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THE EFFECT OF HOUSEHOLD CHARACTERISTICS ON ADOLESCENT CHILDBEARING IN LESOTHO

BY

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A RESEARCH REPORT SUBMITTED TO THE FACULTY OF HUMANITIES AND SOCIAL SCIENCES

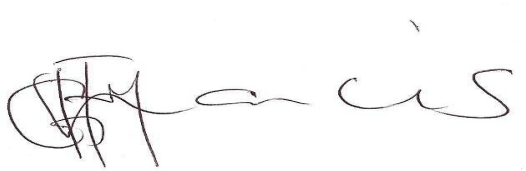
UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF ARTS IN THE FIELD OF DEMOGRAPHY AND POPULATION STUDIES

FEBRUARY 2008

DECLARATION

I, Ifeoma Gloria Francis (Mrs.) hereby declare that this research report is my own original work. It is being submitted to the faculty of Humanities and Social Sciences, University of the Witwatersrand, Johannesburg, it is submitted in partial fulfillment of the requirements for the degree of Master of Arts in the field of Demography and Population studies. I declare that to the best of my knowledge it has not been submitted before in part or in full for any degree or examination at this or any other university.



…….

February 2008

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Abstract

Early exposure of adolescents to sexual intercourse has given rise to an increase in adolescent pregnancy and childbearing, a situation that has proved to have both economic, social and health implications not only for the adolescent mother but also for her child. Using data from the 2004, Lesotho Demographic and Health Survey (LDHS, 2004), this study examines the effect of household characteristics on adolescent childbearing in Lesotho.

The analyses done at three levels were based on a sample of 1,230, never married adolescents aged 15 to 19 years who had either always lived in the present residence or moved to the residence before age thirteen. The sample was a sub-sample from the dataset of all women of reproductive age interviewed during the survey. Logistic regression models were used to check for the odds of adolescent premarital births.

The results show that only about seven percent of adolescents in the sample had premarital births. The older adolescents (18 and 19 years old) had the highest rates of premarital births, 14 and 19 percent respectively, indicating that the risk of premarital birth increases with age. The odds of premarital births was higher among adolescents that had first sexual intercourse at age 15 years or younger, and had achieved primary education or less.

The results also showed the strong influence characteristics of co-resident women have on the behavior of adolescents. For instance, adolescents co-residing with an older woman that had had a premarital birth or first birth as a teenager, or who were separated or divorced, had higher odds of premarital births. The likelihood of adolescent premarital birth was found to be higher in households that were headed by females as well as in large households.

The findings of this study have implications for programs designed to reduce adolescent pregnancy and childbearing. Most interventions to date, to reduce adolescent premarital pregnancy and childbearing, have focused primarily on adolescents themselves. The findings of this study shows that certain household characteristics influence adolescent premarital births and should therefore be taken into account in designing interventions to reduce adolescent premarital childbearing.

Organization of the Research Report

This report is divided into six chapters. The first chapter, the introduction, covers the statement of problem, background to the study, rationale, objectives, research questions and hypotheses. The second chapter covers the literature review and the analytical/conceptual framework. The third chapter covers the methodology. Chapter four outlines the results, and chapter five contains the discussions. Conclusions and recommendations are contained in chapter six.

CHAPTER ONE

INTRODUCTION

1.0. Statement of the Problem

Adolescence[1] is the intermediary stage of development between childhood and adulthood. During this stage a person experiences a number of biological and emotional changes. Studies have shown that individual differences determine how the emotional changes associated with this stage of development affect the adolescents and their reaction to the changes (Matteson 1975; Yeaworth et. at 1980). Early exposure to sexual activities among adolescents has given rise to increased adolescent pregnancy and premarital childbearing. This has both economic and social implications for the teenage mother and her child, as in most cases the father of the child is unable to provide long-term support for them which leaves them to a future of low socioeconomic status (Gwam, 1987), apparently due the inability of these girls to complete school which also compromises employment opportunities.

The World Health Organization defines adolescents as persons between 10 and 19 years of age (Goodburn and Ross, 1995); this study therefore focused on childbearing of female adolescents aged 15 to 19 years in Lesotho. Pregnancy of women aged 13-19 years of age is viewed in many societies as a social problem partly because it is accompanied by huge risks both to the adolescents themselves and to their infants. These include maternal morbidity and/or mortality, high infant mortality, the possibility of the adolescent continuing her education may be slim leading to exposure to a future of low socioeconomic status as a result of not having adequate skill for good paying jobs.

Adolescent pregnancy is a common occurrence in many countries. It was estimated that between 1995 and 2000, about 14 million adolescents between the ages of 15 and 19 years gave birth globally; of this number 12.8 million were from developing countries (UN, 2002). United Nations also reported that the age specific birth rate among adolescents in Africa was estimated to be about 115 live births per one thousand women aged 15 to 19 years (UN, 2002).

[1] Refer to appendix A for definition of terms

Previous studies have highlighted some of the adverse health, social and economic effects of adolescent pregnancy and childbearing. Health risks include pregnancy induced hypertension, anemia, obstructed and prolonged labour, vesico-vaginal fistulae (Koster et al, 2001; Zabin et al 1998; Kelly et al 1993, and Wall 1995). Some social effects include low educational achievement, high school dropout, and poverty (Swane et al, 2003). Pathfinder International (2003) reported 10,000 adolescent girls drop out of school annually due to pregnancy in Kenya. Economically, adolescent childbearing encourages high dependence on families and state during adulthood (Otterblad et al, 2001).

A further danger is that of adolescents remaining unmarried for the rest of their lives as a result of premarital childbearing, as in some cultures men hesitate to marry women that have had premarital births (Kellam et al 1982).

1.1. Background of the Study

Lesotho, one of the smallest countries with a population of about 2.2 million people, is completely surrounded by South Africa. Lesotho is divided into ten provinces or administrative districts, and has four ecological zones namely the Lowlands, Mountain region, Foothills and the Sengu River Valley. The Lowlands are where almost 60 percent of the population is found. The Mountain region covers about 60 percent of the land area with only 23 percent of the population.

In the 1970s, most traditional societies including Lesotho did not support premarital sexual behavior in fact in Lesotho Sesotho tradition considers it an abomination for anyone to have a premarital birth (Poulter et al, 1981). However, today things are different; it is no longer abnormal to see pregnant unmarried adolescents in many traditional societies. This change in cultural values and beliefs in traditional societies may be attributed to modernization and urbanization. Cultural values are eroded in urban areas especially, because when young people migrate to urban areas for either school or employment they move out of reach of elders who in most cases, re-enforce cultural values. The playing down of some of these cultural beliefs may have affected young people in Lesotho and brought about pervasive premarital sex with subsequent pregnancy and childbirth Kimane et al (1999) noted the increase in the number of adolescent births in Lesotho. As young people become sexually active, use of contraceptives is usually low and in some cases may be non existent. Studies have confirmed low usage of condoms and other forms of contraception among sexually active adolescents. Kaufman et al

(2001) in a study in South Africa noted that even though there is wide knowledge of contraception among young people and availability of contraceptives, most young people only use contraceptives after their first birth. The low percentage of condom use and other forms of contraception have exposed many young people to unintended pregnancy/childbirth and sexually transmitted diseases including HIV/AIDS.

Lesotho is one of the countries in the world with the highest rate of HIV/AIDS, with about 23.2 percent prevalence nationally among the adult population 15-49 years (PRB, 2007). United Nations estimates an increase in the HIV/AIDS prevalence to about 36 percent in the next 15 years in Lesotho (US Bureau of African Affairs, 2006). The Ministry of Health and Social Welfare (MOHSW) in Lesotho reported that 52 percent of all women that attended antenatal clinics in 2001 were adolescents, while 23 percent of all births in the same year were among adolescents and 26 percent of all abortions performed in 2001 were in adolescents (MOHSW and WHO 2002). It was further reported that 41 percent of births to adolescents were unwanted (LDHS, 2004). Considering the high percentage of unintended births to adolescents it is important that research be carried out to examine factors contributing to adolescent childbearing other than individual characteristics of the adolescent. These factors include household characteristics. The few studies that have been done recently in Lesotho on adolescent sexual behaviour have paid particular attention to individual characteristics and its effect on adolescent pregnancy but not on household characteristics.

1.2 Rationale

Although there is extensive knowledge of the implications and complications of adolescent pregnancy and childbearing in Southern Africa as taught by the media, life orientation lessons in schools, informal sex education at homes, and the volume of research that has been carried out on the subject. There is still a high incidence of adolescent premarital births in the Southern African region. The age specific birth rates of adolescents are still very high in the Southern African region compared to most developed countries. United Nations estimated that in Lesotho 75 out of every 1000 women aged 15 to 19 years give birth each year, in Botswana about 80, Namibia 99, Zambia 115 and Angola 200 (UN, 2002). In contrast Austria about 12, Switzerland less than 5 and Netherlands about 5 births per 1000 women aged 15 to 19 (UN, 2002).

Early childbearing leads to low levels of education among adolescents. Some adolescents that have premarital births do not make it back to school to complete their schooling, because they are faced with the responsibility of caring for their infants if their mothers or grandmothers are not willing or available to care for the infants. Others that may want to go back to school are faced with the moral stigma of being a teen mother and may experience rejection from peer educators. These challenges cause some teen mothers to drop out of school; this has implications for their socio-economic status and will create dependency either on their families or the government in future. It also has implications for the infant if the mother does not have financial resources to care for her child.

Despite the level of knowledge of risks and programs designed for adolescents, one wonders why these interventions have not reduced the incidence of adolescent pregnancy and childbearing. More studies on adolescent pregnancy/birth are needed; especially studies on the effect of household characteristics- this is because recent studies (Mturi et al, 2001) on adolescent childbearing in Lesotho have focused on individual level variables and not on household variables. As a result, interventions directed at reducing adolescent pregnancy and childbearing have only focused on individuals and have not included the household. The focus on household characteristics proposed in the present study is rooted in the thought that adolescent behaviours may be influenced by the lifestyle and behaviour of their household members by whom they are socialized. These influences exact pressure on adolescents which may sway them either positively or negatively and in many cases determine their future behavior. Moreover, behaviours are principally formed and nurtured in households at a young age. Since most adolescents are still living at home with their families, the family essentially shapes how they turn out. It is imperative therefore that those household characteristics be examined in the study of adolescent pregnancy and childbearing. It is important to note the influence of role-models (co-resident women) in the household on adolescents, particularly the impact of their life experiences. Previous interventions on adolescent sexual behaviour have been directed on adolescents themselves with few results. The present study believes future interventions on adolescent sexual behaviour should be designed to include the household. The implications of this study will advise program designers and the various non-governmental organizations that work with adolescents on multifaceted interventions that will include the household in the fight against adolescent premarital childbearing.

