approximately 25 percent of women and couples in sub-Saharan Africa who want to space or limit their births are not using any form of contraception and are said to have an unmet need of FP (Mansour, 2008). Furthermore, women in sub-Saharan Africa face a 1 in 16-lifetime risk of maternal mortality and an even greater risk of maternal morbidity due to poor health conditions and less than adequate health care services available to people in this region.

Unintended pregnancy is a common outcome for more than 200 million women worldwide, wanting to stop having children or delay their next pregnancy but are not using an effective method of contraception. It's also a primary factor in the 46 million unintended pregnancies that occur each year globally, of which more than half result in abortion. Nearly one half of all the abortions performed are unsafe (Singh, 2010).

Figure 1.9 Pregnancy Planning and Outcome in the Developing World
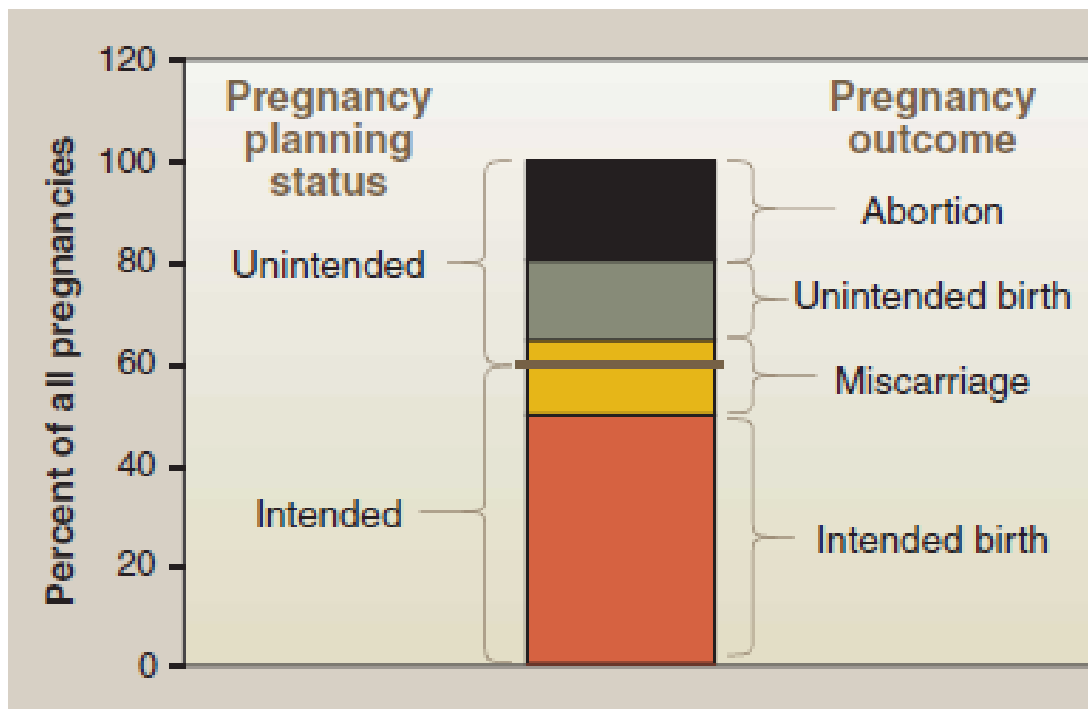
Source: Adapted from Population Policy in Developing World, 2008

From early 1990, a number of studies documented evidence of fertility decline especially in the developing world including sub Saharan Africa. Most of the countries had started experiencing decline in their fertility rates following the inception of deliberate measures to regulate fertility (Caldwell, 2003).

However, concerns have emerged in the recent past about the rates of decline of fertility with evidence pointing to stagnation or stalling of the decline in some countries, which had hitherto experienced marked decline in fertility rates. An analysis of fertility trends in countries with multiple data sets in Africa (Bongaarts 2006, 2008; Shapiro & Gebreselassie 2008) identified about 15 countries experiencing a stall in fertility decline. Some of the countries are at an early stage of transition e.g. Tanzania, Mozambique, Rwanda and Guinea whereas others are at pre-transition levels e.g. Mali, Niger and Uganda (Shapiro & Gebreselassie 2008).

The loss in momentum of fertility decline has potential implications for the region's development both economically and socially. This has led to the questioning of voluntary family planning as the main policy instrument targeted at addressing the high fertility rates and population growth. Although the decline has been observed and attempts made to explain the decline, there has been little consensus on the main cause of the decline in momentum.

Several factors have been proposed including loss of focus on family planning programmes to other emerging health issues such as HIV/AIDS (Agyei-Mensah 2007), changes in determinants of fertility (Bongaarts 2000, 2006), changes in attitudes to family planning, contraceptive prevalence rates, and socio-economic development (Westoff & Cross 2006; Shapiro & Gebreselassie 2008).

However, there is very little information on the contributions of members of sub-groups within the population and whether the fertility decline observed is evident across all the sub-groups and how fertility varies among them. This study aims to clarify the contributions of LAPM contraceptives to fertility decline in comparison with the other determinants of fertility while highlighting the patterns, commonalities, and contributions of subgroups to the overall observations in the populations.

There has also been concern over high maternal mortality rate (MMR) in SSA in the recent past. Despite the launch of safe motherhood initiatives and prevention of maternal mortality programs in several countries, the maternal mortality has continued to rise (Etuk, 2003). Some countries in SSA have the highest MMR in the world.

It was reported that 1 in 13 women in Nigeria die annually from pregnancy related causes (Umoiyoho et al., 2005). Several reports have associated unwanted pregnancies, high fertility rates, and high parity with high MMR (Chukudebelu, 1988).

Contraception, when adopted and used by majority of women has been shown to reduce unwanted pregnancies, lower parity and consequently reduce MMR (Harrison, 1997).

In the last half century, family planning programs have been used as the main instrument in checking population growth in developing and developed countries. However, the levels of unwanted child bearing caused by unsatisfied demand for contraception have not been adequately mitigated (Casterline, 2000). Each year, about 184 million pregnancies occur in the developing world, and 40 percent of these, (74 Million) are unintended because they occur when women want to avoid or delay the pregnancy. These unintended pregnancies end up in abortions (48 %), unintended births (40 %) or miscarriages (12 %) with detrimental health and economic effects for the many women, their families and also the economy as a whole (Singh, 2010).

Unintended pregnancy remains high in most of Africa and more so in Kenya. In a study of eight sub-Saharan African countries, Kenya recorded the highest proportion of unintended pregnancies (Adetunji, 1998). In the KDHS (2003), almost 50% of unmarried women aged 15-19 and 45% of married women reported their current pregnancies as either unwanted or mistimed. Some of this unintended pregnancies end up in unsafe termination which contributes to the high mortality rates experienced in Kenya currently at 488 deaths per 100,000 live births (UNFPA 2013).

The LAPM contraceptives have been shown to be among the safest and most effective forms of contraception. A wide range of users can use them as they have few contra-indications, fewer side effects, and long service life. They are particularly suitable for women in developing countries as they are affordable, convenient to use, do not require re-supply visits, require little or no action at all on the part of the user and are very cost effective to both the user and the service provider (FHI, 2000).

1.6 Objectives of the Study

1.6.1 Main Objective

To determine the users of LAPM in Kenya, if they have unique defining characteristics, find out factors that promote or hinder the adoption of LAPM and examine the level of government's commitment to the provision of family planning services in Kenya.

1.6.2 Specific Objectives

1. To find out the methods of contraception available in Kenya

2. To identify determinants of method choice and continued utilization among women and how they influence decision making in method choice

3. To examine the role of Family Planning programs and the role played by different agents in the provision of reproductive health services

4. To find out the role of population policy, government support and involvement in family planning and what effects it has on fertility and contraceptive use

1.7 Research Questions

1. What contraceptive methods are available in Kenya and who are the users?

2. What factors influence LAPM contraceptive use?

3. Does availability and accessibility of contraceptives influence method choice?

4. Are there social, political, cultural, behavioral, and economical barriers to the use of LAPM?

1.8 Limitations and Constraints of the Study

The study used data collected using quantitative research design. This design has the main disadvantage of being highly structured and respondents have to adapt their responses to previously determined sets of alternatives (Folch-Lyon & Trost, 1981). A method that is based on previously set criteria rarely gets in-depth information on sensitive and intimate issues. The responses usually reflect attitudes on a rational and normative level while more emotional, intimate and sensitive information may not be captured or adequately presented. Quantitative research is also prone to erroneous information especially on sensitive issues and subjects may respond with less than factual information or underreport negative attitudes for fear of social disapproval (Brannen, 1995).

Qualitative research has been used over time to delve into issues involving sensitive or emotional issues on behavior and attitudes. This helps to get a deeper understanding on how and why different observations are made and be able to better understand how various issues affect the whole observation or item of interest.

Focus Group Discussion (FGD) is one of the most commonly used method in the qualitative research design. This affords respondents the opportunity to voice their opinions on behavior and attitudes that they would not be able to disclose on the quantitative design. It also gives them an opportunity to voice their opinions in the company of people who share similar opinions or divergent opinions on a similar matter, and thus may be able to explain and argue for or against a particular opinion.

According to Folch-Lyon (1981), FGDs are more rigorous in the depth of inquiry but not as rigorous in sample selection as in quantitative studies. Their main aim is "the quality" of response as opposed to "magnitude" of observed effect. He says that in addition to explaining

things, it's important to understand beliefs, concepts and meanings behind responses and understand how decisions are arrived at.

Another issue of concern is that quantitative data reported retrospectively, is subject to various types of errors. Some of the errors mostly associated with this kind of survey, where respondents are required to provide responses to questions concerning past events, include recall errors due to memory lapse, age misreporting for social reasons, and both deliberate and accidental event omission.

However, in studies with more emphasis on measuring magnitude of a particular phenomenon or where there are few observations in the population or the items of interest are not wide spread in the population, quantitative research design is superior, in that a huge number of samples can be analyzed with findings being able to be generalized to the whole population.

1.9 Thesis Organization

The thesis is presented in six chapters. Each chapter is divided into different sections and sub-sections covering different areas of interest within each chapter.

Chapter one introduces the research problem and provides background information on Kenya. It presents Kenya's background information on geography, economy, socio-political, health, and health care provision. It outlines the purpose of the study, the objectives to be met in the study and presents the research questions which would help meet the objectives of the study.

Chapter two presents the literature reviewed and discusses the theoretical and conceptual framework for the formulation of objectives, research questions, and data sources. It delves into the analysis options for the role of LAPM in the regulation of fertility and identifies parameters within which the measurements for the study will be held in order to adequately address the research questions and fulfil the study purpose.

Chapter three presents the study method to help achieve the study objectives. It discusses the study design, the data sources, the sampling process and the quality and reliability of the data used. It also presents the operationalization of variables and the data analysis process.

Chapter four presents the findings of the study. The variables and data of interest that provides answers to the research questions and helps meet the study objectives are presented. The data is presented in various forms including tables and figures and discussed along as they are presented.

Chapter five addresses the discussions of the study from the findings and helps shed more light on how well the study objectives were met. It attempts to explain the links between various factors and how they affect the utilization and provision of LAPM in Kenya.

The last chapter, *chapter six*, discusses the lessons learned and the implications of the findings for policy formulation. It also presents recommendations for the various agencies providing sexual and reproductive health services in Kenya and the world at large.

CHAPTER 2

CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 Introduction

This chapter introduces the literature reviewed to give an understanding of the problem, and how it has previously been addressed. It lays down the theoretical framework which the study is based on, and which will guide the collection, collation, analysis, interpretation, and discussion of the study findings and enable the presentation of the results and recommendations in a concise but detailed manner. Much emphasis has been laid on contraceptive use as a whole and the utilization of health facilities. From the literature reviewed, it has been demonstrated that in developing countries, health facilities play an important and central role in the provision of contraceptives and reproductive health services. Most reproductive health services are offered by governments through the Ministries of Health in the public health care systems. Contraceptive utilization, role in fertility regulation and its evolution is the main issue addressed with more emphasis laid on the long acting reversible and permanent methods of contraception, LAPM.

2.2 Conceptual and Theoretical Framework

The main driving force for the championing of inception of contraceptive use in the early 20th Century was the desire to control population growth. This was necessitated by the high fertility rates being experienced at the time, and the need to emancipate, empower, and liberate women from social and health consequences occasioned by unwanted pregnancies and many births during their reproductive years.

As time went by, its role expanded and contraceptive use was seen as a means to alleviate or reduce pressure of high population growth on social and economic development and empowering and enhancing women's health and welfare, especially in developing countries,.

The theoretical framework used in this study is an integration of two fertility regulation models: Davis and Blake; Intermediate Determinants Framework and Bulatao and Lee's Fertility Decision Making Model.

Davis and Blake postulated that reproduction involves three cardinal sequential steps: Intercourse, Conception, and Completion of Gestation while the fertility decision-making model by Bulatao and Lee theorizes that as a society transforms and modernizes, there are changes that occur within it. This includes changes in family structure, perception and decision-making processes.

The two models blend well in a cyclical manner because decisions made have a direct influence on intermediate variables that in turn determines the choices made. The effect of the choices made on the desired outcome has a direct effect in future decision-making. These decisions are made within an environment that is influenced by social, economic, and cultural factors.

According to Davis and Blake (1956), there are three elements involved in the decision making process. These are knowledge, motivation, and assessment of fertility regulation. Knowledge entails being aware of ways of influencing reproductive patterns, access and availability of methods of fertility regulation and the translation of the perceptions on access to actual utilization of fertility regulation measures. The second element in decision-making process is motivation. Motivation determines whether a person will adopt a method of fertility regulation and is based on the perceived benefits that are to be achieved following the adoption of the method. However, it has been noted that motivation is a factor of environment and is influenced by a number of factors either directly or indirectly.

These factors range from social, economic, cultural, and familial and need to be taken into consideration when assessing motivation. The last element is assessment, which entails the proportionate weighting of the real and perceived seriousness of the consequences of unplanned

parenthood. This plays a critical role in determining whether a person will take deliberate measures to limit their family size.

According to Bulatao and Lee's model, perceptions by an individual on the seriousness of an outcome, perceptions on benefits to be obtained and perceptions on barriers limiting access and utilization of a service have a huge influence on the adoption of specific preventative measures. However, the model focuses entirely on what happens at the individual level and falls short of examining factors operating beyond an individual and the role of the environment especially the community, government policies and health system characteristics in influencing the decision making process.

The factors identified in the two models can be categorized into demographic factors, socio-economic factors, cultural factors, and health experiences. Demographic factors that influence the use of health service are age, parity, employment status, and educational level (Magadi et.al. 2000). Socio-economic factors include residence, household living conditions, and income. According to Obermeyer and Potter (1991), socio economic factors have greater importance than demographic factors in influencing the use of health services.

Both demographic and socio-economic factors operate within an environment that is culturally defined and thereby dictating the health seeking behavior by shaping the individual's perception on health and health care services (Stephenson & Tsui, 2002). The beliefs and norms of the community on health seeking behavior are reflected on the individual's decisions that are based, and influenced by how the community views their actions or inaction (Rutenberg & Watkins, 1997). According to Kriegar et.al, (1993) the level of a community's economic development can directly influence health by the association between poverty, deprivation and poor health and indirectly through health care service access and the available social support systems and resources within the community. This has further been supported by many other studies among

them are studies by Hague & Faizunna (2003) and Hock-Long et al. (2003), which came up with similar observations.

According to Bender & Kosunen (2005), parents and peers play a critical role in influencing young women to adopt and use family planning services. Contraceptive use beliefs and attitudes greatly influence intention and behavior of young people towards adoption of a particular method of contraception, (Bongaarts & Johansson, 2000). Having control over their reproductive health coupled with parental support and increased access to quality sexual and reproductive health services, leads to increased use of contraception among young women.

The model used in this study underscores the fundamental role played by contraceptive use as a determinant of fertility and takes into consideration factors, both on the demand and supply side, which affect contraceptive use and fertility as a whole. It appreciates that individual background characteristics, both intrinsic and extrinsic, affect fertility preference.

2.3 Conceptual Framework for Contraceptive Method Choice and Use

The schematic presentation examines the interaction of various factors in influencing choice and use of contraceptives. The relative roles of social, individual, environmental, and FP program factors in influencing decision-making are explored, and their relationships with each other probed. These factors are considered determinants of contraceptive choice and use. They are divided into demand and supply factors. Demand factors are classified into three; demand generating factors, direct demand factors and demand sustaining factors.

The demand generating factors include demographic characteristics of the individual like their age, number of children, their socio-economic status, their norms and beliefs and health seeking behaviors in addition to their previous experiences with health care services.

The direct demand factors are made of the individual's desire to delay childbirth if they have not yet started bearing children, limiting their number of children if they have already achieved their

desired family size, desire to space their births and also unmet need of contraception due to personal preferences or lack of ideal contraceptive methods to match individual's needs.

Figure 2.1 Conceptual Framework

- *Demographic factors*
- *Socio-economic factors*
- *Beliefs and norms*
- *Previous health care experiences*

- *Desire to delay births*
- *Desire to limit number of children*
- *Unmet FP need*
- *Desire to space births*

Demand generating factors

Direct demand factors

Decision making

Demand sustaining factors

Supply factors

- *FP service interaction*
- *User environment*
- *Family and spouse support*
- *Peer interaction*

- *FP accessibility*
- *FP Availablity*
- *Contraceptives supply security*

Source: Author

The supply factors are FP program service related and include access in terms of cost, location, and quality. FP method availability is important in influencing choice as well as availability of different contraceptive methods in order to cater for a wide range of needs and increase the chances of method satisfaction by different users. Steady contraceptive product supply is

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essential to increase uptake since it avoids inconveniences of changing methods mid-way. Supply factors also include program specific activities that seek to enhance product accessibility, improving access to information on FP service benefits and availability and providing the information in an environment that is conducive and manner acceptable to FP users.

The demand sustaining factors operate beyond the individual and include FP service interaction, peer interaction, familial and spousal support, and the environment where the individual operates. The environment has a direct correlation with the culture and societal perceptions of use of FP services. The person's and communal prior interaction and perceptions about the availability, access and quality of the reproductive health service helps to either promote or hinder the decision making process in choosing to either to use or not to use contraception.

All these factors operate within the individual and FP user's environment and constitute knowledge, motivation and assessment as postulated by Davis and Blake and the decision making which is ongoing in the individual and their interaction with their environment as put forward by Bulatao and Lee with both the supply and demand factors playing a significant role.

2.4 Previous Research on Population Growth and Contraceptive Use

In Cairo (Egypt) in 1994, 180 countries met at the International Conference on Population and Development (ICPD) in an attempt to address major issues affecting mankind. These were; poverty, development, environment, status of women, public health and others. They tried to explore linkages that existed between population, sustained economic growth and sustainable development with population growth and its structure. At the time, the world population was 5.63 billion with an annual increase of almost 90 million people and a world population projection of between 7.92 billion and 11.5 billion by the year 2050.

While it had taken 123 years for the world's population to increase from 1 billion to 2 billion, successive increments of 1 billion people took 33 years, 14 years, 13 years and 11 years (UN

1994). This shows the net reduction in the duration taken to increase the population by 1 billion people. Out of this population, it was noted with concern that almost 80% were living in the least developed regions of the world and if nothing was done, the situation was to deteriorate further.

It was argued that it was unacceptable to let nature regulate the demographic composition but rather deliberate measures had to be put in place in order to control population increase and come up with better ways of combining development and population. The deliberations at the conference led to a unanimous agreement to the adoption of programmes of action with the major goal being improving reproductive health and making family planning services universally available in all the countries represented.

Population growth varies greatly within regions and even among countries within same region. The more developed regions i.e. Australia, New Zealand, Japan, Europe and North America which collectively have a population of around 1.19 billion have an average annual population growth rate of 0.3 percent while the less developed regions population estimated at around 4.6 billion people have an average annual population growth of 1.6 percent (UNFPA, 2010).

There are also great variations within the regions and an example is Africa, with its high fertility rate of about 2.4 percent but ranges from 1.6 percent in Southern Africa, 2.0 percent in Northern Africa, 2.5 percent in Western Africa and 2.7 percent in Central Africa (UNFPA, 2006)

Sub-Saharan Africa had an annual population growth rate of 2.5% in 1960 which increased to 3.0% by 1983 with an average total fertility rate of 6.7 children per woman (John, 2007). The population estimate for the region in 1990 was 527 million with a growth rate of 3.2% (Greenbalgh et al., 1992). The population was estimated to be over 906 million in 2005 and was expected to hit 1.1 billion by 2010 and to be 1.5 billion by the year 2050 (UNFPA, 2006) if the trend that had been observed were to continue. Sub-Saharan Africa has one of the highest

fertility rates in the world with a majority of the population being young; over 40% of the population are under the age of 15 (UNFPA, 2006).

It is known, from various studies and demographic history that levels of socio-economic development have great influence on fertility change and population growth is generally fastest in poorest countries with poor socioeconomic conditions and poor health infrastructure (Singh and Casterline 1997, UN 1987).

Some areas of great interest relating to population, development and environmental issues in the world have been when and how fertility in the developing world would decline and the effective measures that could be put in place to ensure fertility regulation

One of the key areas identified is reproductive health. There is an agreement that reproductive health is not only a major health issue but also a development and human rights issue.

Its impact is not limited to an individual, family, community or society but extends across national and geographical boundaries to the entire world. A major area in reproductive health that has been identified with a significant impact in the society and the world at large is the regulation and control of fertility.

Inability of individuals, particularly women in developing countries to control and regulate their fertility not only affects the health of the people immediately concerned but has great implications for global stability and maintenance of balance between people and the environment. Failure to regulate fertility by its own nature constitutes a problem that not only continues to exist but also multiplies. Any unwanted birth that could be averted by fertility regulation results in future generations of new births.

The need to reduce population growth rate has been identified as a necessary measure for checking against the threats posed by increased population on global peace and stability. The high fertility rates observed especially in Sub-Saharan Africa led to substantial research being

carried out, policies being formulated and actions taken in order to identify and address various factors that served or helped to maintain fertility at high levels in the region (Shapiro & Gebreselassie 2008).

In addition to efforts to increase access to education, improve health conditions, eliminate social, economic and cultural barriers the main policy response was the implementation of voluntary family planning programmes which not only provided the products but also provided information about contraceptives which helped both men and women control their reproductive lives and reduce unwanted childbearing (Bongaarts & Sinding, 2009)

Contraceptive use has increased worldwide over the last decade. However, less than one in every seven Sub-Saharan African women (14%) use any modern method of contraception (Population Reference Bureau, 2006).

Unintended pregnancy is a common outcome for more than 200 million women worldwide, wanting to stop having children or delay their next pregnancy but are not using an effective method of contraception. According to Fathalla (1994), unwanted pregnancy is responsible for 25-30% of maternal deaths in Africa and up to 99% of all childbearing associated deaths take place in developing countries. Annually, around 46 million unintended pregnancies occur globally, and with more than one-half resulting in abortion. These are some of the issues, in addition to the already existing disease burden, which have continuously exerted pressure on the healthcare delivery systems.

A number of countries have shown tremendous progress in the regulation of fertility and getting the population growth in control. However, a number of countries are still facing difficulties in reducing their fertility despite having programs to help address the problem of population growth.

2.5 Contraception as a Determinant of Fertility

A voluntary and intentional measure taken to reduce the risk of conception is considered as contraception according to Mturi (1996). Contraceptive use has been described, and identified as one of the most important proximate determinant of fertility (Shapiro, 2007).

It is an established fact that the use of contraception has a significant impact on a woman's fertility and the levels of contraceptive use within the population has been used to denote the success or failure of its family planning programs. Modern contraceptives have been around for over 40 years but their utilization has been fraught with both successes and failures depending on the population being observed.

The use of contraception and the desire to control childbearing depends on a number of factors both economic and socio-cultural. It's a function of accessibility of the FP services and interest or motivation to delay childbearing, to space births or limit the number of children born.

The contraceptive prevalence rate within a population is considered a diffusion process beginning with awareness on the source and availability of FP services, proximity to those services, and the extent to which hindrances or constraints that limit their access exist. Some of the constraints may include but not are not limited to cost of the service, social and geographical barriers and more importantly the quality of the service (Curtis & Neitzel, 1996).

The difference in contraceptive use, according to Mturi & Hinde (2001), explains about 92 per cent of the variation in fertility across populations. This implies that in populations where contraceptive use is widespread, fertility is expected to be low and birth spacing equally longer. This affords women in their reproductive ages an added health benefit of reduced exposure to maternal related health risks such as delivery complications, low birth weight infants, greater risks of abortion, and maternal and child mortality. These reproductive health issues are among the leading causes of death for women all over the world (McDevitt et al., 1996)

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Contraceptive use has gone through a number of transformations, reflecting changing patterns of fertility preferences and the growing desire by individuals to determine if and when to have children. People want to have smaller family sizes where they can lead quality life and be able to provide adequately for their needs.

