

FACTORS ASSOCIATED WITH TEENAGE PREGNANCY IN ZAMBIA

By

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**A dissertation submitted to the University of Zambia in partial
fulfillment of the requirements of the degree of Master of Arts in Population
Studies**

THE UNIVERSITY OF ZAMBIA

LUSAKA

November, 2015

DECLARATION

I Catherine Sungwe hereby declare that this dissertation represents my work, has not previously been submitted for any degree at this or any University and does not incorporate any published work or material from another thesis or dissertation.

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Catherine Sungwe

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CERTIFICATE OF APPROVAL

This dissertation of **CATHERINE SUNGWE** has been approved as partial fulfillment of the requirements for the award of the degree of Master of Arts in Population Studies by the University of Zambia.

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Date

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ABSTRACT

Teenage pregnancy is a global problem especially in developing countries. Teenage pregnancy is associated with several social issues: poverty, low education levels, and the lack of awareness about sex and pregnancy prevention. Zambia is not an exception; about three in ten young women aged 15-19 have begun childbearing, that is, they have given birth already or are currently pregnant with their first child. This study investigates factors associated with teenage pregnancy in Zambia using data from the 2007 Zambia Demographic and Health Survey. It is intended to accomplish a research objective which is; to investigate how socio-demographic and socio-economic factors can influence teenage pregnancy in Zambia. After weighing the data set, only 1574 women were valid cases (after selecting cases of age group 15-19.) In this study, data analysis was done using the 2007 ZDHS processed data. The study used Statistical Package for Social Scientists (SPSS) 16.0 to generate frequencies, cross tabulations and binary logistic regression. The present study findings show that 28.5 percent of the teenagers had ever been pregnant and 71.5 percent had never been pregnant and have clearly demonstrated that the major factors that influence teenage pregnancy in Zambia were socio-demographic factors. Socio-economic factors are important determinants of teenage pregnancy but they were not statistically significant. From the findings of this study, the following are the recommendations; there is need for policy makers, community leaders and school curriculum to act towards raising age at marriage to after 19 years and make the methods of contraception accessible to teenagers. Qualitative techniques like focus groups discussions could be helpful in reflecting on the root cause of the problem.

DEDICATION

To my lovely husband Dennis.

To my mother, Fostina.

To my late father who unfortunately did not live to witness his love for me bear these wonderful fruits.

ACKNOWLEDGEMENTS

I wish to thank my supervisor Dr. Namuunda Mutombo for his support and encouragement throughout the stages of this dissertation by his quick helpful feedback. I also thank the staff in Department of Population Studies for their support.

Lastly, I thank my husband Dennis, friends and family for supporting me build my success.

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LIST OF ABBREVIATIONS AND ACRONYMS

CPH	Census of Population and Housing
CSO	Central Statistical Office
MOE	Ministry Of Education
NSO	National Statistical Office
SEA	Standard Enumeration Areas
SPSS	Statistical Package for Social Sciences
UN	United Nations
US	United States
UNFPA	United Nations Population Fund Agency
UNICEF	United Nations Children’s Emergency Fund
WHO	World Health Organisation
ZDHS	Zambia Demographic Health Survey

CHAPTER ONE: INTRODUCTION

1.1. Background

Teenage pregnancy is more common in developing countries than developed countries and is also associated with numerous social issues: poverty, low education levels, and the lack of awareness about sex and pregnancy prevention. It is of concern because it has well known negative health consequences for both mothers and children. For example, teenage mothers are at greater risk of maternal mortality than older women (U.S. Bureau of the Census, 1995).

In Africa, teenage childbearing usually brings a sudden halt to young women's formal education and few girls find ways to continue education after giving birth but the majority do not (Bledsoe and Cohen, 1993). Furthermore, in sub-Saharan Africa, the most central problems facing young people relate to sexuality and reproduction. The combination of poverty and conflict further compound the situation (WHO, 2007).

In Zambia, about 33.8 percent of teenage pregnancy was recorded in 1992. In 1996 a reduction of three percent in teenage pregnancy was recorded probably as a result of various interventions that were put in place by various stakeholders. In 2001/2002 the percentage of teenage pregnancy rose by one percent higher than 1996. This rise can probably be accredited to the introduction of the Re-entry Policy. However, teenage fertility reduced further in 2007, showing that the effect of the policy was temporary and was outweighed by reproductive health interventions. Nevertheless, a rate of 28 percent recorded in 2007 was still high (Mutombo and Mwenda, 2010).

There are various reproductive health challenges that young people in Zambia are facing which among them include low use of contraception. Ministry of Education policy does not allow distribution of condoms in lower institutions of learning. Sexual activity which is often unprotected begins early and is associated with risks such as HIV/AIDS, pregnancy and unsafe abortion, economic hardship and school drop-outs. Girls aged 15-19 face higher reproductive risks than older women. Pregnancy is the leading cause of death for young women aged 15-19 worldwide with complications of childbirth and unsafe abortion being the major risk factors (WHO, 2007)

Teenage mothers may be physically less mature and less able to handle the demands of pregnancy, childbirth, and subsequent child care. Furthermore, teenage mothers may lack experience and tend to be less psychologically mature and emotionally stable, leading to poorer maternal and child health care and infant feeding behaviours (Senderowitz, 1995). They also face greater risks of obstetric fistula (the creation of a hole between the birth canal and anal area during prolonged labour), hemorrhage, and pelvic bone immaturity increases the likelihood of cephalopelvic disproportion, which is associated with a higher incidence of premature birth, prolonged labour, and otherwise difficult childbirth (UNICEF, 2001). The problem is compounded by lack of clear government policies on teenage reproductive health in many countries in the region. This creates uncertainty and hinders provision of information and services.

In order to develop measures that prevent teenage pregnancy, it is important to understand factors that contribute to it and its consequences. Therefore, this study examined how factors in terms of socio- demographic (age, use of any method of

contraception and marital status) and socio-economic (residence, region, education and wealth index) can influence teenage pregnancy in Zambia.

1.2.Statement of the problem

Teenage pregnancy is a growing concern in Zambia. Teenagers get unwanted pregnancies while others get married before they are biologically mature. In an ideal situation, teenagers are expected to be in school during their teenage years, as they are building their future. Given that some researches on factors associated with teenage pregnancy have been done in schools and several campaigns against teenage pregnancy have also been conducted, the prevalence of teenage pregnancy is still high in Zambia. According to ZDHS (2007), about three in ten young women aged 15-19 have begun childbearing, that is, they have given birth already or are currently pregnant with their first child. Teenage pregnancies and deliveries often involve complications and greater risk of maternal mortality and morbidity, as compared to pregnancies of women in their twenties (WHO, 200). Furthermore, Warenius (2008) states that this has been a major cause of school drop-outs of young pregnant girls in order to avoid social stigma; while others have resorted to induced abortions which is often accompanied by devastating consequences. The need to reduce teenage pregnancy is necessary because it is associated with poor socio-demographic outcomes such as high fertility, high mortality and teenage motherhood.