This study focused on premarital adolescent births knowing that adolescent pregnancy and childbearing in general are accompanied by great risks as mentioned above, but that, adolescent premarital births come with additional risks. One of these is the danger of the adolescent not being able to return to school or completely dropping out of school, as well as the risk of remaining unmarried for the rest of her life in certain countries, like Lesotho. Previous studies have noted that Basotho men generally do not want to marry women that already had a premarital birth (Mturi et al 2001). If this happens, the unmarried adolescents with little or no skill are faced with a life time of low socio-economic status, with subsequent negative effects on their children. Married adolescents may not face such harsh conditions even when they do not finish school, as it is expected that their husbands will contribute to their up-keep and the welfare of their children. Hence married adolescents may likely have an advantage over unmarried adolescents. Also, given that married adolescents have left their original households to join their husbands' households, this study will focus on the effect of household characteristics on unmarried adolescents within their original household, since this data is available. Early marriage is not prevalent in Lesotho as in some countries. The LDHS (2004) reported that only 16 percent of adolescents were married, and 51 percent of all women 15-49 years were married, while only 3 percent of women 15-49 years had never been married. This suggests that marriage may be popular or universal in Lesotho. The mean age at first marriage is about 20 years. This might mean that sexually activity unmarried adolescents have a longer time to avoid pregnancy, this under scores the importance of this study. Also given that marriage may be assumed to be universal in Lesotho, it is imperative therefore, to study premarital childbearing among adolescents.

1.3 Main Objective

The main objective of this study is to examine the effect of household characteristics on the occurrence of adolescent premarital childbearing.

1.4 Specific Objectives

1. To investigate the effect of co-resident women's sexual, birth and marital histories on the occurrence of adolescent premarital births.
2. To examine how household structure (sex and age of head, size, presence of older men and women) influences the occurrence of adolescent premarital births.

3. To investigate the effect of household socio-economic status (educational level and selected household assets) on the occurrence of adolescent premarital births.

1.5 a. Research Questions

In order to accomplish the above objectives the study asked and answered the following research questions:

1. How do sexual, birth and marital histories of co-resident women impact on adolescent premarital births?
2. Does household structure influence the occurrence of adolescent premarital birth?
3. How does household socio-economic status influence the incidence of adolescent premarital birth?

1.5 b. Hypotheses

The study proposed and tested the following hypotheses:

1. Sexual, birth and marital histories of co-resident women have no influence on adolescent premarital birth.
2. Household structure has no effect on adolescent premarital birth
3. Socio-economic status of the household does not influence the occurrence of adolescent pregnancy.

CHAPTER TWO

LITERATURE REVIEW AND ANALYTICAL FRAMEWORK

2.1 Literature Review

Adolescent childbearing and sexual behaviour have received attention among researchers in Africa and outside of the continent. This may have been so because of the risks both to mother and infant associated with births at this age. Studies in the past on adolescent pregnancy and premarital childbearing have laid more emphasis on pregnancy outcomes, than on implications and factors that influence adolescent pregnancy (McCullough et al 1991; Cooksey, 1990). In sub-Saharan Africa numerous studies have been carried out on

the subject of adolescent pregnancy and childbearing (Zabin et al 1998; Okonofua et al 1999; Sohail Agha 2002). Most studies in Southern Africa have concentrated on trends and levels of fertility amongst women of reproductive age or only on married women (Garenne et al 2001; Meekers et al 1999; Rutenberg et al 2003). Some studies have also been carried out on adolescent pregnancy, sexual behaviour and childbearing in South Africa (Manzini, 2001; Kaufman et al, 2001); in fact studies on adolescent sexual behaviour have been reasonably documented in South Africa, but not so much in other countries in the region. Very few studies have been carried out in Lesotho on adolescent pregnancy and childbearing (Kimane et al, 1999; Mturi et al 2001).

Manzini (2001) looked at how early female adolescents in KwaZulu-Natal are engaging in sexual intercourse and how some of them end up with premarital births. The study used a sample of 796 adolescent girls who reported they have ever had sexual intercourse. The author used structured questionnaires to obtain information on their sexual behaviour. The results from the study indicated that adolescents were becoming sexually active at an early age, 50 percent of all girls that reported sexually active were aged 16; about 50 percent of the sexually active adolescents had ever been pregnant; and the majority of the pregnancies were unplanned.

Kaufman et al (2001) examined premarital pregnancy and births among black South Africans. The study highlighted the pervasiveness of early childbearing among black women and that the experience of these young mothers, eventually resulted in their delaying subsequent births because of the difficulty in bringing up children without much support. This same finding was echoed by Garenne et al, (2001) in their study in South Africa

Makajane's (2002) study on premarital sex and childbearing among all women of reproductive age in Lesotho consisted of a sample of 1,978 women aged 15-49 years; data from the 1991/92 Lesotho DHS was used. Results highlighted increase in premarital sex and childbearing in Lesotho and showed that younger women have the highest prevalence of premarital sex and were more likely than co-resident women to have premarital births.

Mturi (2003) in his study in Lesotho examined parental position, knowledge and opinions on adolescent sexual behaviour and reproductive health. The study carried out in three districts in Lesotho was based on focus group discussions involving parents that have adolescents. The results informed that majority of the parents involved in the focus group discussion were aware that adolescents were sexually active but very few of them were able to discuss sex-related topics with their adolescent children, possibly for fear that if the adolescents knew about it, they would want to experiment with it. However the contrary may be the case, as good knowledge of sexual education and its implications may lead to delayed sexual initiation and when initiated, contraceptives may be used.
The results further showed that some parents did not approve of the introduction of sex education in schools. Parents were concerned that their children may not be given the proper or sound information in schools, yet were themselves not willing or able to give correct information. If sex is kept secret at home children will get the information either from peers or teachers.

An earlier study by Mturi et al (2001) on adolescent childbearing in Lesotho re-evaluated recent levels and trends in fertility behaviour among women of reproductive age as well as the incidence of induced abortion. The study used the population census data of 1976, 1986 and 1996 as well as the Lesotho DHS of 1991/92. The results showed that of the 728 adolescents (15-19 years) in the sample only 3.8 percent of them reported having been pregnant at least once. The percentage was much higher among young adults 20-24 years in the sample. Finally the study reviewed adolescent fertility in other countries of the Southern African region, compared with Lesotho. The authors concluded that although there was evidence of premarital child bearing in Lesotho the scale was not known because Basotho culture is strongly opposed to extramarital childbearing. As a result pregnancy may be under reported and incidence of induced abortion high since adolescents have difficulty in obtaining contraceptives in Lesotho (Mturi et al, 2001).The study also reported that other countries in the region have higher levels of childbearing among unmarried adolescents when compared with Lesotho.

Extensive studies on adolescent childbearing and sexual behavior in general have been carried out beyond the Southern African region. Some factors have been identified as correlates of adolescent sexual behaviour in these studies. Newcomer and Udry (1987) focused on the effect of parental marital status on adolescents' sexual behavior and found

that adolescents living with both parents at all times were less likely to initiate sexual intercourse at an early age than adolescents living with a single parent. In several studies (Day, 1992; Kiernan & Hobcraft, 1997; Mclanahan, 1998), absence from home of the adolescents biological father was found to be linked to `early sexual encounters and therefore the risk of adolescent pregnancy and may be birth.

Family composition has also been associated with adolescent pregnancy/birth. Cooksey (1990) found an association between adolescent pregnancy and large household size. Others noted the relationship between large number of siblings and the probability of teen pregnancy (Hogan and Kitagawa, 1985).

Socio-economic status of parents of adolescents measured by parental education, income level, and place of residence, was found to correlate with adolescent pregnancy and childbearing. For instance the study by Odimegwu et al (2002) in Bida local government area in Nigeria among adolescents, found that adolescents whose parents were not poor had lower odds of premarital sex than adolescents whose parents had middle to high income. This is consistent with other studies that found that adolescents from educated parents with high income were less likely to engage in early sexual intercourse, or if they do, use contraceptives; while adolescents from lower socio-economic status were more likely to start sexual intercourse early (Upchurch et al 1998; Manlove et al 1998 and Taris and Semin, 1997). Adolescents from higher socio-economic backgrounds will more likely value education and be motivated by educated parents who are able to finance their children's further education. In contrast, adolescents from low socio-economic background, with illiterate parents may, not have the same motivation and may therefore initiate sexual intercourse at an earlier age without the knowledge and means to afford contraceptives.