The introduction of modern contraceptives has had a significant impact on contraceptive practice in both the developed and developing regions and a wide array of effective birth control methods can be accessed, used to regulate, and promote healthy sex lives.

Broadening the choice of contraceptives methods has been shown to increase the overall prevalence (Magadi & Curtis, 2003). It increases the opportunity for an individual to find a method that best suits their needs. Providing a wider range of methods is a core element in determining the quality of care in FP provision and an important dimension in women's reproductive rights (Diaz et al., 1999). In order to increase the CP, Family Planning programmes should provide a variety of accessible, safe, acceptable, effective, and affordable methods to help women reach their reproductive goals without sacrificing along the way.

A study by Fathonah (1996) in Indonesia found that 12 months after initiating contraceptive use, 85 percent of women who had not been given their first choice of contraceptive method had stopped using contraception. This goes to highlight the importance of provision of a wide range of methods, from where a method of choice that suits the individual needs of the woman can be chosen. Contraceptive methods preference for couples and individuals also varies according to their age, socio-economic status, parity and family size preference. Therefore, availing a wide range of methods makes it possible for them to exercise free and informed choice.

According to Magadi & Curtis (2003), appropriate method mix and the use of more effective methods by a smaller proportion of the population can produce a greater decline in fertility than the use of less effective methods by a larger proportion of the population.

The rhythm and barrier method of contraception were the only methods available to couples for fertility regulation prior to 1960. More efficacious methods of contraception like the Pill and IUD became widely available in the 70's followed shortly afterwards by sterilization methods for both the male and female. This made it possible for couples to make a choice between a number of short term, long-term and permanent methods of contraception.

Since the United Nations World Population Conference, several governments have shifted their policy goals towards provision of increased support to the provision of modern and effective methods of contraception. As a follow up, the International Conference on Population and Development (ICPD) was held in Cairo Egypt in 1994, and the World Conference on Women was later held in Beijing, China in 1995. Several governments, both developed and developing, affirmed and re-affirmed their commitment to the deliberations of these fora and promised to support the provision of contraceptive services directly through government facilities and also indirectly by supporting NGOs and private facilities dealing with the provision of reproductive health services.

2.6 Use of Contraceptives in Developed and Developing Countries

Men and women in developed countries marry later, have fewer children, and usually delay having children to much later in life (United Nations Report, 2004). These, together with increased investment in reproductive health programs, have helped reduce fertility, decrease population growth, and also helped couples realize their desires for smaller family size.

According to the United Nations Report (2004), 62 percent of married or in union women in developing countries use contraception while 70 percent of married women in the developed countries use a method of contraception. In Africa, only 25 percent of married women use contraception. In Asia and Latin America, the contraceptive prevalence rate is relatively high at 66 percent and 69 percent respectively.

The most commonly used modern contraceptive method in the developed and developing countries are IUDs for older women and OCs, and Condoms for younger women. According to the report, in the developed countries, 17 percent of married women used OCs, 15 percent used Condoms, while female sterilization was used by 22 percent of married women, and IUDs by 16 percent of the population of married women.

Traditional methods are also reported to be popular in the developed countries with the most common method of contraception or fertility regulation being periodic abstinence (Rhythm) and withdrawal method.

2.7 Contraceptive Use Patterns in Africa

The use of contraceptives is generally low in Africa as compared to other developing countries. Many studies that have been carried out to measure prevalence of contraceptive use and fertility across the world indicate that Africa has the highest birth rates, and the lowest contraceptive use. Factors that have variously been associated with the high fertility include early parenthood, rural residence, low levels of education, limited access to contraceptive products, and general lack of interest (Mturi and Hinde, 2001, Magadi et al., 2000, and Shapiro, 2007).

According to the UNFPA 2003 report on adolescence and sexuality, it was reported that adolescents nowadays attain puberty earlier, engage in premarital sex and delay marriages. These points to the overall risk exposure to unwanted pregnancies and sexually transmitted infections. In a study carried out in Nigeria (Speizer et al., 2001), it was reported that the mean age for

initiation of sex was 15 and that 23% of those who were already sexually experienced had already been pregnant. The majority of the pregnancies had been terminated albeit illegally, posing more health risks to those procuring the abortions and generating a lot of questions on the significance and role of limiting and/or outlawing termination of pregnancy.

In recent demographic and health surveys, there is a general observed trend of increasing prevalence of contraceptive use in African countries. The Population Reference Bureau (2010) indicated a more than 90 percent use of modern contraceptives. Among married women, sterilization, IUD and OC are the most prevalent whereas in young and unmarried women it's condoms, OC and hormonal injections. However, there exist huge variations in contraceptive use between different regions and between countries in the same region.

2.8 Fertility in SSA

Investment in reproductive health programs has been shown to reduce fertility in addition to making couples lead a more productive and fulfilling life by regulating the size of their families. Sub-Saharan Africa has one of the youngest populations in the world due to its high fertility.

More than two-thirds of their population is less than 50 years of age and a good proportion of which is made of women. It has been shown that young women from less developed countries are more likely to experience higher risk of exposure to reproductive health issues. This is because many marry earlier, and are thus deprived of the education opportunities necessary to make informed decisions (Speizer et al., 2001).

According to UNFPA (2003), young women's fertility is influenced by a number of factors namely gender inequalities, life opportunities, access to reproductive health services, service provider's attitudes and their economic status. Early pregnancy and childbirth compromises and limits the ability of a young woman to fully develop and utilize her potential, support herself and consequently lead a good quality life. Education is one of the most important socio-economic

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factors that have been shown to directly affect fertility. Educated women tend to initiate sexual activity, marriage and childbearing later in life than uneducated women and are also more likely than uneducated women to use effective contraception, to seek adequate prenatal care and have a skilled attendance during delivery.

Among sexually active young women in SSA, there is a very low level of contraceptive use despite widespread knowledge (Speizer et al. 2001). This may be indicative of lack of interest in in the use of contraception, presence of socio-cultural barriers, and/or limited access to quality reproductive health services.

The contraceptive prevalence rate in SSA is comparatively lower than other developing regions of the world (United Nations, 2004). The low contraceptive prevalence rate has been attributed to majority of the population in SSA living in rural areas with poor infrastructural development and low socio-economic status.

2.8.1 The Use of Contraceptives in SSA as Compared to Other World Regions

Figure 2.2 shows the levels of utilization of contraceptives for fertility regulation in different parts of the world.

Figure 2.2 The Use of Contraceptives in SSA and Other Parts of the World

Source: UNFPA, 2010

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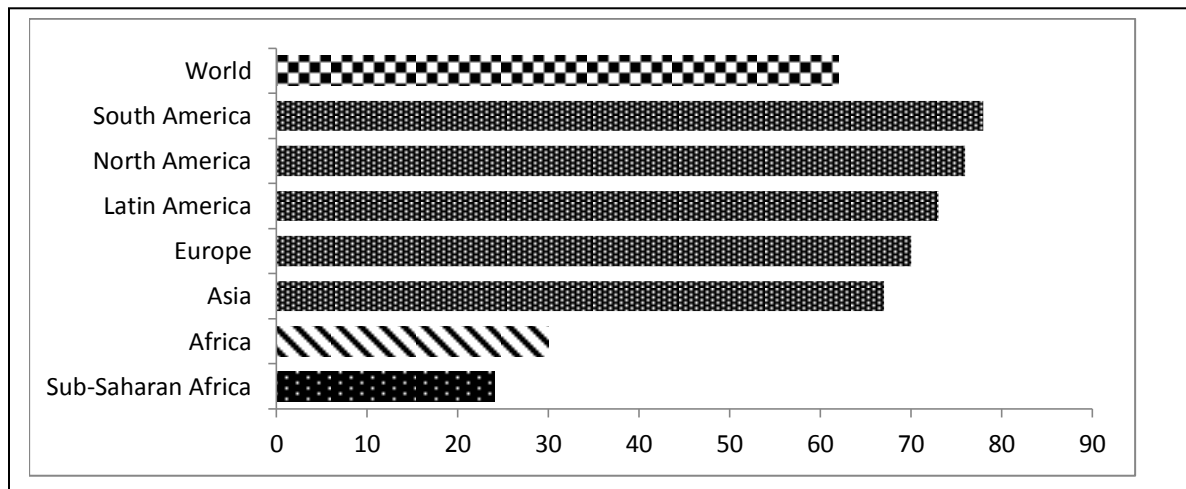
2.8.2 The Total Fertility Rates of Few Countries in SSA

Sub-Saharan Africa is one region in the world with a high fertility level. However, there has been evidence in the recent past of a decline in fertility levels across the region.

Table 2.1 The Total Fertility Rates (TFR) of Countries in SSA

Country	Year	TFR
Uganda	2006	6.7
Rwanda	2005	6.1
Kenya	2008	4.6
Lesotho	2004	3.5
South Africa	2003	2.3

Source: World population data sheet, 2009

2.8.3 The Total Fertility Rates (TFR) by World Regions

The existing fertility in the whole of SSA is still high when compared to the world's fertility rate of 2.65 per woman recorded during the period 2000-2005. Table 2-2 shows the total fertility rates of women aged between 15 and 49 grouped by region.

Table 2.2 The TFR in the World by Regions

Region	Total fertility rate (TFR) 15-49
World	2.7
Developed countries	1.6
Africa	5.1
East Africa	5.5
Central Africa	6.3
West Africa	5.8
North Africa	2.0

Source: World population data sheet, UN 2006

There exists differences in fertility within the various regions of Africa with Northern Africa having the lowest fertility rate (TFR 2.0) followed by Southern Africa 2.9, while East Africa has a TFR of 5.5, West Africa has a TFR of 5.8 and Central Africa has the highest fertility rate at 6.3 births per woman (UN, 2006).

2.9 The role of Reproductive Health Programs

Reproductive health programs have a great influence on availability and access to quality reproductive health services in a population. They are organized and carried out in a variety of social, environmental, and economic contexts.

Their effects converge with those of other influences on contraceptive use and reproductive health service utilization. This leads to improved quality of reproductive health services, and consequently, a huge influence on the people's overall perception on access and quality of reproductive health services.

Many questions have been asked concerning the role of family planning programs and the degree to which they influence the utilization of contraceptives. According to Ngom et al. (2005), there is a strong correlation between contraceptive use and organized programs. In countries with strong FP programs, there is a high prevalence of contraceptive use. However, the effectiveness of a program is depended on the prevailing economic conditions of the country and existing cultural practices.

Reproductive health includes many elements: safe motherhood and childbirth, postnatal care, prevention and treatment of STIs including HIV/AIDS, prevention and treatment of infertility and FP services among others.

Every year, many women die from complications of pregnancy, childbearing and unsafe abortions (Shane, 2006). Reproductive health programs, when functional and accessible, can

prevent most of these deaths by providing the necessary information and services to enable women decide if, how many, and when they should have children (Ross et al., 1999).

The government of South Africa began to provide very strong support for the Family Planning program under the Population Development Program (PDP) in 1960's. This was informed by the fear that rapid population growth would undermine the country's prosperity and economic development (Schwartz, 2004). The government provided substantial support in form of funds and human capacity development to private and public family planning service providers and provided access to free contraceptives. By 1983, more than half the country's eligible women were practicing contraception.

The fertility rate was estimated at an average of 6 to 7 children per woman between 1950 and 1970. It then dropped to an average of 4 to 5 children per woman in the period 1980 to 1995 (United Nations, 1995), 2.9 children per woman by 1999, and to 2.3 children per woman by 2003 (SADHS, 2003). In the SADHS (2003), there was almost universal knowledge of contraceptives, with three-quarters of women interviewed reporting having used contraceptives. 98.8 percent of all contraceptive users at the time of the survey used modern methods of contraception. This highlights the important role played by a well-established and functional Family planning Program.

CHAPTER 3

METHODOLOGY

3.1 Study Design

The KDHS 2008, whose findings are used in this study, was a descriptive cross-sectional study. Quantitative research design was used to collect the survey data. Quantitative research design measures various variables and can show the relationship and effects between and among variables. According to Brannen (1995), quantitative research has the superior advantage over qualitative design of systematic control of variables, highly structured design, rigorous sample selection and the ability to draw findings that can be generalized to the whole population.

3.2 Study Area

The KDHS survey was carried out in the Republic of Kenya in 2008 and data collected in a nationally representative sample.

3.3 Data

Data used in this study was obtained from the KDHS 2008 survey. The KDHS is a nationally representative survey carried out with standardized tools for data validity and reliability. The survey gathered information on men 15-54 years and women of the reproductive age 15-49. The survey was designed to collect information on household social, demographic and economic conditions, women's reproductive histories, fertility, awareness and use of contraceptives. It sought to find out childhood and maternal mortality, domestic violence, maternal and child health, breastfeeding practices, nutritional statuses of mothers and young children in addition to HIV testing, knowledge, attitude, and behavior with regard to HIV/AIDS, STIs and Malaria.

The main objective of KDHS is to provide detailed and up-to-date information on socio-economic status, demographic status, both national and regional demographic estimates and provide health information on households to policy makers, researchers and program managers. The survey was carried out by the Kenya National Bureau of Statistics (KNBS) in collaboration with the Ministry of Public Health and Sanitation, the National AIDS and STIs Control Program (NASCOP), the National Public Health Laboratory Services (NPHLS), the Ministry of Medical Services (MoMS), the National Coordinating Agency for Population and Development (NCAPD), the National AIDS Control Council (NACC), and the Kenya Medical Research Institute (KEMRI). Financial support for the survey was provided by the GoK, the United Nations Fund for Population Activities (UNFPA), the World Bank, and United Nations Children's Emergency Fund (UNICEF), and the United States Agency for International Development (USAID). Technical assistance was provided by the MEASURE DHS+, a program of the Macro Systems International.

3.3.1 Sources of Data

The main source of data for this study was the 2008 Kenya Demographic and Health Survey (KDHS, 2008). The survey was carried out in Kenya in 2008 and reference is made to earlier surveys from 1993 to 2008 to get a deeper understanding and gain insight on the trends and changes observed. Other sources of data were also included to furnish additional information and complement the primary data source in order to get a holistic view and meet the study objectives. The KDHS 2008 is the latest nationally representative data set with information on contraceptive use and other health and economic indicators. The most recent survey KDHS 2014 was carried out from May 2014 to October 2014 but the results are not yet out.

3.4 Sampled Population

According to the KDHS 2008 survey, a total of 9,936 households countrywide were selected for the survey. 9,268 were considered eligible for the survey but only 9,057 households were interviewed representing a 97.7% response rate for the households chosen.

For the women in the reproductive age group (15-49), a total 8,767 women were considered eligible for the survey but only 8,444 were interviewed representing a 96.3% response rate. The table below shows the interview results according to residence.

Table 3.1 Results of the Household and Individual Interviews, KDHS 2008

Result	Residence		
	Urban	**Rural**	**Total**
Household interviews			
Households selected	3,286 (**33.1**)	6,650 (**66.9**)	9,936
Occupied households	3,015 (**32.5**)	6,253 (**67.5**)	9,268
Households interviewed	2,910 (**32.1**)	6,147 (**67.9**)	9,057
Household Response Rate (%)	**96.5**	**98.3**	**97.7**
Women Interviews (age 15-49)			
Eligible women	2,735 (**31.2**)	6,032 (**68.8**)	8,767
Eligible women interviewed	2,615 (**31**)	5,829 (**69**)	8,444
Household Response Rate (%)	**95.6**	**96.6**	**96.3**

Source: KDHS, 2008

3.5 Sampling Frame

The 2008 KDHS survey was a household based survey and therefore the sample was drawn from household populations resident in the country. In the 2008 KDHS, a sample of 10,000 households, which were a representative sample of all the households in the country, was drawn. According to the KDHS 2008 survey, the sample was designed to make provisions for separate estimates for key indicators in each of the eight Kenyan provinces on their own as well as by

urban or rural residency. Urban populations were deliberately oversampled so as to get enough cases for analysis and later weighted nationally in order for the data to be comparable and generalized for the entire population.

The KNBS manages and maintains the national master sampling frames for household surveys. The KDHS 2008 adopted a two-stage sampling design where the first stage involved selecting data collection points or clusters from the national master sample frame. A total of 400 data collection points or clusters (133 urban and 267 rural) were selected.

The second stage of the sampling process involved systematic sampling of households from an updated national list of households. In order to get a more accurate representation and selection of households, a number of clusters were updated for various surveys prior to the KDHS survey.

3.5.1 Selection and Eligibility

In the survey, all women aged 15-49, and who were either resident or visiting in the sampled households on the night before the survey were eligible to be interviewed.

3.5.2 KDHS Data Quality and Reliability

The KNBS, which was responsible for carrying out the survey recruited research assistants and supervisors based on a set qualifications and criteria. Preference was given to prior experience especially with past KDHS surveys, and other health related surveys like the Kenya AIDS Indicator Survey (KAIS), the Kenya Malaria Indicator Survey (KMIS), and the Multiple Indicator Cluster Survey (MICS). This was aimed at bringing on board qualified people with appropriate skills and experience necessary to undertake the survey and generate reliable and high quality data.

3.5.3 Operational Definition of Variables for analytical analysis

3.5.3.1 Dependent Variables

A). <u>LAPM use</u>

The analysis sought to establish LAPM contraceptive use among women age 15-49. It was categorized into three; those women not using any method of contraception, those using SAM method of contraception, and those who were using LAPM contraceptive methods at the time of the survey.

B). <u>Method Choice</u>

The choice of contraceptive methods among the study population was analyzed. It had three categories; those who were using traditional methods, those using SAM and those using LAPM methods of contraception.

Those not using any contraceptive method were excluded from the method choice analysis.

3.5.3.2 Independent Variables

A). <u>Age</u>

The respondents were grouped into 5-year-interval age categories with a total of 7 groups. For analysis purposes the age categories were coded as 1 representing 15-19, 2 representing 20-24, 3 representing 25-29, 4 representing 30-34, 5 representing 35-39, 6 representing 40-44 and 7 representing 45-49. The reference category was 20-24 age-group.

B). <u>Marital Status</u>

The respondent's marital status was measured as a dichotomous variable. The respondents were either in union or not in union. The respondents considered to be in union were those who were currently married or living as married (living with partner or cohabiting). The

respondents who were considered not in union included all the respondents who reported as being single, divorced, widowed, or separated. Not in union was the reference group.

C). **Number of Children**

The respondent's total number of children was divided into four categories for purposes of analysis. 1 represented those with no children, 2 those with one or two children, 3 those with three or four children and 4 those with more than five children. The reference group was 3 (3-4 children)

D). **Residence**

The respondent's place of residence was analyzed as a dichotomous variable with 1 representing rural residence and 2 representing urban residence. The reference group was taken as the urban residence.

E). **Educational Level**

The highest education level attained by the respondents was categorized into four groups. Those with no education (never been to school) was coded as 0, those with primary education was coded as 1, those with secondary as 2 and those with higher education were coded as 3. The reference category was 0.

F). **Contraceptive Source**

The respondent's source of contraceptive product was considered a dichotomous variable with those obtaining contraceptive products from public source coded as 1 and those obtaining contraceptive products from a private source being coded as 2. The reference group was those obtaining from a public source.

G). Contraceptive Information Source

The respondent's source of information on contraceptives was categorized into three groups. Those who received information from mass media were coded as 1, those who received from family and friends were coded as 2 and those that got their information from a health facility were coded as 3. The reference group was those that received information from a health facility.

3.6 Data Processing and Analysis

In order to understand the items of interest from the study, various methods were used to analyze the data. Microsoft Excel and SPSS Statistical Software Version 22 were used for analysis. Measures of central tendencies and dispersion were used to explain observed findings. Binary logistic regression and multinomial logistic regression methods were used to get a deeper understanding and try to explain associations and variations between variables.

3.6.1 Analytic Strategy

The indicator variables of Contraceptive Use and Method Choice were the underlying variables in the analysis, and the main variables of interest as outcomes. They were analyzed in two stages. In the first stage, the determinants of decision to use contraceptives are analyzed based on the secondary data from the KDHS 2008 survey of women aged 15-49. In the second stage, determinants of method choice were analyzed among women currently using contraceptives. The main reason for this analysis is to determine the methods preferred, the reasons for the preference, and determine the defining characteristics of the users of specific methods of contraception.

To further assess the determinants of contraceptive use, the association between socio-demographic, behavioral and contraceptive use were examined through cross-tabulation. Chi-square test was carried out to find out the variables that affected contraceptive use and their significance at 5% significance level.

To further understand how the various explanatory variables affect the indicator variables, logistic regression model was fitted to focus on the current use of LAPM and method choice.

A multinomial logistic regression model for the multivariate analysis was used in order to gain more understanding and examine the determinants of LAPM use and method choice among women in the reproductive age in Kenya.

3.6.2 Logistic Regression

In analyzing the data, binary logistic regression was used. The dependent variable LAPM Use was considered a dichotomous variable: Current use and Non-use. It was the most suitable method for analysis because of its inherent ability to detect changes in measurements when new variables are added to the equation.

The dependent and independent variables do not need to have a linear relationship and the data for the variables don't have to be normally distributed in the logistic regression model. In order to understand the effect of a unit change in the independent variable on the dependent variable, they were presented as risk ratios to represent the relative likelihood of exposure to the variable of interest. The risk ratio of the reference group is one (1.00). Odds ratios of less than 1 indicate reduced likelihood of LAPM use when compared to the reference group, while odds ratios of more than 1 indicating increased likelihood of LAPM use when compared to the reference group. The effect and relationship between the indicator variable and explanatory variable is indicated by the magnitude of the regression coefficient when compared to the coefficient of the standard error. When the correlation coefficient of an independent variable is greater than that of its standard error, a positive correlation is inferred. A negative correlation is inferred when the coefficient is less than that of its standard error.

In order to measure the percentage of variation explained by the independent variables, the square of the multiple correlation coefficients between the indicator and explanatory variable

were determined. The assumptions made in the model were that there was no relationship between the independent variables.

The models were fitted to the data using the forward stepwise procedure. At every step of fitting, the significance of variables in the model were checked using the value of the variable coefficient r (Pearson product-moment correlation coefficient). At 5% significance level, the strength of the association using the square of the correlation coefficient (r^2) was used to determine the significance of variables at each step of the model, and decisions made on whether or not a variable should be retained in the model. The models were interpreted using the odds ratios with the chosen reference group and the odds used to compare between groups in the model.

The logit model is of the form

$$Logit(p) = \log(\frac{p}{1-p}) = \beta_0 + \beta_1 x_1 + \text{........} + \beta_k x_k$$

The odds of using LAPM contraceptive can also be determined in terms of probability of current use by the following formula

$$p = \frac{\exp(\beta_0 + \beta_1 x_1 + \text{........} \beta_k x_k)}{1 + \exp(\beta_0 + \beta_1 x_1 + \text{........} \beta_k x_k)} = \frac{1}{1 + e^z}$$

Where $Z = \beta_0 + \beta_1 x_1 + \text{............} \beta_k x_k$ Retherford and Choe, 1993)

3.6.3 Chi-square Test of Independence

In order to develop a statistical model that would help predict the behavior of the dependent variables LAPM and Method Choice, using knowledge of the independent variables, contingency tables (CT) were constructed. The goodness-of-fit test helps to highlight how well the observed counts in the CT fit the expected counts on the model. The main assumption here is that the variables in the CT are independent of each other. If the chi-square value is too small, it indicates their independence whereas when it's large, it indicates the variables are dependent. The chi-square values, together with the degrees of freedom, help determine the p value which is necessary to interpret the findings.

3.6.4 Multinomial Logistic Regression

Multinomial logistic regression is an advancement of the binary logistic regression. The indicator variable takes three or more categories of variables. A way of determining effects of the explanatory variables on the indicator variable is in the form of estimated probabilities (Retherford and Choe, 1993). Probabilities are calculated for each variable while the remaining variables and the reference are taken at their mean values. This helps to estimate the probability of choosing LAPM contraception when all other factors are held constant. In this study, the main interest is finding out the factors that promote or hinder the use of LAPM, and therefore the response variable measured was LAPM choice.

The multinomial logistic model is of the form

$$\log(\frac{p_j}{p_J}) = \sum \beta_{jk} x_k$$

This is interpreted as the logarithm of the ratio of the odds of an individual belonging to category j for j =1, 2,.............., j-1 to the odds of being in the reference group J. The main assumption in this model is that of mutual exclusivity and exhaustiveness.

CHAPTER 4

FINDINGS

4.1 Introduction

In this chapter, descriptive and analytic findings from the KDHS 2008 survey will be presented. The effect of various predictor variables on the use of long acting reversible and permanent methods of contraception (LAPM), determinants of method choice and their correlations will be explored in depth and the associations between them explained.

The information gathered from the KDHS 2008 survey provided different kinds of data on social, economic, cultural, and demographic information of respondents. This will be used to draw inferences on a number of important social indicators like the quality of life and quality of health care services. This helps in policy formulations to specifically address identified shortcomings and enhance the already existing structures and institutions.

