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PREVALENCE OF TEENAGE PREGNANCY AND ASSOCIATED FACTORS IN EKUMFI DISTRICT

BY

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DECLARATION

I, **ELLEN MAWUSI AGBEMABIESE**, do hereby declare that apart from references that have been duly acknowledged, this dissertation is the result of my efforts under able supervision. I take full responsibility for this work.

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LIST OF ABBREVIATION

ANC	Antenatal Care
GHS	Ghana Health Service
UNFPA	United Nations Population Fund
WHO	World Health Organisation

ABSTRACT

Background: Teenage pregnancy is a fast growing public health issue with approximately eighteen million girls under the age of 20 giving birth each year (UNFPA, 2013). It is reported that more than ninety percent of these births occur in low and middle-income countries (UNFPA, 2013) in Africa, South Asia, Latin America, and the Caribbean (WHO, 2014). In Ghana, the rates of teenage pregnancy is high. Of all births registered in the country in 2014, 30% were by teenage girls with 14% of this figure comprising of adolescent girls aged between 15 and 19 years (GHS, 2014). Ekumfi district teenage pregnancy rate among ANC registrants have been 16.4%, 18.5%, 18% and 16.4% for the years 2015, 2016, 2017 and 2018 respectively (DHIMS, 2019). Early marriages either arranged, pushed by parents, or due to circumstances surrounding teenagers are profound contributors to increased teenage pregnancy prevalence (UNFPA, 2019).

Objective: To determine the prevalence of teenage pregnancy and its associated factors in Ekumfi District.

Methods: A community based cross-sectional study design with quantitative methods was used to conduct the study. Multi-stage sampling method data was employed to select 368 teenagers. Data was analysed with STATA 16.0 with chi square multiple logistic regression was used to determine factors associated with teenage pregnancy in Ekumfi. Statistical significance was set at $p< 0.05$.

Results: Current prevalence of teenage pregnancy in Ekumfi stands at 15.8%. Age (aOR = 2.56; 95% CI = 1.72 – 3.80; $p < 0.001$) and residing with relative(s) (aOR = 8.78; 95% CI = 1.27 – 60.62; $p = 0.028$) were significant predictors of teenage pregnancy in Ekumfi.

Conclusion: Rate of teenage pregnancy in Ekumfi stands at 15.8% with increasing age and residing with relatives affecting prevalence. Policy makers are encouraged to intensify education on sex, contraception and teenage pregnancy among teenagers in Ekumfi.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Teenage pregnancy is a fast growing public health issue with approximately eighteen million girls under the age of 20 giving birth each year (UNFPA, 2013). Teenage pregnancy is defined as a pregnancy in girls between the ages 10–19 years. It is estimated that approximately sixteen million teenage girls give birth each year accounting for more than 10% of births worldwide (WHO, 2016). Statistics from the World Health Organization in 2016 also showed that around 16 million teenagers give birth each year with approximately two million of these births occurring to girls under the age of 15 years (UNFPA, 2013; WHO, 2019). It is reported that more than ninety percent of these births occur in low and middle-income countries (UNFPA, 2013) in Africa, South Asia, Latin America, and the Caribbeans (WHO, 2014). In Sub-Saharan Africa, about 12 million girls give birth each year with teenage birth rates reaching over 200 births per 1000 girls age 15–19 (Amponsem-Boateng et al., 2018) and this can be attributed to poverty, lack of education, early marriages and lack of employment opportunities (UNFPA, 2015).

In Ghana, teenage pregnancy is equally on the hike with an increase from 5,518 in 2014 to 5,564 teenage pregnancy cases documented in 2015. In 2017, 57,000 teenage pregnancy cases were recorded in the first half of the year (Awuni, 2017; GNA, 2017). There are regional variations in the rates of teenage pregnancies in Ghana with the Northern and Central regions reporting the highest rates (GHS, 2014). Ekumfi District is no exception to this problem reporting pregnancies among females 12-19 years and high mortality rates among females between 10-29 years as a result of maternal mortality (GSS, 2014).

1.2 Statement of the Problem

Teenagers represent 22% of Ghana's total population showing a potential for highly educated and trained manpower that would be essential for development and economic growth. **Unfortunately these numbers are not being fully realized in the numbers recorded for literacy and workforce especially among women**. This can be attributed to the high rates of school dropouts due to teenage pregnancies and early marriages. In Ghana, the rates of teenage pregnancy is high. Of all births registered in the country in 2014, 30% were by teenage girls with 14% of this figure comprising of teenage girls aged between 15 and 19 years and the rest 16% between ages 12 and 14 years (GDHS, 2014). In Ekumfi district in the Central regiont of Ghana, pregnancies occurring among females 12-19 years are on the rise. Ekumfi district teenage pregnancy rate among ANC registrants have been 16.4%, 18.5%, 18% and 16.4% for the years 2015, 2016, 2017 and 2018 respectively (DHIMS, 2019). Early marriages either arranged, pushed by parents, or due to circumstances surrounding teenagers are profound contributors to increased teenage pregnancy prevalence (UNFPA, 2019). Even though teenage pregnancy among ANC attendee is high, there is also the possibility that some may not seek ANC services and may terminate the pregnancy altogether. While the true prevalence of teenage pregnancy is not known, the factors contributing to the teenage pregnancy including teenage marriage to have not also been explored in the district. The magnitude of the problem and the factors are necessary for policy makers to fashion appropriate interventions to address the phenomenon in the district.

These girls are therefore at risk of poor pregnancy outcomes (Al-Haddabi et al., 2014). In this district, a high maternal mortality rate is recorded especially among females between the ages of 10-29 (GSS, 2014). Teenage pregnancies and deliveries are accompanied by high risks such as stillbirths, haemorrhages, premature babies, neonatal and maternal morbidity and mortality resulting in the loss of manpower to the nation. These morbidity and mortality rates

are further aggravated by incidences of illegal induced abortion and its risks among these teenagers.

1.3 Research Questions

1. What is the prevalence of teenage pregnancy in Ekumfi?
2. What is the prevalence of teenage marriage in Ekumfi?
3. Is there an association between teenage marriage and prevalence of teenage pregnancy in Ekumfi?

1.4 Objectives of the study

1.4.1 General Objective

To examine the prevalence of teenage pregnancy and its associated factors among teenagers in Ekumfi District.

1.4.2 Specific Objectives

The specific objectives of this study were to:

1. Determine the prevalence of teenage pregnancy.
2. Determine the prevalence of teenage marriage.
3. Estimate the extent to which teenage marriages contributes to teenage pregnancy in Ekumfi.

1.5 Justification

Teenage pregnancy is a public health concern in the Ghana and has both short and long term effects on both mother and child. This research will provide empirical evidence of teenage pregnancy in Ekumfi and add to the entire body of knowledge of teenage pregnancy in Ghana. Research shows that teenage girls aged 15–19 years are twice more likely to die during pregnancy and childbirth compared to women in their twenties, whereas those under

the age of 15 years are five times more likely to die (Habitu et al., 2018; Ochen et al., 2019). Findings of this study will help identify factors associated with teenage pregnancy in Ekumfi. Disseminating such findings would help stakeholders such as chiefs, religious leaders and the District health directorate of Ghana health service and civil society organisations map out mitigating and targeted solutions that can curb the menace of teenage pregnancy and teen marriage. Conducting this study is a relevant pre-requisite to prevention of medical implications such Caesarean births, stillbirths and neonatal mortalities since they are more common in pregnant teenage mothers as compared to mothers between the age of 20 and 29 (Al-Haddabi et al., 2014). This study will help bring to light the factors associated with teenage pregnancy and provide suggestions to assist the decision making process of policy implementers

