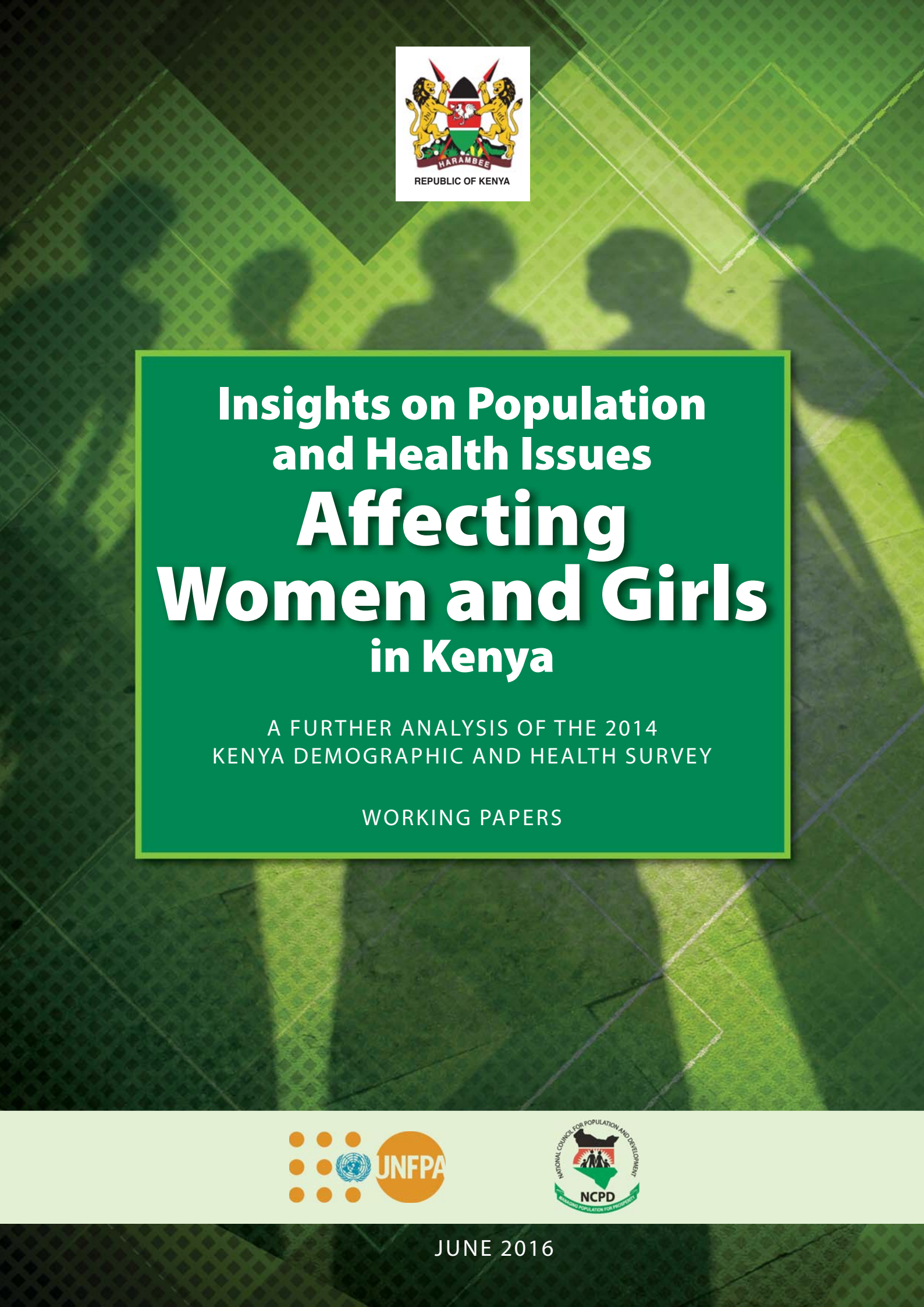

Insights on Population and Health Issues Affecting Women and Girls in Kenya

A FURTHER ANALYSIS OF THE 2014
KENYA DEMOGRAPHIC AND HEALTH SURVEY

WORKING PAPERS

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List of Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
CPR	Contraceptive Prevalence Rate
DHS	Demographic and Health Surveys
HIV	Human Immuno Deficiency Virus
KDHS	Kenya Demographic and Health Survey
MOH	Ministry of Health
NACC	National Aids Control Council
NASSEP V	Fifth National Sample Survey and Evaluation Programme
NCPD	National Council for Population and Development
STIs	Sexually transmitted infections
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
WHO	World Health Organisation

Executive Summary

The Kenya Demographic and Health Survey (KDHS) is a national assessment of the impact of the country's population and health programme. This survey was first conducted in Kenya in 1989 and thereafter every five years. Since 1989, the data from the survey has been representative at both the national and provincial levels. However, in 2014 the data for some of the indicators was also representative at the county level. This was necessitated by the introduction of a devolved system of government at the County level.

From each round of the KDHS, further analysis of the data is usually conducted with the aim of gaining a better understanding of the relationship between various variables. This analysis leads to recommendations for both policy and programmes. In harmony with this practice, the National Council for Population and Development (NCPD) with support from the United Nations Population Fund (UNFPA) Kenya Country Office, undertook two in-depth studies on population and health concerns of adolescents and marginalized women and girls.

The first in-depth study looked at the factors associated with sexual debut among females aged 15-24 years in Kenya. Results from this study show that the median age at first sex for the study population was 17 years. Using the cox regression analysis, the findings showed that, among women aged 15-24 years, the factors associated with a higher risk of engaging in sex at a younger age are; low levels of education, living in a female headed household, and lack of exposure to mass media. Type of residence was not found to have any significant effect on the age at first sex.

The second in-depth study looked at the factors associated with contraceptive use among women of reproductive age living in the 14 marginalized counties of Kenya. Marginalized counties used in this study are those that have been defined as so by Kenya's Commission on Revenue Allocation. Of interest in this study was to establish if there is any difference in the factors associated with contraception among married women in the marginalized counties when compared with married women countrywide. Results from the study showed that the most significant factors influencing contraceptive use in both the marginalized counties and Kenya are the number of living children, education attainment, and wealth status. Other factors which yielded some significant results are age, religion and county of residence.

Findings from the above two studies have both programme and policy implications. The recommendations arising from the findings need to be acted upon to improve the wellbeing of adolescents and marginalized women and girls in the country.

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Factors Influencing Sexual Debut among Young Women 15-24 Years in Kenya

Stephen Macharia
Irene Muhunzu
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1.1 Abstract

This paper examines the factors influencing sexual initiation among young women 15-24 who have ever had sex in Kenya. Data are drawn from the 2014 Kenya Demographic and Health Survey. Descriptive frequency approach was used to generate the percent distribution of the study population by background characteristics and to estimate the median age at first sexual debut. The Life Table technique was used to estimate the median age at first sex by study variables while the Proportional hazard (Cox) regression model was used to assess the risk of young women initiating sex for women in the age bracket. Univariate results show that, median age at first sex for young women aged 15-24 who have ever had sex was 17 years. Bivariate results revealed that young women from rural areas were found to initiate sexual activity earlier than their urban counterparts. Women with secondary and higher level of education delay to initiate sexual activity compared to those with no education. Wealth index was found to portray similar trends in that women from rich households were found to have initiated sexual activity later than those from poor households. Young women living in female headed households had a lower age at first sex compared to those living in male headed households. Young women exposed to more than one type of mass media were found to delay sexual initiation compared to those not exposed to any type of media at all. When the Cox regression model was fitted with all the explanatory variables, the effects were significant except for type of place of residence which had no significant effect on median age at first sex.

To address early sexual initiation among young women, there is need to initiate and/or strengthen interventions that will ensure that young women stay longer in schools to attain higher education levels while at the same time empowering households to more sustainable income levels. There is also need to encourage young women to affiliate themselves to religion as it imparts good virtues to individuals and hence delays sexual initiation. Moreover, there is need to improve access to more types of mass media among young women while at the same time ensuring that they are exposed to the appropriate messages.

1.2 Introduction

United Nations (UN) defines young persons as those between the ages of 15-24 years. In Kenya, 20.6 percent of the total population is between 15-24 years, with females aged 15-24 years comprising 10 percent of the population (2010, KNBS). Studies show that sexual activity among young Kenyan women begins early and it often results in teenage pregnancy, early child-bearing, unsafe abortions and STIs including HIV that is likely to cause maternal and child morbidity and mortality (Were 2007, Ikamari *et al*., 2007, Magadi *et al*., 2003, WHO 2013). Adolescents are physiologically immature and are twice as likely as older women to die of pregnancy-related causes. They are likely to give birth to low birth weight babies who are at higher risks of illness and death. The 2014 KDHS findings show that 18 percent of women aged 15-19 have begun childbearing.