The background characteristics considered for the analysis can be broadly grouped into three: contextual factors (access, place of residence), socio-economic factors (education level, decision making and economic status) and demographic factors (age, marital status, children ever born).

The findings will be presented in sections to cover contraceptive use, the determinants of contraceptive use, and determinants of choice and use of LAPM. Specific descriptive findings from the KDHS 2008 report will be presented first to give a backdrop and act as a foundation for the analytical findings which will be presented later.

4.2 Kenya's Population Structure

Age and sex are the most basic and important elements of demographic classification. The distribution of the ages across the population helps to better understand the current situation and

enable planning for future activities. The household population in the KDHS survey consisted of 38,019 people of which 49 percent were male and 51 percent were female.

Table 4.1 Age Distribution by Sex, and Residence in five-year age groups (percent)

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
< 5	14.3	13.0	**13.6**	17.1	15.4	**16.2**	16.6	14.9	**15.7**
5-9	12.4	11.0	**11.6**	17.2	15.1	**16.1**	16.3	14.3	**15.2**
10-14	8.1	9.6	**8.9**	15.2	14.8	**15.0**	13.8	13.7	**13.8**
15-19	8.0	9.0	**8.5**	11.2	9.7	**10.4**	10.6	9.5	**10.0**
20-24	10.8	14.6	**12.8**	7.3	8.0	**7.6**	8.0	9.3	**8.6**
25-29	10.9	13.5	**12.2**	5.6	6.5	**6.0**	6.6	7.8	**7.2**
30-34	10.3	8.1	**9.1**	4.7	5.9	**5.3**	5.8	6.3	**6.0**
35-39	7.1	6.1	**6.6**	4.1	4.5	**4.3**	4.7	4.8	**4.7**
40-44	6.6	4.6	**5.6**	3.6	3.9	**3.8**	4.2	4.1	**4.1**
45-49	4.1	2.8	**3.5**	3.2	3.8	**3.5**	3.4	3.6	**3.5**
50-54	2.2	2.9	**2.6**	2.7	3.3	**3.0**	2.6	3.2	**2.9**
55-59	2.1	1.9	**2.0**	2.0	2.3	**2.2**	2.0	2.3	**2.2**
60-64	1.5	1.4	**1.4**	2.0	2.1	**2.0**	1.9	1.9	**1.9**
65-69	0.5	0.5	**0.5**	1.4	1.6	**1.5**	1.2	1.4	**1.3**
70-74	0.5	0.1	**0.3**	1.1	1.4	**1.3**	1.0	1.1	**1.1**
75-79	0.3	0.6	**0.4**	0.7	0.7	**0.7**	0.6	0.7	**0.6**
> 80	0.1	0.4	**0.3**	1.0	1.2	**1.1**	0.8	1.1	**1.0**
Missing	0.0	0.1	**0.1**	0.1	0.1	**0.1**	0.0	0.1	**0.1**
Total	3,586	3,830	7,416	14,917	15,686	30,602	18,503	19,516	38,019

Source: KDHS, 2008

Figure 4.1 Population Pyramid of Kenya

Population Pyramid of Kenya 2008/2009
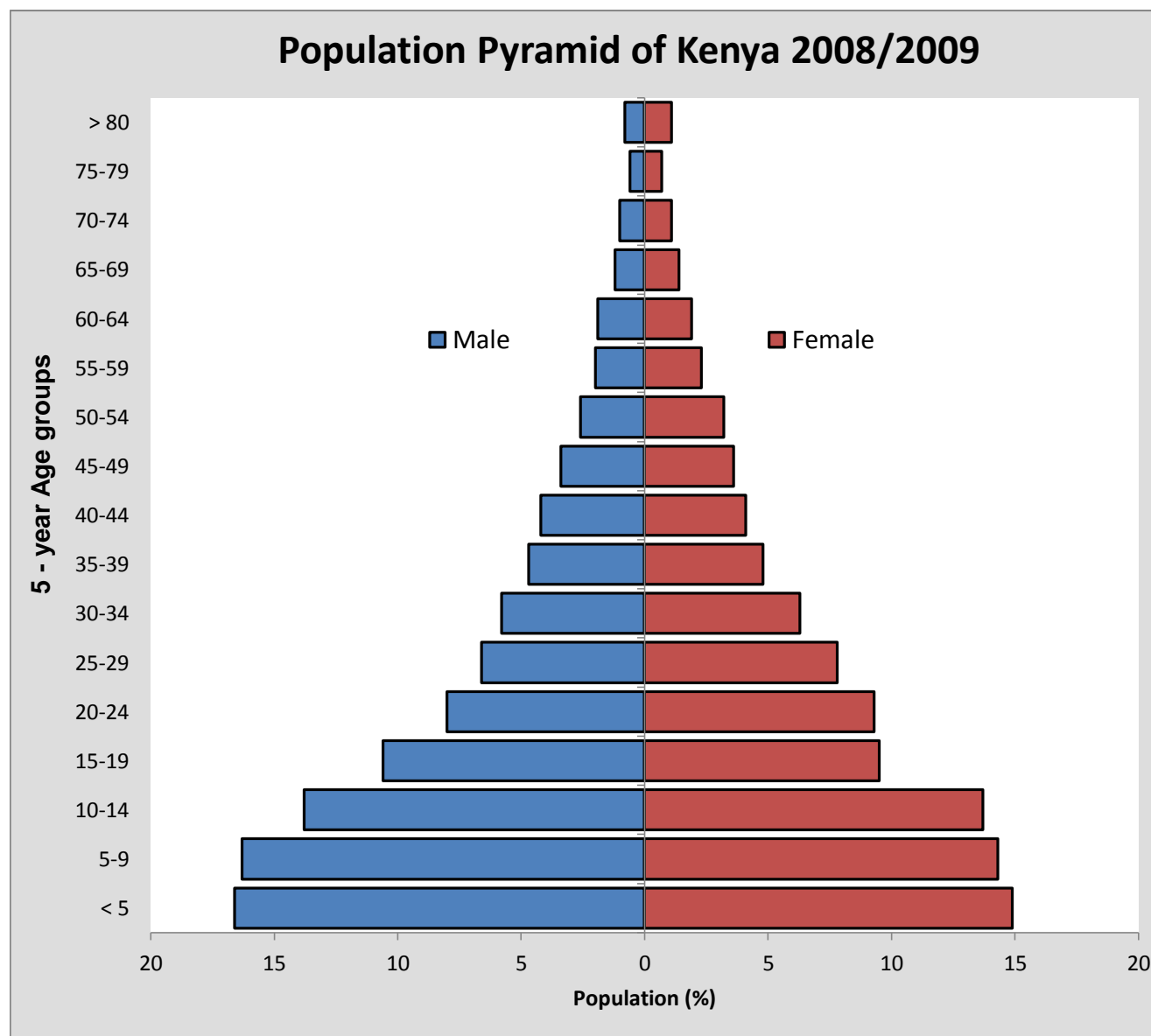
Source: KDHS 2008

The populations pyramid above shows the age structure of the Kenyan population by age and sex. As expected, the household population structure is still wide at the base as is of many developing nations. The population aged below 20 years constitutes 54.7 % of the total Kenyan population while those aged below 15 accounting for 44.7 % of the population. The population aged between 15 and 64 is 51% whereas the population aged 65 and above is 4%. From the KDHS

survey, the age dependency ratio in Kenya is 96, a slight increase from the previous 92 (KDHS, 2003). A high dependency ratio poses a big challenge to the government because of the increased demand for social services, expenditure on health, education and social security.

4.3 Educational Attainment

Education is an important social indicator and determinant of contraceptive use.

4.3.1 Education Attainment by Age

Table 4.2 Education Attainment by Age 15 – 49 (percent)

Age	No education	Primary	Secondary	Above secondary	Number	Median years completed
15 – 19	4.5	65.6	29.0	0.9	1,862	7.1
20 – 24	7.5	54.6	19.1	8.8	1,806	7.6
25 – 29	8.3	57.0	24.8	10.0	1,529	7.5
30 – 34	7.9	57.0	25.8	9.3	1,232	7.4
35 – 39	11.0	54.9	24.6	9.5	933	7.3
40 – 44	14.5	49.8	27.7	8.0	791	6.6
45 - 49	22.0	50.1	23.0	4.9	697	6.1

Source: KDHS 2008

The proportion of women with no education is slightly lower in the younger population as compared to the older population and increases with age. On the other hand, majority of the population in the different age groups have attained primary education (basic education) with most of the groups representing more than 50%. However, the number of women with more than secondary education is low with an average of 8.4% having attained education higher than secondary level. This includes college, university and other tertiary institutions.

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4.3.2 Educational Attainment by Residence

From the 2008 KDHS survey, 11.3% of women age 15 – 49 living in urban areas had no education, 45.3% had primary education while 29.8% had secondary education. The population with more than secondary education constituted 13.5%. On the other hand, 21.3% of the population living in rural areas had no education, 64% had primary education, and 13.2% had secondary education. Only 2.2% had more than secondary education.

Figure 4.2 Educational Attainment by Residence
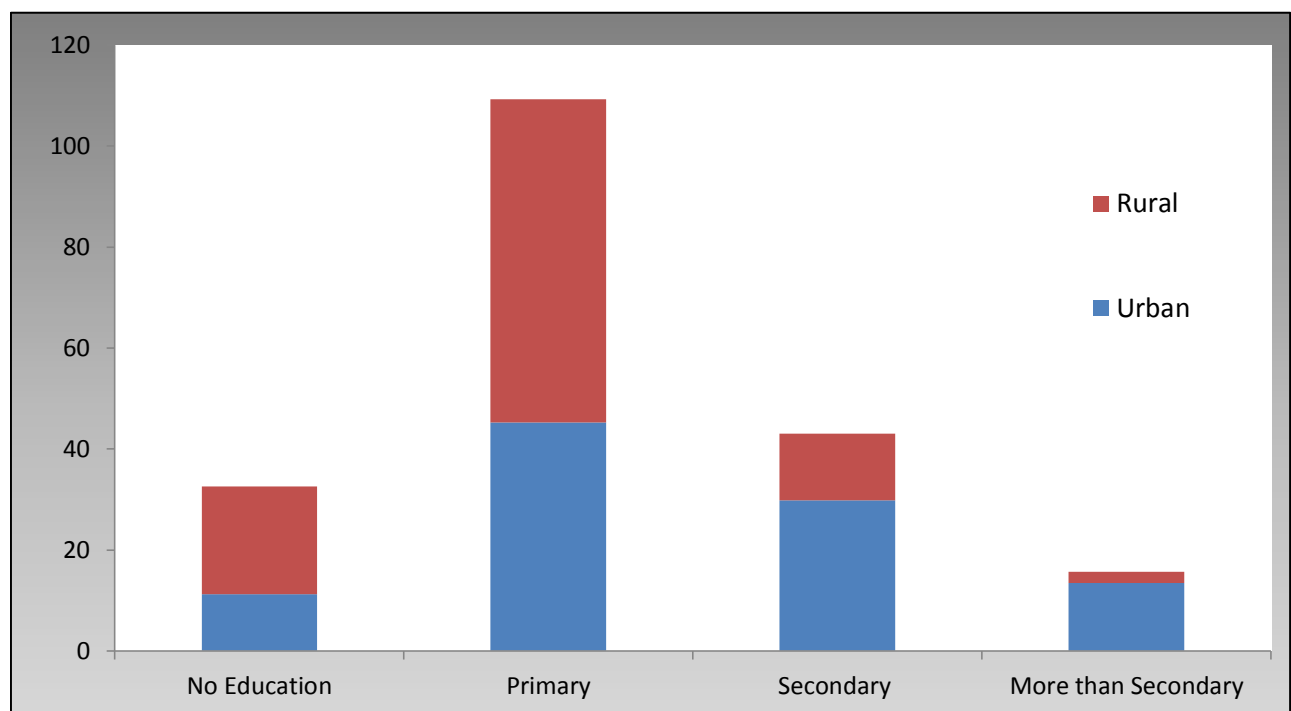
Source: KDHS 2008

4.4 Exposure to Mass Media

Access to information is an integral part in the dissemination of information and increasing awareness among the population. It increases people's awareness and knowledge, which enables them to make better decisions in matters that affect their wellbeing. In order to plan effectively for the most effective media channel to spread information, it is important to understand the

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characteristics of different media forms and the groups of people that they are likely to reach. Access to information changes people's perception and modifies their behavior as individuals and community as a whole.

Table 4.3 Exposure to Media by Age (percent)

Age	Reads newspaper	Watches TV	Listens to radio	All three media	No media access	Total
15 – 19	26.3	31.6	76.6	14.0	19.5	1,761
20 – 24	27.3	37.2	80.6	17.7	15.8	1,715
25 – 29	26.2	39.4	78.5	20.7	18.0	1,454
30 – 34	24.4	31.7	77.0	15.9	19.1	1,209
35 – 39	22.5	34.5	73.9	16.2	20.3	877
40 – 44	20.0	33.0	76.0	15.5	21.3	768
45 - 49	14.2	26.7	70.7	10.4	26.6	661
Total	**24.3**	**34.1**	**77.0**	**16.3**	**19.2**	**8,444**

Source: KDHS 2008

From table 4.3, radio is the most popular media channel with 77% of respondents listening to it at least once a week. More than 70% in all age groups have access to the radio while access to newspaper is the least with less than 25% of respondents reading a newspaper. The proportion of respondents having no access to media increases with increase in age from 20 years old.

4.4.1 Exposure to Media by Background Characteristics

Women living in urban areas have more access to mass media as compared to those living in the rural areas. The access is higher in all the categories of mass media for urban women with 43% of them having access to all the three media forms at least once a week as compared to the women residing in rural areas whose access to all the three media is only 7.6%.

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Table 4.4 Exposure to Media by Background Characteristics (percent)

	Reads a newspaper once a week	Watches TV at least once a week	Listens to the radio at least once a week	All three media at least once a week	No media access	Number
Residence						
Urban	49.2	69.3	83.1	41.5	9.3	2,148
Rural	15.8	22.1	74.9	7.6	22.6	6,296
Education						
No education	0.8	8.6	35.4	0.3	62.3	752
Primary	23.2	48.3	83.1	11.3	38.7	2,526
Secondary +	51.9	58	87.2	38.3	7.4	2,894
Wealth quantile						
Lowest	4.3	2.9	42.3	0.4	56.3	1,393
Second	9.7	6.8	77.5	1.5	20.3	1,483
Middle	15.1	19.8	84.9	5.2	13.5	1,613
Fourth	24.6	42.1	85.3	15.0	11.1	1,736
Highest	53.0	76.1	86.2	45.1	5.9	2,220
Total	**24.3**	**34.1**	**77.0**	**16.3**	**19.2**	**8,444**

Source: KDHS 2008

Exposure to mass media increases with increase in the educational level of the respondents and their wealth quantiles. For instance, 87.2 % of women with secondary education and above listen to the radio at least once a week as compared to only 35.4% of those with no education. The same can be said of the wealth quantile where only 42.3% of those in the lowest quantile listen to the radio at least once a week as compared to 86.2% in the highest quantile. Only 0.4 percent of respondents in the lowest quantile have access to the three media at least once a week whereas 45.1 percent of respondents in the highest quantile have access to the three media at least once a week.

Figure 4.3 Exposure to Media

Media Exposure

- Reads a newspaper at least once a week
- Watches TV at least once a week
- Listens to the radio at least once a week
- All three media at least once a wee
- No media at least once a week

Pie chart values: 24.3, 34.1, 77, 16.3, 19.2
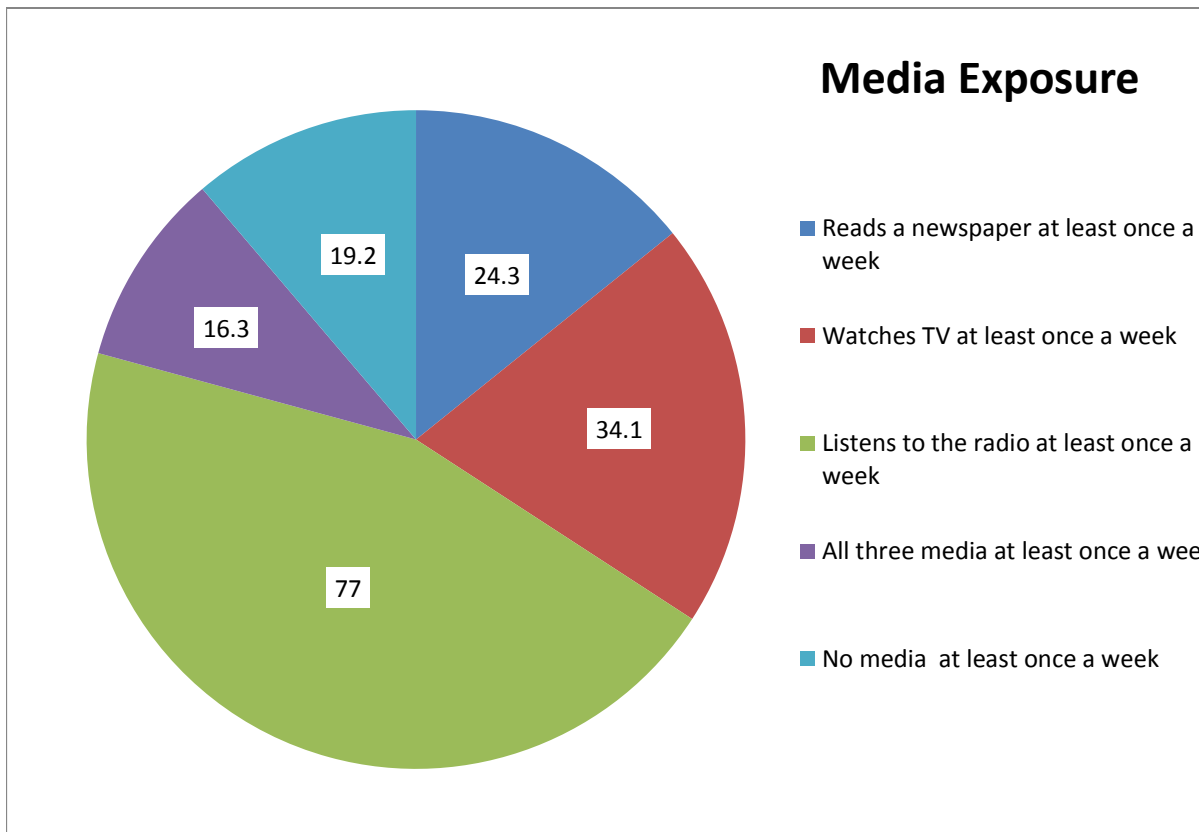
Source: KDHS 2008

Radio is the most popular method of information dissemination with 77% of respondents having access at least once a week. Reading a newspaper at least once a week is the least effective method as less than 25% of the population have access to newspaper at least once a week.

4.5 Employment, Occupation and Earnings

The employment status of respondents is an important aspect in the estimation of their economic status. Their employment status, kind of occupation, and type of earnings were surveyed in the KDHS 2008. The employment status refers to whether the respondents were employed at the time of the survey or the immediate 12 months preceding the survey.

4.5.1 Employment

The employed women included those who reported working at the time of the survey (within 7 days) and also those who reported having worked in the 12 months prior to the survey.

Table 4.5 Employment of Women aged 15 – 49 by Age (Percentage)

Age	Employed	Not employed	Total	Number
15 – 19	21.1	78.9	100	1,761
20 – 24	54.2	45.8	100	1,715
25 – 29	69.7	30.3	100	1,454
30 – 34	73.5	26.5	100	1,209
35 – 39	75.2	24.8	100	877
40 – 44	80.5	19.5	100	768
45 - 49	75.5	24.5	100	661
Total	**59.0**	**41.0**	**100**	**8,444**

Source: KDHS 2008

From table 4.5, the proportion of women who were employed increased with increasing age. Only 21.1% of women aged 15 –19 were employed as compared to more than 70% of those aged above 30. Overall, 59 % of women aged 15-49 were employed and only 41% were not in employment in the immediate 12 months preceding the survey.

When looking at employment by background characteristics, majority of women who were divorced separated or widowed (81.7%) were in employment as compared to only 37% who had never been married.

The proportion of women in employment increased with increase in the number of living children as well as the wealth quantile.

Table 4-6 gives more information on women employment by background characteristics.

Table 4.6 Employment of Women by Background Characteristics (Percentage)

Characteristic	Employed	Not employed	Total	Number
Marital Status				
Never married	37.2	62.8	100	2,634
Married or living together	66.6	33.4	100	4,928
Divorced/separated/ widowed	81.7	18.3	100	881
Living Children				
0	33.7	66.3	100	2,397
1-2	65.0	35.0	100	2,579
3-4	72.6	27.4	100	1,899
5+	71.3	28.7	100	1,569
Residence				
Urban	61.9	38.1	100	2,148
Rural	58.0	42.0	100	6,296
Wealth quantile				
Lowest	52.0	48.0	100	1,393
Second	55.7	44.3	100	1,483
Middle	59.3	40.7	100	1,613
Fourth	58.2	41.8	100	1,736
Highest	66.0	34.0	100	2,220
Total	**59.0**	**41.0**	**100**	**8,444**

Source: KDHS 2008

4.5.2 Occupation

The respondents who were employed at the time of the survey were asked the kind of work they did. From the findings, a small proportion of women (30.5%) are working in the professional, technical or managerial sectors and a majority of women 39.3% are employed in the agricultural sector.

Figure 4.4 Occupation of Women Aged 15 – 49 by Background Characteristics

Occupation by sector

- ■ Professional/Technical/Managerial
- ■ Clerical/Sales & services
- ■ Skilled manual
- ■ Unskilled manual & Domestic
- ■ Agriculture
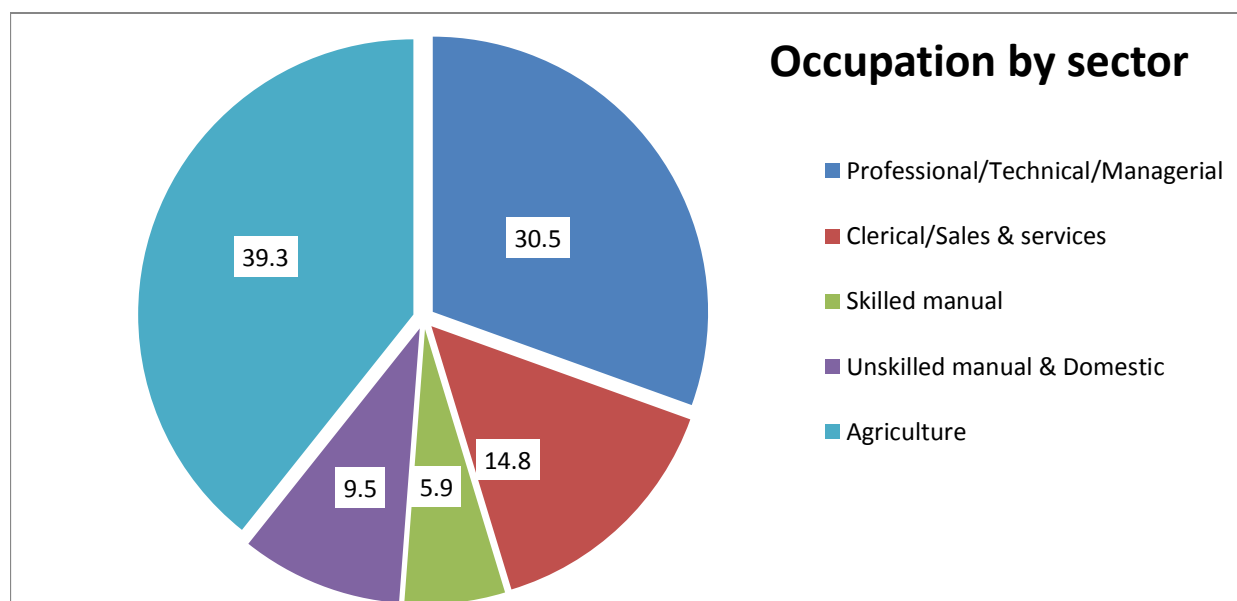
Source: KDHS 2008

Although agricultural occupations accounted for most of the employment, there was a decline in the proportion of women employed in the agricultural sector and an increase in the population employed in professional, technical and managerial occupations from the KDHS 2003.

4.5.3 Earnings

In addition to knowing the employment status of the women and their occupations, it was necessary to find out the type of earnings, and the characteristics of the employer. The earnings were considered cash if in monetary value and in any other form as in-kind. For employment security, the continuity in employment was measured as either all year, seasonal or occasional. More than 62% of the women surveyed were employed all year round with a majority being self-employed. Most of the employed respondents 65% were paid in monetary terms.