1.6 Conceptual Framework

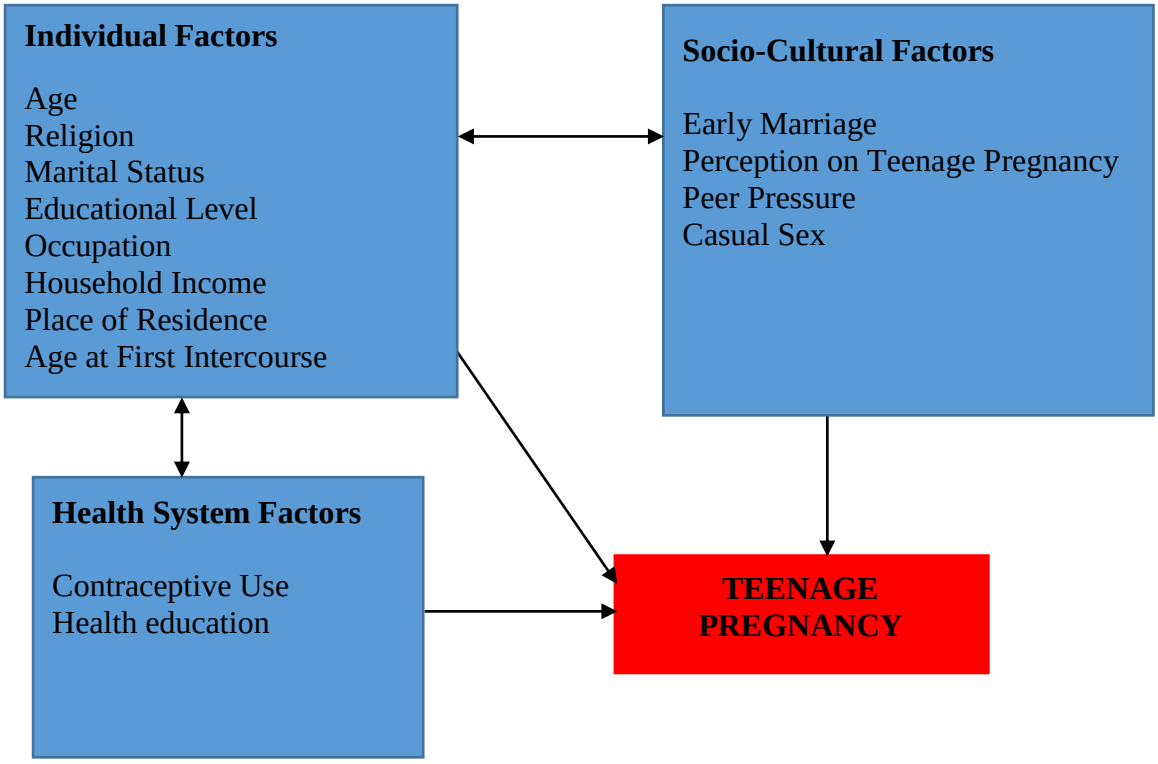

Figure 1: Conceptual Framework of factors associated with Teenage Pregnancy

1.7.1 Narrative of Conceptual Framework

Figure 1 represents the conceptual framework for the study. The model illustrates the relationship between the dependent and independent variables pertaining to the study. Independent variables include sociodemographic factors (age, religion, educational level, occupation, marital status, household income and place of residence)

The educational level attained by teenagers may impact on the knowledge and exposure of the teen girls towards reproductive health information as well as impact early marriages and teen pregnancy. The status of a girl in terms of marriage has been shown to affect teenage pregnancy. A recent study by Yussif et al. (2017) revealed that majority of teen mothers (approximately 83%) who partook in their study were reported to be married while approximately 9% were widowed, 5% were single at the time, while the remainder were

either in a stable relationship or divorced. Low household income or poverty has a role to play in the occurrence of teenage pregnancy. Female adolescents from urban settings have decreased odds of teenage pregnancy compared to their rural counterpart. Even though religion does not seem to have significant statistical correlation with teenage pregnancy, it is obvious that the role of religion in the prevention of the premarital sex is lagging or ineffective implying that teen girls may hide under the tenets of religion but may not be practising what they are taught. Some religious beliefs discourages the use of artificial birth control or family planning methods exposing teenagers to teenage pregnancy. Type of occupation practiced by teenagers influenced the occurrence of teenage pregnancy and unemployment may have positive correlation with adolescent pregnancy

Factors that make up the history of sexual and reproductive health (age at first intercourse, early marriage, contraceptive use, perception on teenage pregnancy, peer pressure and casual sex) contribute to teenage pregnancy. The perception an adolescent has concerning teenage pregnancy may affect the likelihood of getting pregnant at an early age. Perception of an adolescent on issues bordering on teenage pregnancy does not necessarily translate into protective actions. Early marriages are major contributing factors of teenage pregnancies especially in Africa. Early marriage is seen as a means of protecting adolescent girls from engaging in illegal sexual behaviours as well as a display of fertility. Marriages are reported to have happened without the approval of the girls. Although contraceptive use in general may have increased over the years, among teenagers almost one in four males and almost four in ten females do not use a condoms which put them at risk of teenage Pregnancy.

Peer groups have become a source of worry when teenagers are influenced negatively by their peers to take bad decisions and engage in unacceptable social vices and risky sexual behaviour which predispose teenagers to early pregnancy. Age at which an adolescent first

had sex has been shown to affect teenage pregnancy. Adolescents engaged in casual sex without protection exposing them to teenage pregnancy.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

This chapter contains a review of available literature relevant to this study. The chapter discusses results of recent studies done on the epidemiology of teenage pregnancy and its associated factors. These studies are taken from the global and local settings to better understand the matter of study.

2.2 Epidemiology of Teenage Pregnancy

World teenage birth rate stood at 65 per 1000 adolescents whiles in sub-Saharan Africa, it was as high as 140 per 1000 adolescents (WHO, 2016). Bangladesh, Nigeria, Brazil, Congo, United States, Ethiopia and India are countries known to have the highest prevalence of teenage worldwide (Naziru, 2016). In 2013, sub-Saharan Africa had the highest prevalence of teenage pregnancy in the world (UNFPA, 2013b), Also, in 2015, it was estimated that about 21 million girls aged 15 to 19 years and 2 million girls aged under 15 years become pregnant in developing countries around the world (UNFPA, 2015). Half of all births that occurred in sub Saharan Africa were to teenage mothers, with an estimated 101 births per 1000 women aged 15–19, almost double the global average (UNFPA, 2013b). The UNFPA in 2013, stated that because the global population of adolescents continues to grow, projections indicate that the number of teenage pregnancies will increase globally by 2030, with a huge number from Africa. In Ghana, teenage birth rate stood at thirteen percent and averagely one in ten adolescent 15-19 years began childbearing in the urban areas, while double this rate exists in the rural communities. (GSS, GHS & ICF, 2009). It has also been revealed that 12% of adolescent girls between the ages of 15 and 19 years have become pregnant or already given birth (Gyesaw & Ankomah, 2013). This trend continues to exist as the prevalence of adolescent pregnancy is quoted to be 14% among the 15-19 year olds in

2015. Seventeen percent of teenage mothers were found residing in rural areas while those living in Brong Ahafo, Central, and Volta regions accounted for 21-22% (GSS, GHS &ICF, 2015). In the Ekumfi district in the Central Region, teenage pregnancy rate among ANC registrants has been 16.4%, 18.5%, 18% and 16.4% for the years 2015, 2016, 2017 and 2018 respectively (DHIMS, 2019).

2.3 Factors Associated with Teenage Pregnancy

Literature shows that there are numerous factors associated with teenage pregnancy ranging from sociodemographic factors such as age, religion, educational level, occupation, marital status, household income and place of residence as well as factors that make up the history of sexual and reproductive health including age at first intercourse, early marriage, contraceptive use, perception on teenage pregnancy, peer pressure and casual sex.