Initiation of sexual intercourse at an early age contributes to vulnerability to HIV infection by exposing adolescents to more sexual partners and a longer period of sexual activity before they form long-term monogamous relationships. Studies in Nigeria, Kenya, Tanzania, Uganda and South Africa all suggest that early initiators are less likely to know how to prevent STIs, including HIV, or to be able to negotiate condom use than those who delay sexual intercourse (Lugoe *et al*.,2001, Hulton *et al*., 2000, Zulu *et al*.,2002, Harrison *et al*., 1998, Owuamanam 1995). For young females, early initiation poses additional risks because of their physiological immaturity and the power differentials between them and older male partners.

According to WHO (2009), half of new HIV infections occur in 15-24 year olds, and one third of new cases of curable sexually transmitted infections (STIs) affect people younger than 25 years. The females account for two-thirds of the new infections. Early sexual initiation exposes the young persons to more sexual partners and a longer period of sexual activity which increases their probability of getting STIs—including HIV.

The studies show that globally, five million adolescents between 15 to 18 years have unsafe abortions each year and 70,000 abortion-related deaths occur among this age group every year. It is indicated in these studies that young girls who report first sexual intercourse during their early teen years have much higher rates of fertility, morbidity and mortality than girls who delay sexual onset until older adolescence (MOH, 2005; Barnett and Schueller, 2000; NCAPD/MOH, 2003; Erulkar *et al*.,2004, UNESCO, 2001).

The increasing proportion of young women engaging in early sexual debut is a growing concern and has been at the centre stage for most interventions targeting the young persons in Kenya. According to the 2014 Kenya Demographic and Health Survey (KDHS), 12 percent of young women aged 15-24 have had sex before the exact age of 15, an increase from 11 percent reported in the 2008-9 KDHS. Early sexual debut in the absence of contraceptive use increases the risk for sexually transmitted infections including HIV, teenage pregnancy and unsafe abortions (Were 2007, Magadi *et al*., 2009, Beguy *et al*., 2011, WHO 2002). Young women (aged 15-24) are almost three times more likely to be living with HIV than men of the same age (3% and 1.1% respectively) (2014, NACC). According to WHO (2009), every year, 16 million girls between ages 15-19 and another nearly one million girls under 15 years give birth.

Almost 95% of these births occur in developing countries. The health consequences associated with these early pregnancies can be severe contributing to high maternal and child morbidity and mortality. This is because young adolescents' bodies are not physiologically mature and the risks of complications and miscarriage would heighten during pregnancy and childbirth.

Pregnancy-related complications are the major cause of mortality and morbidity among young African women and have also been associated with poor child health outcomes. The mortality rate among young women (ages 15-24) is recorded the highest in Africa compared to other regions of the world (Luke *et al*., 2012). To achieve the sustainable development goal of reducing the maternal mortality ratio to less than 70 deaths per 100,000 live births by 2030 there is need to address adolescent and youth sexual reproductive health.

Previous and current research show that early sexual activity and consequently teenage pregnancy have socio-economic consequences such as low probability of completing education and participation in the labour force, lower social standing, and increased dependency on social welfare programmes (Luke 2003, Kabiru *et al*., 2008, Marston *et al*., 2013).

Understanding the risk and predictor factors of early sexual activity is important and relevant to programmes and policies targeted at improving young persons' development and sexual reproductive health. Most studies carried out on young people in Kenya have not provided data on females as a separate group, despite the unique needs. It is under this context that this further analysis was undertaken to re-examine the initiation of sexual debut among young women 15-24 years. This study sought to estimate the median age at first sex for women in this age bracket and determine the effect of social-economic, cultural and demographic factors on age at first sex. The results will inform policy development and programming and contribute to the growing evidence of factors that predispose young women to poor reproductive health outcomes.

1.3 Scope and Limitations of the Study

While the analysis was aimed at targeting women including 10-14 years, the 2014 KDHS survey did not collect information on persons in this age group. Reproductive health questions were limited to women and men of reproductive age group 15-49 and 15-54 years respectively.

There are limitations of the available data on factors influencing onset of sexual activity among youth as measured in the KDHS. The youth are not a homogenous group and their situation and needs vary widely by age, socio-economic status, education, geographic location and settings. Information on these micro-level disparities is not readily elicited.

Since information collected depended on retrospective history, biases are likely to be introduced in the study due to problems associated with memory lapses. The other limitation is that most of the variables under study are time dependent—that is, they may have changed over time. For instance, place of residence recorded is the current place of residence not the place of residence as at the initiation of sexual activity thus introducing biases.

The weight variable was ignored in regression analysis because of values in the weight variable that were non-integers.

1.4 The Problem-Behaviour Theory

This study is informed by the Problem-Behaviour Theory developed by Jessor in the 1960s, which has been widely applied to research on adolescent health behaviours such as early sexual intercourse and risky sexual behaviours. The theory incorporates both contextual attributes and individual characteristics conceptualized as protective factors and risk factors. (Jerror R 1977, Jessor *et al*., 2001, Ndugwa 2011)

Three types of protective factors (models protection, controls protection, and support protection) and three types of risk factors (models risk, opportunity risk, and vulnerability risk) are specified in the theory. According to the theory, the greater the risk factors and the less the protective factors in an adolescent's life situation, the greater the likelihood of an adolescent's involvement in problem behaviour. The theory posits that it is the balance between the risk and protective factors that exist within a young person's environment and the young person's personality that determines his/her likelihood of engaging in a problem behaviour. A problem behaviour, according to Jessor, is defined socially according to norms of the environment or the institutions of authority in which the young person is situated. The Problem-Behaviour Theory has been applied in our study setting and found to provide an explanatory account of youth problem behaviours. Studies that applied this theory have demonstrated that demographic and socio-economic factors are associated with youth's engagement in risky sexual behaviours (Marston *et al*.,2006, Were 2007, Luke 2003, Luke *et al*.,2012, Marston *et al*.,2013, Ngom *et al*.,2003, Ndugwa *et al*.,2011). These factors include age, education, marital status, religion, residence, wealth, employment, and migration status.

Socio-economic factors influencing onset of sexual activity among young people

Socio-economic factors such as family size, income, education and social values affect the sexual behaviour of female adolescents. Existing empirical studies using population-based data from Africa show that poverty is a risk factor for early sexual debut. A study from four African countries showed that poorer girls (but not boys) had sex earlier than their wealthier counterparts in three of the four countries studied (WHO 2013, Rani and Lule 2004, Zulu 2002). Poverty is an underlying factor in motivating sexual behaviour. Poverty motivates young females to engage in risky sex. Financial pressures play a major role in influencing girls to begin engaging sex in order to meet basic needs and this may explain why transactional sex is common among female adolescents. These studies suggest that adverse economic condition, no education, coercion, peer pressure to obtain luxury items, are reasons for early sexual activity among youth (Magadi *et al*., 2009, Beguy *et al*., 2011, Luke 2012). Studies from African countries show that females from poorer households were more likely to be sexually active and more likely to engage in risky sexual behaviour. Results further reveal that poor women initiate sexual activity two years earlier than those who are wealthy. In addition, young people in rural areas are likely to have earlier sexual debut than those in urban areas (Kabiru *et al*., 2009, Marston *et al*., 2013).

The existing evidence on the relationship between educational attainment and sexual debut generally supports a protective effect of education on timing of sexual debut, particularly among females. A recent review of Demographic and Health Surveys (DHS) from 24 countries in Africa between 2000 and 2010 found that individuals with more education were less likely to report early sexual debut (WHO 2013). Further, the studies from these several African countries have shown that school-going or educated youth, particularly females, may be less likely to engage in early sexual behaviour than out-of school youth (Kabiru and Orpinas, 2008). Other studies show that women with at least some secondary school education begin sexual activity at least three years later than those with no education. (*NCAPD and CSA, 2004*).

In most sub-Saharan African countries, more than 70 percent of young women begin sexual activity during adolescent period—this to a large extent is as a result of exposure to media effect. Studies show that young people who have high exposure/access to mass media; TV, radio and computer have higher risks of engaging in sexual activity than those who are not fully exposed (Kelly *et al*., 2006, Luke 2003, Mackaig *et al*., Erulkar *et al*., 2004). The studies explain the impact of exposure to explicit sexual material on sexual debut, and consequently on sexual risk. Adolescents may be exposed to sexual contents in the media because they are still at their developmental stages and hence cannot decipher good from bad media programming. Reducing adolescent's exposure to this content has the possibility of reducing sexual indulgence when they include depiction of sexual risk (such as the possibility of contracting sexually transmitted diseases or becoming pregnant). Mass media are an important context for adolescents' sexual socialization, and media influences should be considered in research and interventions with early adolescents to reduce sexual activity.

Socio-demographic factors influencing onset of sexual activity

Studies conducted in Kenya over time concur that, like in other places, adolescents are initiated to sex early with gender, father presence in the household, family wealth status and peer influence as the predisposing factors (Ngom *et al*., 2003, Marston *et al*., 2006, Biddlecom *et al*., 2009, Babalola *et al*., 2005). Teenage girls who reported that they had a close relationship with their father were more likely to delay sexual intercourse. It is interesting to note that adolescents in female headed households generally have lower odds of having

initiated sexual activity, although this ceases to be significant when other factors such as schooling status, mass media exposure, region of residence and ethnicity are controlled for (Magadi 2011, Ramirez-Valles *et al*., 1998).