Figure 4.5 Earnings, Employment Type and Continuity
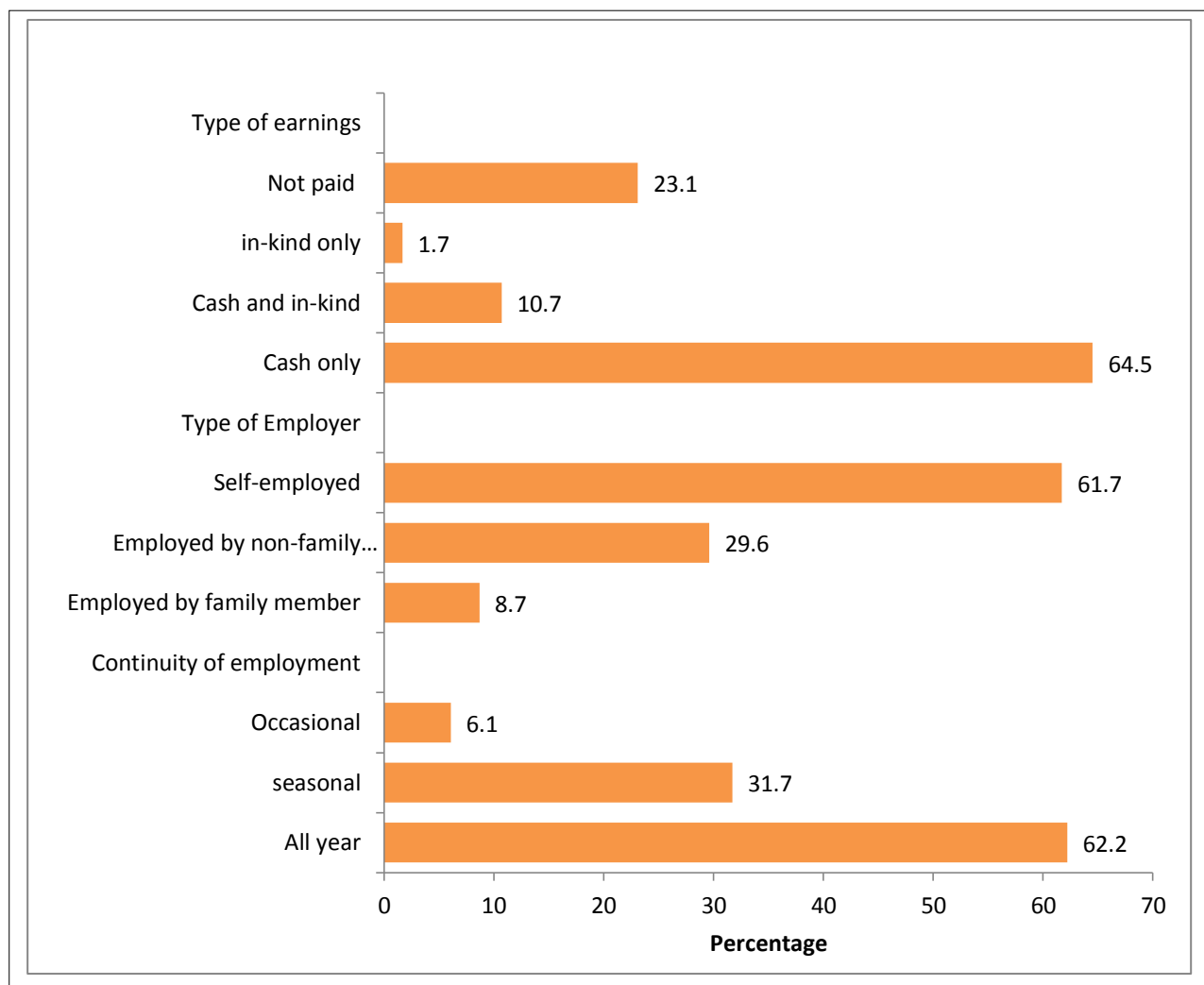
Source: KDHS 2008

4.6 Health Insurance Cover

Health insurance is an important component in the well-being of a population. It takes away the burden of paying out-of pocket in order to access health care. In the 2008 KDHS survey, men and women were asked about their enrolment in health insurance and if they did, the type of insurance by which they were covered. Figure 4.6 illustrates further.

Figure 4.6 Health Insurance cover by Gender
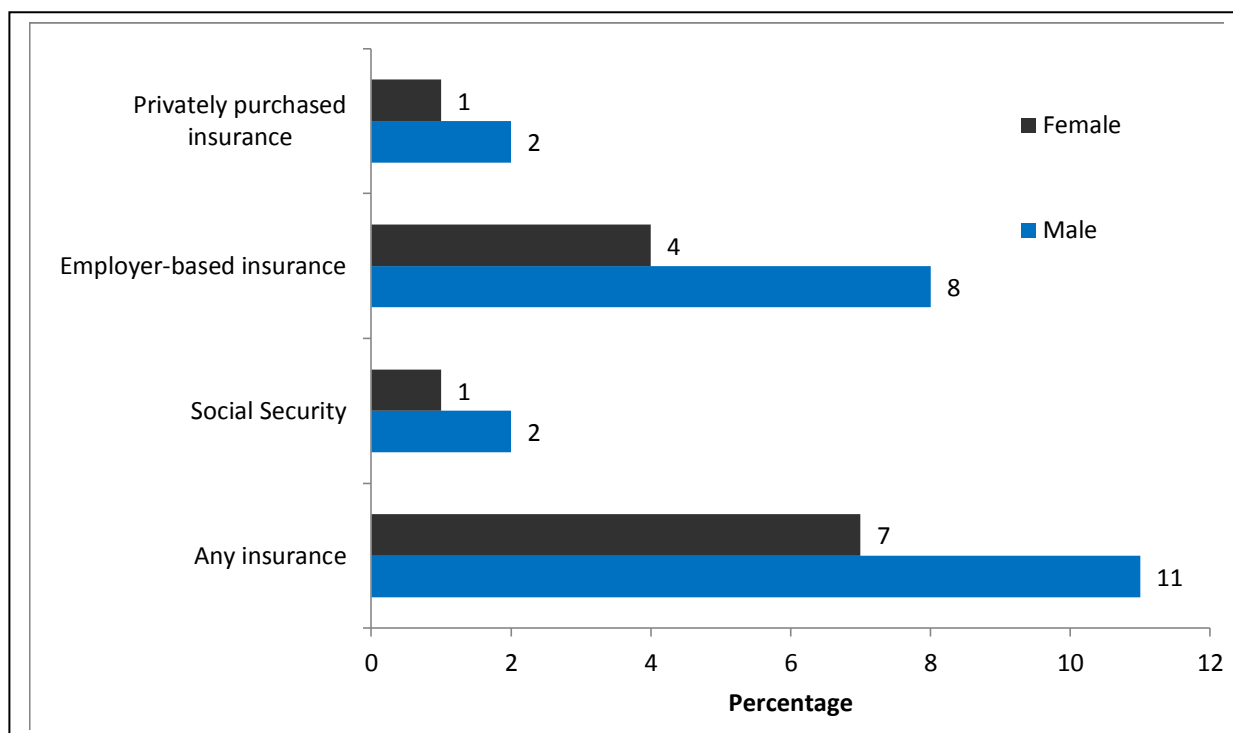
Source: KDHS 2008

From the survey, the insurance cover is very low. Out of the whole population only 7% of women and 11% of men are covered by health insurance. Employer-based insurance provides the highest coverage as compared to the social security which only covers 1% of women.

4.7 Fertility

4.7.1 Fertility Trends

The 2008 KDHS survey was the fifth survey to be carried in Kenya from the inception of DHS in Kenya in1989. The surveys provide a wealth of data that helps track events and determine trends. There was a decline of births from highs of 8.1 in the late 1970s to 6.7 in the late 1980s and further to 4.7 in early 1990s and thereafter a near stagnation.

Figure 4.7 Trends in TFR from 1975 to 2008
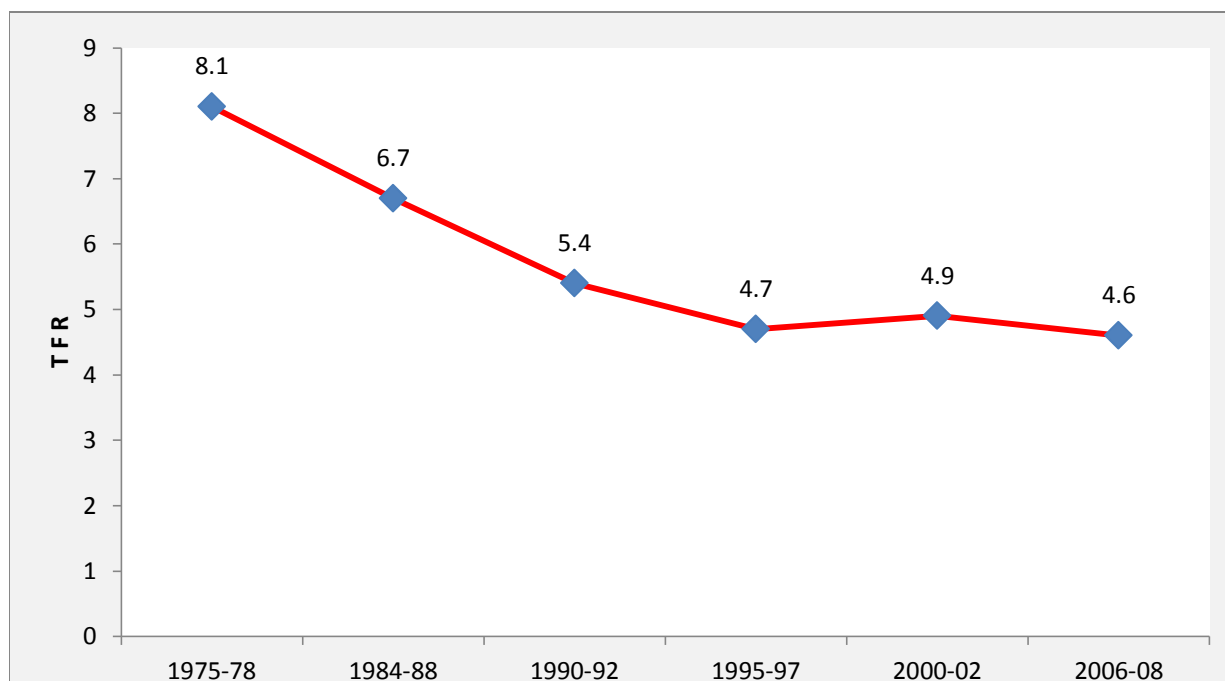
Source: KDHS 2008

4.7.2 Children Ever Born

From table 4-9, almost 28% of women aged 15-49 have never given birth with the highest proportion being those aged 15-19 in which more than 85% had never given birth. This gives an indication on the onset of childbearing. It's also interesting to note that more than a third (34%) of women aged 20-24 and almost 10% of those aged 25-30 have never given birth. This goes further to highlight the changing trends in the onset of childbearing with most people opting to delay childbearing. More than 99% of women aged 45-49 have had at least a birth, confirming childbearing to be almost universal for that age group. The distribution of children-ever-born to all women, and to currently married women, is presented in the table below.

Table 4.7 Children Ever Born to Women Age 15-49

Age	Number of children ever born (CEB)						Number of women	Mean number of CEB
	0	1	2	3	4	5+		
ALL WOMEN								
15 – 19	85.5	12.4	1.7	0.3	0.1	0.0	1,761	0.17
20 – 24	33.5	28.7	22.5	10.3	3.6	1.5	1,715	1.27
25 – 29	10.5	16.5	28.5	20.3	12.7	11.5	1,454	2.49
30 – 34	3.4	8.9	16.4	21.6	17.4	32.3	1,209	3.69
35 – 39	2.8	6.1	10.0	17.2	15.2	48.7	877	4.62
40 – 44	2.6	4.7	10.7	14.1	17.3	50.6	768	5.00
45 - 49	0.7	2.3	3.9	9.1	12.6	71.4	661	6.29
Total	**27.5**	**13.8**	**14.5**	**12.5**	**9.6**	**22.1**	**8,444**	**2.68**
CURRENTLY MARRIED WOMEN								
15 – 19	36.1	51.2	9.7	2.4	0.6	0.0	212	0.80
20 – 24	9.9	32.4	33.1	16.5	5.8	2.4	958	1.83
25 – 29	3.9	14.2	28.4	24.9	14.4	14.3	1,088	2.82
30 – 34	1.5	6.2	14.3	22.3	19.6	36.0	962	3.95
35 – 39	1.3	4.2	9.9	16.7	16.1	51.9	694	4.86
40 – 44	1.7	2.2	9.2	14.2	18.4	54.3	548	5.30
45 - 49	0.0	0.8	3.2	7.7	12.5	75.8	566	6.65
Total	**5.0**	**13.8**	**18.6**	**17.8**	**13.6**	**9.4**	**4,928**	**3.69**

Source: KDHS 2008

Among the married women, more than 35% of women aged 15-19 have not had a delivery while more than three-quarters (75.8%) of women aged 45-49 have had more than 5 deliveries.

4.7.3 Age at First Birth

Early onset of childbearing lengthens the childbearing period leading to increased fertility. On the other hand delayed initiation of childbearing has a negative effect on fertility as a result of reduced exposure period to childbearing as a result of the limited reproductive period for women (15-49 years).

The table below shows the proportion of women who gave birth by exact age, the number that have never given birth and the median age at first birth, according to their current age.

Table 4.8 Age at First Birth

Current age	Percentage that gave birth by exact age					Percentage never given birth	Number of women	Median age at first birth
	15	18	20	22	25			
15 – 19	1.3	na	na	na	na	85.5	1,761	a
20 – 24	4.5	25.9	46.7	na	na	33.5	1,715	a
25 – 29	4.9	27.9	52.2	70.8	84.5	10.5	1,454	19.8
30 – 34	6.0	31.0	54.5	73.4	86.4	3.4	1,209	19.7
35 – 39	7.5	27.9	48.5	67.8	81.7	2.8	877	20.2
40 – 44	4.2	29.2	48.9	68.1	85.2	2.6	768	20.1
45 - 49	6.2	35.5	54.4	73.1	86.9	0.7	661	19.5
20 – 49	5.4	28.8	50.6	na	na	12.2	6,683	19.9
25 – 49	5.7	29.9	51.9	70.8	84.9	4.9	4,969	19.8

na = Not applicable

Source: KDHS 2008

The proportion of women who had given birth by age 15, increases with increase in age, with more than 6% of women in the age group 45-49 having given birth by this age as compared to 1.3% of those in the 15-19 age group. More than half of the women have had a delivery by age 20, and the median age at initiation of childbearing being 19.8 indicating an early onset of childbearing across the population.

4.8 Contraceptive Use

The current use of contraception is an important aspect of fertility regulation. It is regarded as an important determinant of fertility, and an indication of the extent of coverage of family planning programs. People get motivated to use contraception if they are given access to them and have adequate information to help them make informed decisions.

The knowledge of contraceptive methods, sources of contraception, and ever use of a method of contraception are some of the aspects of contraceptive use that help to evaluate the role of contraception in fertility regulation. The degree to which contraception is known, and tried is indicated by ever use of contraception; a low level of knowledge points to a deficiency in knowledge of fertility limiting options by the population.

4.8.1 Contraceptive Methods Knowledge

In order for people to make informed decisions, knowledge forms the bedrock for evaluating various options in order to make the most rational decision. A number of contraceptive methods, both modern and traditional methods were reported. Information was gathered from women who are currently married and also those not married but sexually active.

The levels of knowledge of any method of contraception, is higher among the sexually active unmarried women and currently married women cohorts as opposed to the all women category. The currently married women know more contraceptive methods (8.1) as compared to all women category. The most commonly known methods are the short acting methods with injectable and pill being the highest at 93.9 and 92.8 respectively. Among the long acting methods, implants and female sterilization were the most known methods.

Table 4.9 Knowledge of Contraceptive Methods

	All women	Married women	Sexually active unmarried women
Modern Methods	**94.5**	**96.2**	**97.6**
Long Acting Methods (LAPM)			
Female sterilization	66.8	73.9	63.6
Male sterilization	38.1	41.6	40.0
IUD	61.1	70.1	62.5
Implants	67.2	76.9	67.7
Short Acting Methods (SAM)			
Injectables	88.5	93.9	89.6
Pill	87.9	92.8	86.6
Male condoms	89.2	90.1	95.8
Female condoms	57.6	60.4	57.4
LAM	33.9	41.6	26.9
Emergency Contraception (EC)	40.2	42.1	49.7
Traditional Methods	**68.5**	**74.3**	**69.2**
Rhythm	61.5	67.1	60.4
Withdrawal	47.6	53.4	54.6
Folk Method	6.8	8.3	5.3
Any method	**94.6**	**96.4**	**97.6**
Mean number of methods	7.5	8.1	7.6
Number of respondents	**8,444**	**4,928**	**318**

Source: KDHS 2008

4.8.2 Trends in Contraceptive Knowledge 1993 -2008

There is generally a high knowledge of modern contraceptive, a trend that has maintained at around 95% over time. When looking at specific methods, the short acting methods are relatively well known as compared to the long acting methods. There was an increase in their knowledge in the years preceding 1998 KDHS survey after which, they either levelled off (injectable and condoms) or dropped (Pills).

Table 4.10 Trends in Contraceptive Knowledge 1993 -2008

	1993 KDHS	1998 KDHS	2003 KDHS	2008 KDHS
Modern Methods	**95.2**	**96.3**	**94.4**	**94.5**
Long Acting Methods (LAPM)				
Female sterilization	81.1	81.8	73.9	66.8
Male sterilization	41.3	47.7	47.2	38.1
IUD	73.3	72.0	67.0	61.1
Implants	37.8	48.7	63.7	67.2
Short Acting Methods (SAM)				
Injectables	87.6	89.7	88.9	88.5
Pill	91.9	92.6	89.5	87.9
Male condoms	83.4	91.5	90.6	89.2
Traditional Methods				
Rhythm	64.2	68.8	64.7	61.5
Withdrawal	29.5	36.9	41.3	47.6
Folk Method	9.3	8.1	9.3	6.8
Any method	**95.6**	**96.8**	**94.6**	**94.6**

Source: KDHS 2008

Figure 4.8 Trends in the Knowledge of LAPM 1993 - 2008
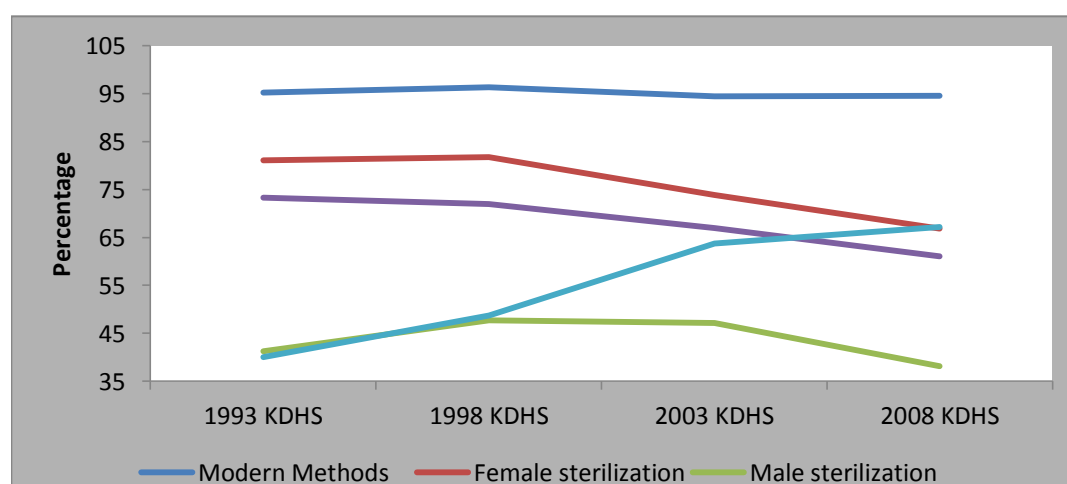
Source: KDHS 2008

As for the long acting permanent and reversible methods of contraception, there was a significant increase in levels of knowledge prior to 1993 KDHS, however the period after that showed either a stagnation or marked decline in their knowledge levels from as high as 81.1% to 66.8% for female sterilization and 73.3% to 61.1% for IUD.

Figure 4.9 Trends in the Knowledge of SAM 1993 - 2008
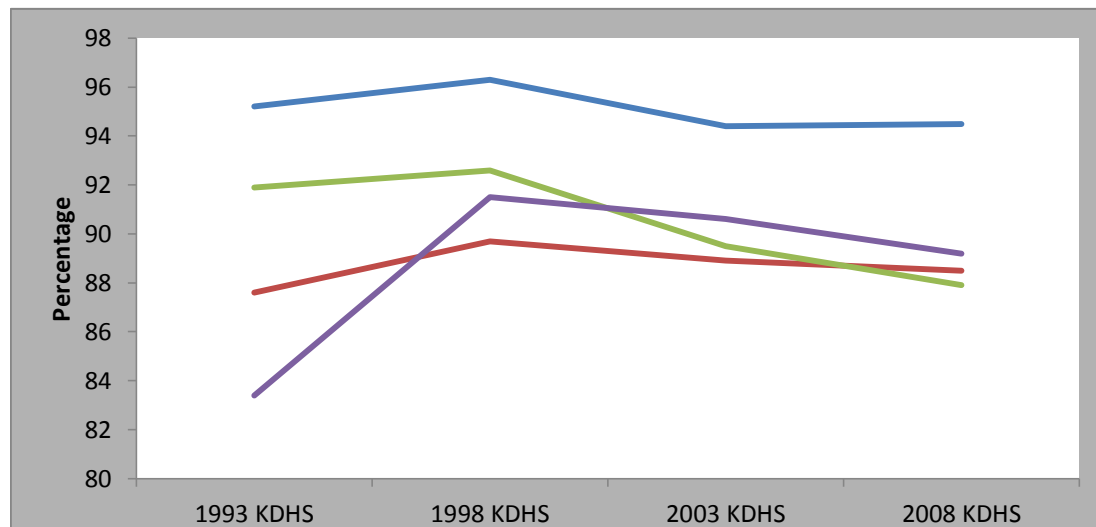
Source: KDHS 2008

The observed stall or decline in the knowledge levels of contraception among women aged 15-49 after 1998 is an issue that requires careful analysis and consideration in light of information access and dissemination.

4.8.3 Current Use of Contraceptives in Kenya

The translation of the knowledge of contraceptives into utilization determines the contraceptive prevalence rate. It is the proportion of currently married women in the ages 15-49 that are using any method of family planning. From the 2008 KDHS survey, 45.5 percent of married women were using contraception, with 39% of them using modern methods of contraception and 6% using traditional methods.

Table 4.11 Current Use of Contraceptives by Cohorts

	All women	Currently married women	Sexually active unmarried women	All Sexually active women
Modern Methods	**28.0**	**39.4**	**45.1**	**44.6**
Long Acting Methods (LAPM)				
Female sterilization	3.2	4.8	1.8	4.8
IUD	1.0	1.6	1.3	1.7
Implants	1.3	1.9	1.2	2.1
Short Acting Methods (SAM)				
Injectables	14.8	21.6	16.8	24.0
Pill	4.7	7.2	5.8	8.3
Female condoms	0.0	0.0	0.2	0.0
LAM	0.4	0.5	0.0	0.3
Male condoms	2.6	1.8	18.0	3.4
Traditional Methods	**4.1**	**6.0**	**5.2**	**6.5**
Rhythm	3.2	4.7	4.2	5.0
Withdrawal	0.4	0.7	0.6	0.7
Folk Methods	0.4	0.7	0.4	0.8
Any method	**32.0**	**45.5**	**50.3**	**51.1**
Not currently using	68.0	54.5	49.7	48.9
Number of respondents	**8,444**	**4,928**	**318**	**4,135**

Source: KDHS 2008

From the table above, only 32% of women aged 15-49 are using any method of contraception. Of all the women, almost half of all the sexually active women and sexually active unmarried women are not using any contraception. Female sterilization is the most common method among the LAPM methods with 4.8% utilization by both married and all sexually active women.

4.8.3.1 Trends on Contraceptive Use in Kenya

There has been a steady increase in contraceptive prevalence rate in Kenya from as low as 7% in late 1970s to 46% observed in the 2008 KDHS survey. However the rate of increase has slowed in the recent years. The CPR is a direct function of the use of modern methods of contraceptives and an increase in the use of modern contraceptives leads to an increase in the population CPR.