2.3.1 Socio-Demographic Factors

2.3.1.1 Age

Age has been implicated as an associated factor in issues of teenage pregnancy. According the Centre for Disease and Prevention (2019), a total of 194,377 babies were born to women aged 15–19 years in the United States in 2017 representing a 7% drop from the figure recorded in 2016. Reports also showed that younger teenage girls were likely to be pregnant as compared older teens however birth rates fell by 10% for girls aged 15–17 years and 6% for girls aged 18–19 years (Martin et al., 2018). A study by Yussif et al. (2017) in the Northern part of Ghana on the long-term effects of pregnancy revealed that about 50% of mothers who partook in their study were younger than 20 years and 25% were 25 years or older with the mean age being 21, showing high pregnancy rate among younger girls. In contrast to these findings, a cross sectional study by Habitu et al. (2018) on the prevalence and factors associated with teenage pregnancy in Northeast Ethiopia, they found out that as

the ages of teenage girls increased by one year, the odds of being pregnant increased by 2.1%. This finding is in agreement with results from a national survey in Ethiopia (Central Statistical Agency, 2017), Limpopo Province, South Africa (Motthiba & Maputle, 2012) and a study in Abia State, Nigeria (Nwosu, 2017) revealing that older teen girls were more likely to fall pregnant compared to younger teen girls. Another by Alemu & Vincent (2016) in South Sudan on factors contributing to, and effects of, teenage pregnancy also revealed that majority of teenage pregnancies were recorded in girls between the ages of 17-19 years (80%) whiles those aged 14-16 years recorded 20% with a mean age of 17.5%. This was related to the fact that as adolescent girls increase in age, they will have more exposure to sex and their chance of being married will greatly increase leading to teenage pregnancy and early procreation (Habitu et al., 2018).

2.3.1.2 Educational Level

The level of a girl's education has been named as a factor in teenage pregnancy in a number of studies. Previous and current evidence shows that as the educational level of girls increased, the chance of exposure to pregnancy decreases (Asseta et al., 2015).Studies in Southwestern Nigeria on unmet social needs and teenage pregnancy revealed that the level of education of the teenage girls who took part in the study ranged between below primary school level and tertiary level. Primary level and below represented 25.8%, Junior High 25.3%, Senior High 39.1% and Tertiary level peaking at 9.8% (Salami et al., 2014). Another trend observed in Juba (Alemu & Vincent, 2016) reported that 8% of pregnant teenagers have never been to school, 46% did not complete primary school, 12% completed primary school, and 26% did not complete senior high school while only 8% completed senior high school. Fifty-four percent of them reported that they dropped out of school because they were pregnant. Habitu et al. (2018) in their paper recorded 1% for pregnant teens in college, 19.6% in Secondary school, 61.7% in primary and 17.7% with no educational background. A study

in Southern Ethiopia also reported that a total of 62.3% pregnant teen girls were in grade nine and ten while 37.7% were pupils in grade eleven and twelve (Mathewos & Mekuria, 2018). The educational level attained by teenagers may impact on the knowledge and exposure of the teen girls towards reproductive health information (Salami et al., 2014) as well as impact early marriages and teen pregnancy (Adebusoye, 2011).

2.3.1.3 Marital Status

The status of a girl in terms of marriage has been shown to affect teenage pregnancy. A recent study by Yussif et al. (2017) revealed that majority of teen mothers (approximately 83%) who partook in their study were reported to be married while approximately 9% were widowed, 5% were single at the time, while the remainder were either in a stable relationship or divorced. Similar results were attained by Alemu & Vincent (2016) stating that 86% of teenage mothers were married women, 10% were single while an equal of 2% were either divorced or widowed. Salami and colleagues also revealed that 39.7% of the respondents were married, 47.7% were single while 12.6% were separated showing a disparity with earlier results. This is similar to results from Habitu et al. (2018) and CSA (2017) stating that an average of 30% of teenage mothers were married, 47.2% were single , 0.6% were widowed while 12.3% were divorced. Another study also argues that approximately 90% of teenage pregnancies in the developing world happen to girls who are married (Ayuba & Gani, 2012) implying that these pregnancies may be planned. This is in line with reports from the WHO (2014) and Ezegwui et al. (2012) stating that majority of teenage pregnancies are planned due to marriage. Reports by Ayuba & Gani, (2012) reveal that the high number of teenage pregnancies recorded in marriage are as a result of high exposure to sex and pressure to conceive quickly after marriage as per African culture.

2.3.1.4 Household Income

According to Kagan (2019), household income is the combined gross income of all persons 15 years or older living together in a household whether related or unrelated. Household income has also been named as a factor associated with teenage pregnancy. This position has been consistent over time with various studies agreeing that low household income or poverty has a role to play in the occurrence of teenage pregnancy. A study in South Africa revealed that majority (65%) of teen mothers were from poor households while only a few teenage females were from households without poverty (Mkwananzi, 2015). He furthered stated that most (63%) study participants hailed from households where the head of the house was unemployed while only 37% of the teenage girls were from households with heads that were employed. High levels of poverty he documented increased the likelihood of teenage pregnancy because poverty is related to lower levels of education, lower access to contraceptives, fewer options of protective activities (sport, curricular activities, interests, hobbies) and higher levels of social ills. Other studies done in Uganda (Uganda Bureau of Statistics, 2011; Ochen et al., 2019), Nigeria (Amoran, 2012) and Sri Lanka (Dulitha et al., 2013) also document this trend. A qualitative study in Chorkor, a suburb of Accra Ghana, (Gyan, 2013) indicated that out of the 55 respondents, 94% agreed that poverty influences adolescent pregnancy mainly because majority of the teen girls were found exchanging sex for gift or money. Indications also show that teenagers from poor households have 2.7 times greater odds of engaging in premarital sex which mostly lead to teenage pregnancy compared to those from rich households (Boamah, 2013). There is growing concern that physical neglect of teenage girls due to poverty could foster relationships with older men which is seen as more beneficial when daily needs such as food, shelter, clothing and money are not met by parents/caregivers (Harner, 2016).

2.3.1.5 Place of Residence

Place of residence has been found to be associated with adolescent pregnancy in numerous studies. A recent comparative study done by Asare et al. (2019) in Sunyani, Ghana revealed that female adolescents from urban settings have decreased odds of teenage pregnancy compared to their rural counterpart. This finding is consistent with the reports from the 2014 Ghana Demographic Health Survey, which emphasized that teenagers in rural areas have greater likelihoods of childbearing at an early age (Ghana Statistical Service, 2014). Other reports from across sub-Saharan African countries have identified rural residence as a factor in the increase of teenage pregnancy (Odimegwu & Mkwananzi, 2016). A meta-analysis done by Kassa et al. (2018) also showed that adolescent girls who reside in rural areas were two times more likely to be pregnant as compared to adolescent girls living in urban areas. Habitu et al. (2018) in their paper also identified residence as a statistically significant variable in relation to teenage pregnancy. They resolved that rural settlements had higher rate of adolescents' pregnancy as compared to urban settlements. They stated that the rural settlements have a high prevalence of early marriage which could be reason for the corresponding rate of teen pregnancy. However, a study in Canada by Sekharan et al. (2015) stated contrary to the above reporting that even though place of residence was associated with adolescent pregnancy, it did not have a strong correlation. Mathewos & Mekuria (2018) in their paper recorded a high rate of teen pregnancy in urban centres in Southern Ethiopia compared to rural setting. However, they also stated a non-significant relationship with teenage pregnancy. Rural locations have been documented to be frequently associated with poverty, and the practices of cultural and traditional beliefs which promote early marriage and childbirth (Odimegwu & Mkwananzi, 2016).