It is with this background that this study is aimed at establishing factors associated with teenage pregnancy in Zambia using evidence from the 2007 Zambia Demographic and Health Survey (ZDHS) data as it represents teenagers at the national level.

1.3. Research objective

The research objective is to investigate the socio-demographic and socio-economic factors associated with teenage pregnancy in Zambia.

1.3.1. Research question

1. How do socio-demographic and socio-economic factors' influence teenage pregnancy in Zambia?

1.4. Rationale of the study

According to ZDHS (2007), about three in ten young women aged 15-19 have begun childbearing, that is, they have given birth already or are currently pregnant with their first child. Despite teenage pregnancy being the major cause of school drop-outs for young pregnant girls, it poses health risks for both mothers and children. The need to reduce teenage pregnancy is necessary because it is associated with poor socio-demographic outcomes such as high fertility, high mortality and teenage motherhood.

It is with this view that results obtained from this study may enhance knowledge on factors associated with teenage pregnancy and motherhood. In an ideal situation teenagers in this age group are not supposed to become pregnant or married but on the ground there are being pregnant or married. The gaps in information on all aspects of teenage pregnancy will need to be filled so that the data must inform policy and program makers and provide a basis for an effective advocacy on the matter. In addition, teenagers in Zambia need close attention; the study will help program planners and policy makers in schools and health care facilities creating programs aimed at reducing teenage pregnancy. This may further contribute to the

promotion of gender equality and empowering of women through seeking to eliminate gender disparity in primary and secondary education and improve ratios of females to males in tertiary education.

1.5. Conceptual Framework

Davies and Blake (1956) in the theory of fertility, identified three major groups of factors affecting fertility namely, factors affecting fertility fecundity, factors affecting sexual unions and factors affecting birth control. Under these three groups eleven direct determinants for fertility were identified as follows: first fecundity factors which include ability to have intercourse, ability to conceive and ability to carry a pregnancy to a term; second, sexual union factors which include: formation and dissolution of unions, age at first intercourse, sexual abstinence and temporary separation; third, birth control factors which include: use of contraceptives, sterilization and induced abortion.

Building on Davies and Blake 1956 framework, Bongaarts (1978) introduced a model for fertility determinants which reduced the eleven determinants suggested by Davies and Blake to only four. The four determinants include: use of contraceptives, entry into marital union, abortion and lactation infecundibility. He claimed that these four are the most important, more operational and easy to measure and quantify than the determinants introduced by Davies and Blake. .

In this study, a framework for the factors associated with teenage pregnancy was developed from the above theories. In line with the above theories, the following conceptual framework has been modified by the researcher to explain probable factors associated with teenage pregnancy. The variables were identified as socio-demographic and socio-economic. The socio-demographic variables included; age,

use of contraceptives and marital status. The rationale behind the choice of these determinants is that they all cause pregnancy unless prevented. On the other hand, socio- economic variables included; region, type of residence, levels of education and wealth index. Figure 2 shows a conceptual framework of variables that will be used in this study which include; age, marital status, use of contraceptives, region, place of residence, wealth index and education. Teenage pregnancy is the dependent variable that is influenced by the other factors in the study as independent variables. Age affects teenage pregnancy in that this is a transition period from childhood to adulthood, so teenagers explore their bodies.

Marital status is associated with teenage pregnancy. This is because married women have high incidences of sexual activities compared to women in the other marital categories. This is shown from the data collected in Zambia in 2007 on coital frequency (CSO, 2009). But teenagers, who give birth particularly at ages 15 to 17, are likely to be single (The Allan Guttmacher Institute, 1999).

Use of contraceptives affects teenage pregnancy as contraceptives help in the prevention of pregnancy. In this, most teenagers however, believe that they can always prevent unwanted pregnancy. This implicit trust on the contraceptives makes the teenagers engage in indiscriminate sexual affairs that often lead into unwanted pregnancy.

Place of residence is a useful measure of change from rural behavior to urban behavior. Significant differences in urban-rural teenage pregnancy and fertility are partly the result of the impact of education in urban areas as compared to rural areas (U.S Bureau of the census, 1995).

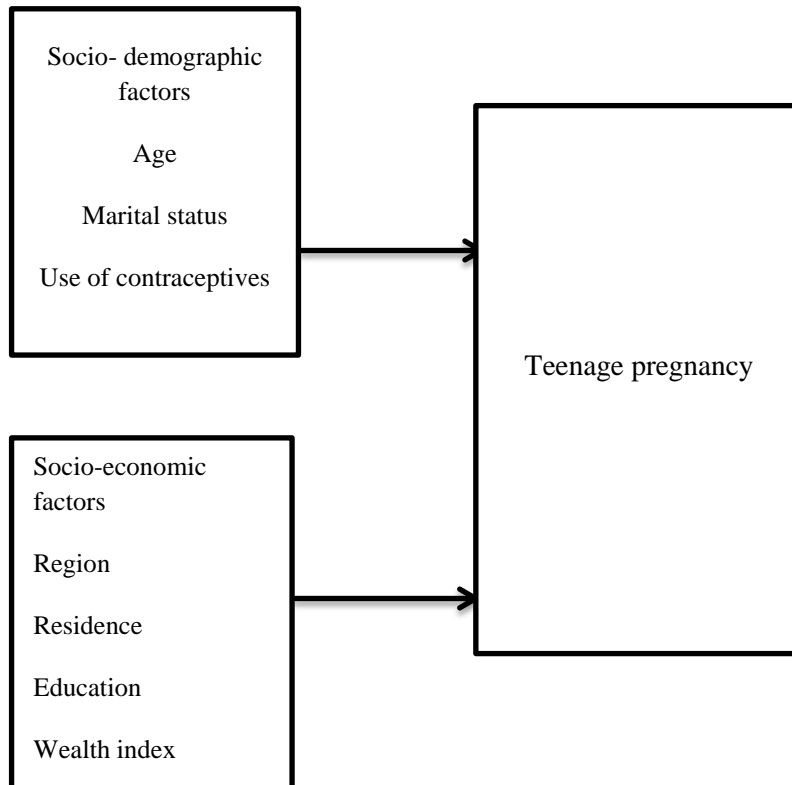
Education and teenage pregnancy are associated both at individual and societal levels in that teenagers having a secondary-school education are considerably less likely than less educated women to become pregnant. Low educational expectations have been pinpointed as a contributing factor. Furthermore, the risk of teenage pregnancy is greater among teenagers whose parents have no formal education (Muchuruza, 2000). Therefore, education, particularly women's education, has a significant effect on fertility as it brings in a new outlook on life as well as skills for taking advantage of new opportunities.