Figure 4.10 Contraceptive Prevalence Trend in Kenya (1978-2008)
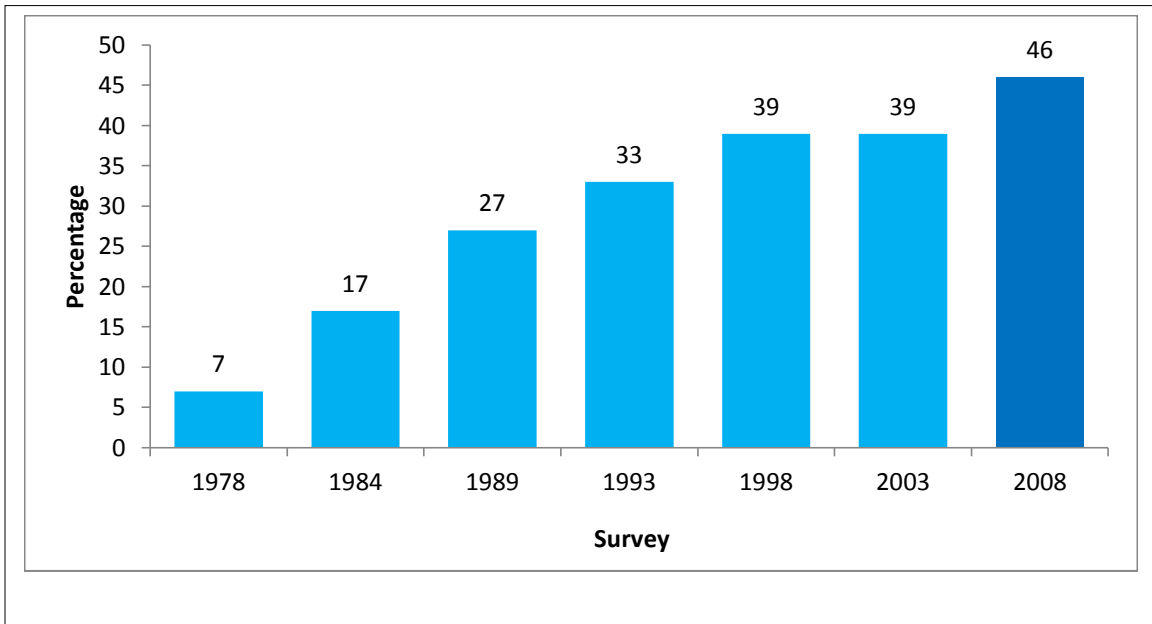
Source: KDHS 2008

Figure 4.11 Use of Popular Contraceptive Methods in Kenya (1998-2008)
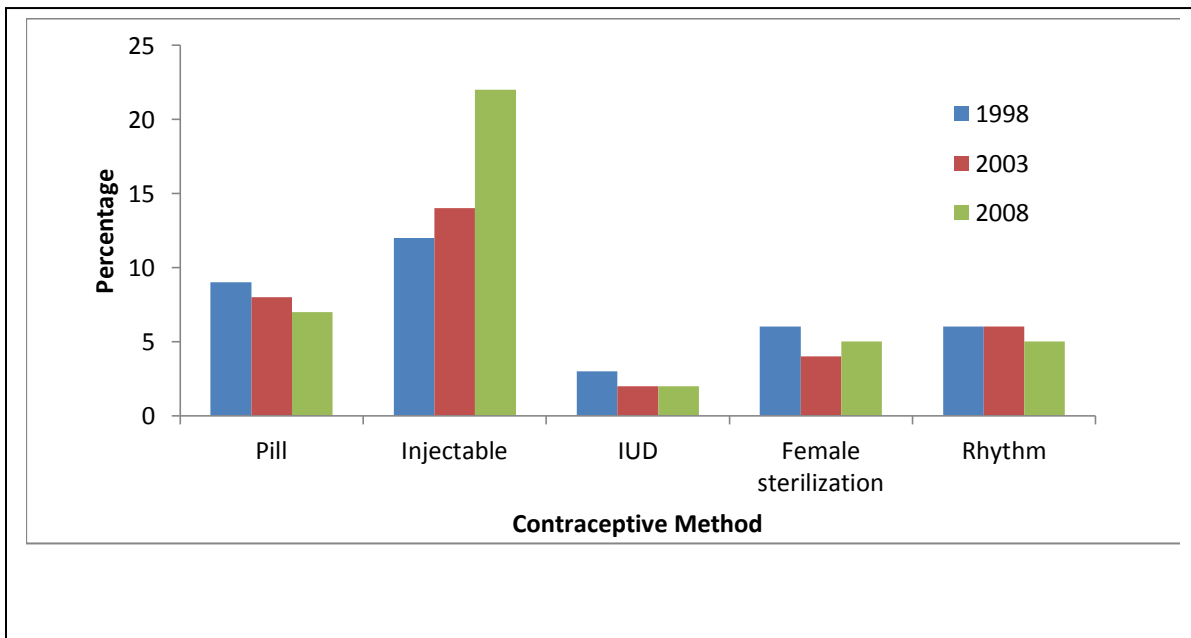
Source: KDHS 2008

Table 4.12 The Use of Modern Contraceptives by Age 2008

Age	Modern Contraceptive Method										Number of women
	Any Method	Any Modern	Female sterilization	Pill	IUD	Injectables	Implants	Male condoms	Female condoms	LAM	
ALL SEXUALLY ACTIVE WOMEN											
15 – 19	27.7	24.7	0.0	3.4	0.0	13.5	0.0	7.6	0.0	0.2	233
20 – 24	43.6	37.2	0.1	7.1	0.2	23.7	0.7	5.0	0.0	0.3	791
25 – 29	51.3	47.3	0.6	10.0	1.0	29.2	3.5	2.7	0.0	0.3	939
30 – 34	60.4	54.2	5.1	9.4	1.5	31.6	3.2	2.6	0.1	0.7	814
35 – 39	55.3	44.8	5.9	7.7	4.2	22.1	1.8	3.0	0.0	0.1	565
40 – 44	59.2	51.6	14.4	9.2	3.7	20.4	1.9	1.7	0.0	0.4	442
45 - 49	44.3	36.1	15.1	6.6	2.4	8.0	1.1	2.9	0.0	0.1	351
Total	**51.1**	**44.6**	**4.8**	**8.3**	**1.7**	**24.0**	**2.1**	**3.4**	**0.0**	**0.3**	**4,135**
CURRENTLY MARRIED WOMEN											
15 – 19	22.2	19.6	0.0	3.2	0.0	14.4	0.0	1.7	0.0	0.2	212
20 – 24	35.7	30.4	0.1	5.8	0.2	21.1	0.6	2.1	0.0	0.5	958
25 – 29	45.3	41.3	0.5	8.1	0.9	26.5	3.1	1.7	0.0	0.5	1,088
30 – 34	54.9	48.8	4.8	8.5	1.4	28.9	2.9	1.6	0.0	0.8	962
35 – 39	51.2	41.2	6.3	7.3	3.7	19.4	1.9	2.4	0.0	0.3	694
40 – 44	52.5	46.6	13.7	9.1	3.3	16.7	1.9	1.3	0.0	0.7	548
45 - 49	40.4	32.4	14.0	5.1	1.8	8.6	1.0	1.7	0.0	0.0	466
Total	**45.5**	**39.4**	**4.8**	**7.2**	**1.6**	**21.6**	**1.9**	**1.8**	**0.0**	**0.5**	**4,928**
SEXUALLY ACTIVE UNMARRIED WOMEN											
15-19	26.8	23.2	0.0	2.0	0.0	1.6	0.0	19.6	0.0	0.0	71
20-24	63.2	58.9	0.0	11.1	0.0	16.0	0.6	31.2	0.0	0.0	66
25 +	54.8	48.7	3.3	5.3	2.3	23.1	1.8	12.5	0.4	0.0	180
Total	**50.3**	**45.1**	**1.8**	**5.8**	**1.3**	**16.8**	**1.2**	**18.0**	**0.2**	**0.0**	**318**

Source: KDHS 2008

The use of contraceptives is lowest among the 15-19 age groups, increases with increase in age and is at its peak in the 30-34 age groups in both the currently married women and the sexually active women cohort. Female sterilization is most prevalent in the 45-49 groups. Interestingly, more than 9% of married women age 40-44 use the Pill as their method of contraception. Implants are more popular in the 25-34 age groups and sterilization is mostly used by women above age 30. Sexually active unmarried women prefer the injectable (16.8%)

Figure 4.12 Use of Modern Contraceptives by Age groups 2008
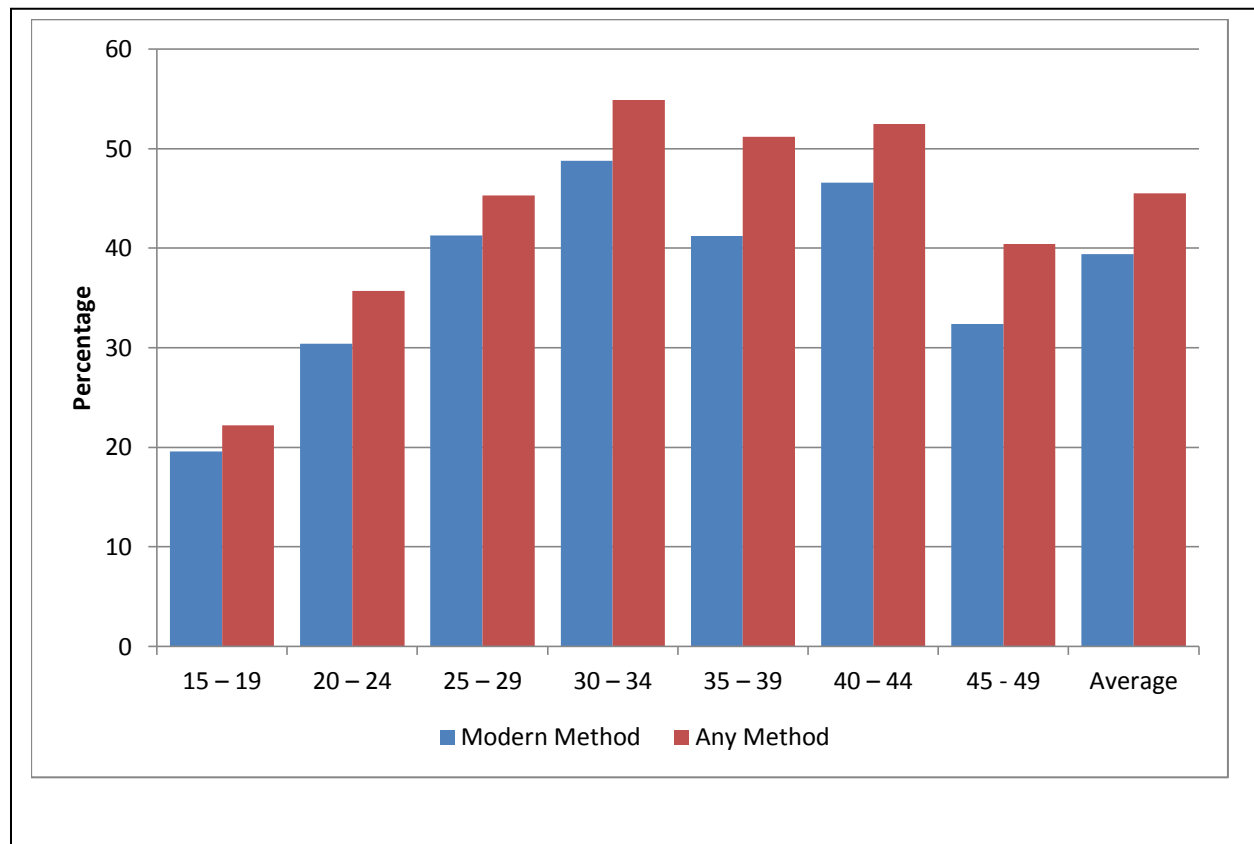
Source: KDHS 2008

4.8.4 The Use of LAPM in Kenya

Table 4.13 Use of LAPM in Kenya by Background Characteristics

	Any Method	Modern Method	Female Sterilization	IUD	Implants	Number of women
Residence						
Urban	53.1	46.6	3.0	2.9	2.7	1,154
Rural	43.1	37.2	5.3	1.2	1.7	3,774
Education						
No education	14.1	12.0	2.6	0.0	0.9	565
Primary	48.2	41.8	4.8	1.0	1.3	1,436
Secondary +	59.8	52.1	5.0	3.4	4.0	1,488
Number of living children						
0	14.7	10.5	0.0	0.0	0.9	296
1-2	47.0	42.1	0.9	1.8	2.2	1,763
3-4	53.2	46.4	5.5	2.1	2.7	1,563
5+	41.2	34.2	10.3	0.8	1.0	1,307
Wealth quantile						
Lowest	20.1	16.9	2.3	0.0	0.2	870
Second	40.0	33.4	3.8	0.5	0.7	883
Middle	49.8	43.2	6.8	1.6	1.2	952
Fourth	56.9	50.4	7.6	1.5	2.7	1,012
Highest	54.7	47.9	3.4	3.4	4.0	1,211
Total	**45.5**	**39.4**	**4.8**	**1.6**	**1.9**	**4,928**

Source: KDHS 2008

The contraceptive use in urban areas is higher than rural areas for both modern methods and any method. Rural women are more likely to use female sterilization as compared to urban women. More urban women use IUD and Implants, 2.9 vs 1.2 and 2.7 vs 1.7 for IUD and Implants respectively. The use of LAPM increases with increase in level of education with the preferred methods being sterilization and implants. Sterilization is mostly preferred by women with more than five children, while Implants and IUD are mostly used by women with 3 to 4 children.

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Figure 4.13 The Use of LAPM in Kenya
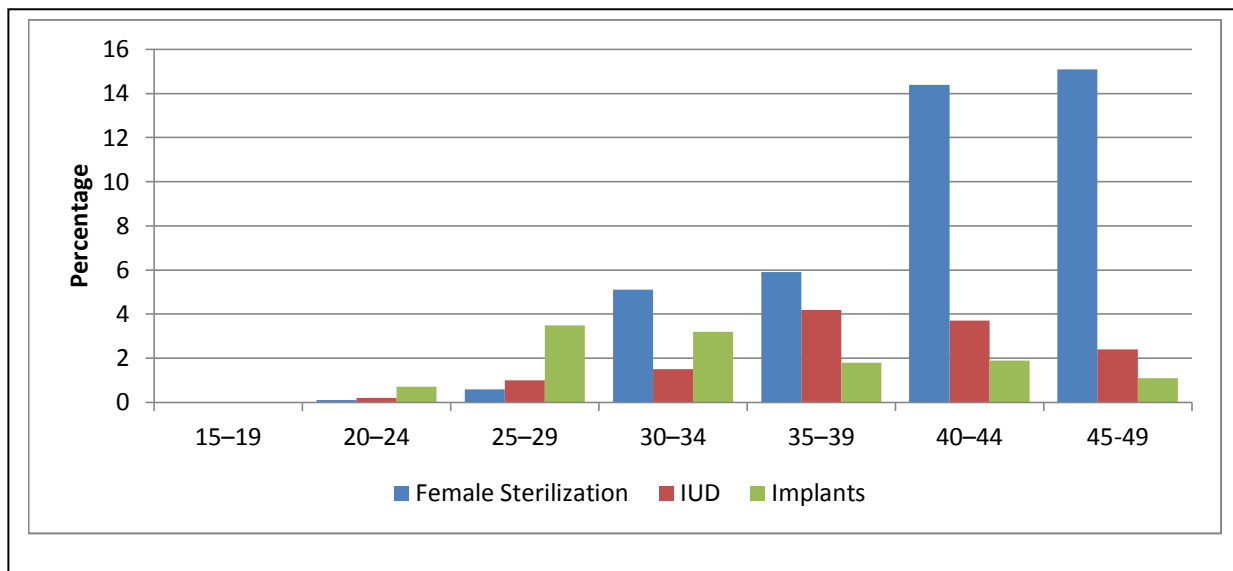
Figure 4.14 The Use of LAPM in Kenya by Education and Residence
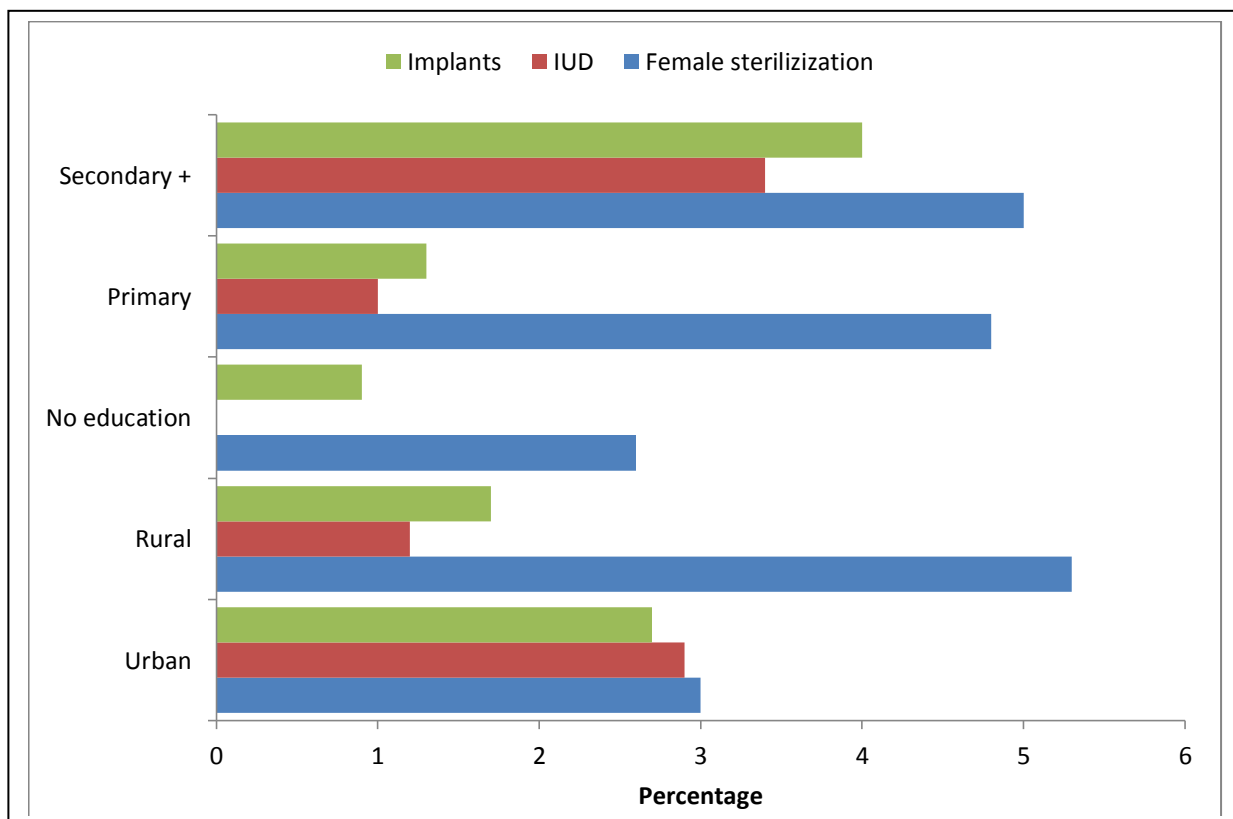
Women residing in urban areas have a uniform mix of the three LAPM methods. Most women in rural areas use female sterilization as compared to the other two methods. More women in rural areas use implants than IUD while in urban areas, more women use IUD as compared to implants.

Secondary and higher level of education women, have a near uniform mix of the LAPM methods with sterilization being the most preferred method. The use of IUD among women with no education is almost non-existent. Sterilization is the most preferred method across the education levels followed by implants.

Figure 4.15 The Use of LAPM in Kenya by Wealth and Number of Children

92
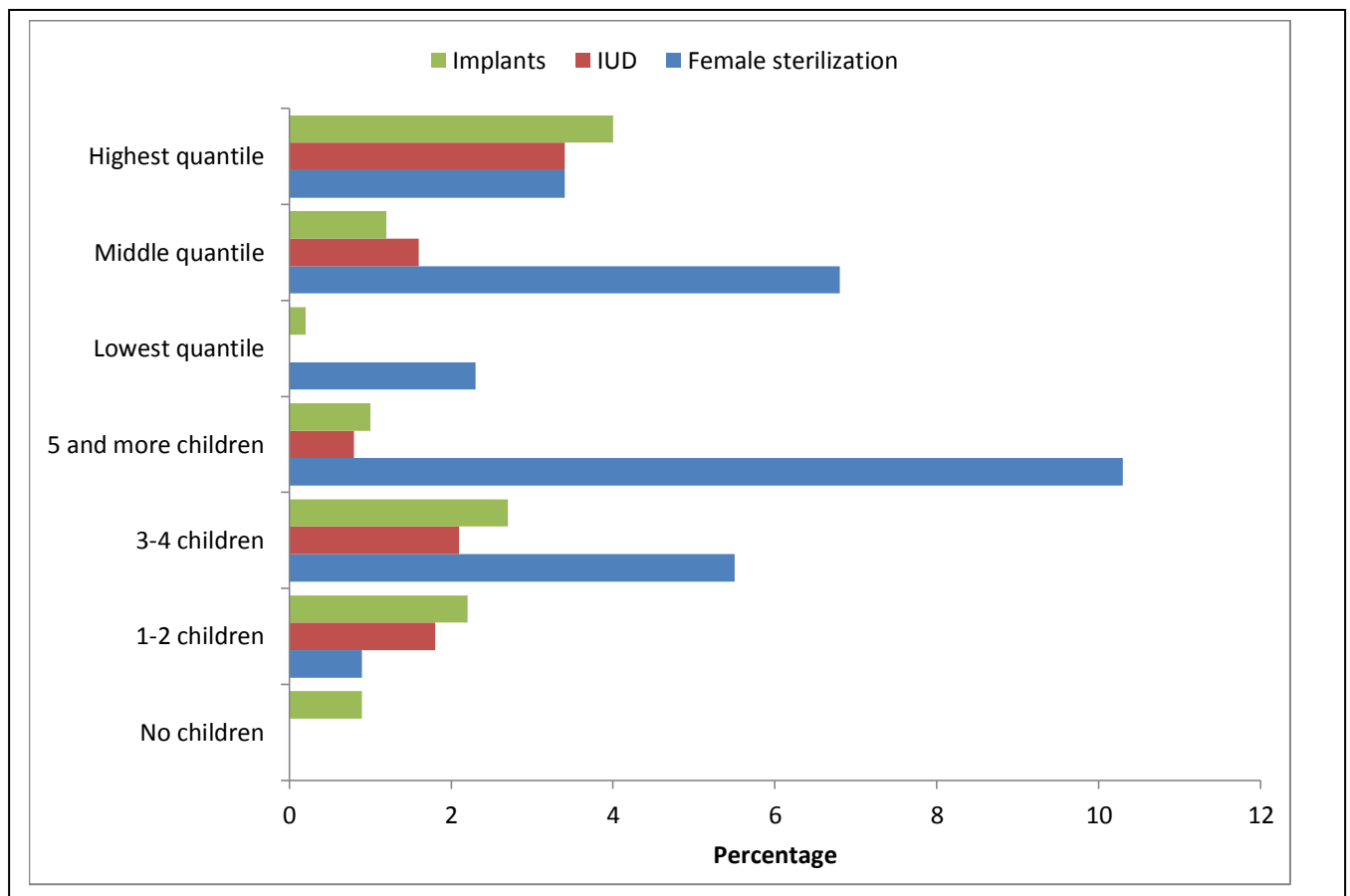
The method mix among the highest quantile women is almost uniform with more women using implants as compared to the other methods. Sterilization is the preferred method in both the middle and lower quantile categories. IUDs are used by more women in the middle quantile than implants while in the lower quantile the use of implants is higher than IUD.

Sterilization is the preferred method among women with 3 or more children and the mostly used method among women with 5 or more children. Implants are the method of choice for women with no children to women with 4 children.

4.8.5 Initiation of Contraception

Table 4.14 Number of Children at Initiation of Contraception

Current age	Never used	Number of children at initiation					Number of women
		0	1	2	3	4+	
15 – 19	85.9	9.6	3.3	1.1	0.0	0.0	1,761
20 – 24	42.7	21.6	24.6	8.3	2.2	0.6	1,715
25 – 29	27.4	12.3	33.7	15.5	6.3	4.8	1,454
30 – 34	21.6	8.9	32.5	17.8	9.4	9.8	1,209
35 – 39	27.2	4.8	23.8	11.5	11.6	21.1	877
40 – 44	24.9	4.6	25.7	11.4	10.7	22.8	768
45 - 49	35.9	4.9	11.2	10.9	9.0	28.3	661
Total	42.3	11.1	21.8	10.0	5.6	8.7	8,444

Source: KDHS 2008

More than 9% of women in the 15-19 age groups had already initiated contraceptive use before their first child as compared to less than 5% of women in the 44-49 age groups. More than 20% of women had started using contraception in the 20-24 age groups before first child. One-third of women were using contraceptives by the time they had their first child. Majority of women initiate the use of contraception after their first child.