2.3.1.6 Religion

Another factor that has been associated with teenage pregnancy is religion. However, there has been inconsistent relationship found between these two variables. Asare et al. (2019) on the factors associated with teenage pregnancy revealed in their study that even though Christians were the majority of participants (72.5%), while Muslims were the minority (27.5%), none of these religious groups showed any significant association with the occurrence of teenage pregnancy. In another study, teenager mothers were either Orthodox (38.6%), Protestant (37.5), Muslim (19.3) or others (4.7%) religious affiliations (Mathewos & Mekuria, 2018). However, none of these religious affiliations had a positive link with teenage pregnancy. Even though religion does not seem to have significant statistical correlation with teenage pregnancy, it is obvious that the role of religion in the prevention of the premarital sex is lagging or ineffective (Muhammed et al., 2017) implying that teen girls may hide under the tenets of religion but may not be practising what they are taught. A study in the Niger Delta of Nigeria revealed that religious beliefs discourages the use of artificial birth control or family planning methods (Isa & Gani, 2012) exposing them to teenage pregnancy.

2.3.1.7 Occupation

Occupation has been found to be associated with adolescent pregnancy. Unemployment is a common trend in both past and recent research papers on teenage pregnancy (Alemu & Vincent, 2016; Yussif et al., 2017; Assefa et al., 2015; Amoran, 2012; Habitu et al., 2018; Nwosu, 2017). A study done in Sudan on factors contributing to, and effects of, teenage pregnancy (Alemu & Vincent, 2016) revealed that of the pregnant teenagers who took part in the study, 4% were unemployed, 2% were students while 86% were acting as house wives. They however stated no strong correlation with the occurrence of teenage pregnancy. Another study on the long-term effects of adolescent pregnancies in a community in Northern

Ghana revealed that majority of these pregnant teenagers engaged in petty trading (Yussif et al., 2017), but this did not show any statistical correlation with adolescent pregnancy. Contrary to these findings, the type of occupation practiced by teenagers influenced the occurrence of teenage pregnancy (Assefa et al., 2015; Amoran, 2012; Habitu et al., 2018). Habitu et al. (2018) revealed that 33.7% of the teenage mothers were farmers, 7.6% were housewives, 3.5% were merchant, and 6% were daily labourers while 49.2% were students. They further stated that unemployment had positive correlation with adolescent pregnancy. This finding is in line with results from Nigeria stating a higher employment rate of 75.8% (Nwosu, 2017). Unemployment impedes access to contraceptives exposing them to higher chances of teenage pregnancy.

2.3.2 History of Sexual & Reproductive Health

2.3.2.1 Perception on teenage pregnancy

The perception an adolescent has concerning teenage pregnancy affects the likelihood of getting pregnant at an early age. A previous study by Alemu & Vincent (2016) assessed the perception of teenage mothers on teenage pregnancy. They assessed their perception on risk, prevalence, stigmatisation and chastity. On the issue of risk, 80% of the teenagers answered yes, 6% had no opinion while 14% answered no to whether they think teenage pregnancy is risky. Based on prevalence, 94% answered yes, 2% had no opinion while 4% answered no to the question of whether teenage pregnancies commonly occur in their community. On the topic of stigmatisation, they were asked if pregnant teenagers suffer stigma and isolation. Sixty percent answered yes, 14% said they had no opinion while 13% stated no as answer. They were also question on chastity asking whether sex permitted is before marriage in their culture. Eighteen percent answered yes while 82% answered no to the question. They argued that the perception of an adolescent on issues bordering on teenage pregnancy does not necessarily affect translate into protective actions. Family history of teenage pregnancy has

also been shown to affect perception of teenagers concerning teenage pregnancy. Research states that daughters and sisters of childbearing adolescents have a higher likelihood of teenage pregnancy as compared to those who do not have a family history of teenage pregnancy (Baafi, 2015). Baafi (2015) argued that socialization and social theories play a role in the intergenerational transmission of early childbearing due to their mother's marital instability and reduced parenting ability as well as poorer socioeconomic environment in which young mother raise their children.

2.3.2.2 Early Marriages

Early marriages are major contributing factors of teenage pregnancies especially in Africa. Most traditions and cultures in Sub-Saharan Africa encourages teenage marriages and parenting using physical development as the measurement of maturity (). Chad, Mali, Niger, Nigeria, South Asian Yemen, Bangladesh, India, Turkey and Ghana report high rate of early marriages. Early marriage is seen as a means of protecting adolescent girls from engaging in illegal sexual behaviours as well as a display of fertility (UNICEF, 2011; Shuaib et al., 2011). Most of these marriages are reported to have happened without the approval of the girls while those with approval were based on elopement or love (Kost & Henshaw, 2014; Ceylan, 2014). In Ghana's 2010 Population and Housing Census, it was revealed that 5.2% of adolescents between ages 12 and 14 are married with 9% of adolescents girls between the ages of 15 and 19 years were also married (GSS, 2012). Results from a meta-analysis done on teenagers in Africa (Kassa et al., 2018) also showed that married adolescents were more than twenty times more likely to start childbearing during adolescence age than adolescents who were never married, In other cases, guardians or parents were found forcing their teenage girls into marriage for payment of dowry as a source of income in Uganda (Ochen et al., 2019). Most countries in Sub-Saharan countries expect a woman who gets married to start having children right away forcing married adolescents to be victims of teenage pregnancy.

Social status and identities of women in most Sub-Saharan Countries are tied to motherhood and childlessness is highly stigmatized, preventing most married adolescents from using any form of contraception (Hindin & Fatusi, 2009).

2.3.2.3 Contraceptive Use

Contraceptive use among teenagers in the United States has increased since the 1990s, but reports show that many are inconsistent users revealing that of those who had sex in the past month, almost one in four males and almost four in ten females did not use a condom (Martinez et al., 2011) translating into the numbers recorded for teenage pregnancy. These figures are even worse in the developing countries across the globe especially in sub Saharan Africa. Ghana for example, records high knowledge concerning the existence of contraceptives with results indicating that the television is the main source of contraceptive knowledge (56.2%) (Beson et al., 2018). However, this knowledge does not translate into utilisation of the methods. Various behaviour change communication or social marketing strategies in the form of visual and audio advertisements flood the Ghanaian society (Hayat et al., 2013) in recent times increasing awareness but unfortunately this is not represented in the use of contraceptives with the 2008 Ghana Demographic Health Survey reporting low contraceptive use among adolescents (24.0% among females and 39.0% among males). These figures are influenced by numerous factors including knowledge of contraceptive methods and their use, access, sociodemographic characteristics, and negotiation skills of the persons involved (Boamah et al., 2014). A study in Kintampo in consistence with previous finding revealed that knowledge of at least one contraceptive method was high (88.9%) among adolescents (males 92.1% and females 86.6%) and 22.9% of adolescents used contraceptives consistently while 44.1% used contraceptives sometimes. Knowledge and use of male condoms was highest (84.0% and 82.0% respectively) followed by pills (7.9%), injection (0.9%), and foam (0.3%). Although some adolescents reported ever using a

contraceptive method in this survey, consistent contraceptive use was very low (Boamah et al., 2014). Another study in Bolgatanga in the Upper East Region of Ghana revealed minimal contraceptive use among school going adolescents where 74.7% of males and 82.1% of females reported no use of any contraceptive method posing them at high risk for unwanted pregnancies and sexually transmitted infections (Rondini & Krugu, 2009).

2.3.2.4 Peer Pressure

During the period of adolescence, teenagers associate and create groups with other teenagers around the same age with common interest referred to as a peer group. These groups play very vital roles in the life of teenagers especially pertaining to finding their identities and the decisions they are influenced to take by their peers. They also provide a means of social acceptance to the adolescents. Peer groups become a source of worry when teenagers are influenced negatively by their peers (Naziru, 2016) to take bad decisions and engage in unacceptable social vices and risky sexual behaviour. Naziru (2016) in his study stated that teenagers who have sexually active, aggressive, poor in school, low in popularity and older friends are several times more likely to fall pregnant since they may be pressurized into early sex by peers. Another problem is the lack of proper and complete sex education. Sex education for adolescents in most parts of the world especially Africa is seen to be a taboo. Many parents, cultures and societies frown on discussing sexual matters with their adolescents. This exposes them to the ills of advices given to them by their ignorant peers. He also revealed that teenagers who are likely to fall prey to pressures of engaging in sex lack appropriate negotiation skills to decide what is best for them and they are also highly concerned about how their peers feel about their sexuality.