Wealth index is measured by the household wealth of either their parents or guardians. It affects teenage pregnancy in that poor and marginalized girls are among those more likely to become pregnant, not only after getting married very young, in some contexts in exchange for a dowry but also because they may engage in consensual or forced transactional sex to support themselves and their families (UNFPA, 2013).

Figure 1.5.1: Conceptual framework for factors associated with teenage pregnancy.

Independent variables

Dependent variable



Source: Author

1.6. Definitions of terms

A teenager is an individual in the transitional stage of development between childhood and full adulthood (the period of time during which a person is biologically adult but emotionally not fully matured). In this study, a teenager is a female person aged between 15–19 years.

Pregnancy is the state in which a foetus develops in the uterus of a woman of childbearing age, during the period from conception to birth. In the context of this

study, teenage pregnancy refers to pregnancy of a woman of age between 15-19 years.

Socio-demographic factors were defined as age, marital status and ever use of contraceptives in this study.

Socio-economic factors were defined as region, residence, education, wealth index, ethnicity and religion.

CHAPTER TWO: LITERATURE REVIEW

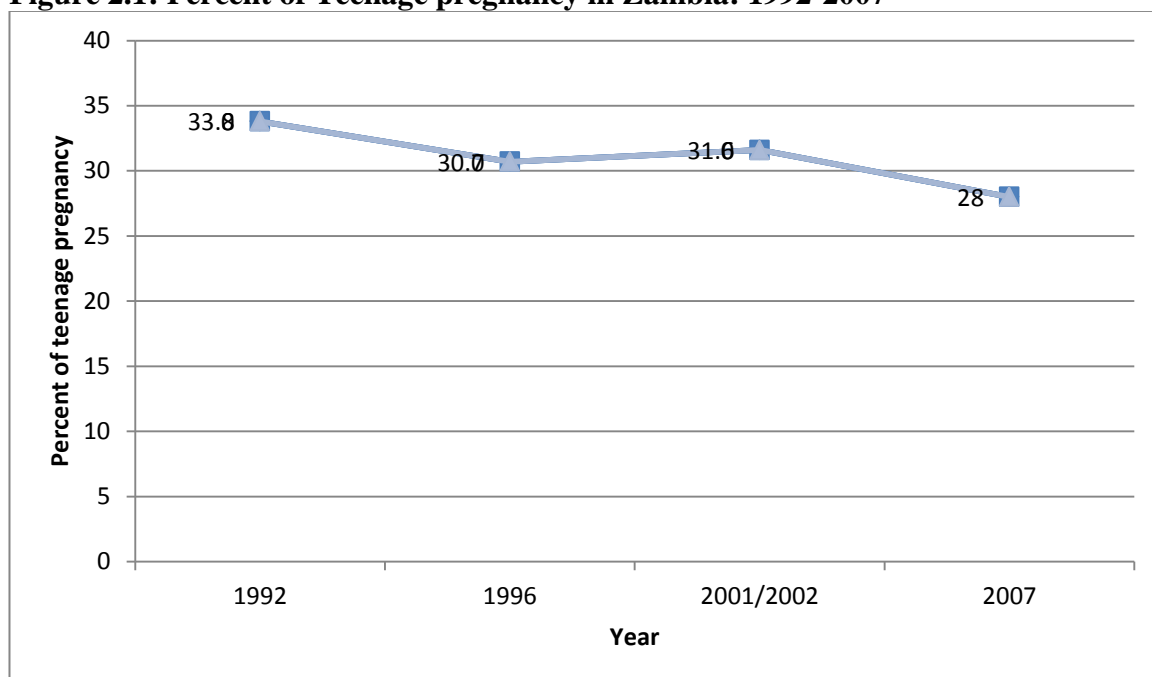
This chapter deals with significant documented literature concerning general trends in teenage pregnancy and factors associated with teenage pregnancy in Zambia.

2.1. General Trends of Teenage Pregnancy in Zambia

High rates of unwanted pregnancy among African teenage girls have been documented in reports and studies from a number of sources including government health ministries, non-government agencies in various parts of sub-Sahara Africa. Zambia is not an exception in this issue.

Figure 2 shows that in 1992 slightly more than one third of Zambian mothers were teenagers. In 1996, a reduction of three percent in teenage fertility was recorded, probably as a result of various interventions that were put in place by various stakeholders. In 2001/2002 the percentage of teenage pregnancy rose by one percent higher than 1996. This rise can probably be accredited to the introduction of the Re-entry Policy. But teenage fertility reduced further in 2007, showing that the effect of the policy was temporary and was outweighed by reproductive health interventions. Nevertheless, a rate of 28 percent recorded in 2007 was still high (Mutombo and Mwenda, 2010).

Figure 2.1: Percent of Teenage pregnancy in Zambia: 1992-2007



Source: (ZDHS reports, 1992-2007)

2.2. Factors associated with teenager pregnancy

2.2.1. Socio-demographic factors

Age is one of the factors that influence teenage pregnancy. Around the world, fifteen million women less than 20 years of age bear children which is one-fifth of all births. The developing world indicates that one-third to one-half of women become mothers within 19 years of age. Relatively, the situation in South Asian countries is severe as there are higher proportions of teenage pregnancies in this region due to common practice of early marriage and social expectation to have a child soon after marriage (Stone e tal, 2003). Other studies in sub-Saharan Africa investigating the effects of socio-demographic factors on teenage fertility have shown that socio-demographic characteristics of teenage have an association with teenage fertility.

Marital status is also an important determinant of teenage pregnancy. According to U.S. Bureau of the Census (1995), marriage directly affects teenage pregnancy. In developing countries, marriage is the predominant context for childbearing and also marks the transition to adulthood in many societies. In two-thirds of Sub-Saharan African countries, one out of every four women aged 15-19 is married. Hobcraft (1997) notes that, first sex is usually within marriage for Asian and North African women, whereas sexual activity before marriage is more the norm in Sub-Saharan African. Studies indicate that women who marry early on average have a longer exposure to the risk of pregnancy which often leads to higher fertility (Palamuleni, 2011). This could be attributed to the fact that married teenagers have high incidences of sexual activities compared to teenagers in the other marital status categories. This is shown from the data collected in Zambia in 2007 on coital frequency (CSO, 2009). But teenagers, who give birth particularly at ages 15 to 17, are likely to be single (The Allan Guttmacher Institute, 1999).

Use of any method of contraception is also associated with teenage pregnancy. Most teenagers are too frightened and embarrassed to inquire information on how to access and use conventional methods of pregnancy prevention. Clinicians, on the other hand, face a huge challenge of how to prescribe and inform teenagers on how to use contraceptives. Furthermore, most teenagers believe that they can always prevent unwanted pregnancy. This implicit trust on the contraceptives makes the teenagers engage in indiscriminate sexual affairs that often lead to unwanted pregnancy.