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Figure 4.16 Number of Children at Initiation of Contraception
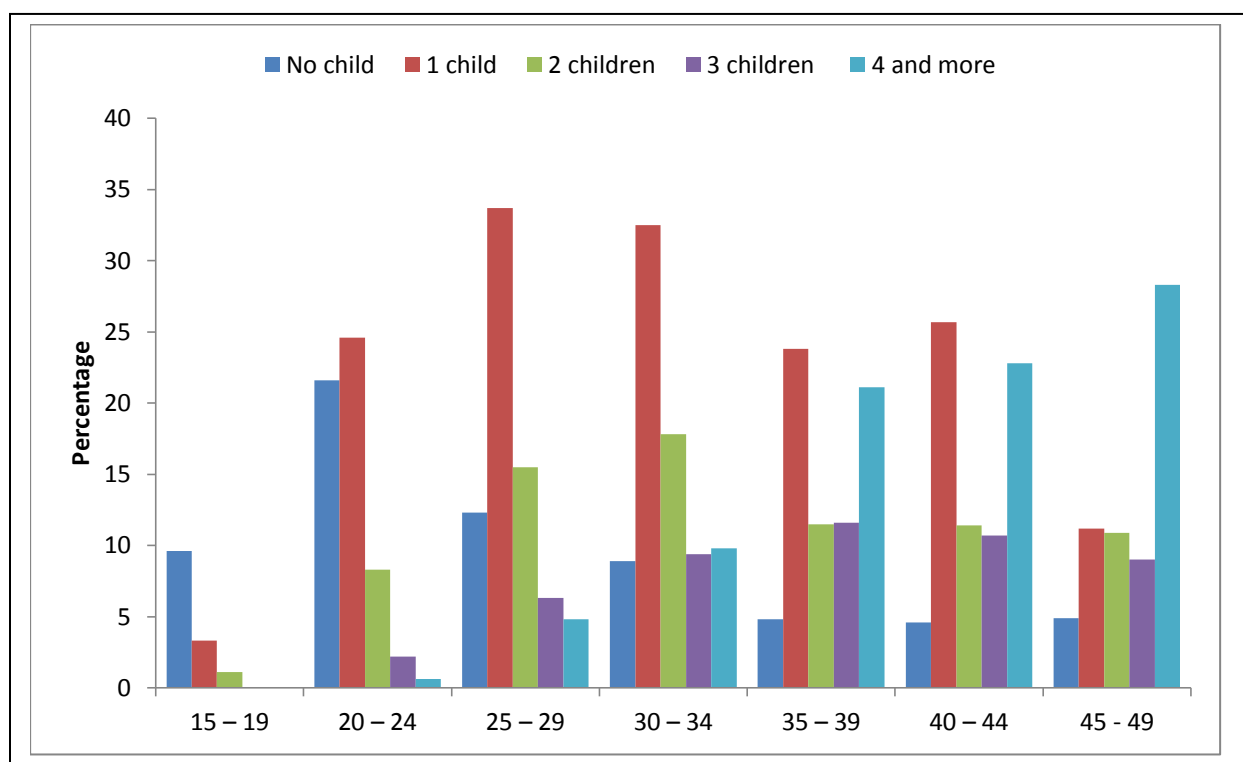
Source: KDHS 2008

4.8.6 Sources of Contraceptives

The sources of contraception provides valuable information on the access to FP services and the role played by FP programs in improving access and quality of the FP services. The sources have been classified as either public or private, depending on the nature of the source. Public sources refer to government institutions whereas private refer to private entities, mission hospitals, and non-governmental institutions.

The government is the biggest provider of contraceptive services. Public sources are the most common source of contraception for female sterilization (67%), implants (78%) and injectable (65%) while private sources provide majority of the pill (58%) and male condoms (80%). IUDs are provided by almost equal share by the government (51%) and the private sources (49%).

Figure 4.17 Sources of Contraceptives in Kenya, 2008
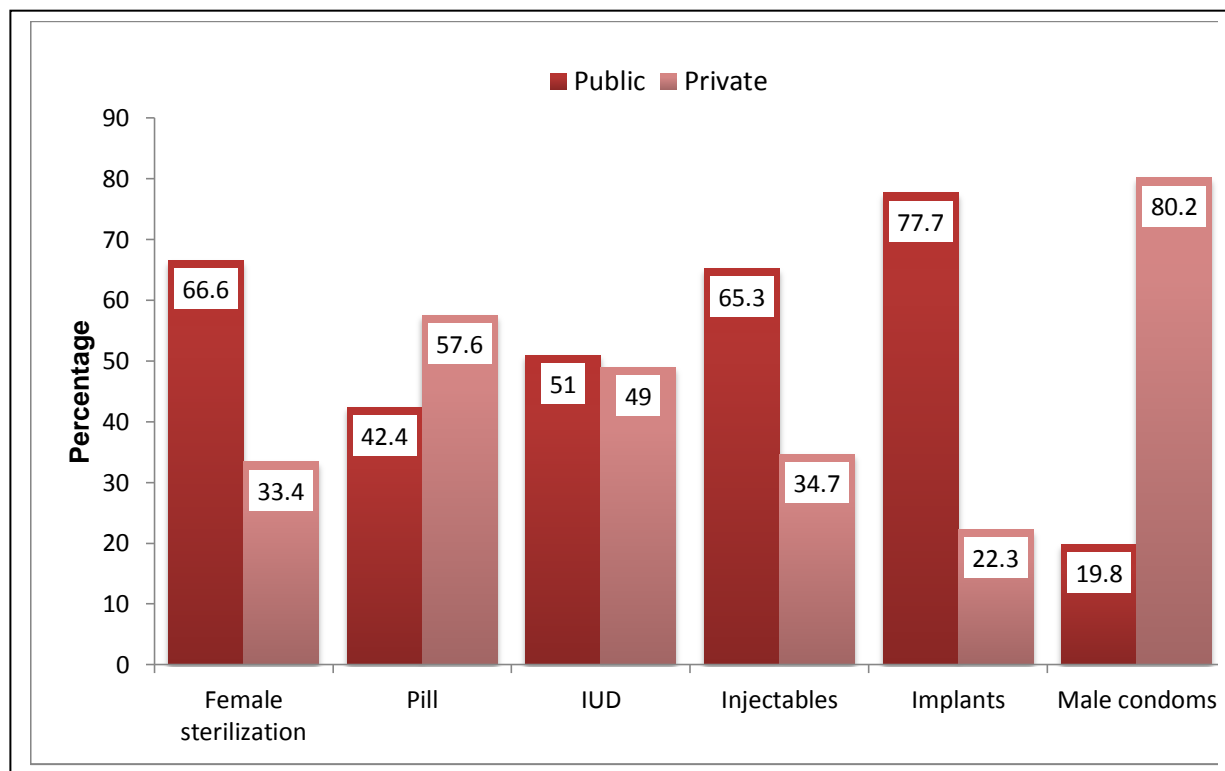
Source: KDHS 2008

4.8.7 The Cost of Contraceptive Methods

From the table, 27.7% of contraceptive users obtained their current method from a public source at no cost while 8.1 got from a private source at no cost as well. Majority of users of a LAPM method and obtained their product from a public source free of charge. The median costs for those who paid for their products vary with the method. The median costs for female sterilization and pill were comparable in both public and private source. The costs of obtaining implants and IUD from a private source were relatively high with a median cost of Kshs 996 as compared to Kshs 196 from a public source.

Table 4.15 The Cost of Contraceptive Methods

Method Source	Female sterilization	Pill	IUD	Injectables	Implants	Male condoms	Total
Public source							
Percentage free	54.1	30.8	57.2	16.4	35.6	70.8	27.7
Don't know cost	10.4	0.0	16	0.4	0.0	22.2	2.4
Median cost (Ksh)	2,495	18	*	30	196	*	29
No. of women	179	169	43	813	85	44	1,334
Private source							
Percentage free	28.0	3.5	8.0	5.0	6.4	11.7	8.1
Don't know cost	17.1	3.7	8.2	0.3	0.0	41.5	10.2
Median cost (Ksh)	2,497	23	997	90	996	10	60
No. of women	90	229	42	433	24	176	995
Total							
Percentage free	45.4	15.1	33.1	12.5	29.1	23.4	19.3
Don't know cost	12.6	2.1	4.9	0.4	0.0	37.7	5.7
Median cost (Ksh)	2,495	20	498	45	348	10	43
No. of women	269	398	85	1,246	110	220	2,329

Source: KDHS 2008

4.8.8 The Future Use of Contraception by Non-users

In order to be able to identify the present and future demand for contraceptives, it is necessary to know what proportions of women, who are not currently using any method of contraception, intend to use in the future. In addition, reasons given for not using a method now will help in better planning by service providers and policy makers.

Table 4.16 Future Use of Contraceptives by Non-users

Intention	Number of living children					Total
	0	1	2	3	4 +	
Intends to use	54.7	64.0	55.5	61.4	49.0	**55.0**
Not sure	7.6	4.9	3.2	3.8	5.0	**4.6**
No intention	37.8	31.1	41.3	34.9	45.8	**40.4**
No. of women	**136**	**447**	**493**	**431**	**1,181**	**2,687**

Source: KDHS 2008

More than half (55%) of currently married women who are not currently using any method of contraception intend to use in the future. The desire to use a method of contraception increases with the number of children.

The main reasons mentioned for not using any method of contraception were method-related and included health concerns (14.9%), fear of side effects (15.8%), and interference with normal body functions (5.9%). Fertility related reasons were also mentioned and they included infrequent sex (6.7%), Menopause/had hysterectomy (8.5%) and being sub-fecund/infecund (6.9%). Opposition to use was minimal ranging from 6% to 9%.

The preferred future method of choice gives an indication of method preference for the non-users and may be helpful in planning to meet their future needs and/or address their concerns for some methods.

Figure 4.18 Non-users Preferred Future Contraceptive Methods by age group

Source: KDHS 2008

97
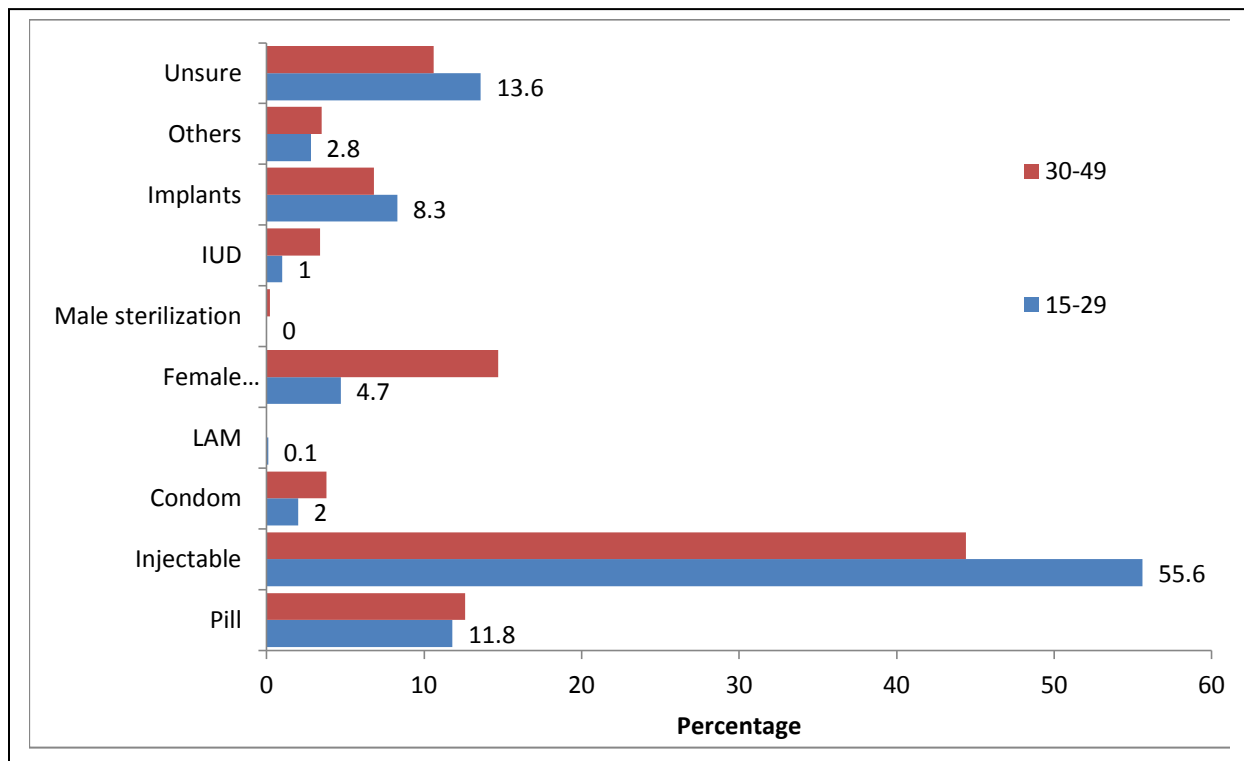
A big proportion of non-contraceptive users prefer injectable (51.5%), pill (12.1%), female sterilization (8.4%) and implants (7.7%) as their future methods. Female sterilization, pill, IUD and condoms are preferred more by women over 30 years than those under 30 years. The desire to use traditional methods is minimal indicating preference of more effective and convenient methods.

4.9 Fertility Preferences

In order to understand the current fertility and future preferences, it is necessary for planners to have access to valuable information on the need for contraception (spacing or limiting), the occurrences and nature of pregnancies (wanted, mistimed or unwanted). This helps in planning effectively for the future programs and country policies on population.

4.9.1 The Desire for More Children

The future intention to have more children provides information on reproductive behaviors and provides an opportunity for family planning programs to act as an intermediary in the success of this goal by making it possible for women to conceive if and when they want to.

From the chart, almost half of the respondents (48.8%) have no desire for more children, and a further 27% want to wait for more than two years before they can get another child. Less than 20% want their next child within two years or are undecided on when to have the child. The desire for more children soon decreases with increase in the number of children from 76% for women without a child to 4% for women with four or more children.

Figure 4.19 Future Intentions for More Children
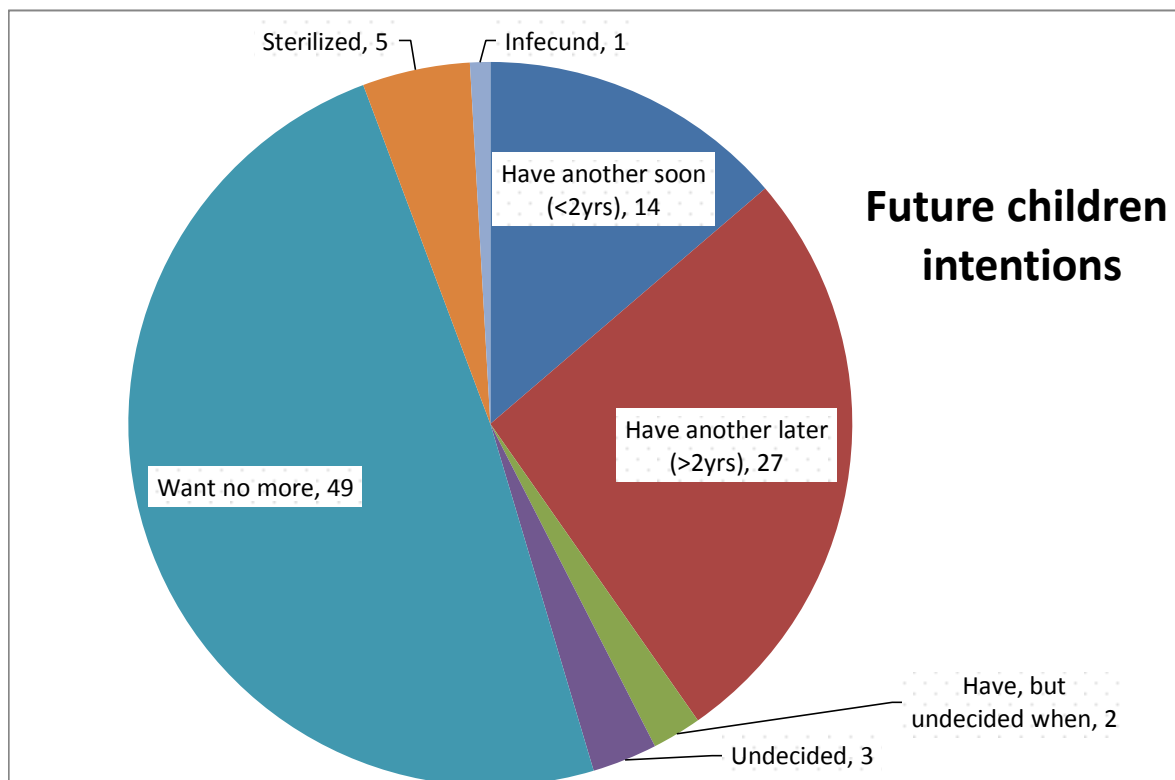
Source: KDHS 2008

4.9.2 FP Services Demand

The need for FP services is determined by the number of women wanting to stop childbearing or delay their next pregnancy. Women who are exposed to the risk of pregnancy and desire to limit or delay their births but are not using any contraceptive method are said to have an unmet need for family planning. Pregnancies which are unwanted or mistimed are also considered an unmet need. Only women who are currently using contraceptives are said to have a met need. The demand for FP services is thus the sum of the met need of contraception and the unmet need The table below shows the demand for FP services and the demand satisfied among married women as well as totals for all women.

Table 4.17 Contraceptive Demand and Unmet need

	Unmet need			Met need			Total demand	Demand Satisfied	Number of women
	Spacing	Limiting	**Total**	Spacing	Limiting	**Total**			
15 – 19	25.6	4.0	**29.7**	20.7	1.8	**22.5**	52.2	43.1	212
20 – 24	24.0	6.1	**30.1**	28.2	7.5	**35.7**	65.8	54.2	958
25 – 29	16.6	10.0	**26.7**	27.1	18.2	**45.3**	72.0	62.9	1,088
30 – 34	11.5	11.0	**22.4**	18.1	36.8	**54.9**	77.3	71.0	962
35 – 39	5.9	18.7	**24.6**	9.0	42.1	**51.2**	75.8	67.5	694
40 – 44	2.1	22.4	**24.5**	2.6	49.9	**52.5**	77.0	68.2	548
44 – 49	1.2	20.2	**21.4**	0.6	39.8	**40.4**	61.7	65.4	466
Married women	12.9	12.8	**25.6**	17.5	28.0	**45.5**	71.1	64.0	4,928
Unmarried women	2.2	0.9	**3.2**	6.8	6.4	**13.2**	16.4	80.7	3,516
All women	8.4	7.8	**16.3**	13.0	19.0	**32.0**	48.3	66.3	8,444

Source: KDHS 2008

From the table, 46% of married women had their FP needs met while 26% had an unmet need for FP services. Half of the women who had an unmet need for FP services (12.8%) wanted to limit their births but were not using any method to achieve that goal. The total demand for FP services is 71% while the demand satisfied is 64% indicating a deficit in meeting the FP needs of women in Kenya. As expected, the demand for spacing decreased with increase in age while the demand for limiting increases with age. Unmarried women had the lowest demand at 16.4% with 13.2% of their needs being met indicating a more than 80% satisfaction.

Figure 4.20 FP Services Demand
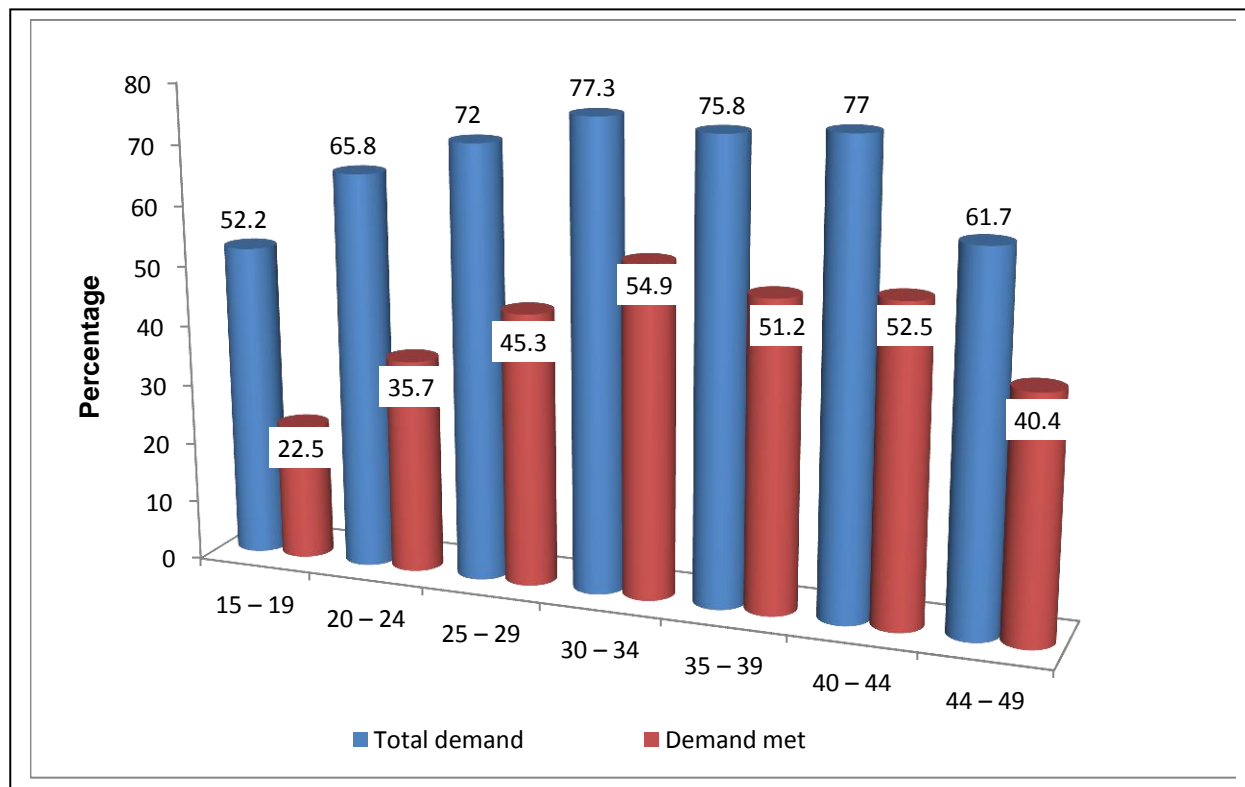
Source: KDHS 2008

Married women in Kenya aged 15-19 have less than half of their FP demands met, followed by those aged 20-24 who have a demand for FP services of 65.8 percent but only 35.7 percent is met. Generally, younger women have a higher deficit as compared to older women, but they all have more than 20% of their needs unmet. Highest demand for FP is with the 30-34 age groups.

4.9.3 Planned Parenthood

In the KDHS 2008 survey, women who had delivered within the 5 years preceding the survey were asked about the planning of those pregnancies. This was in order to determine whether they were planned (wanted at the time), mistimed (wanted later) or unwanted (not wanted at all). This information helps to gain an understanding on the control which women have over their conception. The findings are presented below

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Table 4.18 Planning of Births

	Birth planning status			Number of women
	Wanted then	Wanted later	Not wanted	
Birth order				
1	62.2	24.6	13.1	1,446
2	65.9	26.6	7.4	1,354
3	59.4	28.8	11.7	1,077
4+	48.9	24.1	26.7	2,569
Mother's Age at birth				
<20	53.2	31.9	14.9	1,021
20-24	60.4	29.9	9.6	2,068
25-29	61.7	23.2	14.9	1,589
30-34	57.1	21.1	21.2	1,004
35-39	48.8	16.0	35.0	539
40-44	33.7	16.1	50.2	226
Total	**57.2**	**25.5**	**17.3**	**6,445**

Source: KDHS 2008

Almost half (42.8%) of births in Kenya are either wanted later (mistimed) or not wanted at all (unwanted). Less than two-thirds of total births were wanted at the time and the biggest proportion is with birth orders of 3 and more. Women younger than 25 years had the highest proportion of mistimed births while those above age 35 had the highest levels of unwanted births. In general, more than 17% of births are to women who never wanted to conceive.

4.10 Analytical Findings

In assessing the determinants of LAPM use, the association between demographic, socio-economic and contraceptive use were analyzed through cross tabulation and contingency tables. Independent variable analysis was carried out using logistic regression.

Several studies have documented the role played by education, income, and access to FP services in the utilization of contraceptive services. In addition, several other factors play a role in the creation and satisfaction of FP service demand.

SPSS version 22 was used for the analysis. Some of the independent variables were found to be statistically significant to the use of contraceptives as a whole in the bivariate analysis but were less significant in predicting the choice of LAPM in the multivariate analysis. The interactions between various variables were examined and only significant variables and interactions presented for interpretation.

4.10.1 Education

Education is one of the factors highly associated with the use of contraceptives. It has been argued previously that educated women are more likely to use contraception, get married later in life, reduce fertility, have access to better economic opportunities and are incidental to better maternal and children outcomes. In order to assess the effect of education on the use pf LAPM, chi-square tests were carried out and the findings are as shown below.

Education has a direct relationship with the use of LAPM. The Chi-square value of 196.116 at 12 degrees of freedom with a p-value less than 0.0005 is statistically significant at 99% level.