2.3.2.5 Age at First Sexual Intercourse

Age at which an adolescent first had sex has been shown to affect teenage pregnancy. A Philippine study revealed that, 73% of all young mothers had their first sex experience as teenagers, and almost three-quarters of these women also experienced their first pregnancy before their 20th birthday (Habito et al., 2019). A previous study stated that as the girls grew older, the chances of having their initial sex experience increased citing the mean age when sex started to be 15.9 ±1.5 years (Alemu & Vincent, 2015). Of the teenagers interviewed 38% had their first sexual intercourse between 17-19 years, 54% between 14-16 years and 8% between 11-13 years, indicating a high risk of pregnancy for those within the ages of 14-16 years. Habitu et al. (2018) showed that 38.6% of the respondents had sexual intercourse before 15 years of age with the median age at first sex being 15.8 years. Another study in the same area stated that 62.9% of teenage mothers started sexual intercourse at the age of 17 years and above (Mathewos & Mekuria, 2018).

2.3.2.6 Casual Sex

According to the Oxford dictionary, casual sex is sexual activity between people who are not established sexual partners or do not know each other well. This is popularly referred to as a one night stand. A study by Habito et al. (2019) on the issue of adolescent sexual initiation and pregnancy in Philippines discovered that majority of teens engage in a one night stand from time to time, some cited their first sexual encounter to be casual. They further revealed that these adolescents engaged in casual sex without protection exposing them to teenage pregnancy. Qualitative researchers have also noticed a shift in young people's relationships compared to previous generations. The older generation cherished formal courtship and introduction to parents but this is not the case of young people now. They have forgone what is right in favour of "informal and casual encounters" with friends (Gipson et al., 2012) as well as strangers mostly without protection exposing them to teenage pregnancy. Alcohol and

drug facilitation are often cited as catalyst for unplanned and unprotected sex (Gipson et al., 2012; Livingston et al., 2015). It is important to acknowledge that in recent times, teenagers are having sex both within and outside of marriage and informal unions hence the need for intensive sex education and the enforcing the use of contraceptives. Sex education for adolescents in most parts of the world especially Africa is seen to be a taboo. Many parents, cultures and societies frown on discussing sexual matters with their adolescents but this is important to help curb teenage pregnancy. Results from studies (Harner, 2016; Ochen et al., 2019) reveal another form of casual sex but this time un-consensual. Sexual abuse puts girls at higher risk of experiencing teenage pregnancy. These abuses come in the form of harassment and rape citing poor physical fitness to be a major cause of sexual abuse. Nguyen et al. (2016) also cited experiences of domestic violence as a causative factor of teenage pregnancy especially with teen marriages. CDC (2019) reports that almost 3 million women in the US experience Rape Related Pregnancy (RRP). Thirty percent of such cases reported reproductive coercion, a situation whereby their partners tried to get them pregnant when they did not want to or tried to stop them from using birth control.

CHAPTER THREE

3.0 METHODOLOGY

3.1 Introduction

This chapter presents the methods and procedures that were employed in this study. It includes the study design and study location, study population, sample size, sampling techniques, data collection techniques and tools, ethical considerations and data processing and analysis.

3.2. Study Design

This study employed a Community-based cross-sectional study (quantitative approach) to determine the prevalence of teenage pregnancy, prevalence of teen marriages, and the effect of teen marriages on teenage pregnancy adjusting for other factors. The cross-sectional approach is appropriate for the study since exposure and outcome will be measured simultaneously. The study was carried out from August, 2020 to September, 2020.

3.3 Study Location

"The study was conducted in the Ekumfi District in the Central Region of Ghana. The district was established in June 2012, when it was carved out of the Mfantsiman Municipal District. The district is bordered to the north by Ajumako/Enyan/Essiam District, to the east by Gomoa East District, to the south by the Gulf of Guinea, and to the west by Mfantsiman Municipal District. The total surface area of the district is 276.65 square kilometres with a population of 52,231 (PHC, 2010) representing 2.4 percent of the region's total population. Males constitute 46.1 percent and females represent 53.8 percent. About ninety percent of the population (89.4%) is rural. The population of the District is youthful (42.3%) depicting a broad base population pyramid which tapers off with a small number of elderly persons (8.5%). The total age dependency ratio for the District is 103.0, the age dependency ratio for males is higher (111.3) than that of females (96.3). The Total Fertility Rate for the District

4.0. The General Fertility Rate is 111.3 births per 1000 women aged 15-49 years which is the ninth highest for the region. The Crude Birth Rate (CBR) is 24.7 per 1000 population".

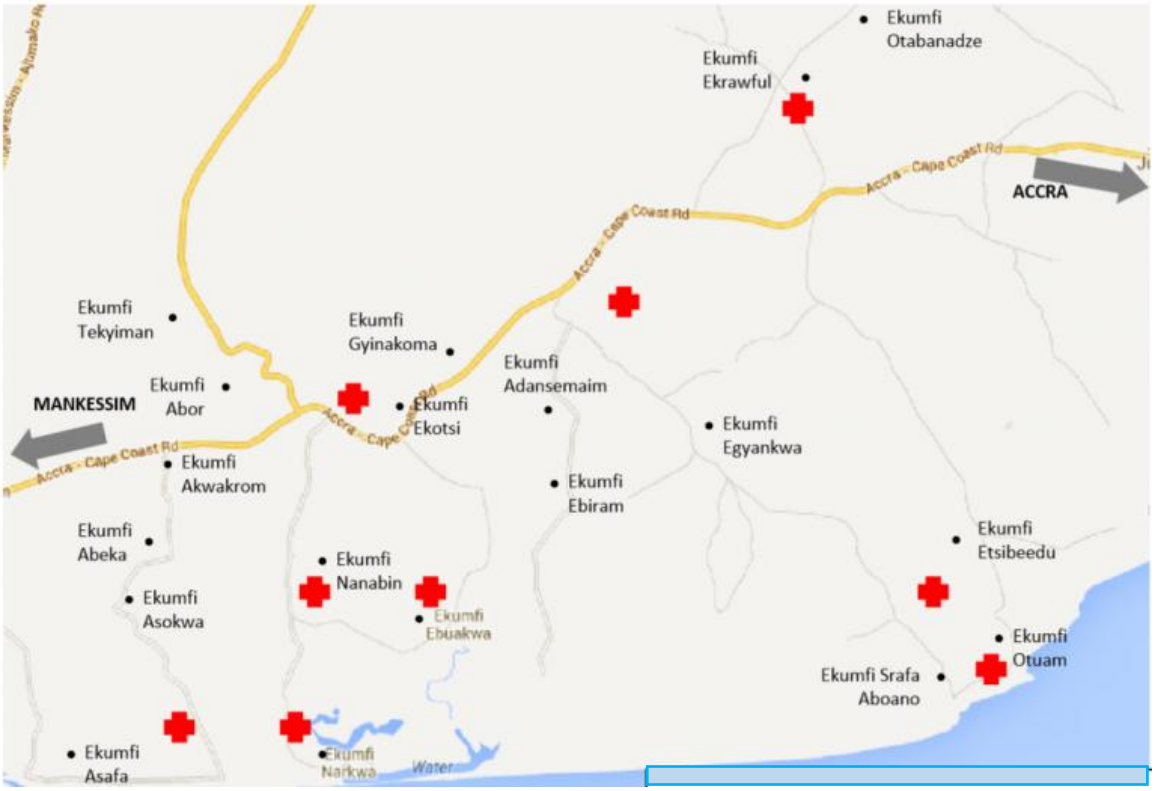

Figure 2: Map of Ekumfi District (Source: Global Brigades)

3.4 Study Population

The study population consist of all teenaged girls. The calculated sample size was selected from teenage girls living in households in the Ekumfi district

3.4.1. Inclusion Criteria

1. Teenage girls between 15-19 years.

2. Teenage girls who are permanent residents in Ekumfi.

3.4.2. Exclusion Criteria

1. Teenagers who were ill at the time of the study were excluded

3.5 Sample Size Calculation

The sample size was determined using the Cochran's formula.