Some studies have shown that contraceptive use among teenage women in Sub-Saharan African countries is relatively low, with 2 percent of teenage reported using contraceptives as compared to 10 percent in Asia, North Africa and 23 percent in Latin America and the Caribbean. The low levels of contraceptives use among Sub-

Saharan adolescent women is attributed to the fact that these women once married are often under social pressure to have children (U.S. Bureau of the census 1995).

2.2.2. Socio-economic factors

Residence influences fertility in some way. Differences in fertility by urban and rural residence occur due to locational factors that affect aspirations and family sizes preferences. Urban places typically offer better educational and modern sector job opportunities, better health facilities and more access to information on contraceptives and supplies. Urban areas also tend to face lower social and financial costs of fertility regulation, a rather lower labour value of children and higher out of pocket costs of having and raising children compared to rural areas. Furthermore, teenagers living in more urbanised countries tend to have lower fertility when compared to their counterparts living in countries with less proportions of urban population (U.S Bureau of the census, 1995).

Region also affects teenage pregnancy in some way. In Zambian provinces, traditions might contribute towards teenage pregnancy. Girls are treasured as wealth and once they become of age, parents are willing to see them off to their husbands. This has been coupled with benefits yielding from dowry payments that may solve some of their problems. As a result, teenage marriages have become rampant. Lack of care and support from parents, both emotionally and financially, has also contributed to teenage pregnancies. According to the UN population agency (UNFPA), in Zambia early and forced marriages are common in Luapula Province, where the prevalence of early pregnancy and under-age marriage is estimated at about 70 percent among teenage girls.

Teenagers from the poor households have high prevalence of teenage pregnancy compared to those from rich households. Teenage pregnancy also has economic consequences. In some contexts, poverty puts pressure on families to marry daughters in order to reduce the costs of food and education, which become husband's responsibilities. Furthermore, studies have shown that in developing countries, poor and marginalized girls are among those more likely to become pregnant, not only after getting married very young, in some contexts in exchange for a dowry but also because they may engage in consensual or forced transactional sex to support themselves and their families (UNFPA, 2013).

Where employment opportunities for girls are scarce, marriage can be an option to secure a girl's future, since marriage becomes a way to improve a woman's economic situation and social status. In qualitative research conducted in Uganda, young people described poverty as an impetus for having children as a source of income, labour and old age insurance (Beyeza et al, 2010).

DiCenso et al (2002) asserted that teenagers of poor economic status are mostly in this social problem of teenage pregnancy. The parents of these teenagers cannot afford the financial involvement for their maintenance at home or school. Childbearing may curtail education and thus reduce a young woman's employment prospects in a job market that requires ever higher levels of training. Consequently, most teenage mothers lack a partner to contribute to the household income.

Education is considered to be among the most important socio-economic factors that affect fertility. Education influences fertility in several ways; it changes the norms and values of couples towards the desired family size, for example educated teenage mothers prefer to have fewer children (Bledsoe and Cohen 1993). Education also

increases the opportunity cost of women's time. Additionally, education eliminates barriers to the use of contraceptives through increasing the adolescents' awareness and willingness to adopt family planning (United Nations, 1987). Data from the Demographic and Health Surveys in Sub-Saharan African countries demonstrate that there is a negative relationship between level of education and teenage pregnancy (Bledsoe and Cohen, 1993). This is in line with other scholars who found out that more education leads to delayed pregnancy and therefore higher levels of education are associated with lower probability of becoming pregnant (Bates et al, 2007).

The 1996 Education Policy of Zambia indicates that the benefits of education in improving the overall quality of life multiply with increased participation of girls and women. The empowerment of girl-child with education is particularly associated with significant reductions in infant mortality and morbidity, improvement in family nutrition and health, lowering of fertility rates, improved chances of girl child's education and improved opportunities in both wage and non-wage-sectors (MOE, 1996).

2.2.3. Gap analysis arising from literature review

There is a lot of literature focusing on how individual factors affect teenage pregnancy. The following are related to this research; a research done by Barton (1999) depicts that one of the major social problems in sub-Saharan Africa today is teenage pregnancy. In his article, the author test a model based on modernization theories that attempt to explain the widespread prevalence of teenage sexual activity in African countries such as Zambia. Students were randomly selected from seven secondary schools in two Zambian cities, Lusaka and Kitwe. Results of this study do not support modernization theories of teen sexual activity. In addition, the author

found that traditional institutions such as initiation ceremonies continue to influence sexual activity levels.

Khan (2012) has done a research on Factors Associated with Teenage Pregnancy in South Africa. In his research he alluded that the problems of teenage pregnancy arise from individual, familial and societal factors, including, but not limited to, culture, religion, moral values and beliefs, education and economic circumstance, and a lack of supporting structures. A report from the National Research Council on adolescent childbearing shows an increase in childbearing among unmarried female adolescents in sub-Saharan Africa which raises religious and cultural concerns (Bledsoe and Cohen, 1993).

Katayamoyo (2010) investigated on determinants of teenage pregnancy in Lusaka District. In his research, female teenagers (13 to 19 years old) attending clinic at centers where antenatal services are available was his study population. The sample population was in two groups of female teenagers as follows: one group constituted cases comprising pregnant teenagers attending antenatal clinic and another group constituted controls comprising female non-pregnant teenagers attending same clinic for any other ailments (with no reported history of pregnancy or abortion). Analysis of data resulted in testing the association of the various exposure factors i.e. socio-demographic, contraception, tradition and culture and illicit sex.

The results on multivariate backward logistics regression showed the following: teenagers below 16 years were 70 percent less likely to get pregnant compared to those above, singles were 60 percent less likely to be pregnant compared to those who are married, while participants with breadwinners who were not in gainful employment were two times more likely to get pregnant. Parental/guardian reprimand was shown to have a deterrent effect on teenage pregnancy. Lack of

knowledge on female physiology or hormones was shown to predispose to teenage pregnancy by three times whereas lack of knowledge on condoms had similar effect by twofold. Shyness to access contraceptives by teenagers increased chances of pregnancy by 50 percent.

Ferré (2009) conducted a research with a topic ‘The age at first child: Does education delay fertility timing? The Case of Kenya’. In this study data from the Kenyan Demographic and Health Surveys of 1989, 1993, 1998, and 2003 was used to uncover the impact of staying one more year in school on teenage fertility. To get around the endogeneity issue between schooling and fertility preferences, the analysis used the 1985 Kenyan education reform as an instrument for years of education. The author found that adding one more year of education decreases by at least 10 percentage points the probability of giving birth when still a teenager. The probability of having one’s first child before age 20, when having at least completed primary education, is about 65 percent; therefore this means a reduction of about 15 percent in teenage fertility rates for this group. One additional year of school limits the probability of becoming a mother each year by 7.3 percent for women who have completed at least primary education, and 5.6 percent for women with at least a secondary degree. This paper showed that investing in education can have positive spillovers on health.