Table 4.19 Chi-Square Tests for Education

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	263.243[a]	12	.000
Likelihood Ratio	196.116	12	.000
Linear-by-Linear Association	79.799	1	.000
N of Valid Cases	8444		

Source: KDHS 2008

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Table 4.20 Crosstab for the Use of LAPM with Educational Level

			Using LAPM					
			Using IUD	Using Female sterilization	Using Male sterilization	Using implants	Other methods	Total
Highest educational level	No education	Count	0	18	0	4	1220	1242
		Expected Count	15.4	35.6	.1	15.9	1174.9	1242.0
		% within Highest educational level	0.0%	1.4%	0.0%	0.3%	98.2%	100.0%
		% within Using LAPM	0.0%	7.4%	0.0%	3.7%	15.3%	14.7%
	Primary	Count	33	153	0	37	4181	4404
		Expected Count	54.8	126.2	.5	56.3	4166.2	4404.0
		% within Highest educational level	0.7%	3.5%	0.0%	0.8%	94.9%	100.0%
		% within Using LAPM	31.4%	63.2%	0.0%	34.3%	52.3%	52.2%
	Secondary	Count	30	48	0	34	1972	2084
		Expected Count	25.9	59.7	.2	26.7	1971.5	2084.0
		% within Highest educational level	1.4%	2.3%	0.0%	1.6%	94.6%	100.0%
		% within Using LAPM	28.6%	19.8%	0.0%	31.5%	24.7%	24.7%
	Higher	Count	42	23	1	33	615	714
		Expected Count	8.9	20.5	.1	9.1	675.4	714.0
		% within Highest educational level	5.9%	3.2%	0.1%	4.6%	86.1%	100.0%
		% within Using LAPM	40.0%	9.5%	100.0%	30.6%	7.7%	8.5%
Total		Count	105	242	1	108	7988	8444
		Expected Count	105.0	242.0	1.0	108.0	7988.0	8444.0
		% within Highest educational level	1.2%	2.9%	0.0%	1.3%	94.6%	100.0%
		% within Using LAPM	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: KDHS 2008

From the chi-square analysis, LAPM use varies from method to method across the different education levels. Women with no education are less likely to use LAPM when compared to women with some education. The observed Counts (OC) is less than the Expected Counts (EC) in all the LAPM methods. Women with primary education are more likely to choose female sterilization OC 153 against EC of 126. Women with secondary education are more likely to use IUD and Implants with OC/EC of 30/25.9 and 34/26.7 respectively. Women with higher education have a balanced method mix with OC higher than EC in all LAPM methods.

4.10.1.1 Regression analysis for education and use of LAPM

In order to understand the effect of education on the use of LAPM, a regression model was developed.

Null Regression Model

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.863	.048	3536.380	1	.000	.057

The null model, (equation without predictors) will be used to evaluate the effect of different independent variables on the use of LAPM.

Table 4.21 Regression Model with Education as a Predictor

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	No Education			115.766	3	.000			
	Primary	-2.189	.241	82.619	1	.000	.112	.070	.180
	Secondary	-1.105	.128	74.175	1	.000	.331	.258	.426
	Higher	-1.042	.145	51.286	1	.000	.353	.265	.469
	Constant	-1.827	.108	284.481	1	.000	.161		

a. Variable(s) entered on step 1: Education.

Source: KDHS 2008

When the independent variable of Education was introduced to the equation, there was a significant improvement in the regression coefficients of the Null Model. The new equation had a p-value of less than 0.0005 and statistically significant at 99% confidence level for all the education levels. The null hypothesis of no difference between the model with no predictor and the one with education as a predictor was rejected. The existence of a relationship between education and use of LAPM was supported. A woman with primary education was 11.2% (OR 0.112) more likely than a woman with no education to use LAPM, while a woman with secondary education 33.1% (OR 0.331), and higher education 35.3% (OR 0.353) was more likely to use LAPM than a woman with no education.

4.10.2 Residence

The place of residence has an influence on the use of LAPM. The chi-square test shows LAPM use and residence are not mutually exclusive. The Chi-square value 53.460 at 4 degrees of freedom is significant statistically at 99% level.

Table 4.22 Chi-Square Tests for Residence

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.557	4	.000
Likelihood Ratio	53.460	4	.000
Linear-by-Linear Association	4.456	1	.035
N of Valid Cases	8444		

Source: KDHS 2008

Table 4.23 Cross Tabulation for Using LAPM and Residence

Crosstab

			Type of place of residence		Total
			Urban	Rural	
Using LAPM	Using IUD	Count	58	47	105
		Expected Count	32.5	72.5	105.0
		% within Using LAPM	55.2%	44.8%	100.0%
		% within Type of place of residence	2.2%	0.8%	1.2%
	Using Female sterilization	Count	54	188	242
		Expected Count	74.9	167.1	242.0
		% within Using LAPM	22.3%	77.7%	100.0%
		% within Type of place of residence	2.1%	3.2%	2.9%
	Using Male sterilization	Count	1	0	1
		Expected Count	.3	.7	1.0
		% within Using LAPM	100.0%	0.0%	100.0%
		% within Type of place of residence	0.0%	0.0%	0.0%
	Using implants	Count	53	55	108
		Expected Count	33.4	74.6	108.0
		% within Using LAPM	49.1%	50.9%	100.0%
		% within Type of place of residence	2.0%	0.9%	1.3%
	Others	Count	2449	5539	7988
		Expected Count	2473.8	5514.2	7988.0
		% within Using LAPM	30.7%	69.3%	100.0%
		% within Type of place of residence	93.7%	95.0%	94.6%
Total		Count	2615	5829	8444
		Expected Count	2615.0	5829.0	8444.0
		% within Using LAPM	31.0%	69.0%	100.0%
		% within Type of place of residence	100.0%	100.0%	100.0%

Source: KDHS 2008

A woman living in an urban area is more likely to use IUD, OC 58 against EC 32.5, and Implants OC 53 against EC of 33.4 than a woman living in a rural area with OC 47 against EC 72.5 and

OC 55 against EC 74.6 respectively. A rural woman is more likely use female sterilization than an urban resident woman with OC of 188 against EC of 167.1.

4.10.2.1 Regression analysis for Residence and use of LAPM

The relationships of residence and the use of LAPM were evaluated by fitting a regression model and using residence as a predictor on the use of LAPM.

Null Regression Model

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.863	.048	3536.380	1	.000	.057

Source: KDHS 2008

Table 4.24 Regression Model with Residence as a Predictor

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Residence(1)	.258	.100	6.628	1	.010	1.295	1.064	1.576
	Constant	-2.950	.060	2397.660	1	.000	.052		

a. Variable(s) entered on step 1: Residence.

Source: KDHS 2008

When residence was used as a predictor, there was an improvement in the regression coefficients of the null model. The residence p-value 0.010 was statistically significant at 99% confidence level and thus the null hypothesis of no difference between the two models was rejected. Urban residence increases the log odds of use of LAPM by 0.258. The likelihood of a woman living in an urban area, to use LAPM as compared to a woman living in a rural area, was 1.295.

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4.10.3 Marital status

The overall exposure to the risk of conception is dependent on whether the woman is married, or living together with a spouse even though they are not married. This was referred to as being in union, while women who had less risk of exposure i.e. never married, or living apart from spouse were considered not in union.

Table 4.25 Cross Tabulation for Using LAPM and Marital Status

Crosstab

				Currently married women		Total
				Not in Union	In union	
Using LAPM	Using IUD	Count		9	96	105
		Expected Count		42.3	62.7	105.0
		% within Using LAPM		8.6%	91.4%	100.0%
		% within Currently married women		0.3%	1.9%	1.2%
	Using Female sterilization	Count		39	203	242
		Expected Count		97.5	144.5	242.0
		% within Using LAPM		16.1%	83.9%	100.0%
		% within Currently married women		1.1%	4.0%	2.9%
	Using Male sterilization	Count		0	1	1
		Expected Count		.4	.6	1.0
		% within Using LAPM		0.0%	100.0%	100.0%
		% within Currently married women		0.0%	0.0%	0.0%
	Using implants	Count		16	92	108
		Expected Count		43.5	64.5	108.0
		% within Using LAPM		14.8%	85.2%	100.0%
		% within Currently married women		0.5%	1.8%	1.3%
	Others	Count		3339	4649	7988
		Expected Count		3219.2	4768.8	7988.0
		% within Using LAPM		41.8%	58.2%	100.0%
		% within Currently married women		98.1%	92.2%	94.6%
Total		Count		3403	5041	8444
		Expected Count		3403.0	5041.0	8444.0
		% within Using LAPM		40.3%	59.7%	100.0%
		% within Currently married women		100.0%	100.0%	100.0%

Source: KDHS 2008

The risk of exposure to contraception had a significant relationship with the use of LAPM. Women, who were considered not in union, were less likely to use LAPM than women considered in union. This is indicated by the OC less than EC in all the LAPM methods. Women in union were more likely to use all the LAPM methods when compared to women not in union, with all OC more than the EC. Women not in union were less likely to use LAPM when compared to other methods OC/EC of 3339/3219.2 whereas women in union were more likely to use LAPM than other methods with OC/EC of 4649/4768.8.

4.10.3.1 Regression analysis for Marital Status and the use of LAPM

The effect of marital status on the use of LAPM was examined using regression analysis.

Null Regression Model

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.863	.048	3536.380	1	.000	.057

Source: KDHS 2008

Table 4.26 Regression Model with Marital Status as a Predictor

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp (B)	95% C.I.for EXP(B)	
								Lower	Upper
Step 1[a]	Marital Status(1)	-1.481	.137	117.414	1	.000	.227	.174	.297
	Constant	-2.473	.053	2211.201	1	.000	.084		
a. Variable(s) entered on step 1: Marital Status.									

Source: KDHS 2008

When marital status was used as a predictor for the use of LAPM, there was a significant improvement in the regression coefficients of the null model. With the p-value less than 0.005, the null hypothesis of no difference in the two models was rejected and the existence of a relationship between marital status and the use of LAPM supported. Being in union increased the log odds of using LAPM by 1.481 and the chances of using LAPM by 22.7%.

4.10.4 Employment

In order to determine the relationship between socio-economic status and the use of LAPM, employment was considered an indirect indicator for the SES. Access to reproductive health services is dependent on the SES of the woman and the availability of the services.

Table 4.27 Cross Tabulation for Using LAPM and Employment

Use LAPM * Worked in last 12 months Cross tabulation

			Worked in last 12 months				Total
			No	In the past year	Currently working	Have a job, but on leave last 7 days	
Use LAPM	Not using LAPM	Count	3650	202	3978	157	7987
		Expected Count	3536.1	200.6	4096.1	154.2	7987.0
		% of Total	43.2%	2.4%	47.1%	1.9%	94.6%
	Using IUD	Count	11	3	90	1	105
		Expected Count	46.5	2.6	53.8	2.0	105.0
		% of Total	0.1%	0.0%	1.1%	0.0%	1.2%
	Using Female Sterilization	Count	55	5	178	4	242
		Expected Count	107.1	6.1	124.1	4.7	242.0
		% of Total	0.7%	0.1%	2.1%	0.0%	2.9%
	Using Male sterilization	Count	1	0	0	0	1
		Expected Count	.4	.0	.5	.0	1.0
		% of Total	0.0%	0.0%	0.0%	0.0%	0.0%
	Implants	Count	21	2	84	1	108
		Expected Count	47.8	2.7	55.4	2.1	108.0
		% of Total	0.2%	0.0%	1.0%	0.0%	1.3%
Total		Count	3738	212	4330	163	8443
		Expected Count	3738.0	212.0	4330.0	163.0	8443.0
		% of Total	44.3%	2.5%	51.3%	1.9%	100.0%

 Source: KDHS 2008

Employment was found to be an important indicator for the use of LAPM. Women who were currently working were more likely to use LAPM than any other category of women. The OC for all the methods were higher than EC for the currently working women. Women who did not work in the last 12 months before the survey were less likely to use LAPM as the OC were lower than EC in almost all the LAPM methods and OC/EC of not using LAPM was 3650/3536.

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4.10.4.1 Regression analysis for Employment and the use of LAPM

To assess the effect of employment on the use of LAPM, a regression analysis model was fitted.

Null Regression Model

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.863	.048	3536.380	1	.000	.057

Source: KDHS 2008

Table 4.28 Regression Model with Employment as a Predictor

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Not Working			117.443	3	.000			
	Worked in the past year	-.461	.430	1.149	1	.284	.631	.272	1.465
	On leave	.259	.527	.241	1	.624	1.295	.461	3.641
	Working	.840	.420	4.002	1	.045	2.315	1.017	5.271
	Constant	-3.264	.416	61.588	1	.000	.038		

Source: KDHS 2008

When employment was included in the model, there was a significant change in the regression coefficients. Working had a p-value 0.045 which was less than Alpha value of 0.05 thereby being statistically significant at 95% confidence level. The null hypothesis of no effect was rejected. Women who reported working at the time of the survey had a 231.5% likelihood of using LAPM as compared to women who did not work. Women who worked but were on leave had a 1.295 odds ratio of using LAPM.

4.10.5 Age

The effect of age on the use of LAPM was evaluated by regression analysis and a model developed to ascertain the effect and relationship.

Table 4.29 Cross Tabulation for Age and Using LAPM

Use LAPM * Age 5-year groups Cross tabulation

			Age 5-year groups							
			15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
Use LAPM	Not using LAPM	Count	1767	1729	1365	1092	839	618	578	7988
		Expected Count	1671.6	1649.8	1346.2	1116.3	879.8	690.6	633.8	7988.0
		% of Total	20.9%	20.5%	16.2%	12.9%	9.9%	7.3%	6.8%	94.6%
	Using IUD	Count	0	3	14	20	27	26	15	105
		Expected Count	22.0	21.7	17.7	14.7	11.6	9.1	8.3	105.0
		% of Total	0.0%	0.0%	0.2%	0.2%	0.3%	0.3%	0.2%	1.2%
	Using Female Sterilization	Count	0	1	6	37	51	76	71	242
		Expected Count	50.6	50.0	40.8	33.8	26.7	20.9	19.2	242.0
		% of Total	0.0%	0.0%	0.1%	0.4%	0.6%	0.9%	0.8%	2.9%
	Using Male sterilization	Count	0	0	0	0	0	1	0	1
		Expected Count	.2	.2	.2	.1	.1	.1	.1	1.0
		% of Total	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Implants	Count	0	11	38	31	13	9	6	108
		Expected Count	22.6	22.3	18.2	15.1	11.9	9.3	8.6	108.0
		% of Total	0.0%	0.1%	0.5%	0.4%	0.2%	0.1%	0.1%	1.3%
Total		Count	1767	1744	1423	1180	930	730	670	8444
		Expected Count	1767.0	1744.0	1423.0	1180.0	930.0	730.0	670.0	8444.0
		% of Total	20.9%	20.7%	16.9%	14.0%	11.0%	8.6%	7.9%	100.0%

Source: KDHS 2008

Age was an important predictor for the use of LAPM. Young women were less likely to use LAPM than older women and the likelihood increased with increase in age. Women aged 30 and above had a higher likelihood of using LAPM than younger women. The OC for using IUD among the 30-34 age groups was 20 against an EC of 14.7, OC of 37 for female sterilization against EC of 33.8 and OC of 31 against EC of 15.1 for Implants. Women aged 45-49 were less likely than women aged 20-24 to use Implants.

4.10.5.1 Regression analysis for Age and the use of LAPM

In order to find out the relationship between age and the use of LAPM, a regression model of age was fitted with the use of LAPM.

Null Regression Model

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.863	.048	3536.380	1	.000	.057

Source: KDHS 2008

Table 4.30 Regression Model with Age as a Predictor

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	15-19			184.628	6	.000			
	20-24	-19.365	956.163	.000	1	.984	.000	.000	.
	25-29	-2.909	.283	106.018	1	.000	.055	.031	.095
	30-34	-1.321	.175	57.049	1	.000	.267	.189	.376
	35-39	-.681	.158	18.621	1	.000	.506	.372	.690
	40-44	-.384	.157	5.937	1	.015	.681	.501	.928
	45-49	.130	.152	.728	1	.394	1.139	.845	1.534
	Constant	-1.838	.112	268.059	1	.000	.159		

a. Variable(s) entered on step 1: Age.

Source: KDHS 2008

When age was included in the equation, with the age group 15-19 being the reference group, there was a statistically significant change in the coefficients of the null model. The overall equation p-value and p-values of the sub-groups were statistically significant. The null hypothesis of no difference between the null model and the model with age as a predictor was rejected. There was a 26.5% higher chance of a woman aged 30-34 to use LAPM as compared to

the reference group while women aged 45-49 had 113.9% likelihood of using LAPM as compared to women aged 15-19.

4.10.6 Multinomial Logistic Regression for Method Choice

A number of variables were assessed in order to determine their effect on the dependent variables of contraceptive use and method choice. Odds ratios were used to determine the significance of the variables at each step of their analysis. Odds ratios of greater than one indicated increased likelihood of using contraception and LAPM method choice.

The regression coefficients were compared to the coefficients of the standard errors and the variables with higher effect on the dependent variables used in the model.

The correlation of the various independent variables with the dependent variables yielded several correlation coefficients (Pearson product-moment correlation co-efficient). The square of the correlation coefficients helped in understanding how much of the dependent variable was explained by the independent variables.

At 5% significance level, the strength of the association using the square of the correlation coefficient (r^2) was used to determine the significance of variables and decisions made on whether or not a variable should be retained in the model. The models were interpreted using the odds ratios with the reference group and the odds used to compare between groups in the model.

The different independent variables were assessed to see their suitability in the final model and their correlation coefficient used to determine how much they influenced the dependent variables. The test of relationship between the independent variables and the dependent variable in the multinomial regression was determined by the change in the likelihood values of the null model and the final model. The final model chi-square provided the statistical evidence for a relationship between the dependent variable and independent variables.

Table 4.31 Multinomial Logistic regression for Method Choice

Case Processing Summary

		N	Marginal Percentage
Contraceptives Choice by Type	Traditional Methods	201	11.9%
	SAM	1138	67.2%
	LAPM	355	21.0%
Type of place of residence	Urban	555	32.8%
	Rural	1139	67.2%
Worked in last 12 months	In the past year	65	3.8%
	Currently working	1576	93.0%
	Have a job, but on leave last 7 days	53	3.1%
Employment all year/seasonal	All year	1125	66.4%
	Seasonal	497	29.3%
	Occasional	72	4.3%
Unmet need	Using to space	611	36.1%
	Using to limit	1083	63.9%
Current Marital Status	Not in UNION	173	10.2%
	In UNION	1521	89.8%
Contraceptive Product Source	Other Sources	857	50.6%
	Government Source	837	49.4%
Valid		1694	100.0%
Missing		6750	
Total		8444	
Subpopulation		1267	

Source: KDHS 2008

The case processing summary gives a summary of the variables included in the model and their categories. From the summary, 67.2% of the married women were using SAM as compared to 21.0% using LAPM. 93% reported they were working. Out of the working women, 66.4% worked all year and only 4.3% worked occasionally. 63.9% of the married women used contraceptives for limiting purposes and 89.8% were considered exposed to the risk of conception.

The Parameter Estimates for the Multinomial Regression are shown in Appendix 3.

The overall test of relationship between the independent variables and the method choice is shown by the final model chi-square in the Model Fitting information.

Table 4.32 Model Fitting Information for Method Choice

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	2556.140			
Final	1977.122	579.018	22	.000

Source: KDHS 2008

From the analysis, the probability of the model chi-square (579.018) was less than alpha 0.01. The null hypothesis of no difference between the null model and the final model was rejected. There is a relationship between the independent variables and method choice.

The relationship of individual independent variable and the dependent variable Method choice is shown in the Likelihood Ratio Test table. Current Age, Education, Age at marriage, and Contraceptive source had a statistically significant relationship with LAPM method at 99% confidence level. Residence, Marital status and Unmet contraception need relationship were significant at Alpha 0.05. Employment and working status were not statistically significant.

Table 4.33 Likelihood Ratio Tests for Method Choice

Effect	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	1977.122[a]	.000	0	.
Age	2108.647	131.525	2	.000
Education	2007.064	29.942	2	.000
Marriage Age	1989.303	12.180	2	.002
Residence	1983.173	6.051	2	.049
Working	1981.898	4.776	4	.311
Employment	1980.983	3.860	4	.425
Unmet Need	1984.935	7.812	2	.020
Marital Status	1985.565	8.442	2	.015
Contra Source	2302.869	325.747	2	.000

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.
a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Source: KDHS 2008

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Table 4.34 Adjusted odds ratios for LAPM Method Choice

			95.0% Confidence Interval for Exp(B)	
		Exp(B)	Lower Bound	Upper Bound
1	Place of residence (rural)			
	urban	1.02	0.73	1.42
2	Age group (20-24)			
	15-19	0.82	0.48	1.22
	25-29	1.18	0.96	1.52
	30-34	1.42	1.12	1.74
	35-39	1.51	0.94	1.85
	40-44	2.17	1.04	2.48
	45-49	2.32	1.08	2.61
3	Parity (3-4)			
	None	0.17	0.12	0.25
	1-2	0.79	0.65	0.98
	5 and more	1.21	0.97	1.51
4	Marital status(in union)			
	Not in union	0.84	0.66	1.02
5	Educational level (none)			
	primary	1.21	1.02	1.68
	Secondary and higher	2.68	1.87	2.94
6	Contraceptive source (public)			
	Private	0.33	0.19	0.51
7	Information source (health facility)			
	Mass media	2.44	1.98	2.87
	Family and friends	1.22	0.99	1.43

Source: KDHS 2008

The adjusted odds ratios determined factors that had the greatest influence on the choice of LAPM. Women living in urban areas were more likely (1.02) than rural women to choose LAPM while older women had a higher probability of choosing LAPM than younger women. There was 67% less likelihood of using LAPM when source of contraception was from private source.

CHAPTER 5

DISCUSSIONS

Kenya was among the first countries in SSA to introduce reproductive health and family planning program. The program was introduced with the ultimate aim of improving and increasing access to reproductive health services and family planning in particular in addition to reducing maternal and child mortality.

According to Kenya's reproductive health policy, all women in the reproductive age are entitled to quality reproductive health services and are entitled to have access to a wide range of choices of contraceptive methods for fertility regulation.

This study focused both on factors working at individual level and those that operate beyond the individual including the environment, community, policy, and healthcare system and how they influence the use of contraceptives. Factors that were deemed important and having a great influence in decision making on the use FP were educational level, marital status, initiation of contraception, socio-economic status and the interaction with healthcare services.

These factors had different effects on the use of FP in general and the LAPM in particular. The long acting reversible and permanent methods of contraception form an important part of the method mix available to women. Their use is not as widespread as the short acting methods, thereby making it necessary to understand the specific characteristics of people who choose LAPM and try to explain factors that have an influence on their decision making.

5.1 Demography

Kenya's population stands at slightly over 44 million people. Its population stood at 10.9 million 40 years ago. It has an average annual population growth rate of 2.9%, which has been near constant for the last 30 years. The government came up with population policies and initiated the

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FP program, in order to reduce population growth to an average of 2.1% per annum by 2010. The population aged below 20 years constitutes more than half (54.7%) and those aged below 30 account for more than 70% of the population. This huge population of young people poses an ever increasing burden on the government in providing for social, reproductive, and health needs. There is huge unemployment as seen in the survey with more than 40% of women aged below 30 years being unemployed. Economic empowerment forms the cornerstone of motivation to limit child birth, improve the quality of life and access more opportunities.

Many women were found to initiate childbearing at an early age as shown in Table 4.8, with the median age at initiation of childbirth being 19.8. More than 70% of women had given birth by the time they were age 22 and more than 85% had given birth by age 25. The highest ASFR was for women aged 20-24.

With the early onset of childbearing the overall exposure to the risk of conception is increased without access to fertility limiting measures. However, some women prefer to delay child birth as indicated despite early initiation of sexual activities. More than 85% of women aged 15-19 had never given birth as well as one-third of women aged 20-24 (Table 4.7). Despite being sexually active, only 27.7% of women aged 15-19 and 43.6% aged 20-24 were using any method of contraception. Among the currently married women, only 22.2% (15-19) and 35.7% (20-24) were using any method of contraception (Table 4.12).

5.2 Contraceptive Availability, Knowledge and Use

Kenya was among the first countries in Africa to realize the importance of FP as a core element in economic and social development and incorporated it in the country's development policy in 1965.It adopted a raft of measures including policy formulation and dedicated organs of

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government to specifically address reproductive health and included family planning within the PHC framework in order to improve access to family planning services.

There were fourteen different methods of contraception available in Kenya. The modern methods constituted more than 70%. The methods were Pill, IUD, Injections, Diaphragm, Male condom, Female sterilization, Male sterilization, Rhythm method, Withdrawal, Implants, Abstinence, Lactational Amenorrhea, Female condom, Foam and Jelly. The LAPM were IUD, Implants, Female sterilization and Male sterilization.