N_o = minimum sample size

z = standard normal score (1.96) for a 95% confidence level

p = prevalence of teenage pregnancy = 28.6% (Habitu et al., 2018)

q = 71.4%

e = degree of precision, set at 5% = 0.05

$$N_o = \frac{z^2 pq}{e^2}$$

N_o = **328**

This number was increased to **368** to make up for possible **10% non-response rate.**

3.6 Sampling Method

This study made use of multi stage sampling approach to enrol study participants.

Firstly, two of the sub-districts in Ekumfi were randomly selected. These were Essuehyia, an urban sub district and Ekrawfo, a rural sub district. According to the Ekumfi district population for health and their catchment area 2020, the population of persons aged 15-49 was 1214 and 258 for Essuehyia and Ekrawfo respectively. A population proportionate to size sampling approach was used to divide the calculated sample size of 368 into the two selected sub-districts - 304 for Essuehyia and 64 for Ekrawfo. In each selected sub-district, one community was selected at random from a list of communities in the sub-district. Abirim was a selected community in the Essuehyia sub district. However, Ekrawfo does not

have any other communities hence was selected by default. Following this, all consecutive household were visited within the selected community in a systematic order. This was done with the help of an assembly member of the selected community. The assembly member assisted by indicating the first house at the point of entry into the community, after which all consecutive households were visited to find teenagers aged 15 - 19 years for the study. In each household, only one eligible teenager was enrolled into the study. For households that have more than one eligible teenager, there was random selection of one teenager through balloting.

3.7 Data Collection Tools and Methods

A structured questionnaire was used to elicit information from study participants. This questionnaire had two sections. The first part of the questionnaire focuses on Socio-demographic characteristics of participants. The other section elicited information on History of Sexual & Reproductive Health. Before administration of questionnaires, the aim of the study was explained to all respondents to ensure there was full comprehension and to rule out any form of ambiguity. The questionnaires were administered by the principal investigator with the help of three trained research assistants on a one-on-one basis. The questionnaire was administered in English Language for literate teenage and translated into Twi/Fante for non-English literate teenagers using a formal forward and backward translation. Each questionnaire took approximately 15 minutes to answers.

3.8 Study Variables

3.8.1 Dependent Variables

Self-reported teenage pregnancy was the dependent variable.

3.8.2 Independent variables

These include;

Socio-demographic Factors

Age, Religion, Marital Status, Educational Level, Occupation, Household Income, Place of Residence

History of Sexual & Reproductive Health Factors

Age at First Intercourse, Early Marriage, Contraceptive Use, Perception on Teenage Pregnancy, Peer Pressure, and Casual Sex

3.9 Quality control

Quality control measures that was employed to ensure sanity of the data includes a two-day training of research assistants on data collection methods the study, ethics of research, data entry and data validation.

Pretesting of the questionnaire was done at Cape Coast. All anomalies, questions with ambiguity and typographical errors were corrected before actual data collection.

After data collection, the data was sorted, coded and entered into Microsoft excel. The data was cleaned and then exported into Stata version 16.0 file (Stata Corporation, Texas, USA) before analysis.

3.10 Data Analysis

Frequency distribution was done to compute proportions on sociodemographic factors. Mean ages of the teenagers and mean household income and their respective standard deviations was computed. Tests of association on factors influencing teenage pregnancy was done using Chi Square/simple logistic regression. The association between prevalence of teenage pregnancy and each independent variable was analyzed using multiple logistic regression analysis with statistical significance set at p-values ≤ 0.05. This was done by first running a bivariate analysis (Chi Square/simple logistic regression) between teenage pregnancy prevalence and all the independent variables selecting those with p-values ≤ 0.2. These were

fitted in a final multiple logistic regression model to assess the strength of association looking at Adjusted Odds Ratio (AOR) with 95% confidence interval (CI).

3.11 Ethical Consideration

Ethical Clearance: Approval from Ghana Health service Ethical Review Committee

Permission: Permission from the Authorities at the District health directorate, community leaders (Chiefs and Assembly members).

Informed Consent: Written consent was sought from eligible participants after explaining the benefits and risks involved in participation. For individuals aged below 18, parental assent was sought from parents /guardian before enrollment into the study. Participants were made to understand that, participation is purely voluntary hence they can opt out at any time and this would not affect them in any way.

Compensation: They were also made to understand that, there was compensation involved in participating in the study. Individuals who participated in the study by answering questionnaires were given deodorants/ hand sanitizers worth not more GH¢ 3.00 as compensation for their time spent.

Confidentiality: Participants were allowed to answers the questionnaires at convenient places of choice to ensure privacy. In ensuring anonymity, participants were identified with codes and numbers. No information regarding participants' name or any other information that traces the data collected to the participants was taken. Participant information was kept on a computer with a secured password. Filled questionnaires were kept under lock and key, with only the principal investigator having access.

Benefits: Participating in this study gave participants an opportunity to gain some knowledge and awareness on teenage pregnancy since each participant was educated after data collection.

Risks: This research came with no risk that borders on physical damage to the participant except the risk of having to share information which may seem personal.

Cost: This study did not come to participants at any cost except the precious time that was spent answering the questionnaire.

Conflict of Interest: There is no conflict of interest.

CHAPTER FOUR

4.0 RESULTS

4.1 Socio-demographic characteristics of respondents

The descriptive statistics of 368 teenagers is shown in table 4.1 below. The mean age of these teenagers at the time of survey was 16.4 years ± 2.0SD. Majority of the teenagers 251(68.2%) were single. The age at which respondents got married was 17.3 years ± 0.9SD. Majority of the respondents 310(84.2%) were unemployed. Out of the 368 respondents, 221(60.1%) had had up to primary education. Most of the respondents 312(84.8%) indicated 0 – GH₵ 500 as monthly income earned as a household. Nearly seventy six percent 278(75.5%) of respondents were Christians. Majority of the respondents 360 (97.8%) resided in rural areas with 32.1% residing with both parents. More than half 202(54.9%) of the teenagers receive money from persons they are residing with. Also, 56.8% of respondents had no restriction in their movement with a further 56.0% indicating low levels of restriction. Majority of the respondents 308(83.7%) had never taken alcohol.

Table 4.1 Socio-demographic characteristics of respondents (n = 368)

Variables	Frequency	Percent (%)
Age in years (M ± SD)	16.4 ± 2.0	
Marital status		
Married	29	7.9
Cohabiting	88	23.9
Single	251	68.2
Age at marriage (M ± SD)	17.3 ± 0.9	
Employment		
Employed	58	15.8
Unemployed	310	84.2
Occupation		
Food vendor	10	17.3
Hairdresser	12	20.7
Seamstress	6	10.3
Trader	30	51.7
Educational level		
Vocational	29	7.9
Primary	221	60.1
Junior High School	113	30.7
Senior High School	5	1.4
Household income (GH₵)		
0 - 500	312	84.8
501 - 1000	51	13.9
1001 - 1500	2	0.5
>1500	3	0.8
Religion		
Christian	278	75.5
Muslim	90	24.5
Residence		
Rural	360	97.8
Urban	8	2.2
Resident with		
Both parents	118	32.1
One parent	93	25.3
Sibling	25	6.8
Grandparent	28	7.6
Alone	20	5.4
Partner/boyfriend	77	20.9
Relative	7	1.9

Table 4.1 Socio-demographic characteristics of respondents (n = 368)		
Variables	Frequency	Percent (%)
Financial support from provider/person being resided with		
Gives me money	202	54.9
Fend for myself	166	45.1
Restriction of movement		
Yes	159	43.2
No	209	56.8
Level of restriction		
High	60	16.3
Moderate	102	27.7
Low	206	56.0
Alcohol consumption		
Occasionally	60	16.3
Never	308	83.7

4.2 Prevalence of teenage pregnancy

Out of the 368 respondents, 15.8% had ever been or are currently pregnant (95% CI = 12.2 – 19.9).