A research done by Fathi (2003) examined the determinants of teenage pregnancy in Cameroon using the Cameroon DHS 1998 data set. The emphasis in her study was on the influence of Islam religion on teenage pregnancy and the main findings revealed that very early sex, early marriage and being a moslem significantly influence teenage pregnancy in Cameroon.

A study in Ethiopia by Alemeyehu et al (2010), found that the major factors associated with adolescent fertility were age, educational status, place of residence, employment, use of contraceptives and marriage. This is consistent with Bledsoe and Cohen's (1993) study which reported similar findings.

Most researches done in the previous studies involved primary data and school going teenagers. Therefore, this study investigates which factors among those identified from previous studies are statistically significant in determining teenage pregnancy by examining the levels of significance in Zambia using evidence from the 2007 Zambia Demographic and Health Survey (ZDHS) data.

CHAPTER THREE: METHODOLOGY

This study employed quantitative data in explaining the factors associated with teenage pregnancy. Levels of analyses ranged from simple descriptive statistics to multiple regression analyses with chi-square tests.

3.1 Data source and description

The study used secondary data from 2007 Zambia Demographic Health Survey (ZDHS), a nationally representative survey of 7,146 women age 15-49 and 6,500 men age 15-59. Three questionnaires were used for the survey, namely; the household, women's, and men's questionnaires. These questionnaires were based on population and health issues relevant to Zambia. From the data set, seven variables were used for this analysis and these included; age, marital status, use of contraceptives, region, place of residence, education and wealth index. The cross-sectional survey data available for the study did not allow for an analysis of change, but it does provide some assessment of the main factors associated with teenage pregnancy in Zambia. These variables were manipulated by way of recoding.

In the ZDHS 2007 data set, a command selecting cases was used to select the teenagers in the age group 15-19 and there were 1598 cases. After weighing the data, only 1574 cases were valid for analysis.

3.2. Data processing and analysis

In this study, data analysis was done using the 2007 ZDHS processed data. The study used Statistical Package for Social Scientists (SPSS) 16.0 to generate frequencies, cross tabulations and binary logistic regression. Cross tabulation was used to examine the association of the each socio-demographic and socio-economic

variable on the prevalence of teenage pregnancy. A binary logistic regression model was used to predict the influence of socio-demographic and socio-economic factors on teenage pregnancy. Logistic regression is a regression method that involves an outcome variable that is a categorical dichotomy and predictor variables that are continuous or categorical. The use of logistic regression is based on the fact that the dependent variable is treated as dichotomous because it can only take on one of the two values: 0 or 1. In this case a teenager can either be never been pregnant or ever been pregnant. Teenage pregnancy was coded into a binary form, hence 0= never been pregnant, 1= ever been pregnant.

In this study, simultaneous method was used in order to observe variables that were not significant in the model, based on the p-value. The log likelihood ratio statistics were also observed. It used 2 models and these included; model 1 which fitted the socio- demographic variables only namely; age, marital status and use of contraceptives as regressors for teenage pregnancy. This was done in order to find out how these variables influence teenage pregnancy without socio-economic variables. Model 2 included both socio-demographic and socio-economic variables as regressors for teenage pregnancy. This was done in order to find out how both socio-demographic and socio-economic variables influence teenage pregnancy and observations based on the behaviour of the variables were made.

3.2.1. Dependent variable

In the choosing of the dependent variables, three variables were combined namely; currently pregnant, had children or had terminated pregnancy to come up with teenage pregnancy. The use of logistic regression is based on the fact that the dependent variable is treated as dichotomous because it can only take on one of the

two values: 0 or 1. In this case, a teenager can either be never been pregnant or ever been pregnant. Hence, teenage pregnancy is categorized as 0= never been pregnant, 1=has ever been pregnant.

3.2.2. Independent variables

Under the independent variables, these are in two categories; namely socio-demographic and socio-economic factors.

Socio-demographic factors include; age, marital status and use of contraceptives.

Age of the respondents was in five categories (15-19) as coded in the 2007 ZDHS. The reference category was age 19.

Marital status (Never married-268/ married-280/ formerly married-26); But for the purpose of logistic regression married and formerly married were combined. The value of 1, never married and the value of 2 for married / formerly married. The reference category was married/formerly married.

Use of any method of contraception-This variable was measured taking the value 1 if woman aged 15-19 had not used any method of contraceptives to prevent pregnancy and the value of 2 if used any method (folkloric method, traditional method and modern method). The reference category was use of any method of contraceptive.

Socio-economic factors consist of region, type of residence, wealth index and education.

Place of residence- Urban was coded 1 and rural was coded 2. The reference category is rural.

Region was coded according to the ZDHS data set; 1-Central, 2-Copperbelt, 3-Eastern, 4-Luapula, 5-Lusaka, 6-Northern, 7-Northwestern, 8-Southern, 9-Western. The reference category was Western.

Wealth index- In this study, the teenagers' wealth index was measured based on household wealth of their parents or guardians according to the ZDHS. This variable was categorised into 5 quintiles as coded in the 2007 ZDHS i.e. Poorest and poorer representing the value of 1 as poorest, poorer- 2, middle represents value of 3, richer- 4 and richest representing value of 5. The reference category was richest.

In the ZDHS data, highest level of education was categorized as 1 for no education with 63 cases, 2 for primary with 764, 3 for secondary with 739 and 4 for higher level with 8 cases. In this study, it was categorized as 1 for no education, 2 for primary, and 3 for secondary. The reference category was secondary. Higher level of education was removed from the analysis because it had very few cases as required by logistic regression and could not give a meaningful statistical calculation to report on.

3.3. Limitations of the study

Even though the DHS data provide some clues regarding factors associated with teenage pregnancy in Zambia, there are several factors associated with teenage pregnancy such as; peer pressure, low self-esteem and family breakdown that were not included in the ZDHS data set. Lack of qualitative data to complement these results was another limitation.

CHAPTER FOUR: FINDINGS

In order to investigate the socio-demographic and socio-economic associated with teenage pregnancy in Zambia, the following were employed; descriptive analysis was used to inspect the frequency distributions of the various factors, cross tabulation analysis was employed to examine the association of the independent variables and teenage pregnancy and logistic regression was used to determine the impact of the independent variables on the dependent variable.

4.1. Background characteristics of the study population

Frequencies were done in order to find out the number of study population and their percentages in each category of the variables. With regard to the dependent variable (teenage pregnancy), respondents who had never been pregnant were 1125(71.5) cases while 449(28.5) cases had ever been pregnant.

The following table gives the frequency distribution of respondents according to their background characteristics.