Other studies have considered biological influence on the timing of sexual initiation by adolescents. Newcomer and Udry (1984) found that adolescents' mother's age at first sex and first birth was significantly related to their daughters' eventual age at first intercourse. This implies that a mother's age at first sex and first birth may influence the daughter's age at first intercourse. This is consistent with Mott's et al (1996) study. Age at menarche has been found to be related to age at first sex. Adolescents that have earlier

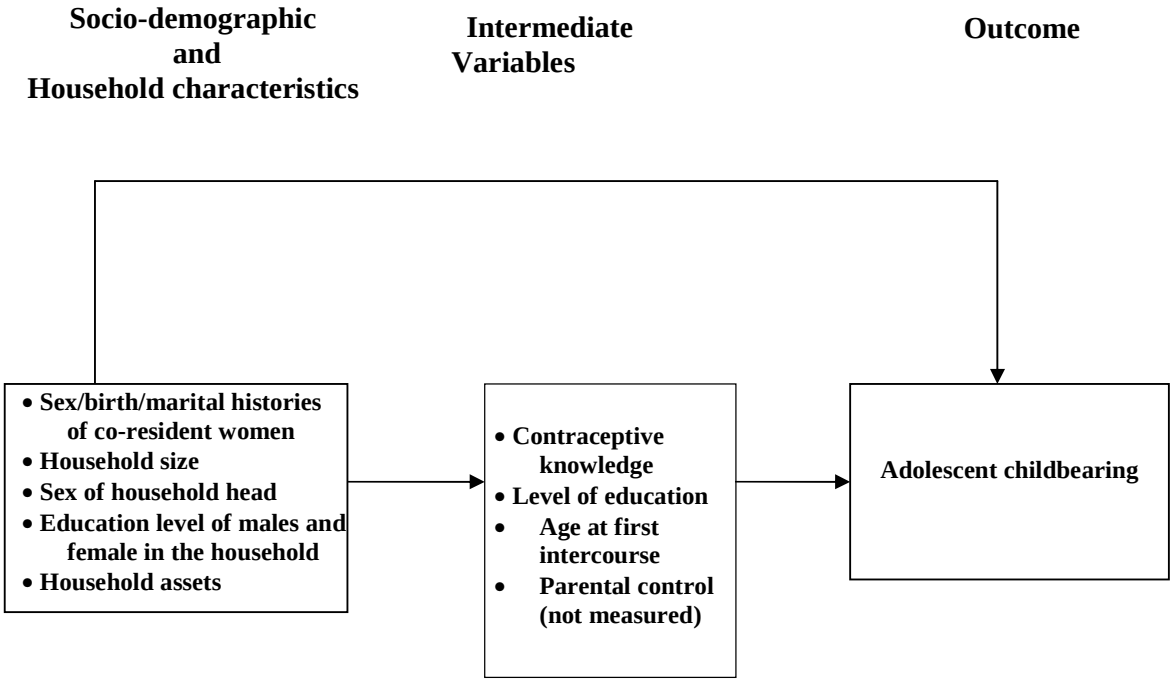
age of menarche were more likely to initiate sexual intercourse early (Miller et al 1997; W.B Miller et al 1998).

Other studies have linked sexual abuse with adolescent pregnancy, noting that adolescents that have been sexually ill-treated at an early age are more likely to continue with sexual encounters compared to adolescents that have not experienced sexual abuse (Boyer and Fine, 1992; Botler and Burton 1992; Luster and Small 1994).

Most studies on adolescent pregnancy and childbearing in Southern Africa have placed great emphasis on individual level characteristics this may explain why interventions have only been directed towards adolescents. Household level analysis and its relationship to adolescent pregnancy and childbearing have not received sufficient attention among researchers in the Southern African region, especially in Lesotho. Adolescents are not brought up in isolation but in households where they are influenced, therefore it is important that household characteristics be analyzed to properly inform program designers on appropriate interventions to reduce adolescent pregnancy and childbearing. Therefore this study will examine the effect of household characteristics on adolescent childbearing, with emphasis on the characteristics of co-resident women, household composition and household socio-economic status. If programs and interventions to reduce adolescent pregnancy and childbearing are designed to involve the household, it may have a far reaching effect and reduce the health and social problems associated with adolescent births.

2.2 Analytical/Conceptual Framework

The analytical framework explains how socio-demographic factors and household characteristics affect the outcome (adolescent premarital childbearing) through a set of intermediate variables.



Adolescent premarital pregnancy and/or childbearing does have financial, structural and social consequences not only for the adolescent, but for her household as well. This has a way of altering the household and in most cases stretches the available financial and other resources. Characteristics of women resident in the household (age at first birth, age at first intercourse, premarital birth status, marital status) and household structure (size of household, sex of household head and highest educational level of male and female respondents all exert quantifiable influences on the adolescent and may determine how early the adolescent initiates sexual activity. If the onset of sexual intercourse is early, this may result in pregnancy and childbirth especially if there are no adequate contraceptives. Based on the likely influence of household members on adolescents the framework for this study has been modeled through household characteristics and socio-demographic factors. I have developed an analytical framework that has socio-demographic factors and household characteristics operating through intermediate variables (contraceptive knowledge, age at first intercourse, level of education and parental control) to affect the outcome (adolescent premarital birth). The framework presented above has been adapted from Cooksey (1990) and modified for the purpose of this study. Cooksey (1990) using data from a longitudinal survey of 1,946 women under

the age of 24 years who had ever been pregnant, looked at 'the factors in the resolution of adolescent premarital pregnancies'.

Adolescents living in the same household with co-resident women that had first intercourse at an early age, or who had an adolescent first birth, may be influenced by the example of these women; start intercourse early and may have a premarital birth. The size of family affects parental control[2] or oversight; adolescents from large families may experience slight parental control, as well as overcrowding in household, less control may expose them to early sexual initiation. Secondary education or higher of male and female in the household and household assets as a proxy for household socio-economic status will most likely encourage the adolescents to focus on education and therefore delay intercourse. Medium to high socio-economic status may mean that the household is able to adequately care for adolescents and therefore they may not get into sexual relationships early to get their needs met. High education presumably may mean they will have knowledge and access to modern methods of contraceptives to delay conception, if or when sexual activity is initiated, in that case pregnancy is avoided and so is childbearing

2.3 Variables and Definitions

2.3.1 Dependent Variable

Ever had a premarital birth (Yes/No)

2.3.2 Independent Variables

- **Adolescent Variables**

Age (Single years)

Place of residence (Urban/Rural)

Relationship to household head (Daughter/grand daughter/ other[3])

Educational level[4] (Primary and less/Secondary)

Age at first intercourse (15 and younger/over 15)

[2] Parental control is not measured in this study
[3] Sister to the head, daughter in-law
[4] LDHS did not specify completion or not of primary and secondary education

Knowledge of modern contraceptives (Knows no modern method/knows modern method)

Period lived in the present residence (Always/ less than 8 years, more than 9 years)

- **Co-resident Women Variables (**characteristics of oldest woman in household**)**

Marital status (Never married/ Married/ Separated[5])

Age at first intercourse (Before age 20/After age 20)

Age at first birth (Before age 20/After age 20)

Ever had a premarital birth (Yes/No)

Should children be taught about condoms? (Yes/No/ don't know)

- **Household Structure/Characteristics**

Sex of household head (Male/Female)

Age of household head (<50 years/50 years or more)

Size of household (Small, less than 5 members/Large, 5 or more members)

Highest male educational level (Primary or less/Secondary or more)

Highest female educational level (Primary or less/Secondary or more)

Presence of potential economically productive male adults 20-64 years (Less than 3/ 3 or more)

Presence of potential economically productive female adults 20-59 years (Less than 3/ 3 or more)

Presence of older males 65 years and over (None/ at least 1)

The presence of older female 60 years and over (None/ at least 1)

Has electricity (Yes/No)

Has piped water (Yes/No)

Has flush toilet (Yes/No)

Has car (Yes/No)

[5] Separated, divoreced or widowed

CHAPTER THREE

METHODOLOGY

3. 0. Source of Data

The data for this study was taken from a nationally representative probability sample of women 15-49 years in Lesotho (2004). The survey questionnaire consisted of individual and household questionnaires. The study population for these analyses consisted of 1,230 adolescents aged 15-19 years in Lesotho who have either always lived in the present residence or moved in there before age 13 years.

3.1. Sample Design

The sample for the 2004 DHS was a nationally representative sample which covered over 9,000 households in the ten districts in Lesotho, both urban and rural residential areas. The sample design was done in two stages; the first stage involved selection of 405 clusters, of which 109 were from rural areas and 296 from urban areas. These clusters were selected from the enumeration areas used in the 1996 national population census; the households were listed from the selected clusters and a systematic selection of the households that participated in the survey was done. Eligible for the interview were all women aged 15-49 years who were present in the household on the night preceding the day of the interview, whether visitors or household members.

The household questionnaire listed visitors and household members, and was used to identify eligible women for the individual interview; it also provided demographic data, including age, sex, residence, migration, as well as relationship to household head. Information on household characteristics, including sanitation, was also covered by the household questionnaire. The women questionnaire collected information from women of reproductive age 15-49 years, covering questions on background characteristics, birth history and child mortality, knowledge and use of family planning, fertility preferences, antenatal and delivery care, breastfeeding practices, vaccination and child illnesses, marriage and sexual activity. Information on the woman's economic activity as well as her husband's background characteristics, knowledge of and behavior regarding HIV/AIDS and other sexually transmitted infections (STIs). Information gathered but not used were not included in the research report. The survey had a response rate of 95 percent.

3.2 Data Analysis

Statistical analysis for this study was done using Stata 8 special edition. The analysis was done at three levels:

1. Simple descriptive statistics or univariate analysis of variables to give the general characteristics of all dependent and independent variables covered in the study; it provides the frequency and percentages of respondents and their basic features.

2. Bivariate analysis was done to investigate the strength of association between the dependent variable and each independent variable. The statistical method used was cross tabulation and Chi-Square tests of association. The purpose of the Chi-square test is to prove if there is any significant association between household characteristics and adolescent premarital births

3. The final level of analysis was multivariate binary logistic regression.

The logistic regression models used the independent or explanatory variables to predict the probability that the dependent or response variable will produce a change. The binary logistic regression model for response variable is denoted by the following model equation. Like the Chi-square test, binary logistic regression will show if there is any significant relationship between household characteristics and premarital births, but it will also give the odds of occurrence of premarital births among the various categories of the predictor variables.

The logistic model equation is $\log\left[\frac{p_i}{1-p_i}\right]=\beta_0 + \beta_i x_i + \varepsilon_i$.

Where β_0 = Stands for the intercept.

$\beta_{i=}$ Stands for all the slopes

x_i = Stands for all the variables

ε_i = Stands for the error term.

3.3. Limitations

Secondary data is often compromised by under-reporting; especially where information is self reported. Respondents may not be motivated to give accurate answers to questions; there may be as a result of recall bias if the event happened a long time before the survey. Questions on sexual history, like age at first intercourse, are sensitive and may be under

reported. This may well be the case with adolescents in Lesotho. The Lesotho 2004 Demographic and Heath Survey did not collect data on parental marital status at the household level; therefore parental marital status is not included in household variables in this study. Given that Lesotho has a small population and adolescent premarital births are not common, the sample size for adolescents with a birth history is not very large. This did not affect the analyses as most of the variables were recoded and limited to two categories to be able to give statistical predictive power.