Socio-cultural factors influencing onset of sexual activity

Studies in sub-Saharan countries show that young people residing in rural areas tended to initiate sexual debut earlier than those in urban areas (NCAPD & CSA 2004). Young women residing in rural areas report earlier sexual debut and riskier sexual behaviours compared to those residing in urban areas (Barnett *et al*., 2003, Bruce *et al*., 2002, Erulkar *et al*., 2004).

The effects of religion on sexual activity have been demonstrated in various studies (Rostosky 2004, Agadjanian *et al*. 2009; Gyimah *et al*. 2006). Some of the literature argues that religion in the home is a major factor in the social acquisition of youth religious values, including values about sexual intercourse (Rostosky 2004, Gregory, 2014). Religious values are the source of moral proscriptions for many individuals. Teachings at the churches or mosques are likely to play a role in informing an individual's attitudes, values and decisions (Odimegwa, 2005, Rostosky 2004). The authors argue that individuals attending religious meetings receive more frequently, messages against premarital sex. According to these authors, involvement in religious institutions will enhance the chances of young people making friends with peers who have restrictive attitudes towards premarital sex. Being involved with a religious plausibility structure provides buffering for youths and a basis on which to process the social world. Social support found in these plausibility structures has been found to directly decrease the likelihood of having had first sexual intercourse.

Consequences of sexual activity among young women

Evidence emanating from Kenya suggests that many young women are sexually-active, with 16 years being the average age at first sex. In addition, studies have shown that the majority of sexually-active youth do not practice protected sex and as a result are at a risk of unintended pregnancy, unsafe abortion and contracting STIs and HIV (Kabiru *et al*., 2008, Gipson *et al*., 2008, Hofferth *et al*., 1987, Marston *et al*., 2003, Ikamari and Towett 2007, WHO 2013).

According to the studies, young mothers are more likely to experience pregnancy related complications which often lead to maternal death. Children born to young mothers are usually subject to elevated risks of morbidity and mortality. Early pregnancy may lead to school drop-out among young women. Studies in Kenya have reported that 13,000 girls drop out of school annually due to early childbearing. Due to the fact that early childbearing hinders a mother's educational attainment, it often results in reducing economic opportunity for the mother and the household as a whole. The above mentioned serious health risks of early sexual activity and child bearing underlie the need for addressing adolescent sexual and reproductive health.

1.5 Conceptual Framework

Most models of sexual activity among young people that have been previously published suggest two basic components, biological and sociological models. The conceptual framework adopted is the sociological model of Twa-Twa (1994) which focuses on the role of social environment in sexual activity among young people. He borrowed a lot from the sociological model of Peterson and Taylor (1980) and that of Hofferth and Hayes (1987). By modifying the Twa-Twa sociological model of sexual behaviour among adolescents the following conceptual framework was developed to illustrate factors in the social environment that influence sexual debut among female adolescents. The framework depicts that education and religious affiliation delay sexual debut, while exposure to mass media and upper wealth index influence early sexual debut.

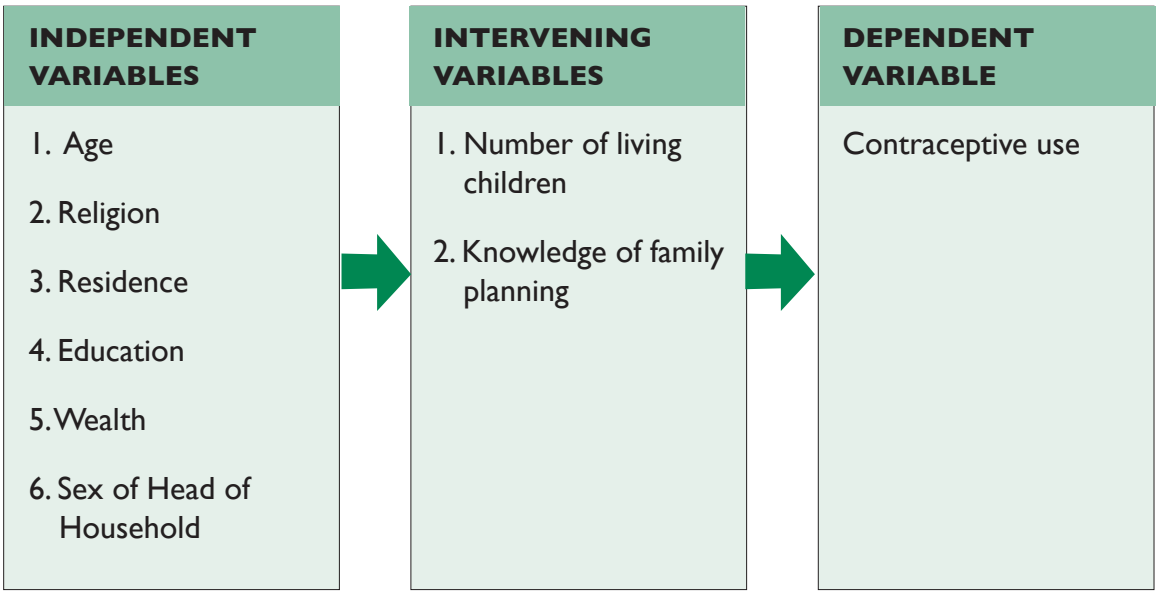

Figure 2.1: Conceptual framework

1.6 Methods

Descriptive frequencies, bivariate and multivariate analyses methods were performed. The basic descriptive frequencies were used to generate the percent distribution of the study population by background characteristics and to estimate the median age at first sex. Life table technique was used to estimate median age at first sexual debut for women aged 15-24 who have had sexual intercourse by the various study variables.

The Proportional hazard (Cox) model is used to assess the effect of the demographic and socio-economic variables on age at first sexual debut. The model was developed by Cox in 1972; it is usually stated in continuous form and is fitted by the method of partial likelihood (Cox, 1972). Age at first sexual debut may

be interpreted as survival time from a virgin state to a non-virgin state. Throughout this interval, women may either enter into sexual exposure or be right censored at the time of the survey. In this case, women who had never had sex at the time of the survey constitute censored cases.

Sources of data

The data for the study was drawn from the 2014 Kenya Demographic and Health Survey (KDHS) dataset. The KDHS was conducted to collect data on fertility, marriage, sexual activity, fertility preferences, family planning, maternal and child health, information about HIV/AIDS and other sexually transmitted diseases, information on malaria and use of mosquito nets and domestic violence. The survey covered a national representative sample of 31,079 women aged 15-49. The Survey used a two-stage sample based on the 2009 Kenya Population and Housing Census. This study focuses on 7,036 young women aged 15-24, who include both single and ever-married women who have ever-had sex. The unit of analysis are individual young women.

Description of variables

The dependent variable is age at first sexual intercourse measured in terms of completed years. During the survey, all women were asked a series of questions regarding their sexual activity. All women who had ever had sex were asked to indicate how old they were when they first had sexual intercourse. The response to this question constitutes the woman's age at first sexual intercourse. All the women who indicated that they had never had sexual intercourse were not asked the question about the age at first sexual debut. The independent variables were—level of education, wealth quintile, type of residence, exposure to mass media, religion and sex of household head. Education level is the highest level attained at the time of the survey measured in terms of no education, primary (recoded from primary incomplete and complete), secondary, and higher level. Type of residence is the current place of residence which can either be in urban or rural areas. Wealth Index measures the woman's household economic status/background. The variable was recoded into three categories—poorer and poorest was recoded as poor, middle was not recoded, while richer and richest were recoded to rich. Religion refers to the woman's religious affiliation. This variable was recoded into four main categories. Roman Catholic remained, Protestant/other Christians and Muslim was not recoded while non-religious and others was recoded into one variable because those categorised as 'others' were few and were combined with non-religious.

Household head is the most responsible/respectable member of the household who makes key decisions of the household on a day to day basis and whose authority is respected by all members of the household. It could be the father, the mother or a child, depending on the status of the household. A Male Headed Household is a household whose primary decision-maker or source of livelihood (income) is a man while Female Headed Household is a household whose primary decision-maker or source of livelihood (income) is a woman. In this study, this variable is measured in terms of male or female headed household. Exposure to mass media refers to the type of mass media a woman is exposed to. The main types here are listening to radio, watching television or reading a newspaper. This variable was analysed in terms of whether the young woman is not exposed to any type of media, exposed to one type of media, exposed to two types of media or exposed to three types of media.

1.7 Results

Descriptive analysis results revealed that 61.3 percent (7,036) of the 11,483 young women aged 15-24, had initiated sexual activity at the time of the survey. Table 1.1 presents the percent distribution of this target population by background characteristics. The analysis shows that about 39 percent of the target population was residing in urban areas while about 61 percent were rural residents. Majority (66%) of them were in male headed households while the rest were living in female headed households. In regard to education, results revealed that about 11 percent of this cohort had not attended any education, and about 8 percent had attended higher than secondary level while almost half (48%) had attended primary level.