Table 4.1: Percentage distribution of teenagers (15-19) by selected characteristics in Zambia

Background Variables	N	%
Socio-demographic		
Age		
15	364	23.1
16	328	20.8
17	295	18.7
18	293	18.6
19	294	18.7
Marital status		
Never married	1268	80.5
Married	280	17.8
formerly married	26	1.7
Use of contraceptives		
Never used	1229	78.1
Used	345	21.9
Socio-economic		
Residence		
Urban	761	48.4
Rural	813	51.6
Region		
Central	141	9.0
Copperbelt	303	19.3
Eastern	188	12.0
Luapula	109	6.9
Lusaka	285	18.1
Northern	196	12.5
Northwestern	82	5.2
Southern	171	10.9
Western	99	6.3
Wealth index		
Poorest	219	13.9
Poorer	246	15.6
Medium	261	16.6
Richer	385	24.4
Richest	463	29.4
Education		
No education	63	4.0
Primary	764	48.5
Secondary	739	47.0
Higher	8	0.5
Total	1574	100

Source: (ZDHS, 2007)

From table 4.1 above, the majority of the teenagers were aged 15 with 23.1 percent; 20.8 percent of the respondents were aged 16. Teenagers aged 17 and 19 represented

18.7 percent each. Lastly, teenagers aged 18 were few with 18.6 percent. With regard to marital status, the never married teenagers were 80.5 percent, while married teenagers were 17.8 percent. Only few of the teenagers were formerly married (1.7 percent). Teenagers who never used contraceptives were 78.1 percent while teenagers who used contraceptives were 21.9 percent. The proportions of teenagers residing in the urban and rural areas are almost equal, 48.4 percent and 51.6 percent respectively. Teenagers from Copperbelt province were the majority with 19.3 percent, followed by teenager from Lusaka province with 18.1 percent. Teenagers from Western and Northwestern provinces were 6.3 and 5.2 percent respectively. The highest percentage of teenagers was from the richest households with 29.4 percent while the lowest was 13.9 percent from poorest households. Teenagers with primary level of education were the majority with 48.5 percent while teenagers with higher level of education were 0.5 percent.

4.2: Bivariate analysis

Selected background characteristics were cross-tabulated with teenage pregnancy to determine if there is a relationship between the independent variables and the dependent variable. The following table shows the results obtained from cross-tabulations:

Table 4.2: Prevalence of teenage pregnancy in Zambia by selected characteristics

Background characteristics	Never been pregnant	Ever been pregnant
	N (%)	N (%)
Socio-demographic		
Age*		
15	343(94.2)	21(5.8)
16	272(82.9)	56(17.1)
17	209(70.8)	86(29.2)
18	171(58.4)	122(41.6)
19	131(44.6)	163(55.4)
Marital status*		
Never married	1084(85.5)	184(14.5)
Married	38(13.6)	242(86.4)
Formerly married	3(11.5)	23(88.5)
Use of contraceptives*		
Never used	1006(81.9)	223(18.1)
Used	119(34.5)	226(65.5)
Socio-economic		
Type of residence*		
Urban	603(79.1)	159(20.9)
Rural	523(64.3)	290(35.7)
Region*		
Central	97(68.8)	44(31.2)
Copperbelt	241(79.3)	63(20.7)
Eastern	132(70.2)	56(29.8)
Luapula	74(67.9)	35(32.1)
Lusaka	224(78.6)	61(21.4)
Northern	142(72.4)	54(27.6)
Northwestern	51(63.0)	30(37.0)
Southern	109(63.7)	62(36.3)
Western	55(55.6)	44(44.4)
Wealth index*		
Poorest	137(62.6)	82(37.4)
Poorer	160(65.0)	86(35.0)
Middle	161(61.7)	100(38.3)
Richer	270(70.1)	115(29.9)
Richest	397(85.7)	66(14.3)
Education*		
No education	29(46.0)	34(54.0)
Primary	507(66.4)	257(33.6)
Secondary	582(78.8)	157(21.2)
Higher	8(100)	0(0.0)
Total	1125(71.5)	449(28.5)

Source: ZDHS, 2007.

*means significant at $p > 0.05$

According to table 4.2, teenagers aged 19 had the highest teenage pregnancy percentage of 55.4 percent. Then teenagers aged 18 with 41.6 percent. Teenagers

aged 16 and 17 had 17.1 percent and 29.2 percent of teenage pregnancy respectively. Lastly, teenagers aged 15 were the lowest with 5.8 percent of teenage pregnancy. Age of a teenager was significantly associated with teenage pregnancy. The table clearly shows the percentage of teenage pregnancies increases as age increases. Therefore, the older a teenager gets, the more likely they are to be pregnant.

Over three-quarters of teenagers who were formerly married (88.5 percent) and currently married (86.4 percent) were pregnant. The never married teenagers had the lowest teenage pregnancy percentage of 14.5. Teenagers who marry early on average have a longer exposure to the risk of pregnancy which often leads to higher fertility. Marital status of a teenager was significantly associated with teenage pregnancy as the p-value was less than 0.05. Teenagers who used contraceptives had the highest teenage pregnancy percentage of 65.5 while teenagers who never used contraceptives had the lowest teenage pregnancy percentage of 18.1. Use of contraceptives by a teenager was significantly associated with teenage pregnancy. This entails that use of contraceptives contributes to teenage pregnancy.

Teenagers from rural areas had the highest percentage of teenage pregnancy of 35.7 percent compared to teenagers from urban areas with 20.9 percent. Teenagers from Western province had the highest percentage of teenage pregnancy of 44.4 percent, followed by teenagers from Northwestern province with 37.0 percent. Teenagers from Southern and Luapula provinces had 36.3 percent and 32.1 percent of teenage pregnancy respectively. The lowest percentage of teenage pregnancy was 20.7 percent from Copperbelt province. Residence and region were significantly associated with teenage pregnancy as the p-value was less than 0.05.

With regards to wealth index (household wealth), the highest percentage of teenage pregnancy of 38.3 percent was teenagers from middle households. Teenagers from the poorest households and poorer households had 37.4 percent and 35.0 percent respectively. The lowest was 14.3 percent of teenagers from the richest households. Wealth index was significantly associated with teenage pregnancy since the p-value was less than 0.05.

Teenagers with no education had the highest percentage of teenage pregnancy of 54.0 while teenagers with higher level of education were the lowest with 0.0 percent. However, education was significantly associated with teenage pregnancy as the p-value was less than 0.05.

4.3: Distribution of teenagers by marital status and contraceptive use

Use of contraceptives	Marital status			
	Never married N (%)	Currently married N (%)	Formerly Married N (%)	Total N (%)
Never used contraceptives*	1084(88.2)	132(10.7)	13(1.1)	1229(78.1)
use contraceptives*	184(53.3)	147(42.6)	14(4.1)	345(21.9)

Source: ZDHS, 2007.