CHAPTER FOUR

RESULTS

4.1 UNIVARIATE ANALYSIS

4.1.1. Demographic, Socio-economic and Household Background of Respondents

This chapter presents the univariate analysis of demographic, socioeconomic and household backgrounds of the respondents as listed in sub-section 2.3 above. These characteristics provide a crucial understanding of the composition of the population.

Those demographic, socioeconomic and household characteristics most likely to affect adolescent childbearing positively or negatively were identified and examined at both individual and household levels.

4.1.2. Individual Level Demographic Background

From Table 1 it can be seen that about half (49.1 percent) of the respondents are 16 years and younger, 70 percent of the respondents had not had sex at the time of the survey, while 12 percent had sex before age 16. The mean age at first intercourse is 15.8 years. Majority (59 percent) of respondents had attained only primary education. Knowledge of modern method of contraception is high, 91 percent of respondent knew a modern method. Urbanization is slow in Lesotho, thus most of the population still live in rural areas making the urban population far lower than rural population. Over 76 percent of respondents were in rural areas. Age at first birth increased steadily with increase in age, 66 percent of respondents had first birth between age 17 and 19 years and mean age at first birth is 16.9 years. About 65 percent of respondents were daughters of household head, and 90 percent had always lived in the present residence.

Table 1 Percentage distribution of individual characteristics of respondents (15-19 years) Lesotho Demographic and Health Survey, 2004

VARIABLES	FREQUENCY (N=1,230)	PERCENTAGE (%)
Age		
15	278	22.60
16	326	26.50
17	236	19.19
18	218	17.72
19	172	13.98
Age at first intercourse	**Mean age @ first intercourse =15.8years**	
Had not had sex	859	69.95
Had sex btw 9-15years	147	11.97
Had sex btw 16-19 years	222	18.08
Highest Education level		
No education	2	0.16
Primary	723	58.94
Secondary	505	41.06
Knowledge of any method of contraception		
Knows no method	110	8.94
Knows modern method	1120	91.06
No. of children ever born		
No child	1148	93.33
Children	82	6.59
Type of residence		
Urban	285	23.17
Rural	945	76.83
Age at first birth	**Mean age @ first birth =16.9 years**	
Before age 17 years	28	34.2
Birth between 17 &19 yrs	54	65.9
Period lived in present residence		
Less than 8 years	54	4.4
More than 9 years	62	5
Always	1114	90
Relationship to household head		
Daughter	794	64.55
Grand daughter	225	18.29
Other	219	17.16
Total	1230	100
Ever had premarital birth		
No birth	1148	93.33
Births	82	6.67
Total	1230	100

4.1.3. Household Socio-Demographic Characteristics

The household plays an important role in the up bring of children, it is therefore essential for the present study, that household structure and socio-economic status be examined in detail. Household composition/structure and selected assets likely to affect adolescent childbearing and sexual behaviour have been selected and examined below.

4.1.4. Household characteristics

Table 2 shows that more than half (54.4 percent) of respondents were from households with six or more household members, 60 percent of the households were headed by male and over 46 percent of household heads were less than 50 years of age. Majority (88 percent) of the co-residing females had no premarital births, 32 percent of them had first intercourse as teenagers, 69 percent had first birth before age 20 years, and 40 percent of them were married while 47 percent were never married. When asked if children should be taught about condom use, 65 percent of the co-resident females were of the opinion that children should not be taught about condoms while 5 percent were not sure. Over 89 percent of respondents reported the presence of less than 3 potential economically productive male adults (20 - 64 years), while 92 percent of the respondents have no male adults 65 years and older in their households. About 92 percent of respondents reported less than 3 potential economically productive females (20-59 years), while 21 percent had at least one adult female (60 years and over) in their households.

Table 2 Percentage distribution of household characteristics of respondents

Variable	Frequency N=1,230	Percentage (%)
Household size		
1-5 members	465	37.8
6-10 members	669	54.4
More than 10 members	96	7.8
Sex of household head		
Male	732	59.5
Female	498	40.5
More than 10 members	96	7.80
Age of household head		
Less than 50 years	570	46.0
50 years and over	660	54.0
Premarital birth co-residing female		
No premarital birth	1079	87.7
At least one birth	151	12.3
Age at first birth (co-residing female)		
First birth under 20 years	843	68.5
First birth at 20 and over	387	31.5
Age at first sex (co-residing female)		
Before age 20	404	32.8
At 20 and over	826	67.2
Marital status (co-residing female)		
Never married	574	46.7
Married[6]	495	40.2
Separated[7]	161	13.1
Number of female adult(20-59)		
Less than 3	1132	92.0
3 or more	98	7.9
Number of male adults (20-64 years)		
Less than 3	1106	89.9
3 or more	124	10.1
Number of male adults (65+)		
None	1137	92.4
One or more	93	7.6
Number of female adults (60+)		
None	970	78.9
One or more	260	21.1
Children taught about Condom use		
Yes	334	29.7
No	728	64.8
Don't know	62	5.5

[6] Married includes those not married but leaving together

5 Separated, divorced or widowed

4.1.5. Household Socio-economic Status

The highest male and female educational level in the household was used as a proxy for socio-economic status, as well as the ownership of goods and household assets. Most males in households (58 percent) have primary education; only three and half percent have tertiary education, more than half of the females (52 percent) have secondary education. Almost 90 percent of respondents reported they do not have access to piped water, while 98.6 percent do not have flush toilet, 94 percent do not have electricity only and 5 percent reported they have cars.

Table 3 Percentage distribution of household assets of respondents

Characteristics	Frequency	Percentage
Highest male educational level		
No education	109	9.6
Primary	655	57.9
Secondary	328	29.0
Tertiary	40	3.5
Highest female educational level		
Primary	531	43.2
Secondary	642	52.2
Tertiary	57	4.6
Piped Water		
No	1202	89.6
Yes	128	10.4
Has electricity		
No	1155	93.9
Yes	75	6.1
Has flush toilet		
No	1210	98.4
Yes	20	1.6
Has car		
No	1166	94.8
Yes	64	5.2

4.2 BIVARIATE ANALYSIS

In this section I tested for association between ever had a premarital birth (response variable) and the various demographic, socioeconomic and household characteristics using Chi-Square test of association and bivariate logistic regression. Individual socio-demographic variables such as current age, type of place of residence, period lived in the present residence, educational level, age of respondent at first birth, as well as age at first intercourse. Also tested is the association between premarital birth and the characteristics of the co-resident women in the household, such as the marital status of these women, their age at first intercourse, age at first birth, premarital birth status and their attitude towards condoms and young people. Household characteristics such as household size, sex of household head, age of household head, number of economically productive male and female adults in the household, highest male and female education; the presence of household assets like type of toilet facility, electricity, source of drinking water and ownership of car.

4.2.1. Individual Level Socio-Demographic Characteristics

Table 4 shows the results of Chi-Square test of association between the individual socio-demographic variables and the response variable (premarital birth). The percentage of premarital births increased with age, less than four percent of adolescents between ages 15 and 16 years had had premarital births: age is highly associated with premarital birth (P-value< 0.000). Among adolescents that had first intercourse at age 15 or younger, 19 percent of them had premarital births. Age at first intercourse showed significant association with premarital birth (P-value< 0.000). Knowledge of contraceptives is significantly associated with premarital birth (P value=0.011). Table indicates that 7 percent of respondents that knew modern method of contraceptives had premarital births.

Bivariate analysis of individual characteristics shows that current age of the adolescent, age at first intercourse, and knowledge of contraceptive method, were found to be significantly association with premarital birth though at different levels of significance. Other individual level variables, level of education, period lived in the present residence and type of place of residence, did not show a statistically significant association with premarital birth.

Table 4 Summary of background characteristics of respondents by ever had premarital birth

Variables	Premarital birth (%) YES	NO	P value
Current age			
15	1.08	98.92	
16	2.15	97.85	
17	4.24	95.76	
18	13.76	86.24	
19	18.60	81.40	**0.000*** **
Age at first sex			
1ST sex between 9&15years	19.05	80.95	
1ST sex between 16&19yrs	23.87	76.13	**0.000*** **
Knowledge of contraceptive			
Knows no method	0.91	99.09	
Knows modern method	7.23	92.77	**0.011** **
Educational level			
Primary or less	7.59	92.41	
Secondary	5.35	94.65	**0.121**
Type of place of residence			
Urban	5.26	94.74	
Rural	7.09	92.91	**0.279**
Period of residence			
Less than 8 years	8	92	
More than 9 years	6.6	93.4	
Always	5.6	94.4	**0.859**

*** Significant at 10% ** significant 5% *** significant 1%**

4.2.2. Characteristics of Co-residing Women

The premarital birth history of co-resident females was found to be significantly associated with adolescent premarital birth (P value<0.000). If the co-resident female, most likely the mother or grand mother had had a premarital birth, the adolescent in that household is more likely to have premarital birth. The same association was found with age at first birth of co-resident female (P value <0.000). 13.7 percent of co-residing women had first birth before age 20 years. Table 5 shows that age at first sex of the co-resident female was not significantly associated with adolescent premarital birth, (P value=0.808), seven percent of these co-residing women had intercourse before age 20

years. The Table shows that seven percent of adolescents in households where the older female member was never married had premarital births; with five percent in married women households and 10 percent in households where co-residing females were either separated/divorced or widowed. The marital status of co-residing female showed significant association with adolescent childbearing teen birth at (P value=0.080)

Table 5 Summary of characteristics of co-resident women by ever had a premarital birth

Variable	**Premarital birth (%)**		**P value**
	Yes	**No**	
Premarital birth			
Had no premarital birth	3.5	96	
Had premarital birth	29	71	**0.000*** **
Age at first birth co-resident female			
First birth before age 20	13.70	86.30	
First birth after age 20	3.44	96.56	**0.000*** **
Age at first sex co-resident female			
Had sex before age 20	6.55	93.45	
Had sex at 20 or above	6.91	93.09	**0.808**
Marital status of oldest female in household			
Never married	7.14	92.86	
Married	5.05	94.95	
Separated	9.94	90.06	**0.080***
Should children be taught condom use			
Yes	4	96	
No	8	92	**0.032** **

*** Significant at 10% ** significant 5% *** significant 1%**

4.2.3. Household Structure

Four and half percent of adolescents from small households (less than 5 members) had premarital births while 7.3 percent of adolescents from large households (5 or more members) had premarital births. The size of household did not show significant association with adolescent premarital births (P value =0.111). Sex of household head was found to be significantly associated with premarital birth (P value<0.000). Table 6 shows that four percent of respondents in male-headed households had premarital births while over 10 percent of respondents in female-headed households had premarital births. Teen births were almost two and a half times higher in female-headed households than premarital births in male-headed households. Age of household head showed no

significant association with adolescent premarital births. However, premarital births were slightly higher (7.4 percent) in households where household heads were 50 years or older. Relationship to household head revealed that over 5 percent of respondents living with at least one parent had premarital births, while 10.5 percent of grand daughters of household heads reportedly had premarital births. Relationship to household head was found to be associated with premarital birth (P value<0.013).