Table 1.1: Percent distribution of women aged 15-24 who have ever had sex in Kenya, KDHS 2014 by background characteristics

	Percent
Type of place of residence	
Urban	39.2
Rural	60.8
Sex of household head	
Male	65.9
Female	34.1
Highest educational level	
No education	10.7
Primary	47.8
Secondary	33.7
Higher	7.7
Marital status	
Never married	38.3
Ever married	61.7
Religion	
Roman catholic	20.7
Protestant/other Christian	65.5
Muslim	11.6
No religion/others	2.2
Wealth index	
Poor	45
Middle	19.1
Rich	35.9
Exposure to mass media	
Not exposed to any type of media	16.2
Exposed to one type of media	30.8
Exposed to two types of media	31.2
Exposed to three types of media	21.8
Total %	**100**
Total N	**7,036**

Source: Primary Analysis of the 2014 KDHS data.

Bivariate results

The median age at first sex among women aged 15-24 in Kenya was 17 years. The survival analysis results using life tables, are presented in Table 1.2. The results reveal that, there are differentials in age at first sex when analysed by the various study variables. Women residing in rural areas were found to initiate sexual activity slightly earlier than those from urban areas.

Table 1.2: Median age at first sex among women aged 15-24 who have ever had sex in Kenya, KDHS 2014 by background characteristics

	Median Survival time
Type of residence	
Urban	17.44
Rural	16.97
Sex of household head	
Male	17.17
Female	17.14
Highest educational level	
No education	16.41
Primary	16.73
Secondary	17.53
Higher	19.01
Religion	
Roman Catholic	17.10
Protestant/Other Christian	17.17
Muslim	17.31
No religion/others	16.25
Wealth Index	
Poor	16.76
Middle	17.12
Rich	17.64
Exposure to Mass media	
Not exposed to any type of media	16.75
Exposed to one type of media	16.85
Exposed to two types of media	17.26
Exposed to three types of media	17.71

Source: Primary Analysis of the 2014 KDHS data.

Young women who are in male headed households were found to initiate sexual activities earlier compared to those from female headed households. In regard to education, women with no education have the highest tendency of early sexual debut hence lower median age at first sex, while those with higher level of education delayed by over 2.5 years hence the increase in median age at sexual debut. Religion was also found to influence delays in engaging in sexual activities hence increase in the age at first sex. Women affiliated to some religion portrayed delayed onset of sexual activity by almost one year compared to those with no religion. Women from poor households were found to have started sexual activity at an earlier age

compared to those who are from middle and rich households. Exposure to mass media was found to delay sexual debut. Results indicate that women exposed to more than one type of mass media delayed for almost one year to initiate sexual activity compared to those who are not exposed to any type of media.

Multivariate analysis

Multivariate analysis was performed by fitting the Cox model using women aged 15-24 who had ever had sex to test the effect of the explanatory variables on age at first sex. Two models were fitted; one with education as the only explanatory variable and two including all the explanatory variables and the results are presented in Table 1.3.

Table 1.3: Hazard ratios of age at first sex among women aged 15-24 who have ever had sex in Kenya, KDHS 2014 by background characteristics

		Model 1	95.0% CI for Exp(B)			Model 2	95.0% CI for Exp(B)	
Variable Category	Sig.	Exp(B)	Lower	Upper	Sig.	Exp(B)	Lower	Upper
Highest Level of education								
No education (RC)	.000	1.000			.000	1.000		
Primary	.517	1.026	.948	1.111	.481	.966	.878	1.063
Secondary	.000	.744***	.685	.807	.000	.723***	.650	.804
Higher	.000	.486***	.435	.543	.000	.490***	.427	.561
Type of residence								
Urban (RC)					.000	1.000		
Rural					.427	1.023	.968	1.081
Sex of household head								
Male (RC)	0.000	1.000			.000	1.000		
Female	.857	1.005	.956	1.055	.028	1.058**	1.006	1.112
Religion								
Roman Catholic (RC)					.000	1.000		
Protestant/other Christians					.341	.972	.916	1.031
Muslim					.000	.747***	.680	.820
No religion/others					.655	1.039	.878	1.230
Wealth Index								
Poor (RC)					.000	1.000		
Middle					.713	.987	.923	1.056
Rich					.000	.885***	.827	.947
Exposure to Mass media								
Not exposed to any type of media					.000	1.000		
Exposed to one type of media					.366	.964	.890	1.044
Exposed to two types of media					.230	.949	.870	1.034
Exposed to three types of media					.043	.906**	.824	.977

Source: Primary analysis of the 2014 KDHS data ***P<0.01,**P<0.05 *P<0.10

*RC: Reference Category -2 Log Likelihood= 112462.918; Chi-square= 441.112; df =13; Sig= ***P<0.01*

The results revealed that education has a significant effect on age at first sex only at certain levels of education. Women who had acquired secondary and tertiary level education had a lower risk of initiating sex compared to those with no education in both models. For instance, in model 2, the risk of women with tertiary education initiating sex were 51 percent less compared to those with no education. while women with secondary education were 28 percent less likely to engage in first sexual activity compared to those with no education. The percentages were found to be very close to the ones obtained when education variable was fitted alone in the model. The type of place of residence was found to have no significant effect on initiation of sexual activity.

Controlling for other factors, the results reveal that the sex of household head does not significantly influence women to initiate sexual activities as shown in model 1. In model 2 where there is interaction with other factors, the sex of the household head significantly affects initiation of sexual activity among the study population. Women in female headed households had a higher risk of 1.06 times initiating sex than those in male headed households. In regard to religion, the results show that women Muslim faithful were found to be 25 percent less likely to initiate sexual activity compared to woman affiliated to Roman Catholics.

The household economic background was found to affect the sexual initiation among women in the study category. Women from rich households were 11 percent less at risky of initiating sexual behaviours compared to those from poor households. Exposure to mass media was also found to have a significant effect on age at first sex. Women who were exposed to three types of media (reading a newspaper, listening to a radio and watching television) were 10 percent less at risk of engaging in early sex compared to those with no exposure at all.

1.8 Discussions

This paper investigated the factors influencing sexual initiation among young female women aged 15-24 who have ever had sex in Kenya. The results obtained using the data drawn from the 2014 Kenya Demographic and Health Survey clearly showed that education has a statistically significant and strong delaying effect on age at first sexual debut. Each additional level of education lowers the probability of first sex significantly.

In Model 1 and while controlling for other variables, the risk of first sex was 26 percent lower for the women with secondary education and 51 percent lower with those with higher level, all compared to women with no education. Similarly, in model 2, the results present a similar pattern. For instance, the risk of first sex was 28 percent lower for the women with primary education and 51 percent lower for those with higher level, and all still compared with women with no education. These results provide empirical evidence that a woman's educational attainment is an important determinant of a women's age at first sex in Kenya. More education leads to delayed marriage. These results are consistent with those reported earlier in the literature (Kabiru *et al*., 2008; NCAPD *et al*., 2004).

The results of this study show that women in rural areas initiate sexual activities earlier than their urban counterparts concurring with findings from sub-Saharan countries which show that young people residing in rural areas tended to initiate sexual debut earlier than those in urban areas (NCAPD & CSA 2004). However, the same results show that, usual place of residence is weakly associated with the timing of first sexual initiation contradicting the literature which showed that, young women residing in rural areas reported riskier sexual behaviours compared to those residing in urban areas (Barnett *et al*., 2003, Bruce *et al*., 2002, Erulkar *et al*., 2004).

With regard to household headship, the sex of the household head was found not to affect the age at first sexual initiation when other factors are controlled for. However, in the presence of other factors, the sex of the household head significantly influences sexual initiation. Female headed household was found to significantly affect the age at first sex compared to male headed households. Women from female headed households were found to be at more risk in engaging in first sex compared to those in the male headed households. The findings from model 2 are not consistent with the literature which states that female headed households generally have lower odds of having initiated sexual activity, although this ceases to be significant when other factors such as schooling status, mass media exposure, region of residence and ethnicity are controlled for (Magadi 2011, Ramirez-Valles *et al*., 1998). The insignificant results when other factors are controlled for supports the later part of the literature.

Affiliation to a certain religion was found to affect age at first sex in minimal ways. Compared to Roman Catholics, Islam was the only religion with significant difference while other Christians and people with no religion/other religions had no statistically significant difference in initiation of sexual activities. This is contrary to observations by Odimegwa, 2005 and Rostosky, 2004 and others who argued that individuals attending religious meetings receive messages against premarital sex hence are likely to delay sexual debut compared to those with no religion.

In regard to wealth status, there was statistical difference between the poor and the rich but none between the poor and middle class in terms of age at first sex. This finding closely confirms what Kabiru *et al*., 2009 and Marston *et al*., 2013 had observed and therefore the hypothesis is confirmed to be true.