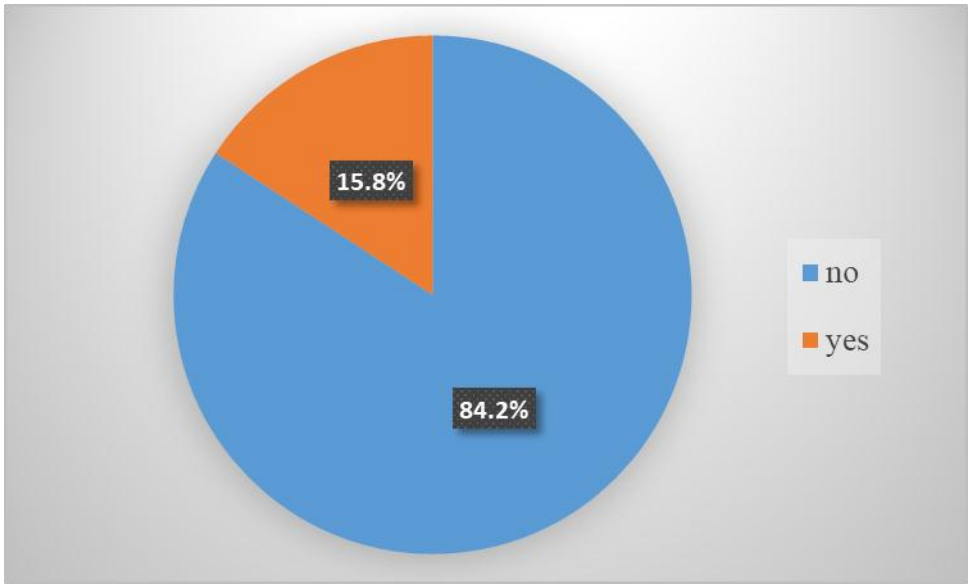

Figure 4.2 Proportion of teenage pregnancy among respondents

4.3 Socio-demographic characteristics associated with teenage pregnancy

The age of respondents ($p < 0.001$), marital status ($p < 0.001$), age at marriage ($p = 0.001$), employment status ($p = 0.007$), educational level ($p = 0.029$) and resident with ($p < 0.001$) were the socio-demographic characteristics associated with teenage pregnancy after a Chi-square/Fischer's exact test and a two sample t-test. (See Table 4.3).

Table 4.3a Socio-demographic characteristics associated with teenage pregnancy

Variables	Teenage pregnancy		χ^2
	Yes (n = 58)	No (n = 310)	p-value
Age in years	18.3 ± 0.74	16.0 ± 1.95	**0.000***
Marital status			**0.000***
Married	13(22.4)	16(5.2)	
Cohabiting	24(41.4)	64(20.7)	
Single	21(36.2)	230(74.2)	
Age at marriage (n = 82)	17.7 ± 0.70	17.0 ± 0.96	**0.001***
Employment status			**0.007***
Employed	16(27.6)	42(13.5)	
Unemployed	42(72.4)	268(86.5)	
Educational level			**+0.029***
Vocational	5(8.6)	24(7.7)	
Primary	43(74.1)	178(57.4)	
Junior High School	9(15.5)	104(33.6)	
Senior High School	1(1.7)	4(1.3)	
Household income			+0.560
0 - 500	53(91.4)	259(83.6)	
501 - 1000	5(8.6)	46(14.8)	
1001 - 1500	0(0.0)	2(0.7)	
> 1500	0(0.0)	3(0.9)	
Religion			0.467
Christian	46(79.3)	232(74.8)	
Muslim	12(20.7)	78(25.2)	

Table 4.3b Socio-demographic characteristics associated with teenage pregnancy

Variables	Teenage pregnancy		χ^2
	Yes (n = 58)	No (n = 310)	p-value
Residence			
Rural	58(100.0)	302(97.4)	
Urban	0(0.0)	8(2.6)	
Resident with			**0.000***
Both parents	8(13.8)	110(35.5)	
One parent	3(5.2)	90(29.0)	
Sibling	2(3.5)	23(7.4)	
Grandparent	1(1.7)	27(8.7)	
Alone	5(8.6)	15(4.8)	
Partner/boyfriend	34(58.6)	43(13.9)	
Relative	5(8.6)	2(0.7)	
Financial support from provider/person being resided with			0.963
Gives me money	32(55.2)	170(54.8)	
Fend for myself	26(44.8)	140(45.2)	
Restriction of movement			0.396
Yes	28(48.3)	131(42.3)	
No	30(51.7)	179(57.7)	
Level of restriction			0.404
High	12(20.7)	48(15.5)	
Moderate	18(31.0)	84(27.1)	
Low	28(48.3)	178(57.4)	
Alcohol consumption			**0.001***
Occasionally	18(31.0)	42(13.6)	
Never	40(69.0)	268(86.4)	

[+] (fisher's exact) *(statistically significant, p≤0.05)

4.4 Sexual history and reproductive health factors associated with teenage pregnancy

The proportion of teenagers who were sexually active was found to be 36.7% (135/368). The age at which sex was first traded for gifts from a man ($p < 0.001$), contraceptive use ($p < 0.001$), current usage of contraceptives ($p < 0.001$), discussion of pregnancy prevention with parents ($p < 0.001$) and information received on pregnancy prevention from health workers ($p = 0.006$) are the sexual history and reproductive health factors associated with teenage pregnancy as shown in table 4.4.

Table 4.4a Sexual history and reproductive health factors associated with teenage pregnancy

Variables	Teenage pregnancy		χ^2
	Yes (n = 58)	No (n = 310)	p-value
Sexually active			**0.000***
No	0(0)	233(75.2)	
Yes	58(100.0)	77(24.8)	
Age at first sex (n = 135)	15.2 ± 1.64	15.3 ± 1.34	0.851
Trading sex for gifts from a man (n = 135)			+0.284
Yes	46(79.3)	51(66.2)	
No	10(17.2)	18(23.4)	
Don't know	2(3.5)	5(6.5)	
No response	0(0)	3(3.9)	
Age at which sex was traded for gifts from a man (n = 135)	17.3 ± 0.95	16.3 ± 0.93	**0.000***
Average number of sexual partners per week (n = 135)	1.2 ± 0.51	1.21 ± 0.41	0.698
Age of first menstruation	12.9 ± 0.71	12.9 ± 0.74	0.616
Contraceptive use			**0.000***
Yes	24(41.4)	219(70.7)	
No	34(29.4)	91(29.3)	

Table 4.4b Sexual history and reproductive health factors associated with teenage pregnancy

Variables	Teenage pregnancy		χ^2
	Yes (n = 58)	No (n = 310)	p-value
Current usage of contraceptives			**0.000***
Yes	31(53.5)	250(80.6)	
No	27(46.5)	60(19.4)	
Discussion of pregnancy prevention with parents			**0.000***
No	32(55.2)	88(28.4)	
Yes	26(44.8)	222(71.6)	
Information received on pregnancy prevention from health workers			**0.006***
Yes	11(19.0)	117(37.7)	
No	47(81.0)	193(62.3)	
Received information on pregnancy prevention from school			0.573
No	38(65.5)	191(61.6)	
Yes	20(34.5)	119(38.4)	
Received information on pregnancy prevention from media			0.452
No	35(60.3)	203(65.5)	
Yes	23(39.7)	107(34.5)	

+ (fisher's exact) *(statistically significant, p≤0.05)

4.5 Perception associated with teenage pregnancy

From table 4.5, none of the perception factors was found to be associated with teenage pregnancy.