Number in households, of potential economically productive male and female adults aged (20-64) and (20-59) respectively, did not show significant association with teen births. Results show seven percent of adolescents in households with less than 3 male adults 20-64 years had premarital births, while five percent with 3 or more male adults had births (P value=0.389).The presence in households of adult female 60 years and over was found to show significant association with premarital birth of adolescents (P value=0.007).

Table 6 Summary of household structure variables by ever had a premarital birth

Variables	Premarital birth (%)		P value
	Yes	No	
Household size			
Less than 5 members (small)	4.51	95.49	
5 or more members (large)	7.26	92.74	**0.111**
Sex of household head			
Male	4.10	95.90	
Female	10.44	89.56	**0.000*** **
Age of household head			
Less than 50 years	5.79	94.21	
50 years or more	7.42	92.58	**0.252**
Relationship to household head			
Daughter	5.16	94.84	
Grand daughter	10.22	89.78	
Other	8.53	91.47	**0.013** **
Number of male adult 20-64 years			
Less 3	6.87	93.13	
3 or more	4.84	95.16	**0.389**
Number of female adult 20-59 years			
Less than 3	6.98	93.02	
3 or more	3.06	96.94	**0.136**
Number of male adults 65+ years			
None	6.86	93.14	
At least one	4.30	95.70	**0.341**
Number of female adults 60+ years			
None	5.67	94.33	
At least one	10.38	89.62	**0.007*** **

*** Significant at 10% ** significant 5% *** significant 1%**

4.2.4 Household Socio-economic Status

Male and female educational levels as well as household assets were used as a measure of household socio-economic status. Results, show that adolescent premarital birth was lower (5.2 percent) in households where the highest male educational level was secondary or tertiary. The highest female educational level in the household showed significant association with adolescent premarital birth (P value=0.096). The highest male educational level however was not found to be significant with teen births: where highest

female educational level was primary or less, 7.7 percent of adolescents had premarital births while about 6 percent had births in households with secondary or tertiary education (P value=0.196).Amongst all household assets analyzed in this study only piped water showed significant association with adolescent premarital births, it was found that seven percent of adolescents from households without piped water had births while 2 percent of households with piped water had premarital births (P value=0.038). The percentage of teen premarital births was higher (7 percent) in households without electricity than with electricity (2.7 percent) (P value=0.152) and in households without flush toilet 7 percent than with flush toilets (5 percent) (P value=0.763). Table 7 illustrates that 6.9 percent of adolescents from households with no cars had premarital birth while only 3 percent of adolescents from households with cars had premarital births (P value=0.248).

Table7 Summary of household socioeconomic variables by ever had a premarital birth

Variables	Premarital birth (%) Yes	No	P value
Highest male Educational level			
Primary & less	7.72	92.28	
Secondary or more	5.87	94.13	**0.196**
Highest female Educational level			
Primary& less	7.59	92.41	
Secondary or more	5.15	94.85	**0.096***
Piped water			
No	7.17	92.83	
Yes	2.34	97.66	**0.038****
Has flush toilet			
No	6.69	93.31	
Yes	5.0	95	**0.763**
Has electricity			
No	6.93	93.07	
Yes	2.67	97.33	**0.152**
Has car			
No	6.86	93.14	
Yes	3.13	96.88	**0.243**

*** Significant at 10% ** significant 5% *** significant 1%**

In summary the following household structure variables and assets were found to be statistically associated with premarital birth at different levels of significance: age of household head , sex of household head, relationship to household head, age at first birth and first intercourse of co-resident female, premarital birth history of co-resident female,

highest male educational level , presence in the household of male and female adults, 65 and 60 years and older respectively and access to piped water.

4.3 Bivariate Logistic Regressions

Bivariate logistic regression was conducted to check which of the predictor variables have significant relationship with the response variable. Each of the independent variables was tested with the dependent variable one at a time; see (Tables 8-11). The following adolescent individual variables, current age 17 years (AOR[7] 4.06, CI 1.103-14.92, P=0.035), 18years (AOR 14.63, CI 4.400-48.63, P<0.000) and 19 years (AOR 20.95, CI 6.306-69.621, P<0.000) and age at first intercourse less than or equal to 15 years (AOR 1.15, CI[8] 2.780-7.492, P<0.000) had a significant relationship with adolescent premarital birth: Adolescents that started sexual intercourse before or at age 15 years had higher odds of premarital births, while the odds of premarital birth rose with increased adolescent age.

Table 8 Bivariate logistic regression of individual characteristics

Premarital birth	Adjusted Odds Ratio	P value	Confidence Interval (95%)	
Current age				
Age 15	RC[12]			
Age 16	2.01	**0.315**	0.515	7.853
Age 17	4.06	**0.035****	1.103	14.915
Age 18	14.63	**0.000*****	4.400	48.625
Age 19	20.95	**0.000*****	6.306	69.621
Age at 1st intercourse				
Age>15	RC			
Age<=15 years	1.15	**0.000*****	2.780	7.492
Educational level				
[9]<=Primary	RC			
[10]>=Secondary	0.69	**0.123**	0.428	1.107
Period of residence				
Moved after age 13	RC			
Moved before age 13	1.49	**0.597**	0.339	6.553
Always	1.21	**0.754**	0.368	3.968
Type of residence				
Urban	RC			
Rural	1.37	**0.280**	0.772	2.444

*** Significant at 10% ** significant 5% *** significant 1%**

7 AOR= Adjusted Odds Ratio
[8] CI, for Confidence Interval
[9] No education and primary education
[10] Secondary and tertiary education
12 Reference Category

The characteristics of co-residing women in the household show that, older age at first birth (AOR 0.23, CI 0.140-0.359, Pr<0.000), premarital birth of co-residing women (AOR 11.27, CI 6.958-18.159, Pr<0.000) and women's view about teaching children condom use (AOR 2.02, CI 1.108-3.664, Pr=0.022) were significantly associated with adolescent premarital birth. Adolescents resident in the same household where the co-resident female had her first birth as a teenager or had a premarital birth as an adolescent were more likely to have premarital births. Adolescents in households where co-residing female does not believe children should be taught about condoms have higher odds premarital births.

Table 9 Bivariate logistic regression of characteristics of co-resident females

Premarital birth	**Adjusted Odds Ratio**	**P value**	**Confidence Interval (95%)**	
Co-resident female Characteristics				
Premarital birth				
Had no premarital birth	RC			
Had premarital birth	11.27	**0.000 *** **	6.988	18.159
Age at first birth				
Had first birth<20 yrs	RC			
Had first birth>=20yrs	0.23	**0.000*** **	0.140	0.359
Marital status				
Never married	RC			
Married	0.69	**0.158**	0.414	1.154
Separated/divorce	1.43	**0.243**	0.782	2.630
Age at first sex				
>=20 years	RC			
<20 years	1.06	**0.808**	0.661	1.701
Should children be taught about condom use				
Yes	RC			
No	2.02	**0.022** **	1.108	3.664

*** Significant at 10% ** significant 5% *** significant 1%**

Household structure variables indicated that sex of household head (AOR 2.73, CI 1.714-4.342, Pr<0.000), and the number of older females sixty years or older (AOR 1.93, CI 1.190-3.123, Pr=0.008) showed significant relationships with the response variable. Adolescents had higher odds of premarital births in female-headed households and households with at least one older woman 60 years and over.

Table 10 Bivariate logistic regression of household structure variables

Premarital birth	Adjusted Odds Ratio	P value	Confidence Interval (95%)	
Household structure				
Household size				
Small (less than 5)	RC			
Large (>=5)	1.64	**0.115**	0.884	3.106
Sex head Household				
Male	RC			
Female	2.73	**0.000*** **	1.714	4.342
Age of head of household				
<50 years	RC			
>=50 years	1.28	**0.290**	0.810	2.024
No female adults				
<3	RC			
>=3	0.42	**0.148**	0.130	1.359
No male adults				
<3	RC			
>=3	0.69	**0.392**	0.294	1.617
No older male>=65				
None	RC			
>=1	0.61	**0.346**	0.218	1.705
No older female>=60				
None	RC			
>=1	1.93	**0.008*** **	1.190	3.123

*** Significant at 10% ** significant 5% *** significant 1%**

Household socio-economic variables show that highest male educational level (AOR 0.66, CI 0.405-1.079, Pr=0.098) and access to piped water (AOR 0.31, CI 0.97-0.999 Pr=0.050) has significant relationships with adolescent premarital births. Odds of premarital births were lower in households where the highest male and female educational level was secondary or more, and households that have access to piped water (Table11).