In past studies, exposure to mass media was previously analysed by frequency of exposure where most studies in sub-Sahara Africa linked those women who have high exposure/access to mass media; TV, radio, computer to higher risks of engaging in sexual activity than those who are not fully exposed (Kelly *et al*., 2006, Luke 2003, Mackaig *et al*., Erulkar *et al*., 2004). In this study, exposure to mass media was analysed by the number of types of media exposed to. The results contradicted the previous studies since those with exposure to more types of media were found to be less likely to initiate early sex compared to those with exposure to fewer types.

1.9 Conclusion and Recommendations

The existence of statistically significant differences in age at first sex among young women aged 15-24 due to their level of education, religious affiliations, household wealth status and exposure to mass media is a clear indication that these factors influence sexual initiation. There is therefore need to initiate and/or strengthen interventions that will ensure that young women stay longer in schools to attain higher education levels while at the same time empowering households to more sustainable income levels. There is also need to encourage young women to affiliate themselves to one type of religion as it imparts good virtues to individuals and hence delays sexual initiation. Moreover, there is need improve access to more types of mass media among young while at the same time ensuring that they are exposed to the appropriate messages.

1.10 References

Barnett B. And Schueller J. 2000. *"Meeting the Needs of Young Clients: A Guide to Providing Reproductive Health Services to adolescents"*. Family Health International funded by USAID.

Beguy D, Kabiru CW, Zulu EM, Ezeh AC. 2011. *"Timing and sequencing of events marking the transition to adulthood in two informal settlements in Nairobi, Kenya"*. Journal of Urban Health

Biddlecom A., Awusabo-Asare K. And Bankole A. 2009. *"Role of parents in adolescent sexual activity and contraceptive use in four African Countries"*. International Perspectives on Sexual and Reproductive Health.

Bruce J. 2002. *"Preparing the Twenty-First Century's First Generation of Adults: Policy and Programme Perspectives"*. Population Council Paper Commissioned by UNFPA.

Central Bureau of Statistic (CBS), Ministry of Health (MOH) and ORC Macro. 2004. *"Kenya Demographic and Health Survey 2003"*. Calverton, Maryland:CBS, MOH, and ORC Macro.

Erulkar A.S., Mekbib T., Smie N. And Gulema T. 2004. *"Adolescent Life in Low Income and Slum Areas of Addis Ababa, Ethiopia"*.

Gipson JD, Koenig MA, Hindin MJ. 2008. *"The effects of unintended pregnancy on infant, child, and parental health: a review of the literature"*. Studies in Family Planning

Harrison A,Xaba N and Kunene P. 1998. *"Understanding safe sex: gender narratives of HIV and pregnancy prevention among rural South African school-going adolescents"*. Reproductive Health Matters.

Hulton LA,Cullen R and Khalokho SW. 2000. *"Perceptions of the risks of sexual activity and their consequences among Ugandan adolescents"*.

Hofferth, S.L. And C.D. Hayes. 1987. *"Risking the Future. Adolescent Sexuality, Pregnancy and Childbearing"*. Washington DC: National Academy Press.

Ikamari D. Towett R. 2007. "*Sexual initiation and contraceptive use among female adolescents in Kenya"* Studies in Family Planning.

Ikamari L, Izugbara C, Ochako R. 2013. *Prevalence and determinants of unintended pregnancy among women in Nairobi, Kenya*. BMC Pregnancy and Childbirth.

Jessor R, Jessor SL. 1977. "*Problem behaviour and psychosocial development: A longitudinal study of youth"*. Academic Press, New York

Kabiru CW, Orpinas P. 2009. *"Factors associated with sexual activity among high-school students in Nairobi, Kenya"*. Journal of Adolescence

Kelly L.L., Brown J.D., Kenneavy K. 2006. *"The mass media are an important context for adolescents' sexual behaviour"* Vol 38 ISSUE 3

Kenya National Bureau of Statistics (KNBS). 2010. *"The 2009 Kenya Population and Housing Census: Counting our people for the implementation of vision 2030"*.Volume 1C—Population distribution by Age, Sex and Administrative units.

Kenya National Bureau of Statistics (KNBS). 2014. *"Kenya Demographic and Health Survey"*. KNBS and ICF Macro

Lugoe WL and Biswalo PM. 2001. *"Self-restraining and condom use behaviours: the HIV/AIDS prevention challenges in Tanzanian schools, International Journal of Adolescence and Youth"*.

Luke N. 2003. *"Age and economic asymmetries in the sexual relationships of adolescent girls in sub-Saharan Africa"*. Studies in Family Planning.

Luke N, Xu H, Mberu BU, Goldberg RE. 2012. *"Migration experience and premarital sexual initiation in urban Kenya: An event history analysis"*. Studies in Family Planning.

Magadi M., Agwanda AO. 2009. *"Determinants of transitions to first sexual intercourse, marriage and pregnancy among female adolescents: evidence from South Nyanza, Kenya"*. Journal of Biosocial Science

Magadi M., Olayo R. 2011. *"Household HIV/AIDS status and sexual debut among adolescents in Kenya"* African Population Studies Vol 25.

Marston C, King E. 2006. Factors that shape young people's sexual behaviour: a systematic review

Marston M, Beguy D, Kabiru C, Cleland J. 2013. *"Predictors of sexual debut among young adolescents in Nairobi's informal settlements"*. International Perspectives on Sexual and Reproductive Health.

Ministry of Health/Division of Reproductive Health. 2005. *"National Guideline for Provision of Adolescent Youth Friendly Services (YES) in Kenya"*.

National Coordinating Agency for Population and Development (NCAPD), Centre for the Study of Adolescents (CSA). 2004. *"Adolescence in Kenya, the facts"*.

National Coordinating Agency for Population and Development (NCAPD), Ministry of Health/Division of Reproductive Health (MOH/DRH). 2003. *"Adolescent Reproductive Health and Development Policy"*.

National Coordinating Agency for Population and Development (NCAPD), Ministry of Health/Division of Reproductive Health (MOH/DRH). 2005. *"Adolescent Reproductive Health and Development Policy, Plan of Action 2005-2015"*.

National Coordinating Agency for Population and Development (NCAPD). 2005. *"KenPop News. Theme: Youth and Development"*. Vol. 1 No. 3

National Council for Population and Development (NCPD) and Ministry of Planning and National Development (MOPND). 2004. *"ICPD +10 Where are we now? Kenya's Progress in Implementing the International Conference on Population and Development Programme of Action- 1994 -2004"*. NCPD and MIPND supported by IPPFAR and UNFPA

National AIDS Control Council (NACC) 2014. Kenya AIDS Indicator Survey (KAIS) 2012.

Ndugwa RP, Kabiru CW, Cleland J, Beguy D, Egondi T, Zulu EM, *et al*. 2011. *Adolescent problem behaviour in Nairobi's informal settlements: applying problem behaviour theory in Sub-Saharan Africa"*. Journal of Urban Health.

Ngom P, Magadi MA, Owuor T. 2003. *"Parental presence and adolescent reproductive health among the Nairobi urban poor"*. Journal of Adolescent Health.

Owuamanam DO. 1995. *"Sexual networking among youth in southwestern Nigeria"*. Health Transition Review.

Ramirez-Valles J., Zimmerman MA. And Newcomb MD. 1998. *"Sexual risk behaviour among youth: modelling the influence of pro-social activities and socioeconomic factor.* Journal of Health and Social Behaviour.

Rani M. And Lule E. 2004. *"Exploring the Socioeconomic Dimension of Adolescent Reproductive Health: A Multi-country Analysis"* International Family Planning Perspectives.

Rostosky SS. 2004. *"The Impact of religiosity on adolescent sexual behaviour: "a review of the evidence"*. Journal of Adolescent Research.

Twa-Twa, Jeremiahs Mutwalante. *"The role of the environment in sexual activity of school students in Uganda"*. Supplement to Health Transition Review Volume 7, 1997

Were M. 2007. *"Determinants of teenage pregnancies: The case of Busia District in Kenya"*.

World Health Organization. 2002. Unsafe Abortion in Adolescents.

World Health Organization. 2013. *Guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries*. Journal of Adolescent Health

UNESCO. 2001. *"Adolescence Education Newsletter"*. Vol.4. No.2

Zulu EM, Dodoo FN and Ezeh AC, 2002. "*Sexual risk-taking in the slums of Nairobi, Kenya"*. Population Studies.

2

Determinants of Contraceptive Use among Married Women of Reproductive Age in Kenya's Marginalized Counties

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2.1 Abstract

Kenya has defined 14 of its 47 counties as marginalized. These marginalized counties are characterized by low levels of development and high poverty. Women in these counties have high fertility levels and their utilization of contraceptive methods is low when compared to the national aggregates. This study therefore sought to explore if the factors that determine contraceptive use among women in the marginalized counties is any different from those that explain contraception among women in Kenya. Using the 2014 KDHS dataset, a sample of 2,816 and 18,549 married women in the marginalized counties and Kenya respectively were used for the study. The dependent variable for this study was contraceptive use while the independent variables were; Age in 5 year groups, Religion, Family Planning knowledge, Number of living children, Education attainment, Wealth Index, Type of Residence, and County of Residence. Logistic regression model was used to analyse the various factors for significance. The results of the study showed that the most significant factors influencing contraceptive use in both the marginalized counties and Kenya are the number of living children, education attainment, and wealth status. Other factors which yielded some significant results are age, religion and county of residence.