*means significant at $p > 0.05$

From table 4.3, it shows that 53.3 percent of the teenagers who were not married use contraceptives while the currently married teenagers and formerly married were 42.7 percent and 4.1 percent respectively. There is an association between marital status and use of contraceptives.

4.4. Multivariate Results

All independent variables were put in a binary logistic regression model to assess the extent of individual variable effects on the dependent variable whilst controlling for other variables. The logistic regression model predicts the likelihood of a teenager being pregnant in a certain category with reference to another category (reference category) of the same variable.

4.4.1. Socio-demographic factors influence on teenage pregnancy

Model 1 fitted the socio- demographic variables only namely; age, marital status and use of contraceptives as regressors for teenage pregnancy. This was done in order to find out how these variables influence teenage pregnancy without socio-economic variables.

Table 4.4: Socio-demographic variables of teenage pregnancy by their Odds ratios

Variables	Model 1
Age	
15	0.144*
16	0.338*
17	0.542*
18	0.600*
19	RC
Marital status	
Never married	0.035*
Currently married	0.806
Formerly married	RC
Use of contraceptives	
Never used	0.230*
Used	RC
Constant	32.898

* Significant at P<0.05

RC means reference category

Source: ZDHS 2007

From table 4.4 above, it can be clearly observed that the odds of teenagers becoming pregnant were lower for the teenagers who were between 15 and 18 years of age compared to teenagers aged 19. Teenagers in all categories of marital status and use of contraceptives had a lower likelihood of becoming pregnant with regard to the reference categories. Age, marital status and use of contraceptives were statistically significant as the p- values were less than 0.05.

4.4.2. Socio-demographic and socio-economic factors' influence on teenage pregnancy

Model 2 included both socio-demographic and socio-economic variables as regressors for teenage pregnancy. This was done in order to find out how both socio-demographic and socio-economic variables influence teenage pregnancy and observations based on the behaviour of the variables were made.

Table 4.5: Socio-demographic and socio-economic variables of teenage pregnancy by their Odds ratios

Variables	Model 2
Socio-demographic	
Age	
15	0.105*
16	0.313*
17	0.450*
18	0.524*
19	RC
Marital status	
Never married	0.033*
Married/Formerly married	RC
Use of contraceptives	
Never used	0.232*
Used	RC
Socio-economic	
Region	
Central	0.595
Copperbelt	0.676
Eastern	0.252*
Luapula	0.722
Lusaka	0.359*
Northern	0.275
Northwestern	0.816
Southern	0.726
Western	RC
Residence	
Urban	0.809
Rural	RC
Education	
No education	1.785
Primary	1.373
Secondary	RC
Wealth index	
Poorest	1.987
Poorer	1.607
Middle	1.724
Richer	1.902
Richest	RC
Constant	47.483
Hosmer and Lemeshow sig	0.645
2*Log-likelihood	1065.253

Source: (ZDHS, 2007) RC means reference category *significant at p<0.05

With reference to table 4.5., (in model 2) when the socio-demographic and socio-economic factors were fitted, age, marital status and use of contraceptives were significant as their p-values were less than 0.05. On other hand, the socio-economic factors were not statistically significant. Furthermore from table 4.4, it can be observed that the odds of teenagers becoming pregnant were lower for the teenagers who were between 15 and 18 years of age compared to teenagers aged 19. Teenagers in all categories of marital status and use of contraceptives had a lower likelihood of becoming pregnant with regard to the reference categories.

From the findings, teenagers from an urban were less likely to become pregnant relative to teenagers from a rural area. The odds of teenagers in all categories of region were lower than teenagers from Western province.

The odds of a teenager from poorest and poorer households becoming pregnant were about 2 times higher than a teenager from a richest household respectively. The odds of a teenager from middle and richer households becoming pregnant were about 2 times higher than a teenager from a richest household respectively.

The odds of a teenager with no education and primary level becoming pregnant were about 2 times and 1.4 times higher than a teenager with secondary level respectively.

Most of the socio-economic factors had been suppressed by demographic factors because the socio-economic factors operated through the socio-demographic factors.

In logistic regression, a goodness of fit statistic with a p value is found displayed along with it. The null hypothesis is that the model is fit, if the p value is less than 0.05 and the null hypothesis is rejected, it means that the model is not fit. In this study, the Hosmer and Lemeshow test was non-significant as the p-value was 0.645.

This entails that the specified logistic equation adequately fits the data. When only the constant was included, the $-2 \times \log\text{-likelihood}$ was 1882.155, but when all

predictor variables were added, it reduced to 1065.253. This reduction shows that the model with predictors is better at predicting teenage pregnancy than the one without predictors.

CHAPTER FIVE: DISCUSSION

This study was aimed at examining socio-demographic and socio-economic factors associated with teenage pregnancy in Zambia and seeks to contribute to the literature on teenage pregnancy.

Under dependent variable-teenage pregnancy, those never been pregnant were 1125(71.5) cases and ever been pregnant were 449(28.5) cases. Teenage pregnancy rates documented for Ghana, Ethiopia, Uganda, Tanzania and Malawi were 14 percent, 16 percent, 19.2 percent, 19.6 percent and 25.3 percent respectively (Alemayehu et al, 2010). Similarly, the Zambian rate is quite high when compared to teenage pregnancy rates in other African countries.

When both socio-demographic and socio-economic variables were regressors for teenage pregnancy, socio-demographic variables (age, marital status and use of contraceptives) were significant as the p-values were less than 0.05 while the socio-economic variables were not statistically significant.

The results obtained clearly showed that age had a significant and strong effect on teenage pregnancy. The effect remained strong in the presence of a number of controls. This is due to the fact that, this is a period teenagers explore their bodies. This is similar to the situation in South Asian countries though severe as there are higher proportions of teenage pregnancies in this region due to common practice of early marriage and social expectation to have a child soon after marriage. Evidence further indicates that nearly 60 percent of all girls are married by the age of 18 years and one fourth is married by the age of 15 years in South Asia (Stone et al, 2003). Results obtained from binary logistic regression clearly showed that marital status is statistically significant. This could be attributed to the fact that married teenagers

have high incidences of sexual activities compared to teenagers in the other marital categories. Teenagers who marry early on average have a longer exposure to the risk of pregnancy which often leads to higher fertility. This is shown from the data collected in Zambia in 2007 on coital frequency (CSO, 2009). In an ideal situation, teenagers in this age group are not supposed to be married but this is not what is obtained on the ground. Furthermore, teenagers, who give birth particularly at ages 15 to 17, are likely to be single (The Allan Guttmacher Institute, 1999).