Table 11 Bivariate logistic regression of household socio-economic status variables

Premarital birth	Adjusted Odds Ratio	P value	Confidence Interval (95%)	
Highest female Educational level				
<=Primary	RC			
>=Secondary	0.74	**0.198**	0.476	1.166
Highest male Educational level				
<=Primary	RC			
>=Secondary	0.66	**0.098***	0.405	1.079
Has piped water				
No	RC			
Yes	0.31	**0.050****	0.097	0.999
Has flush toilet				
No	RC			
Yes	0.73	**0.764**	0.097	5.549
Has electricity				
No	RC			
Yes	0.37	**0.169**	0.089	1.528
Has car				
No	RC			
Yes	0.44	**0.256**	0.105	1.823

*** Significant at 10% ** significant 5% *** significant 1%**

4.4 MULTIVARIATE ANALYSIS

4.4.0. Binary Logistic Regression

Introduction

This third and final level of analysis was carried out to predict the probability of occurrence of premarital birth using the independent variables at both individual and household levels. Logistic regression describes the relationship, if any, between the dependent ('Ever had a premarital birth' with only two responses 'Yes' or 'No') and the independent variables drawn from the adolescents, co-resident female in the household, household structure and household socio-economic status. Logistic regression was chosen rather than other forms of regression models because the response variable is dichotomous. Results are presented in four models.

In the first model the net effect of the individual explanatory variables was carried out to assess the adolescent socio-demographic effect on premarital birth. Characteristics of the

co-resident female in the household were added in the second model. The third model included other household structures, while in the fourth model household assets electricity, type of toilet facility, piped water and ownership of car, were added to model three. Due to the small sample size almost all explanatory variables were recoded into two or three categories. This was done so that results would have statistical predictive power.

4.4.1 Model 1 Odds of Premarital Birth by Individual Socio-demographic Characteristic

Table 12 shows the results of the logistic regression, model 1; the odds of premarital births were less amongst adolescents with more than primary education. As expected the likelihood of having a premarital birth increased with early age at first intercourse. Adolescents that had their first sex before or at 15 years were found to be more likely to have had premarital births than adolescents who had first sexual intercourse after age 15. There was difference in the likelihood of premarital birth between urban and rural residence, with rural dwellers more likely than adolescents in urban areas to have had premarital births, however this difference is not statistically significant. In terms of the number of years lived in the present residence, adolescents who had always lived in the same residence were less likely to have had premarital birth compared to adolescents who had lived in the household for a shorter time.

The likelihood of premarital births increased with age, for instance the respondents that were aged 18 were about eighteen times more likely to have had premarital birth than respondents that were 15 years old. Educational level, age at first intercourse and current age of the respondents were the three individual socio-demographic variables that had statistically significant relationships with premarital births, and can therefore predict the probability of occurrence of adolescent premarital births.

[11]**Table 12 Model 1 Odds of premarital birth by individual socio-demographic characteristic**

Premarital Birth	Adjusted Odds Ratio	P value	[95% Confidence Interval	
Educational level				
>=secondary	0.54	**0.019***	0.317	0.903
Age at first sex				
<=15	5.37	**0.000*** **	3.057	9.438
Type place of residence				
Rural	1.32	**0.388**	0.701	2.499
Period of Residence				
More than 9 years	0.77	**0.753**	0.154	3.864
Always	0.83	**0.773**	0.224	3.041
Current age				
Age 16	1.78	**0.412**	0.45	7.018
Age 17	4.13	**0.035****	1.106	15.392
Age 18	17.53	**0.000*****	5.151	59.625
Age 19	27.51	**0.000*****	8.071	93.731

*** Significant at 10% ** significant 5% *** significant 1%**

4.4.2 Model 2 Odds of Premarital Birth by Characteristic of Co-Resident Females

In Model 2, Table 13 below, I measured the strength of association of the characteristics of co-resident females while controlling for the individual socio-demographic variables of adolescents. The Table showed that age at first birth and premarital birth status of the co-resident females was significantly associated with adolescent premarital births. Marital status of the co-resident female showed no significant relationship with premarital birth. The attitude towards the use of condoms, measured by the question 'should children be taught about condom use?' also shows no significant relationship with adolescent premarital births. Model 2, (Table 13) also illustrated that odds of premarital births were higher for adolescents in households where the co-resident female member had her first birth before age 20 compared to adolescents in households where the co-resident female had first birth at age 20 or older. Respondents living in households where the co-resident female member had a premarital birth were more likely to have had premarital births than respondents living in households where the co-resident females had no premarital births.

The probability of premarital birth was lower among respondents living in households with married co-resident females compared with never married females, the highest odds of premarital birth was among adolescents living in households with co-resident females who were either separated divorced or widowed.

[11] Reference categories for individual characteristic, primary education or less, age at first intercourse above 15 years, urban residence, period lived in residence less than 8 years and current age 15 years.

Adolescents in households where the co-resident female member do not believe children should be taught about condom had slightly higher odds of premarital birth than in households where the older female does believe in teaching young people the about condom use. While controlling for the characteristics of the co-resident females in households, there was a change in the odds of both the educational level and age at first intercourse of the adolescent. For instance the odds increased for respondents with secondary education and this variable became insignificant (Pr=0.213), while for the age at first intercourse the odds reduced, even though it still stayed significant. This change may have been as result of an interaction between these variables and the control variables.

Table 13 Model 2 Odds of premarital birth by characteristics of co-resident females

Premarital birth	Adjusted Odds Ratio	P value	[95% Confidence Interval	
Individual characteristics				
Educational Level				
>=Secondary	0.69	**0.213**	0.383	1.238
Age at first sex				
<=15	4.25	**0.000*** **	2.133	8.450
Period of residence				
More than 9 years	0.35	**0.262**	0.56	2.189
Always	0.60	**0.446**	0.160	2.239
Type of residence				
Rural	1.68	**0.148**	0.831	3,408
Current age				
16	2.58	**0.266**	0.487	13.629
17	6.74	**0.020****	1.350	33.612
18	32.66	**0.000*** **	7.082	150.597
19	32.54	**0.000*** **	7.068	149.786
[13] Co-resident women characteristics				
Age at first birth				
First birth >20	0.45	**0.016****	0.236	0.863
Had premarital birth				
Yes	8.51	**0.000*** **	4.345	16.659
Marital status				
Married	0.82	**0.569**	0.411	1.631
Separated/divorced	1.48	**0.367**	0.631	3.490
Should children be taught condom use				
No	1.11	**0.763**	0.571	2.147

*** Significant at 10% ** significant 5% *** significant 1%**

4.4.3 Model 3, Odds of Premarital Birth by Household Structure Variables

In model 3 (Table 14), other household structure variables were added; results reveals that only sex of household head and size of household showed a significant relationship with adolescent premarital births. The probability of having a premarital birth was found to be higher in female headed households, compared to male headed households. In households with at least three economically productive female adults (20-59 years) the probability of premarital birth was lower while the odds of premarital births were almost the same in households with either less than three, and three or more economically productive males (20-64 years). Adolescents from households where the highest female educational level was secondary or tertiary have almost the same odds of premarital births with adolescents from households with highest female education, primary or less. On the contrary higher educational level of males in household reduced the odds of

premarital births. The likelihood of premarital birth was raised with the increase in the age of household head.

The results further shows that adolescents in households with five or more members had almost two and half times higher odds of premarital births compared to adolescents from households with less than five members. The presence of male adults (65 years and over) in the households reduced the odds of premarital births. Respondents from households without older males 65 years and over were more likely to have had premarital births. While the presence in the household of co-resident women 60 years and over also increased the odds of premarital birth.

While controlling for household structure explanatory variables, no significant change was observed in the co-resident female characteristics. There were slight changes in the adolescent socio-demographic variables but not significant.

Table 14 Model 3 Odds of premarital birth by household structure characteristics

Premarital birth	Adjusted Odds Ratio	P value	[95% Confidence Interval	
Individual characteristics				
Educational Level				
>=Secondary	0.71	**0.412**	0.308	1.621
Age at first sex				
<=15 years	3.82	**0.000*** **	1.866	7.816
Period of residence				
More than 9 years	0.30	**0.213**	0.045	1.993
Always	0.59	**0.448**	0.153	2.288
Type of residence				
Rural	1.49	**0.289**	0.713	3.115
Current age				
16	2.11	**0.393**	0.380	11.634
17	6.66	**0.023** **	1.300	34.103
18	37.44	**0.000*** **	7.822	179.211
19	34.20	**0.000*** **	7.213	162.115
Co-resident women characteristics				
Age at first birth				
First birth >20	0.44	**0.016** **	0.227	0.861
Had premarital birth				
Yes	8.60	**0.000*** **	4.229	17.485
Marital status				
Married	1.11	**0.801**	0.504	2.432
Separated/divorced	1.10	**0.852**	0.416	2.888
Number of female adults (20-59)				
>=3	0.52	**0.340**	0.133	2.007
Number of male adults(20-64)				
>=3	0.99	**0.988**	0.327	3.004
Number of male adults 65+				
>=1	0.52	**0.372**	0.126	2.172
Number of female adults 60+				
>=1	1.30	**0.514**	0.594	2.828
Should children be taught condom use				
No	1.27	**0.512**	0.625	2.564
Household structure				
Highest female educational level				
>=Secondary	1.15	**0.755**	0.485	2.710
Highest male educational level				
>=Secondary	0.83	**0.587**	0.418	1.638
Household size				
Large (>=5 members)	2.84	**0.024** **	1.149	7.037
Age of household head				
>=50 years	1.13	**0.728**	0.559	2.298
Sex of household head				
Female	2.99	**0.005*** **	1.405	6.385
Number of observations 1134				
Prob>chi=0.000				
PseudoR2=0.369				
Log likelihood=-172.479				

*** Significant at 10% ** significant 5% *** significant 1%**

4.4.4 Model 4 Odds of Premarital Birth by Individual, Co-resident Female, Household Structure and Household Socio-economic Characteristics

In model 4, (Table 15) household assets were added to the model, the results show that none of the household assets had a significant relationship with premarital birth. However the probability of adolescent premarital births was lower with the presence of each of the household assets. For instance households with piped water, flushed toilet, electricity and car had lower odds of adolescent premarital birth although these were not significant.

Age of the adolescent at first intercourse, as well as the current age categories 18 and 19 years maintained a strong statistically significant relationship with teen premarital birth all through the four models, even when controlling for women characteristics, household structure variables, and household socio-economic status variables. This indicates that these two variables are strong predictors of adolescent premarital birth at individual level. At household level, the age at first birth of the co-resident female, premarital birth status, the sex of household head and size of household maintained strong statistical relationship with adolescent premarital births even when controlling for the adolescent individual explanatory variables.