2.2 Introduction

Contraceptive use is an important determinant of fertility transition and the proportion of couples using contraception, especially in developing countries, has increased in recent decades (Bongaarts and Westoff, 2000). In Kenya, the use of contraception among married women has increased from 33 percent in 1993 to 58 percent in 2014, although this masks regional variations especially in the marginalized areas. Marginalized areas of Kenya are defined as geographical locations where significant populations of marginalized communities live. These areas have high levels of absolute and relative poverty, food insecurity, poor infrastructure, poor state of basic social services and poor governance. Counties falling into this category include; Turkana, Mandera, Wajir, Marsabit, Samburu, West Pokot, Tana River, Narok, Kwale, Garissa, Kilifi, Taita Taveta, Isiolo, and Lamu (CRA, 2014). In the marginalized counties, contraceptive use among women of reproductive age is low while fertility levels are higher than the national average (see Table 2.1). The high fertility levels in these counties can be ascribed to the low use of family planning among other factors.

Table 2.1: Total fertility rate and contraceptive prevalence rate for marginalized counties in Kenya

County	Total Fertility Rate	Contraceptive Prevalence Rate
Turkana	6.9	10.4
Mandera	5.2	1.9
Wajir	7.8	2.3
Marsabit	5.0	11.7
Samburu	6.3	22.7
West Pokot	7.2	14.2
Tana River	5.8	28.7
Narok	6.0	47.8
Kwale	4.7	41.5
Garissa	6.1	5.5
Kilifi	5.1	34.1
Taita Taveta	3.2	68.0
Isiolo	4.9	27.0
Lamu	4.3	42.2
Kenya	3.9	58.0

Source: KDHS 2014

2.3 Overview of Factors Influencing Contraceptive Use

Studies indicate that factors that influence contraceptive use are multifaceted thus use of contraception is associated with socio-demographic, socio-cultural, socio-economic, source of information and family planning factors (Mohammed *et al*., 2014). Different reasons why women of reproductive age do not use family planning methods have been cited by various studies. Stock out, lack of preferred methods, religious affiliations, providers' incompetence and spousal communication about family planning have been shown to be determinants of contraception use (Mekonnen and Woku 2011; Omo-Aghoja *et al* 2009; Aziem *et al* 2011; Marchant *et al* 2004, Underwood 2000).

Socio-cultural factors render contraceptive use difficult as noted by Casterline *et al*. (2001). Use of family planning methods may be low and poorly accepted where customs emphasize the importance of childbearing as observed by Ndubani and Hojer (2001). Cultural values, beliefs and communication with partners affect women's use of contraceptives especially in rural areas that are still male-dominated, and where women feel pressure to prove their fertility (Peer *et al*. 2013). Polygamy has been cited as a barrier to contraception among predominantly Muslim communities due to competition between co-wives to have many children so as to get a bigger share of household resources (Aziem *et al*., 2011).

Socio-economic factors including education, economic, and health variables as well as proximate factors including biological and behavioural variables such as contraception and age of a woman affect contraceptive use (Bongaarts, Frank, and Lesthaeghe, 1984). Level of educational attainment has been found to be a major determinant of Family Planning use, by increasing awareness and decision making power (Magadi, Madise, and Rodrigues 2000; Ilani *et al*). In addition, a study from Nepal, conducted by Gubhaju, determined that as a wife's education level increases, the husband's preference for more children has less effect on the woman's decision to use contraception.

Limited research is available on determinants of family planning use in the marginalized Counties of Kenya. Taking into consideration the low level of contraceptive use in these Counties, identification of factors that determine contraceptives use will generate relevant evidence based information that will help policy makers to understand current population concerns and use the information to make informed decisions on population related matters in various sectors. This is in line with Article 56 of Kenya's Constitution that tasks the State to ensure that the marginalized communities have reasonable access to health services and infrastructure among other essential services.

2.4 Study Objectives, Hypothesis, and Conceptual Framework

The aim of this study was to explore the factors that determine contraceptive use among women of reproductive age (15-49 years) in the marginalized counties of Kenya. Specifically, the study sought to address the following objectives:

- Compute the combined contraceptive prevalence rate for the marginalized counties
- Compare background characteristics of married women of reproductive age in marginalized counties and Kenya
- Explore and compare determinants of contraceptive use in the marginalized counties and Kenya
- Make recommendations for sustaining and improving contraceptive use in the marginalized counties

The findings of this study will contribute to the body of knowledge on the factors that determine contraceptive use among people living in disadvantaged areas of Kenya.

In undertaking this study, the null hypothesis below was used:

Null Hypothesis:

There are no differences in the determinants of contraceptive use among married women in the marginalized counties when compared to all married women in Kenya.

The conceptual framework for the study was adopted from the Bongaarts (1978) proximate determinants framework for the analysis of fertility. Given that this study was focused on contraceptive use, the Bongaarts framework was modified to only include those factors that determine contraceptive use as shown in Figure 2.1;

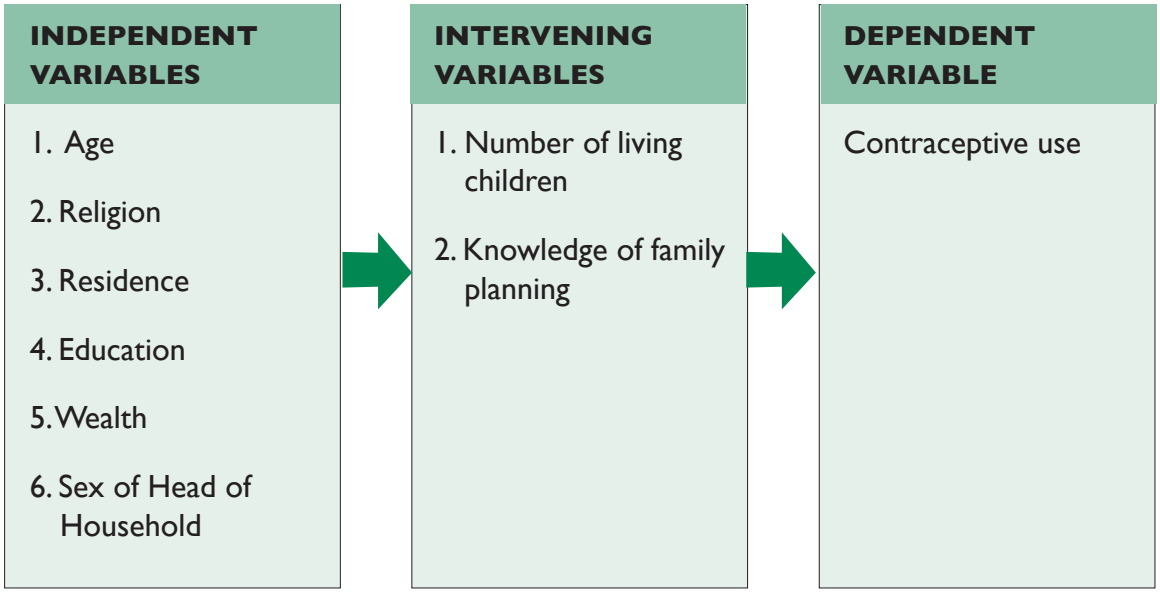

Figure 2.1: Conceptual framework

2.5 Methods

This study on the determinants of contraceptive use among married women of reproductive age living in the marginalized counties of Kenya used data from the 2014 Kenya Demographic and Health Survey (KDHS). The sample for the 2014 KDHS was drawn from a master sampling frame, the Fifth National Sample Survey and Evaluation Programme (NASSEP V). This frame contains a total of 5,360 clusters drawn from the enumeration areas of the 2009 Kenya Population and Housing Census. The 2014 KDHS was designed to provide estimates at national, provincial, and county levels. A total of 39,679 households from 1,612 clusters spread across the country were selected for the survey, with 995 of these clusters in the rural areas and 617 in urban areas. Given the design of the survey, the 2014 KDHS was not self-weighting and therefore the resulting data was weighted to be representative at the national, regional, and county levels.

Three types of questionnaires were used in the 2014 KDHS namely; household, women's, and men's questionnaires. The household and women's questionnaires were administered in all sampled households while the men's questionnaire was administered in every second household. Only women of reproductive age were eligible to respond to the questions in the women's questionnaire. A total of 31,079 women of reproductive age, from 36,430 households across all the 47 counties in Kenya, were successfully interviewed during the 2014 KDHS using the women's questionnaire. Out of this number, 18,549 women were married. However, for the purpose of this study, 2,816 married women living in the 14 marginalized counties of Kenya were selected.