This is similar to what was found out in other studies elsewhere which showed that there is a significant effect of marital status on teenage pregnancy. In two-thirds of Sub-Saharan African countries, one out of every four women aged 15-19 is married. Early sexual activity out of wedlock is also relatively highly prevalent as compared to other developing countries as revealed in a study of Adolescent fertility in developing countries by the U.S. Bureau of the Census (1995). Hobcraft (1997) notes that, first sex is usually within marriage for Asian and North African women, whereas sexual activity before marriage is more the norm in Sub-Saharan Africa. Studies indicate that women who marry early on average have a longer exposure to the risk of pregnancy which often leads to higher fertility (Palamuleni, 2011).

From the current study, the results obtained clearly showed that use of contraceptives had a significant and strong effect on teenage pregnancy. The effect remained strong in the presence of a number of controls. The results obtained from bivariate analysis between marital status and use of contraceptives showed that contraceptive use among the never married teenagers was higher than the currently and formerly married teenagers. In an ideal situation, teenagers in this age group are not supposed to use contraceptives but from this study, it shows that they use contraceptives hence, it becomes a factor. This is due to the fact that use of contraceptives affects fertility

because it decreases the probability of a woman conceiving. Furthermore, most teenagers believe that they can always prevent unwanted pregnancy. This implicit trust on the contraceptives makes the teenagers engage in indiscriminate sexual affairs that often lead to unwanted pregnancy.

This is similar to what was found in the most recent Malawi Demographic and Health Survey, sexually active unmarried 15-19 years old girls, only half had never used a modern method of contraception, and about a third were currently using a modern method, almost exclusively the male condom. At 26 percent current modern contraceptives use was also low among married girls aged 15-19, but prevalence of hormonal methods most notably injectable was considerably higher and absence of contraceptive use more than a quarter of girls aged 15-19 had started childbearing (NSO and Macro, 2011).

The results obtained from binary logistic regression clearly showed that type of residence was not significant. Type of residence had no influence on teenage pregnancy once other variables were controlled for. This means that residence works through other variables. This is quite different from what was found out in other studies elsewhere which showed that there is a significant difference in teenage pregnancy between teenagers in rural areas and those in urban areas. Other empirical evidence states that, urban women had lower fertility because they desire smaller families, marry later and are more likely to use contraceptives more effectively (United Nations, 1987). Adolescents living in more urbanised countries tend to have lower fertility when compared to their counterparts living in countries with less proportions of urban population (U.S Bureau of the census, 1995).

Another finding of this study is that education had no significant effect on teenage pregnancy in Zambia. This could be attributed to the introduction of reproductive health lessons in the schools and also empowerment of girl-child with education which is particularly associated with significant reductions in infant mortality and morbidity, improvement in family nutrition and health, lowering of fertility rates, improved chances of girl child's education and improved opportunities in both wage and non-wage-sectors (MOE, 1996).

In explaining how education leads to low prevalence of teenage pregnancy, Gyepi-Garbrah (1985) argued that education raises age at marriage and hence lead to later start of child bearing. This is in line with other scholars who found out that more education leads to delayed pregnancy and therefore higher levels of education are associated with lower probability of early pregnancy (Bates et al, 2007).

From this study wealth index was not significant. This is contrary to other studies which show that there is negative association between the prevalence of teenage pregnancy and wealth. As standard of living increases the prevalence of teenage pregnancy systematically decreases. In another study done by the United Nations Fund for Population Activities in 2000, for a group of developing countries it has been observed that higher rates of teenage pregnancy among the poor are due to their early marriages.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1. Conclusions

Teenage pregnancy is a global problem especially in developing countries. Teenage pregnancy is associated with several social issues and these include: poverty, low education levels, and the lack of awareness about sex and pregnancy prevention. Pregnancy is the leading cause of death for young women aged 15-19 worldwide with complications of childbirth and unsafe abortion being the major risk factors (WHO, 2007). This study has examined selected factors associated with teenage pregnancy in Zambia using data obtained in the 2007 Zambia Demographic Health Survey.

However, from the current study, binary logistic regression analysis revealed that the major factors that influence teenage pregnancy in Zambia were socio-demographic factors; age, marital status and use of any method contraceptive are significant and associated with teenage pregnancy in the bivariate analysis. The study also revealed that there were a significant proportion of teenagers who got pregnant among the teenagers aged 19, married/formerly married and contraceptive users. Generally, socio-demographic factors strongly influence teenage pregnancy in Zambia and associated with teenage pregnancy due to the fact that they affect fertility directly.

On the other hand, the binary logistic regression analysis revealed that socio-economic factors (type of residence, region, education and wealth index) were not significant as the p-values were above 0.05. Therefore, socio-economic factors had no influence on teenage pregnancy in Zambia with reference to this study.

The present study findings have clearly demonstrated that the major factors that influence teenage pregnancy in Zambia were socio-demographic factors (age, marital

status and use of contraception). The socio-economic factors are important determinants of teenage pregnancy but were not significant. It is anticipated that, if this study's recommendations are considered, it will significantly help in reducing the influence of major factors on teenage pregnancy as it is associated with poor socio-demographic outcomes such as high fertility and mortality and low contraceptive use and poor socio-economic outcomes such as high levels poverty and high levels of school drop outs.

6.2. Recommendations

From the findings of this study, the following are the recommendations;

- Given the significant contribution of socio-demographic factors(age, marital status and use of contraceptives); early marriage to the prevalence of teenage pregnancy, policy makers, community leaders and school curriculum should all act towards raising age at marriage to after 19 years.
- Given the significant influence of the use of contraceptives on the reduction of teenage pregnancy, policy makers should make the methods of contraception available and accessible to teenagers. School curriculum should incorporate educating teenagers about the use of contraception to avoid pregnancy, especially during very early teen years.
- In Zambia, Government introduced youth friendly health services, but there is still a high teenage pregnancy rate; most likely because it is done on a small scale. The government should design programmes that must engage teenagers fully in economic activities. Teenagers must be provided with the information and skills that will enable them teenagers have independence and personal goals which will lower their likelihood of engaging in sexual behaviour; and

hence, increasing the chances to reduce teenage pregnancy in Zambia. The youth friendly services should be introduced in all regions of Zambia.

- Despite the socio- economic factors (region, type of residence, education and wealth index) not being significant, they are important determinants of teenage pregnancy. Government policies should continue supporting the status of women in Zambia by helping them to have more access to education, empowering them and enhancing their participation in market economy. The education system should aim at providing life skills to enable girls avoid pregnancies and early marriages as well as providing reproductive health information so that they are aware of consequences of unwanted pregnancies in both urban and rural areas.
- Future research on teenage pregnancy in Zambia should examine the effect of community level indicators on teenage pregnancy. Community level indicators on availability of family planning clinics are worth studying since use of contraception have shown to be important.
- Qualitative studies are needed to know more about the phenomena of teenage pregnancy from the perspective of teenagers, their parents and families and the community members.

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