Table 15 Final Model Odds of premarital birth by individual, co-resident household structure and household socio-economic characteristics

	Model 1	Model 2	Model 3	Model 4
Socio-demographic characteristics of adolescents				
Highest educational Level	0.535**	0.673	0.757	0.759
	(0.019)	**(0.184)**	**(0.375**)	**(0.528)**
Age at first intercourse	5.363***	4.040******	3.535***	3.663***
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**
Age 16	1.776	2.598	2.111	2.148
	(0.412)	**(0.260)**	**(0.387**)	**(0.379**)
Age 17	4.122**	6.530**	6.076**	6.213**
	(**0.035)**	**(0.022)**	**(0.029**)	**(0.028**)
Age 18	17.405***	30.370 *******	31.395***	33.046***
	(0.000)	**(0.000)**	**(0.000)**	**(0.000**)
Age 19	27.342***	31.731*******	32.025***	33.201***
	(0.000)	**(0.000)**	**(0.000)**	**(0.000**)
Type of place of residence				
Rural	1.312	1.642	1.564	1.239
[1]	**(0.399)**	**(0.162)**	**(0.226**)	**(0.590)**
Characteristics of co-resident women				
Age at first birth		0.455******	0.445**	0.450**
		(0.017)	(**0.017**)	**(0.020)**
Had premarital birth		8.319*******	8.158***	8.551***
		(0.000)	**(0.000**)	**(0.000)**
Marital status				
Married		0.844	1,126	1.212
		(0.628)	**(0.764**)	**(0.638)**
Separated/divorced		1.491	1.107	1.117
		(0.358)	**(0.837)**	**(0.826)**
Should children be taught condom use				
No		1.124	1.206	1.219
		(0.729)	**(0.602**)	**(0.586)**
Household structure				
Sex of household head (Female)			2.962***	2.900***
			(0.005)	**(0.007)**
Number of male adults (20-64) > 3			0.995	1.167
			(**0.993**)	**(0.787)**
Number of female adults (20-59) >=3			0.49	0.431
			(0.290)	**(0.228)**
Age of household head >=50 years			1.218	1.291
			(0.590)	**(0.492)**
Household size (large)			2.939**	2.923**
			(0.019)	**(0.022)**
Number of male adults(65+) >=1			0.477	0.586
			(**0.312**)	**(0.465)**
Number of female adults (60+) >=1			1.127	1.051
			(**0.773**)	**(0.905)**
Relationship to household head			1.269	1.331
			(0.204)	**(0.142)**
Household socio-economic status				
Highest female education in household>=secondary				1.176
				(0.721)
Highest male education in household>=secondary				0.913
				(0.798)
Piped water				0.452
				(0.369)
Flush toilet				0.964
				(0.984)
Electricity				0.626
				(0.699)
Car				0.452
				(0.367)
Number of observations	1228	1135	1134	1134
P values in brackets and in bold				
Model 1 p value=0.000				
Model 2 p value=0.000				
Model 3 p value=0.000				
Model 4 p value=0.000				

*** Significant at 10% ** significant 5% *** significant 1%**

4.5.0 HYPOTHESES TESTS

4.5.1 Co-resident Women

All the characteristics of co-residing women analyzed in this study were found to show statistically significant association with adolescent premarital births at the bivariate level of analysis. When the test of joint significance of all co-resident women variables was done it showed to be statistically significant at less than one percent level of significance implying that the presence and the sexual, birth and marital histories of co-resident women in the same household with adolescents, will influence their premarital births. The first null hypothesis of this study posits that sexual, birth and marital histories of co-resident women will have no influence on adolescent premarital births. The results illustrated inTable16 shows the contrary, therefore this hypothesis is rejected. Adolescent pregnancy and child birth will be influenced by the characteristics of co-resident women

4.5.2 Household Structure

Bivariate test of association in section 4.2.4 showed that only some household structure variables had significant association with adolescent premarital births; however test of joint significance, (Table 16) show that household structure variables used for this analysis jointly show significant association with adolescent births. The second hypothesis proposed that household structure will have no effect on adolescent premarital births. This hypothesis is therefore discarded as the results have shown that household structure will affect adolescent premarital birth.

4.5.3 Household Socio-economic Status

Household socio-economic status measured by highest educational level of male and female showed no significant association with adolescent premarital childbearing. The result of joint test of significance of these variables also showed no statistical significant association (Table 16). The third hypothesis of the study put forward the proposition that socio-economic status of the household will not influence the likely occurrence of adolescent pregnancy, this hypothesis is therefore upheld.

Table 16 Result of joint significance test of individual/co-resident women/household structure/socio-economic status variables

Characteristics	**Chi-Square**	**P-value**
Individual (variables)	54.29	**0.000*** **
Co-resident women (variables)	62.06	**0.000*** **
Household structure (variables)	16.71	**0.019** **
Socio-economic status (variables)	3.22	**0.781**

* Significant at 10%, ** significant at 5% *** significant at 1%

CHAPTER FIVE

DISCUSSIONS

5.0 Introduction

This chapter is a discussion of the results and findings of the study. The different characteristics (individual, co-resident women, household structure and socio-economic status) are interpreted and significant results are highlighted. The findings of the present study are discussed in relation to other studies.

5.1. Individual Characteristics

Although a very small percentage of the 1,230 respondents in the study had had a premarital birth (6.5 percent), this is an increase compared to 3 percent of such births reported in 1995 by the Safe Motherhood Initiative reported in Mturi et al (2001). The survey found that among unmarried adolescents aged 15-19 years, 3 percent had had a premarital birth. The present study shows that incidence of premarital births among adolescents has increased by three and half percent between 1995 and 2004. There is a possibility that this figure will even be higher, since Basotho culture does not support premarital childbearing, and chances of marriage are slim for women with premarital births (Mturi, 2003). It is possible therefore, that the low number of premarital births reported in LDHS, 2004 may be due to under reporting. In the study by Mturi (2003), a survey assistant reported that a respondent whom she knew had had a premarital birth, had omitted to report it. Some adolescents in Namibia and elsewhere in Southern Africa send their out-of-wedlock children to either their mother or grandmother to bring up. Kaufman et al (2001) in their study in South Africa confirmed that adolescents in South Africa were in the habit of sending their out-of-wedlock children to their mothers, as most men were not interested in marrying a woman that already had a premarital birth. It is therefore difficult to determine if these adolescents have had a premarital birth.

Younger adolescents, 15 and 16 years, were found to have a lower percentage of premarital births compared to older adolescents. Hence the risk of premarital births increases with increasing age. The logistic regression further confirmed this, indicating that odds of premarital births were higher among older adolescents.

The mean age at first intercourse of 15.8 years in this study shows that adolescents are becoming sexual active before age 16 years which exposes them not only to pregnancy

and childbearing but also to sexually transmitted infections including HIV. It was found that 19 percent of adolescents that had first intercourse at age 15 years or younger had premarital births. The logistic regression further established that the odds of premarital births were higher among adolescents that started intercourse early. A study in South Africa by Manzini (2001) found an association between age at first intercourse and premarital pregnancy and births, indicating that early age at first intercourse may lead to premarital births especially where contraceptive usage is minimal and abortion is not legalized.

The likelihood of premarital births was higher in adolescents that had little or no education. This highlights the importance of compulsory education for adolescent girls. Incentives such as free education, free provision of books and uniforms should be introduced where possible. Programs should be designed to promote the importance of education for girls. It also calls for job creation so that girls who complete their secondary education can find employment. This will serve as a strong motivation for young people to succeed in school.

5. 2. Co-resident Women

The study highlighted characteristics of co-resident women that were likely to increase the odds of premarital births among adolescents, as well as household characteristics likely to reduce the likelihood of premarital births. Influence of co-resident females proved to be important in the sexual behaviour of adolescents. Adolescent girls in households where the co-resident female had had a premarital birth or early childbirth have higher probability of premarital births. This may explain why little success has been made in Southern Africa and the African continent as a whole where age-specific birth rates of adolescents remain higher than 200 live births per 1000 women in some countries, for example Angola 212, Somalia 208, Niger 206 (UNICEF, 1998). Hence intervention programs should target not adolescents alone but should also educate co-resident women that have an influence on adolescents.

The marital status of co-resident females was found to be associated with premarital birth in bivariate analysis. The logistic regression show that marital status of co-resident females is not associated with adolescent premarital birth even though, separation or divorce of co-resident females increased the odds of premarital births to adolescents in

their households. It was found that presence in households of economically productive women 20-59 years did not show significant association with adolescent premarital births at the bivariate level of analyses but the presence of older women 60 years and older did. However logistic regression analysis indicated that odds of adolescent premarital births were lower in households with the presence of older women 20 years and over. It was particularly interesting to note changes in the odds ratio of the individual characteristics of the adolescents when the characteristics of co-resident females were controlled for (Model 2). For instance the level of education of the adolescent that showed a significant relationship with premarital births ceased to be significant, the adjusted odds ratios of age at first intercourse and the current age changed as well. This attests to the important influence of household characteristics on adolescent premarital childbearing, reinforcing the influence of household role models on the sexual behaviour of young people. The behavioural choices of the older generation affect the behaviour of the young generation, and interventions to influence the behavioural choices of young people should therefore be designed in such a way to involve the older generation in the household, especially women.

5.3. Household Structure

Apart from the influence on adolescents by co-resident women in households other household characteristics in this study have shown to increase the odds of premarital births of teenagers. The odds of premarital births were found to be twice as high in female headed households as in households headed by males and when household assets were controlled for the odds increased. Previous studies (Kiernan & Hobcraft, 1997; Mclanahan, 1998) have linked adolescent pregnancy and childbearing to ‘absence from home of the biological father’, either due to divorce or separation. Kiernan & Hobcraft, (1997) found that female adolescents from female-headed households or brought up by single mothers were more likely to engage in early sexual activity than adolescents from households headed by males. Divorce or separation that result in women being left as head of household should be addressed at household and national levels and a solution be found for it.. Intervention programs that will provide financial assistance can be designed to support these women who are suddenly left to head households following a divorce or separation. The HIV/AIDS pandemic among other factors is determining the sex and age of household heads. Until the epidemic is controlled there is likely to be an increase in both female and child headed households. This implies that adolescent premarital births

may increase if effective programs are not designed to take care of adolescents in these households.