The dependent variable for this study was contraceptive use. This variable was constructed from the variable "current use by method type (V313)" which was recoded from four categories (Not Using, Folkloric, Traditional, and Modern) to two categories (Not Using and Using). The independent variables used were; Age in 5 year groups (V013), Religion (V130), Family Planning knowledge (V301), Number of living children (V218), Education attainment (V149), Wealth index (V190), Residence (V025), and County (Scounty). All the independent variables were used as they are in the 2014 KDHS dataset except the Family Planning knowledge and Number of living children variables which were recoded before analysis. The Family Planning knowledge variable was recoded into the following categories; Knows no method, Knows only traditional or folkloric, and Knows modern methods. The Number of living children variable was recoded into the following categories; 0, 1-2, 3-4, 5-6, and 7 or more children.

In undertaking the analysis, the data was first weighted using a computed weight variable (i.e. variable V005 divided by 1,000,000). The first analysis done was descriptive. This involved production of frequency tables showing the percentage distribution of the married women of reproductive age in the marginalized counties and Kenya as a whole (national) by various background characteristics. The second analysis was a bivariate correlational analysis using crosstabs and the chi-square test. This was done for the dependent variable against each of the independent variables. The results from this analysis showed the significance of the relationship between the dependent variable and each of the independent variables for married women in the marginalized counties and Kenya. The third analysis undertaken was a binary logistic regression analysis using the dependent and independent variables to produce odds ratios for use of contraceptive for women in the marginalized counties and Kenya. Categories for the independent variable were coded as follows; Not using – 0 and Using – 1.

2.6 Results

Table 2.2 shows the distribution of married women of reproductive age in the marginalized counties and Kenya by various background characteristics. According to this table, the contraceptive prevalence rate (CPR) for the marginalized counties is 29 percent. This is much lower than the national CPR for Kenya which stood at 58 percent in 2014. Majority of the women in the study group were in the 5 year age groups from 20 to 39 years. More than one-third (35%) of the women being studied had more than 4 children each compared to 13 percent of women with similar characteristics nationally. About half of the women in the study group were Protestants or other Christian, while Muslims accounted for about one-third of this group.

In terms of education attainment among the women in the study group, about 43 percent of them had no education while less than 15 percent of them had gone beyond primary school. This is substantially different from the national outlook where less than 10 percent of married women of reproductive age have no

education and about 36 percent of them have gone beyond primary school. The proportion of women in the study group who were categorized as poorer and poorest (i.e. first and second quintile) were about 57 percent compared to 34 percent nationally. About 77 percent of the women being studied resided in the rural areas compared to 61 percent of married women at the national level.

Table 2.3 shows the distribution of married women of reproductive age who are using a contraceptive by background characteristics. The results show that about one-quarter of the women in the study group and nationally are in the age group 25-29 years. At the same time 61 percent of these women in the marginalized counties are Protestants and 20 percent are Muslims. At the national level, 76 percent of these women are Protestants and 3.1 percent are Muslims. Most of the contraceptive users in the marginalized counties (70%) and nationally (78%) have 1 to 4 children each. All the contraceptive users in the study group and in Kenya have knowledge on modern contraceptive methods.

The education attainment of the contraceptive users in the study group shows that one-third have incomplete primary education and another 15 percent have not education. Nationally, majority of these women, at-least primary education stands at 73.4 percent. Over half of the contraceptive users in the study group (52%) are poor compared to slightly over one-quarter of the contraceptive users nationally. Both in the marginalized counties and nationally, most of the married women who are contraceptive users reside in the rural areas. The results of the chi-square test, as shown in Table 2.3 indicates that there is a significant association between the use of contraceptives and each of the background characteristics.

Table 2.4 shows the odds of contraceptive use among married women in marginalized counties and nationally. The results show that the most significant factors influencing contraceptive use in both the marginalized counties and Kenya are the number of living children, education attainment and wealth status. Generally, the odds of using a contraceptive method increases with the number of living children that a woman has. In the marginalized counties, women with 1 or 2 children have an odds of 7.648 ($p<0.01$, [CI 4.151 – 14.089]) while those with 5 or 6 children have an odds of 14.881 ($p<0.01$, [CI 7.399 – 29.927]) when compared with women that have no children. The odds of using a method of contraception in the marginalized counties varies from 2.540 ($p<0.01$, [CI 1.940 – 3.326]) for women with primary incomplete education to 4.835 ($p<0.01$, [CI 2.819 – 8.290]) for women with higher education when compared to women with no education. The women in the second (poorer) and fourth (rich) wealth quintiles have an odds of 2.437 ($p<0.01$, [CI 1.823 – 3.257]) and 2.535 ($p<0.01$, [CI 1.754 – 3.662]) of using a contraceptive method compared to those in the first (poorest) wealth quintile. Nationally, the odds of using a contraceptive method for the number of living children, education attainment, and wealth status are all higher compared to those of the marginalized counties.

Other factors which yielded some significant results are age, religion and county of residence. For age, the only significant result was the lower odds of those aged 45-49, using a contraceptive method compared to those aged 15-19. Their odds was 0.415 ($p<0.01$, [CI 0.219 – 0.787]). When compared to Catholics, the Muslims had a significant lower odds of 0.663 ($p<0.05$ [CI 0.450 – 0.978]) of using a method of contraceptive. The odds for the other religions were not significant. As for the counties, those living in Samburu, Tana River, Narok, Kwale, Kilifi, Taita Taveta, and Lamu had significantly higher odds of using a contraceptive method compared to those living in Turkana County. The odds ranged from 2.138 ($p<0.05$ [CI 1.032 – 4.429]) in Samburu to 7.551 ($p<0.01$ [CI 3.937 – 14.481]) in Taita Taveta.

Table 2.2: Percentage distribution of married women (15-49 years) in marginalized counties and Kenya by background characteristics

	Marginalized Counties		Kenya	
Current Use of FP	**% age**	**Number**	**% age**	**Number**
Not Using	70.60	1988	42.0	7796
Using Contraception	29.40	828	58.0	10753
Age in 5-year groups				
15-19	6.3	176	3.7	695
20-24	18.0	507	16.9	3133
25-29	23.5	663	24.6	4556
30-34	17.0	479	19.2	3566
35-39	16.1	455	15.6	2894
40-44	11.1	312	11.3	2091
45-49	8.0	224	8.7	1615
Religion				
Roman Catholic	12.7	358	19	3515
Protestant/Other Christian	45.1	1270	71.9	13326
Muslim	34.4	969	7.2	1337
No religion	7.5	211	1.6	305
Other	0.2	7	0.3	49
FP Knowledge				
Knows no method	7.5	211	1.3	232
Knows only traditional or folkloric	0.5	14	0.1	15
Knows modern methods	92.0	2591	98.7	18302
Living Children				
0	5.8	164	5.9	1086
1 to 2	29.1	819	39.6	7339
3 to 4	30.1	847	32	5936
5 to 6	19.0	536	15.1	2803
7 plus	16.0	450	7.5	1385
Educational attainment				
No education	43.1	1212	9.1	1692
Incomplete primary	26.2	738	25.3	4694
Complete primary	15.9	448	29.1	5389
Incomplete secondary	3.8	107	10.6	1963
Complete secondary	7.2	202	15.8	2930
Higher	3.9	109	10.1	1881
Wealth Index				
Poorest	56.4	1589	17.1	3174
Poorer	11.9	335	17.7	3290
Middle	9.6	271	18.9	3503
Richer	10.2	287	21.3	3957
Richest	11.9	334	24.9	4626

Table 2.3 Percentage distribution of married women (15-49 years) currently using contraception in marginalized counties and Kenya by background characteristics

	Marginalized Counties		Kenya			
	% age	p-value	N	% age	p-value	N
Age in 5-year groups						
15-19	4.6	0.001	38	2.6	0.000	279
20-24	18.0		149	15.6		1676
25-29	25.2		209	25.8		2772
30-34	18.7		155	21.1		2266
35-39	18.4		152	17		1823
40-44	9.4		78	11.2		1207
45-49	5.4		47	6.8		730
Religion						
Roman Catholic	12.7	0.000	105	20.5	0.000	2199
Protestant/Other Christian	60.9		504	75.5		8104
Muslim	19.9		165	3.1		330
No religion	6.4		53	0.8		90
Other	0.1		1	0.1		16
FP Knowledge						
Knows no method	0.0	0.000	0	0.0	0.000	0
Knows only traditional or folkloric	0.0		0	0.0		0
Knows modern methods	100.0		828	100.0		10753
Living Children						
0	1.7	0.000	14	1.6	0.000	167
1 to 2	35.1		291	41.9		4502
3 to 4	34.3		284	36.4		3911
5 to 6	18.1		150	14.9		1600
7 plus	10.7		89	5.3		573
Educational attainment						
No education	15.5	0.000	128	2.8	0.000	299
Incomplete primary	33.0		273	23.8		2561
Complete primary	26.0		215	32.2		3466
Incomplete secondary	7.0		58	11.9		1282
Complete secondary	12.1		100	18.1		1942
Higher	6.5		54	11.2		1203
Wealth Index						
Poorest	33.0	0.000	273	9.5	0.000	1026
Poorer	18.7		155	17.8		1915
Middle	13.9		115	20.9		2249
Richer	17.0		141	24.3		2608
Richest	17.4		144	27.5		2956
Residence						
Urban	29.3	0.000	243	41.9	0.000	4503
Rural	70.7		585	58.1		6250