The knowledge of contraceptives as a whole was near universal with more than 94.6% of women knowing at least one method of contraception. However, knowledge of the LAPM was low with only 66% of women knowing Female sterilization, 61% IUD, 67% Implants and 38% Male sterilization (Table 4.9). When we consider the trend in contraceptive knowledge from 1993 to 2008, the knowledge of modern methods is near constant (around 95%) and the same is true for the SAM (around 90%). However, for the LAPM there is a consistent gradual decline in knowledge of almost all the methods, for instance in 1993 Female sterilization was 81% and in 2008 it was 67%, IUD was 73% in 1993 and 61% in 2008 (Table 4.10). Even though the SAM knowledge is higher, there is also a decline as depicted in Figure 4.9.

There was a huge gap between knowledge and use of contraceptives among women in Kenya. High contraceptive knowledge did not translate to high contraceptive use. 95% of women knew a method but only 32% were using, 96% of married women knew but only 46% were using (Table 4.9 and Table 4.11).

In the LAPM, Female sterilization was the mostly used method with 3.2% of all women and 4.8% of currently married women using it. Implants were used by 1.3% of all women and 1.9% of currently married women.

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The Injectable was the most popular method and its use has continued to increase from 12% in 1998 to 21% in 2008 whereas the use of the Pill is declining as shown in Figure 4-11. The use of LAPM is near constant despite the declining level of knowledge. This may indicate a preference of more convenient methods of contraception especially longer acting methods.

The use of contraceptives varies with age with the lowest use in the 15-19 age groups. The use increases with age and peaks at age 30-34 for both modern methods and any method of contraception (Figure 4.12). This is the age when most women have finished child bearing. The use of LAPM follows the same trend but peaks at age 35-39 and is almost non-existent in women aged below 20. Women younger than 30, prefer implants and IUD more than Female sterilization whereas women older than 35 prefer Female sterilization and IUD more than Implants (Figure 4.13). Younger women mostly use contraceptives to delay and space child births while older women no longer desire to have more children hence their preference for more permanent methods.

5.3 Determinants of LAPM Use and Method Choice

There are several determinants of contraceptive use and method choice. Different independent variables were evaluated to determine how they influence contraceptive use either directly or indirectly by influencing the environment in which an individual operates. This was an important element emphasized in the conceptual theory in an attempt to understand how the different variables interact with each other and the environment to influence demand for FP services and also the supply of contraceptive services.

5.3.1 Age

Age was an important predictor in LAPM use. In the regression model with age as a predictor, the p-values for the model coefficients were statistically significant. However, the needs of women in the different age groups were different. Women aged 30 and above were more likely

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to use LAPM than younger women. The OC of using IUD in the 30-34 age group was 20 against EC of 14.7, and OC of 31 against EC of 15.1 for Implants. Female sterilization was more likely to be used by women aged 45-49 with OC 71 against EC 19.2 and OR 1.139. Implants were most likely to be used by women aged 25-34 (Table 4.29). There was a 26.5% higher chance of a woman aged 30-34 to use LAPM when compared to a woman aged 15-19 (Table 4.30). With the changing dynamics in the initiation and use of contraceptives (Table 4.14), and more so the timing of initiation with many women initiating the use of contraception at low parity, the overall exposure to the risk of conception is increased and the chances of dissatisfaction with FP methods increased. Young women opt for short acting methods while older women choose methods with long term effects due to reduced motivation for more children.

5.3.2 Residence

The chi-square value 53.460 and the p-value 0.010 were statistically significant at Alpha 0.01; the null hypothesis of mutual exclusivity was thus rejected. Women in urban areas were more likely to use IUD OC 58 against EC 32.5 and Implants OC 53 against EC 33.4 than women in rural areas (Table 4.23). Urban residence increased the log odds of LAPM use by 0.258. The method mix in urban areas for the LAPM was more uniform as compared to the rural areas (Figure 4.14). Female sterilization was the most preferred method in the rural areas OC 188 against EC 167.1. This could be indicative of unequal distribution and access to contraceptive services between urban and rural areas. It could also indicate limited options for women in rural areas or lack of access to other FP methods thus limiting their choice of preferred method.

5.3.3 Education

Education was another factor found to have a major influence on LAPM use. The chi-square value of 196.116 with a p-value of less than 0.005 was statistically significant at 99% confidence level. The OC in women with no education was less than the EC in all the LAPM methods.

Education had a significant improvement on the regression coefficients of the null model and the null hypothesis of no relationship between the two models rejected. The probability of using contraception increased with increase in a woman's level of education. A woman with secondary education was 33.1% (OR 0.331) more likely than a woman with no education to use LAPM (Table 4.21). Women with secondary and higher level of education had a more uniform mix of method choice as compared to women with no education (Figure 4.14). This could be as a result of their access to better health facilities and higher socio-economic status in addition to increased motivation to delay child bearing as they pursue higher education and career opportunities.

5.3.4 Employment and Wealth

Women in employment constituted 59% of the respondents (Table 4.5). Majority of the women (70%) aged above 30 were employed whereas only 21.1% aged 15-19 were employed. From Figure 4.4, most of the women were working in the agricultural sector (39.3%) and professional, technical sector (30.5%). More than 62% of the working women were employed all year round and more than 65% paid in monetary terms. The method mix among women in the highest quantile is almost uniform and more women use Implants whereas the method mix in the women on the lower quantile is uneven with a majority using Female sterilization (Figure 4.15). The middle quantile women are more likely to use IUD than Implants whereas the highest quantile women use more Implants than IUD and Female sterilization. Employment had significant effect on the null regression model. It yielded a p-value of 0.045 which was statistically significant at 95% confidence level. The OC for all the methods in the women who were currently working was higher for all the LAPM methods. Women who were not working had increased likelihood of not using LAPM with OC 3650 against EC 3536 (Table 4.27). This may indicate the limitation in access to a wider range of options for the low SES women making them opt to methods which are relatively cheaper readily available in government health institutions.

5.3.5 Marital Status

LAPM contraceptive use was influenced by marital status of a woman. The regression model with marital status as a predictor had a p-value less than the critical value at 99% confidence level. Women who were not in union were less likely to use LAPM than women who were in union. This was indicated by OC less than EC in all the LAPM methods (Table 4.25). Being in union increased the likelihood of using LAPM by 22.7%, OR 0.227 (Table 4.26).

5.3.6 Number of Children

Contraceptive use was influenced by the number of children a woman had. As the number of children increased, more women chose LAPM. Women with 3 or more children were more likely to choose Female sterilization than women with less than 3 children (Figure 4.15). This could be as a result of the decline in the motivation for more children as the number of children increases, thereby affording more opportunities for long acting methods of contraception.

There is changing dynamics in the use of contraceptives and more so the timing of initiation with many women initiating the use of contraception at low parity (Table 4.14). More than 20% of women age 20-24 started using contraceptives before having any child while 22% of all women started using contraception after their first delivery. Women want to have more control on the timing of their conception and the number of children they can bear. They are initiating contraceptive use at a much earlier age as shown in Figure 4.16.

5.3.7 Sources and Cost of Contraceptives

The sources of contraceptive products, and the cost incurred in their acquisition provides valuable information in understanding the role played by different agencies in their provision.

In a setting with a well-organized FP program funded by the government, majority of contraceptive users obtain their products from government sources. However the private sector

also plays a critical role in augmenting the services provided by the government. In Kenya, the private sector controls almost half of all the health facilities in the country.

The government is the biggest provider of FP services with public source accounting for 67% of Female sterilization, 78% of Implants and 51% of IUD (Figure 4.17). This shows a majority of LAPM users obtain their products from a government source. Concerning the cost of the services, more than 54% of Female sterilization users received it for free from a government source and a further 28% got from a private source free of charge as well. More than 57% of IUD users received their product from a government source at no cost and 35% of Implant users as well.

The cost of obtaining contraceptive products from a public source and a private source varied according to the product. The median cost for obtaining Female sterilization and Pill was comparable for both public and private source kshs 2,497 whereas Implants cost more in private sources kshs 997 as compared to public source kshs 196 (Table 4.15).

The creation of awareness, improving access, influencing the perception on quality of the services provided and the experience of service users have a huge influence on future adoption and/or continuation of LAPM use.

5.4 Constraints to the Adoption of Contraception

Women who are not using any method of contraception may help give more insight on the existing constraints to the use of contraceptives. Their failure to use contraception could be as a result of cultural, economic, environmental, accessibility, or personal factors. In order to be able to meet their needs, it's important to know the reasons why they are not using contraceptives and what method they would choose should they decide to use contraceptives.

More than 55% of married women not using any contraception intended to use in the future while 4.6% were unsure. The intention to use contraception increased with the number of children (Table 4.16).

A majority of young Non-users (15-29), preferred Injectables and Implants while a majority aged 30-49 preferred Female sterilization and IUD (Figure 4.18).

The main reasons for not using contraception were method related and included health concerns, fear of side effects, and interference with normal bodily functions. The other reasons were fertility related and were more personal than environmental or institutional. Most of the concerns raised can be addressed effectively by awareness creation and debunking contraception mystery by providing adequate information to FP service users. Most of the fears are unfounded and are passed from one person to another without consulting any authority in order to help make an informed decision.

5.5 The Need for Contraception

The need for contraception, births, and nature of pregnancies (wanted, mistimed or unwanted), help in understanding the existing fertility and the potential for future fertility.

More than 55% of women with one child and 44% of women with two children expressed their desire to delay their next conception to later than two years. More than 49% did not want to have another child and 27% wanted to delay by two years. Out of the married women using contraceptives, 63.9% were using contraceptives to limit childbearing (Table 4.31). These are some of the people that can greatly benefit from the use of LAPM.

The number of women wanting to stop bearing children, or delay their conception, indicate the contraceptive need. Women exposed to the risk of conception and desire to limit or delay conception but are not using any contraception are said to have an unmet need. Only women currently using contraception are said to have a met need. Mistimed and unwanted pregnancies constitute an unmet need as well. From the study, 46% of married women were using contraceptives while 26% wanted to use but were not using (Table 4.17). Half of the women with unmet need wanted to limit their children and the other half wanted to space their deliveries. In

total, the total demand for contraception for married women was 71% and the demand satisfied was 64%. There is a deficit in satisfying demands across all the age groups (Figure 4.20)

In understanding the control which women have over conception, the nature of pregnancy gives an indication of whether it was planned or not. A pregnancy can be planned (wanted at the time), mistimed (wanted later) or unwanted (not wanted at all).

Nearly one-half (43%) of births in Kenya are either mistimed or unwanted. 26% of births were wanted later while 17% were not wanted at all. The unwanted and mistimed births increased with increase in birth order. Women younger than 25 had the highest proportion of mistimed births while those aged 35 and above had the highest unwanted births (Table 4.18).

5.6 The Role of Government and FP Policies

Kenya was among the first African countries to appreciate the important role of FP as a core element in economic and social development. It incorporated FP in the country's development policy in 1965 and initiated measures including policy formulation and setting up frameworks within the MOH to ensure coordination and effective implementation of various RH strategies. A number of policies have been developed and adopted over time in an attempt to guide standardization, implementation, monitoring and evaluation of reproductive health services.

Following the International Conference on Population and Development in Cairo, the Kenyan government launched the NPPSD which provided a framework for equitable, efficient and effective delivery of RH services with specific focus on the most vulnerable and those at the greatest need of FP services.

Looking at Health Care Financing (Table 1-10), the budgetary allocation for the MOH has been reducing over time. It accounted for 7.67% of GoK budget in 2004/2005 while in 2007/2008, it only accounted for 5%. Examining the MOH budget by level of expenditure (Table 1.11), only

21% of the budget is spent on preventive and promotive health with a big proportion being spent on general planning and administration, curative services and the referral hospitals.

Healthcare financing in Kenya is predominantly from three sources; government, households and donors. Households are the largest contributors at 36% followed by government and donors (Figure 1.9). With only 11% (men) and 7% (women) as shown in Figure 4.6 having insurance cover, the burden of paying for health care services lies on the individuals.

A majority of contraceptive users rely on public sources for their contraceptive products, and without adequate funding; their product security cannot be assured. This may explain the declining trend in contraceptive knowledge and use (Figure 4.8 and Figure 4.9).

These factors, as presented in the conceptual theory, play a significant role in influencing the use of fertility regulation measures. According to Davis and Blake; Determinants Framework and Bulatao and Lee's Decision making model, the various factors act at different time points at the individual level, in the individual's immediate environment and indirectly by influencing other factors. The effect of decisions made have a direct influence on future decision making, which are usually made in an environment influenced by social, economic and cultural factors. According to Bender and Kosunen (2005), parents and peers play a critical role in influencing adoption and use of contraceptives. Unplanned pregnancies disrupt a woman's life plans including education and professional ambitions, limit resources available to already born children and jeopardize future financial security (Brown and Eisenberg, 1995).

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

The Kenyan population structure is predominantly made of young people with more than 70% aged below 30. This young population poses an ever increasing burden on the government and natural resources. Failure to provide adequately will lead to generations of multiplied problems. Inability of individuals, particularly women in developing countries to control and regulate their fertility not only affects the health of the people immediately concerned but has great implications for the national government, global stability and maintenance of balance between people and the environment. In addition, it's a violation of women's human rights. Failure to regulate fertility constitutes a problem that not only continues to exist but also multiplies.

In order to improve and encourage the use of contraception, it is important for programs, service delivery, and policy makers to understand how different factors influence and motivate women to delay, postpone child bearing or avoid unintended pregnancy. The provision of a variety of methods to people in need of contraceptive services makes it possible, by increasing the chances, for individuals to find a method that best suits their needs and one that they feel comfortable using. This usually follows an informed decision making process and not because of lack of a better method, or limited choice and/or lack of information.

The LAPM have been shown to be among the safest and most effective forms of contraception. A wide range of users can use them as they have few contra-indications, fewer side effects, and long service life. They are particularly suitable for women in developing countries as they are affordable, convenient to use, do not require re-supply visits, require little or no action at all on the part of the user and are very cost effective to both the user and the service provider.

Contraception, when adopted and used by majority of women in any given population, has been shown to improve the quality of life, reduce fertility, reduce unwanted pregnancies, lower parity and consequently reduce MMR. In Kenya, the government health facilities play an important and central role in the provision of reproductive health services. Most reproductive health services are offered by government through the MOH. A majority of contraceptive users rely solely on the public sources for obtaining their contraceptive supplies.

There is a significant role played by individual's and community's influence on the motivation, adoption, and utilization of contraceptives. The roles of societal, individual, environmental, and program factors in influencing decision-making in the four clusters of demand-generating factors, demand factors, demand sustaining factors, and supply factors help to explain their interactions with each other and the resultant effect on the adoption of contraceptive use as a result of motivation and assessment of potential gains when fertility is regulated.

The person's and communal prior interaction and perceptions about the availability, access and quality of the reproductive health service helps to either promote or hinder the decision making process in choosing to use or not to use contraception. This therefore underscores the need to have an all-inclusive approach in the quest to promote the regulation of fertility, improvement in women's reproductive health, in addition to their social and economic empowerment.

From the study, it was noted that contraceptive methods choice for women varies depending on various factors such as their age, education, socio-economic status, parity and family size preference. Therefore, availing a wide range of methods makes it possible for women to exercise free and informed choice. Broadening the choice of contraceptives methods has been shown to increase the overall prevalence (Magadi & Curtis, 2003). It increases the opportunity for an individual to find a method that best suits their needs. Providing a wider range of methods is a

core element in determining the quality of care in FP provision and an important dimension in women's reproductive rights (Diaz et al., 1999).

In order to increase the CP, Family Planning programmes should provide a variety of accessible, safe, acceptable, effective, and affordable methods to help women reach their reproductive goals without sacrificing any of their ambitions.

From the study, it was evident that most users rely on the government to provide them with their contraceptive supplies. In order to effectively provide for this population, there is a need for changes in infrastructure and reproductive health policy. A more user friendly environment could help attract more contraceptive users and improve their experience with health service providers. In countries with more successful FP programs, that are dependent on the government for funding, the programs operate semi-autonomously with stand-alone units where people seek services with more privacy. The convenience of location, working hours, confidentiality and kind of services offered will vary significantly from the existing structure under the PHC.

In order for women to choose more suitable and effective contraceptive methods, health care providers and the government have to be more supportive. They need to provide adequate information on available choices and help educate the people in order to clear misinformation and misunderstandings. It is worth noting that media, especially in the form of educational programs and entertainment can be very effective in transmitting health behavior messages in a more palatable, culturally sensitive, appropriate and acceptable manner and to a wider population (Masatu et al., 2003). This would help in creating awareness and provide an opportunity to initiate dialogue on the adoption and use of contraception in limiting fertility.

There is also need to have additional support sources like peer groups, counselling services and support groups. This would help in creating a pool of resources from where information dissemination will emanate. The contraceptive prevalence rate within a population is considered

a diffusion process beginning with awareness on the source and availability of FP services, proximity to those services, and the extent to which hindrances or constraints that limit their access exist and are addressed.

Women education beyond primary level should be encouraged and supported. Women with higher education are likely to be more knowledgeable, more motivated to limit fertility, and have the ability to make decisions on their sexual behavior. Education is one of the most important socio-economic factors that have been shown to directly affect fertility. Early pregnancy and childbirth compromises and limits the ability of a woman to fully develop and utilize her potential, support herself and consequently lead a good quality life. Educated women tend to initiate sexual activity, marriage and childbearing later in life than uneducated women and are also more likely than uneducated women to use effective contraception.

In summary the LAPM despite their low levels of utilization, have a huge implication for FP program success and the overall burden on the service provision and economic effects. Arming and empowering women with good health, adequate information and knowledge of reproductive health issues paves way to responsible and planned parent-hood and provides them the all-important opportunity and chance to make responsible life decisions.

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APPENDIX 1: DETERMINANTS OF CONTRACEPTIVE USE

A. Determinants of LAPM contraceptive use ranked from most to least significant

- Level of education

- Wealth quantile

- Place of residence

- Marital status

- Number of children

- Access to media

- Age

B. Factors influencing LAPM choice

- Educational level
- Number of living children
- Future desire for more children

- Product security
- Residence
- Accessibility

C. Factors influencing choice of LAPM by residence

Rural

- Access in terms of location of facility and cost of obtaining the product

- Number of living children

- Age at first birth

- Marital status

Urban

- Educational level

- Contraceptive product convenience

- Product security

APPENDIX 2: MULTIPLE CLASSIFICATION ANALYSIS TABLE

The most convenient way to present the effects of the independent variables on the dependent variables in the multinomial logit regression is by use of multiple classification analysis tables. The procedure used to construct the MCA table for a dependent variable with three categories and two independent variables is as follows;

The dependent variable is the use of contraceptives

p_1= estimated probability of using LAPM

p_2= estimated probability of using SAM

p_3= estimated probability of using Traditional methods

Suppose the independent variable is Level of education (no education, primary, secondary and higher), and Place of residence (Urban/rural). The interest is to determine how education level and place of residence influence choice of contraceptives.

G=1 if primary, 0 otherwise

K=1 if secondary, 0 otherwise

L= 1if rural, 0 otherwise

$\log [p_2/p_1] = a_2 + b_2G + c_2K + d_2L$ (A1)

$\log [p_3/p_1] = a_3 + b_3G + c_3K + d_3L$ (A2)   Where a_2, b_2, c_2, a_3, b_3, c_3 and d_3 are coefficients

$p_1 + p_2 + p_3 = 1$ (A3)

Equations (A1) and (A2) can be written as

$p_2 = p_1\exp (a_2 + b_2G + c_2K + d_2L)$ (A4)

$p_3 = p_1\exp (a_3 + b_3G + c_3K + d_3L)$ (A5)   from equation (A3), $p_1 + p_2 + p_3 = 1$

$p_2 = \exp (a_2 + b_2G + c_2K + d_2L) / 1 + \sum\{\exp(a_j + b_jG + c_jK + d_jL)\}$ (A6)

$p_2 = \exp (a_3 + b_3G + c_3K + d_3L) / 1 + \sum\{\exp(a_j + b_jG + c_jK + d_jL)\}$ (A7) where $2 \leq j \geq 3$

APPENDIX 3: CONTRACEPTIVE CHOICE MULTINOMIAL REGRESSION MODEL

Method Choice Parameter Estimates

Contraceptives Choice by Type[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Traditional Methods	Intercept	-14.897	.963	239.274	1	.000			
	Age	-.399	.079	25.362	1	.000	.671	.574	.784
	Education	-.455	.152	8.986	1	.003	.635	.471	.854
	Marriage Age	.020	.028	.493	1	.483	1.020	.965	1.079
	[Residence=urban]	-.542	.227	5.713	1	.017	.581	.373	.907
	[Residence=Rural]	0[b]	.	.	0	.	.	.	.
	[Working=past year]	-1.439	.790	3.321	1	.068	.237	.050	1.115
	[Working=working]	-1.022	.575	3.160	1	.075	.360	.117	1.110
	[Working=On leave]	0[b]	.	.	0	.	.	.	.
	[Employment=All year]	-.996	.584	2.904	1	.088	.369	.117	1.161
	[Employment=Seasonal]	-.926	.596	2.413	1	.120	.396	.123	1.274
	[Employment=Occasional]	0[b]	.	.	0	.	.	.	.
	[Unmet Need=Space]	.708	.257	7.606	1	.006	2.030	1.227	3.357
	[Unmet Need=Limit]	0[b]	.	.	0	.	.	.	.
	[Marital Status=Not in Union]	-.802	.370	4.699	1	.030	.449	.217	.926
	[Marital Status=In union]	0[b]	.	.	0	.	.	.	.
	[Contra Source=Others]	19.662	.000	.	1	.	34.501	44.501	64.501
	[Contra Source=Govt]	0[b]	.	.	0	.	.	.	.
SAM	Intercept	4.200	.733	32.792	1	.000			
	Age	-.585	.054	116.120	1	.000	.557	.501	.620
	Education	-.567	.105	29.204	1	.000	.567	.462	.697
	Marriage Age	.062	.019	10.576	1	.001	1.063	1.025	1.104
	[Residence=Urban]	-.285	.157	3.280	1	.070	.752	.553	1.024
	[Residence=Rural]	0[b]	.	.	0	.	.	.	.
	[Working=Past year]	-.354	.611	.336	1	.562	.702	.212	2.325
	[Working=Working]	-.343	.469	.536	1	.464	.709	.283	1.779
	[Working=On leave]	0[b]	.	.	0	.	.	.	.
	[Employment=All year]	-.631	.441	2.044	1	.153	.532	.224	1.264
	[Employment=Seasonal]	-.691	.450	2.351	1	.125	.501	.207	1.212
	[Employment=Occasional]	0[b]	.	.	0	.	.	.	.
	[Unmet Need=Space]	.357	.184	3.743	1	.053	1.429	.995	2.051
	[Unmet Need=Limit]	0[b]	.	.	0	.	.	.	.
	[Marital Status=Not inunion]	.076	.218	.121	1	.728	1.079	.704	1.654
	[Marital Status=In union]	0[b]	.	.	0	.	.	.	.
	[Contra Source=Others]	.638	.143	19.965	1	.000	1.893	1.431	2.505
	[Contra Source=Govt]	0[b]	.	.	0	.	.	.	.

a. The reference category is: LAPM.

b. This parameter is set to zero because it is redundant.

Source: KDHS 2008

APPENDIX 4: CORRELATION ANALYSIS FOR LAPM DETERMINANTS

		Current contraceptive method	Age 5-year groups	Type of place of residence	Government sources of contraception	Using LAPM	Using SAM	Using Traditional method
Current contraceptive method	Pearson Correlation	1	.183**	-.058**	-.390**	-.343**	.455**	.520**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000
	N	8444	8444	8444	8444	8444	8444	8444
Age 5-year groups	Pearson Correlation	.183**	1	.040**	-.136**	-.234**	.046**	.054**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000
	N	8444	8444	8444	8444	8444	8444	8444
Type of place of residence	Pearson Correlation	-.058**	.040**	1	-.030**	.023*	-.079**	-.003
	Sig. (2-tailed)	.000	.000		.007	.035	.000	.763
	N	8444	8444	8444	8444	8444	8444	8444
Government sources of contraception	Pearson Correlation	-.390**	-.136**	-.030**	1	.285**	-.433**	.070**
	Sig. (2-tailed)	.000	.000	.007		.000	.000	.000
	N	8444	8444	8444	8444	8444	8444	8444
Using LAPM	Pearson Correlation	-.343**	-.234**	.023*	.285**	1	.102**	.038**
	Sig. (2-tailed)	.000	.000	.035	.000		.000	.000
	N	8444	8444	8444	8444	8444	8444	8444
Using SAM	Pearson Correlation	.455**	.046**	-.079**	-.433**	.102**	1	-.079**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000
	N	8444	8444	8444	8444	8444	8444	8444
Using Traditional method	Pearson Correlation	.520**	.054**	-.003	.070**	.038**	-.079**	1
	Sig. (2-tailed)	.000	.000	.763	.000	.000	.000	
	N	8444	8444	8444	8444	8444	8444	8444

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).