An interesting finding of this study is on open discussion about sex-related issues with adolescents in households. Results show significant association between premarital birth and support for teaching adolescents about condom use (Table 5). Logistic regression shows that odds of adolescent premarital births were found to be higher in households where co-resident females do not feel children should be taught about condom use. This may be reflecting a view some people have, that if children are taught the use of condoms, they may become sexually active, increase the frequency of sexual intercourse or increase the number of sexual partners. I believe that if adolescents are given correct information about their sexuality and sex they will act responsibly in sexual matters. In addition to life orientation in schools and sex-related information in the media, parents should be encouraged to have open discussions about sex-related issues at home. It is important to note that there are parents who would like to discuss these issues but do not know how to go about it; such parents should be educated and given materials that will help them initiate such discussions

Size of household was not significantly associated with adolescent premarital birth (Table 6) however logistic regression indicates that the probability of premarital birth was higher among adolescents from large households compared to adolescents from small households. Large households will need more financial resources to adequately care for its members than households that are small and if the resources are limited, pressure to meet personal needs may encourage adolescents to seek external means of meeting such needs, which may include ‘transactional sex’ and exposure to pregnancy. Government interventions should be designed to support large households as well as educate people on the need to reduce fertility.

5.4 Household Socio-economic Status

Results of bivariate logistic regression analysis showed that odds of premarital births were lower in households with secondary or tertiary male and female education (Table 11); however at the multivariate level of analysis the odds of premarital births were higher with secondary or tertiary education than the odds reported in bivariate analysis. Logistic regression shows that probability of premarital births was slightly lower among

adolescents in households where the highest male educational level was secondary or more. In contrast higher (secondary or more) education of females in households marginally increased the odds of adolescent premarital births. The difference in odds of premarital births in educational level between bivariate and multivariate logistic regressions must have been as a result of interaction with co-resident women's characteristics in the model. It is possible that more educated co-resident women may have had premarital births because of the length of time spent schooling; as the results show, their birth history increases the odds of adolescent births. Further research is needed to better understand this relationship.

No significant association was found between adolescent premarital births and the household assets analyzed in this study, except access to piped water. However logistic regression showed that absence of these amenities in households did increase the odds of premarital births. The implication therefore is that adolescents from households with lower socio-economic status were more likely to have adolescent premarital births than adolescents from medium or higher socio-economic status. This draws attention to the role poverty plays in adolescent sexual behaviour in general.

5.5 Implications of Findings

The objective of this study was to investigate the effect of household characteristics on the occurrence of adolescent premarital childbearing. The study examined the individual characteristics of adolescents, characteristics of co-resident women, household structure, and selected household assets as a proxy for household socio-economic status. The main argument the study posits, is that adolescents are influenced by their households not just their peers, therefore interventions to reduce adolescent premarital pregnancy and birth should not only focus on adolescents but include a more holistic approach involving the household.

Other interventions to reduce premarital births of young people should include, household poverty alleviation programs, financial and social support for female-headed households, educating co-resident women, encouraging female education and job creation. Emphasis should not be limited to contraceptives but include approaches to delaying age of sexual debut. Although contraceptives are available in Southern African countries, the age specific fertility rates of adolescents are still high (UN, 2002). The

present study, and others, has shown that despite extensive knowledge of modern contraceptives, contraceptive usage among adolescents remains low. Orji et al (2005) in their study of 300 adolescents in Illesha, South West Nigeria, found that although 50 percent of the study population was sexually active, only 13 percent used contraceptives at their first intercourse. Another study found that some sexually active adolescents lacked the power to negotiate the use of condoms with their partners for different reasons. Maharaj (2006) examined the motivation for condom use among young people in KwaZulu-Natal South Africa. The result showed 30 percent of respondents felt condom use should be limited to casual sexual intercourse and not used in steady relationships. Some felt that the use of condoms spells mistrust in relationships, and that they may lose their partners if they asked them to use condoms. Other reasons for inability to negotiate the use of condoms may include the age gap and disproportionate power in the case of "sugar daddies" where the motive for sexual intercourse is to alleviate poverty or meet basic needs. Some younger adolescents (13-15 years) find it difficult to go to clinics to ask for other forms of contraception. Considering the difficulties highlighted above, in addition to the provision of contraceptives other interventions should be designed for adolescents.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study examined the impact of household characteristics on adolescent premarital childbearing in Lesotho using the 2004 DHS. The study employed multivariate logistic regression to determine the significant predictors of premarital childbearing among adolescents. Individual and household variables were considered. Individual predictors include current age, age at first intercourse and adolescent educational level. Predictors among household characteristics were age at first birth and premarital birth history of co-resident females, sex of household head and size of household. Findings support the hypotheses that presence of co-resident women, their sexual, birth and marital histories will influence adolescent childbearing; and that household structure will influence the occurrence of adolescent premarital births. Results indicate that household socio-economic status, estimated through selected asset ownership, does not have an effect on adolescent premarital births. If a more sophisticated socio-economic analysis which includes other variables like income/expenditure/consumption are added the results may show some effect. This analysis only used four household assets. Hypotheses that proposed that presence of co-resident women and household structure will not influence adolescent childbearing were therefore rejected.

Results showed that when controlling for characteristics of co-resident women, educational level of adolescent lost its significance in predicting adolescent premarital birth. When controlling for individual characteristics, household characteristics and household assets, age at first birth and premarital birth history of co-resident females maintained a strong significant relationship with adolescent premarital childbearing all through the multivariate logistic regression analyses.

Contrary to expectation, the highest educational levels of male and female household members were not significant predictors of adolescent premarital births at the multivariate level of analysis. In fact it was surprising to see from the results (models 3 & 4) that adolescents from households where the highest female education was either secondary or tertiary had almost the same odds of premarital births as those in households

where the female educational level was lower. One would expect that higher education of women in households should significantly lower the odds of premarital births because of higher contraceptive knowledge and use that one expects to accompany education. However, the contrary is the case in Lesotho.

The present study also confirmed the finding of a study by Cooksey (1990), that size of family of adolescent affects the odds of adolescent pregnancy and childbearing. My results indicate that household size was not significantly associated with adolescent premarital birth at the bivariate level of analysis; however, logistic regression shows that large household size increases the probability of premarital births.

Adolescents in female-headed households were more likely to have premarital births than adolescents from male-headed households. This finding is consistent with findings of Kiernan and Hobcraft (1997), that adolescents from single mothers or female-headed households were more likely to initiate sexual intercourse early and therefore increase the risk of premarital pregnancy.

6.2 Recommendations

Considering the findings of the study it is important to review the programs that have been designed to reduce adolescent pregnancy and childbearing in Lesotho. Programs that focus on adolescents alone are unlikely to achieve the desired reductions in adolescent premarital pregnancy and births. This study indicates that certain household characteristics that are strong predictors of adolescent premarital childbearing should be taken into account when designing interventions. People are influenced by others the influence from co-resident females has shown to impact on the sexual behaviour of adolescents. This may explain why interventions directed only to adolescents have not proven to be very effective in reducing premarital births. Female adolescents learn from their mothers and other older women in their household. An adolescent with a mother who had a premarital birth at 16 or 17 years, may not see any disadvantage in having a premarital birth at a similar age. Adolescents are learning from the past experiences of co-resident women, it is difficult to undo the past, but efforts should be made to stop or drastically reduce the incidence of premarital births, otherwise the cycle of premarital births will continue as the future generation of adolescents will learn from the present teen mothers. This reinforces the need to design programs that target both households and adolescents in addressing teen premarital pregnancy and birth.

The findings of this study have implications for future research. More in-depth qualitative investigations are needed to explore why adolescents in the same households as females that had a premarital birth or a first birth before age 20 years, have higher odds of premarital births than adolescents in households where co-resident females' childbearing was at an older age.

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Appendix A

Definition of Terms

Adolescence

Stage of development between childhood and adulthood

Adolescent

Female between ages 15 and 19 years

Premarital Adolescent Birth/Childbearing

Any birth to an unmarried woman between ages 15 and 19 years.

Co-resident female

A woman 20 years and over, who may be either sister, mother, aunt or grandmother who is living in the same household with the adolescents.

Household

A family unit that includes more than the immediate family but have extended family members also living in it.

Appendix B

Table 1a Description of variables used in the multivariate analysis

Variables	Categories
Dependent	
Ever had a premarital birth	No (0)
	Yes (1)
Independent	
Individual Characteristics	
Educational level	Primary or no education RC (0)
	Secondary (1)
Age at first intercourse	15 (RC)
	16
	17
	18
	19
Type of place of residence	Urban (RC) 0
	Rural (1)
Co-resident Women	
Age at first birth	< 20 years (RC) 0
	>= 20 years (1)
Ever had a premarital birth	No (RC) 0
	Yes (1)
Marital status	Never married (RC) 0
	Married (1)
	Separated(2)
Should children be taught condom use	Yes (RC) 0
	No (1)

Table1 b

Household Structure	
Household size	Small(RC) 0
	Large (1)
Sex of household head	Male (RC) 0
	Female (1)
Age of household head	<50 years (RC)
	>=50 years
Number of male adults 20-64 years	<3 (RC) 0
	>=3 (1)
Number of female adults 20-59 years	<3 (RC) 0
	>=3 (1)
Number of male adults 65 years and over	None (RC) 0
	>=1 (1)
Number of female adults 60 years and over	None (RC) 0
	>=1(1)
Household Socio-economic Status	
Highest male educational level	Primary or less (RC) 0
	Secondary or more (1)
Highest female educational level	Primary or less (RC) 0
	Secondary or more (1)
Piped water	No (RC) 0
	Yes (1)
Flush toilet	No (RC) 0
	Yes (1)
Electricity	No (RC) 0
	Yes (1)
Car	No (RC) 0
	Yes (1)