Table 2.4: Odds ratios on the use of contraception by married women (15-49 years) living in marginalized counties and Kenya by 2014 KDHS background

	Marginalized Counties				Kenya			
			95% CI for Odds				95% CI for Odds	
	Sig.	Odds	Lower	Upper	Sig.	Odds	Lower	Upper
Age in 5-year groups								
15-19 (Reference Category)		1.000				1.000		
20-24	0.721	1.089	0.682	1.738	0.862	0.983	0.810	1.193
25-29	0.774	1.074	0.659	1.749	0.754	0.969	0.798	1.177
30-34	0.637	0.881	0.522	1.489	0.349	0.908	0.741	1.112
35-39	0.940	0.979	0.568	1.688	0.184	0.867	0.703	1.070
40-44	0.061	0.568	0.315	1.025	0.000	0.672	0.540	0.836
45-49	0.007	0.415	0.219	0.787	0.000	0.368	0.294	0.462
Religion								
Roman Catholic (Reference Category)		1.000						
Protestant/Other Christian	0.915	0.983	0.719	1.345	0.004	0.886	0.815	0.963
Muslim	0.038	0.663	0.450	0.978	0.000	0.353	0.300	0.416
No religion	0.722	0.919	0.577	1.464	0.000	0.587	0.442	0.780
Other	0.874	1.219	0.105	14.200	0.000	0.277	0.145	0.528
Living Children								
0 (Reference Category)		1.000			1.000			
1 to 2	0.000	7.648	4.151	14.089	0.000	10.316	8.625	12.338
3 to 4	0.000	11.310	5.916	21.624	0.000	17.871	14.714	21.705
5 to 6	0.000	14.881	7.399	29.927	0.000	17.535	14.173	21.695
7 plus	0.000	13.270	6.317	27.876	0.000	13.736	10.837	17.411
Educational attainment								
No education (Reference Category)		1.000			1.000			
Incomplete primary	0.000	2.540	1.940	3.326	0.000	3.270	2.809	3.806
Complete primary	0.000	3.403	2.483	4.663	0.000	4.315	3.689	5.046
Incomplete secondary	0.000	3.940	2.393	6.488	0.000	4.314	3.609	5.156
Complete secondary	0.000	3.305	2.157	5.064	0.000	5.098	4.281	6.071
Higher	0.000	4.835	2.819	8.290	0.000	4.983	4.114	6.035
Wealth Index								
Poorest (Reference Category)		1.000			1.000			
Poorer	0.000	2.437	1.823	3.257	0.000	1.845	1.647	2.067
Middle	0.000	1.861	1.337	2.589	0.000	2.367	2.107	2.658
Richer	0.000	2.535	1.754	3.662	0,000	2.724	2.409	3.079
Richest	0.010	1.753	1.142	2.691	0.000	2.562	2.229	2.946
Residence								
Urban (Reference Category)		1.000			1.000			
Rural	0.145	0.802	0.596	1.079	0.772	0.988	0.908	1.075
County								
Turkana (Reference category)		1.000						
Mandera	0.053	0.252	0.062	1.017				
Wajir	0.092	0.360	0.110	1.181				
Marsabit	0.595	1.271	0.525	3.074				
Samburu	0.041	2.138	1.032	4.429				
West Pokot	0.730	0.894	0.472	1.691				
Tana River	0.000	3.975	2.071	7.630				
Narok	0.000	3.925	2.302	6.691				
Kwale	0.000	4.921	2.824	8,577				
Garissa	0.286	0.620	0.258	1.491				
Kilifi	0.000	2.914	1.719	4.939				
Taita Taveta	0.000	7.551	3.937	14.481				
Isiolo	0.043	2.246	1.027	4.911				
Lamu	0.000	4.554	2.097	9.891				

2.7 Discussion, Conclusion and Recommendation

Research on the determinants of contraceptive use may vary from one population group to another. Most studies show that some of the key determinants of contraceptive use are education, age, region of residence, wealth, type of residence, and number of living children. This study used some of these determinants to establish if they have an influence on the use of contraceptive methods by married women of reproductive age in the marginalized counties.

The results from this study have shown that the contraceptive prevalence rate in the marginalized counties is 29.4 percent—well below the national average of 58 percent. Majority of the married women using contraceptives in the marginalized counties have a lower wealth status and education attainment when compared to all women in Kenya who are using contraceptives. A comparison of the number of living children shows that 35 percent of the women in the marginalized counties have less than 2 children while at the national level it is 45 percent. Those who have more than 7 children are 16 and 7.5 percent in the marginalized counties and nationally respectively.

From the results of the study, it is evident that the most significant factors that predict the use of contraceptives in the marginalized counties are number of living children, wealth status, and education achievement. Other factors which are partly significant in determining contraceptive use are age, religion, and county of residence. A comparison of these factors in the marginalized counties and at the national level has revealed that there are hardly any differences in the key determinants apart from the odds ratios levels. The corresponding ratios at the national level are higher than that of the marginalized counties.

The policy implication of the above results is that the population of the marginalized counties will continue to grow more rapidly than the rest of the country given that the education and wealth status of most of the women is low, majority of them are not using contraceptives and they have a much higher number of children each when compared to the national aggregates for these indicators. This will therefore lead to a higher demand for basic social services to cater for the increasing needs of the fast growing population. To alleviate this situation, and based on the results of this study, more investments will be required in these counties to improve education attainment, wealth status, and provision of health related services including Family Planning. Enough resources should therefore be directed from the equalization fund to these sectors in the marginalized counties. This will contribute to matching the pace of population increase to the available resources thereby contributing to sustainable development and a better quality of life for the residents of the marginalized counties.

2.8 References

Omo-Aghoja LO, Omo-aghoja VW, Aghoja CO, Okonofua FE, Aghedo O, Umueri C, Otayohwo R, Feyi-Waboso P, Onowhakpor EA, Inikori KA: Factors associated with the knowledge, practice and perceptions of contraception in rural Southern Nigeria. Ghana Med J. 2009, 43: 115-121.

Abdel Aziem, duria a Rayis, Mona Mamoun, Ishag Adam. 2011. Use of family planning methods in Kassala, Eastern Sudan.

Haggaz A, Ahmed S, Adam I. 2009: Use of family planning services in Darfur, Sudan. Int J Gynecol Obstet. 2009, 104: 247-8. 10.1016/j.ijgo.2008.10.022.

T. Marchant, A. K. Mushi, R. Nathan, O. Mukasa, S. Abdulla, C. Lengeler and J. R. M. Armstrong Schellenberg. 2004. Planning a family: Priorities and Concerns in Rural Tanzania. *African Journal of Reproductive Health/La Revue Africaine de la Santé Reproductive* Vol. 8, No. 2 (Aug., 2004), pp. 111-123

Hassan AA, Abubaker MS, Radi EA, Adam I: Education, prenatal care, and poor perinatal outcome in Khartoum, Sudan. Int J Gynaecol Obstet. 2009, 105: 66-7. 10.1016/j.ijgo.2008.10.026 Couple Characteristics and Contraceptive Use among Women and their Partners in Urban Kenya. 2014

NANGENDO, Stevie M.2012. Knowledge And Use Of Family Planning Methods And Services In West Yimbo Division, Bondo District, Western Kenya. African Study Monographs, 33 (4): 233-251, December 2012

Ayoub S. Ayoub: Effects of Women's Schooling on Contraceptive Use and Fertility

Isaac Addai (1999). Ethnicity and Contraceptive Use in Sub Saharan Africa: The Case of Ghana. Journal of Biosocial Science, 31, Pp 105-120.

Underwood, C. 2000. Islamic Precepts and Family Planning: The Perceptions of

Jordanian Religious Leaders and their Constituents. *International Family Planning Perspectives*, vol. 26, no.3, 110-117.

Mohammed A, Woldeyohannes D, Feleke A, Megabiaw B. (2014). Determinants of modern contraceptive utilization among married women of reproductive age group in North Shoa Zone, Amhara Region, Ethiopia

Peer N, Morojele N, London L. 2013. Factors associated with contraceptive use in a rural area in Western Cape Province. S Afr Med J. 2013 Feb 25;103(6):406-12. doi:10.7196/samj.6201. PubMed PMID: 23725962

M Rakibul Islam M. And Thorvaldsen. G. 2012. Family planning knowledge and current use of contraception among the Mru indigenous women in Bangladesh: a multivariate analysis. Open Access Journal of Contraception, 2012

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