Table 4.5 Perception associated with teenage pregnancy

Variables	Teenage pregnancy		
	Yes (n = 58)	No (n = 310)	p-value
Teenage pregnancy is risky			+0.057
Yes	54(93.1)	291(93.8)	
No	4(6.9)	7(2.3)	
No idea	0(0.0)	12(3.9)	
Pregnant teenagers suffer stigma and isolation			+0.415
Yes	52(89.7)	287(92.6)	
No	5(8.6)	14(4.5)	
No idea	1(1.7)	9(2.9)	
Culture does not allow pre-marital sex			+0.493
Yes	44(75.9)	252(81.3)	
No	12(20.7)	46(14.8)	
No idea	2(3.4)	12(3.9)	
Family allowance of teenagers to get pregnant			+0.547
Yes	7(12.1)	39(12.6)	
No	51(87.9)	261(84.2)	
No idea	0(0.0)	10(3.2)	
Sex with random men without protection			0.144
Yes	17(29.3)	64(20.6)	
No	41(70.7)	246(79.4)	
Influence of friends to engage in sexual activity			0.228
Yes	19(32.8)	78(25.2)	
No	39(67.2)	232(74.8)	

+ (fisher's exact) *(statistically significant, p≤0.05)

4.6 Factors associated with teenage pregnancy

The results from a multiple logistic regression of factors associated with teenage pregnancy is shown below in table 4.6. A one year increase in age increased the odds of respondents being

pregnant by nearly 3 fold (cOR = 2.71; 95% CI = 2.02 – 3.63; p < 0.001). However, after adjusting for all other variables (marital status, employment status, educational level, resident with, alcohol consumption, contraceptive use, current usage of contraceptives, received information on pregnancy prevention from health workers), a one year increase in age increased the odds of respondents being pregnant by 2.56 times (aOR = 2.56; 95% CI = 1.72 – 3.80; p < 0.001).

Married teenagers had significantly 8.89 times the odds of being pregnant as compared to teenagers who were single (cOR = 8.89; 95% CI = 3.78 – 20.98; p < 0.001). Also, cohabiting teenagers had significantly 4.11 times the odds of being pregnant as compared to teenagers who were single (cOR = 4.11; 95% CI = 2.15 – 7.85; p < 0.001). However, after adjusting for all other variables, this association was found not to be significant.

The odds of respondents who were unemployed being pregnant was significantly reduced by 59% (cOR = 0.41; 95% CI = 0.21 – 0.79; p = 0.008) but this association was not significant after adjusting for all other variables.

Teenagers who lived alone (cOR = 4.58; 95% CI = 1.33 – 15.85; p = 0.016), lived with their partner/boyfriend (cOR = 10.87; 95% CI = 4.66 – 25.36; p < 0.001) and those who lived with their relative (cOR = 34.38; 95% CI = 5.74 – 205.89; p < 0.001) had significantly 4.58 times, 10.87 times and 34.38 times respectively the odds of being pregnant as compared to those who reside with both parents. However, after adjusting for all other variables, teenagers who reside with their relative had significantly 8.78 times the odds of being pregnant as compared to those who reside with both parents (aOR = 8.78; 95% CI = 1.27 – 60.62; p = 0.028).

Respondents who had never consumed alcohol had significantly 65% reduction in their odds of being pregnant as compared to those who occasionally consume alcohol (cOR = 0.35; 95% CI = 0.18 – 0.66; p = 0.001). After adjusting for all other variables, this association turned out not to be significant.

The odds of teenagers being pregnant was significantly reduced by 71% among teenagers who use contraceptives compared to those who do not use contraceptives (cOR = 0.29; 95% CI = 0.16 – 0.52; p < 0.001). This association was found not to be significant after adjusting for all other variables.

Teenagers who are not currently using contraceptives had significantly 3.63 times the odds of being pregnant as compared to those who are currently using contraceptives (cOR = 3.63; 95% CI = 2.02 – 6.53; p < 0.001) but this association was found not to be significant after adjusting for all other variables.

Respondents who were not informed on how to prevent pregnancy by health workers had a significant increase in their odds of being pregnant by 2.59 times as compared to those who received information from health workers on how to prevent pregnancy (cOR = 2.59; 95% CI = 1.29 – 5.19; p = 0.007). This association was found not to be significant after adjusting for all other variables.

Table 4.6a Factors associated with teenage pregnancy

Variables	cOR(95% CI)	p-value	aOR(95% CI)	p-value
Age in years	**2.71(2.02 - 3.63)**	**0.000***	**2.56(1.72 - 3.80)**	**0.000***
Marital status				
Single	1.00		1.00	
Married	**8.89(3.78 - 20.98)**	**0.000***	3.83(0.01 - 1911.50)	0.672
Cohabiting	**4.11(2.15 - 7.85)**	**0.000***	1.32(0.003 - 688.72)	0.931
Employment status				
Yes	1.00		1.00	
No	**0.41(0.21 - 0.79)**	**0.008***	1.04(0.42 - 2.55)	0.930

Table 4.6b Factors associated with teenage pregnancy

Variables	cOR(95% CI)	p-value	aOR(95% CI)	p-value
Educational level				
Vocational	1.00		1.00	
Primary	1.16(0.42 - 3.21)	0.875	1.56(0.43 - 5.72)	0.502
Junior High School	0.42(0.13 - 1.35)	0.422	0.76(0.18 - 3.24)	0.715
Senior High School	1.20(0.11 - 13.15)	0.881	11.35(0.56 - 229.48)	0.113
Resident with				
Both parents	1.00		1.00	
One parent	0.46(0.12 - 1.78)	0.259	0.12(0.0002 - 63.48)	0.512
Sibling	1.19(0.24 - 6.00)	0.828	0.95(0.14 - 6.33)	0.955
Grandparent	0.51(0.06 - 4.25)	0.533	0.30(0.03 - 2.93)	0.302
Alone	**4.58(1.33 - 15.85)**	**0.016***	0.89(0.21 - 3.74)	0.877
Partner/boyfriend	**10.87(4.66 - 25.36)**	**0.000***	2.56(0.005 - 1401.45)	0.770
Relative	**34.38(5.74 - 205.89)**	**0.000***	**8.78(1.27 - 60.62)**	**0.028***
Alcohol consumption				
Occasionally	1.00		1.00	
Never	**0.35(0.18 - 0.66)**	**0.001***	0.91(0.39 - 2.09)	0.815
Contraceptive use				
No	1.00		1.00	
Yes	**0.29(0.16 - 0.52)**	**0.000***	0.72(0.23 - 2.26)	0.577
Current usage of contraceptives				
Yes	1.00		1.00	
No	**3.63(2.02 - 6.53)**	**0.000***	1.59(0.51 - 4.94)	0.422
Received information on pregnancy prevention from health workers				
Yes	1.00		1.00	
No	**2.59(1.29 - 5.19)**	**0.007***	0.63(0.24 - 1.65)	0.344

*(statistically significant, p≤0.05)

CHAPTER FIVE

5.0 DISCUSSION

Analysis of this results reveal a current teenage pregnancy rate of 15.8% in Ekumfi which is slightly lower than the teenage pregnancy rates of 16.4%, 18.5%, 18% and 16.4% recorded for 2015, 2016, 2017 and 2018 respectively (DHIMS, 2019). In older studies, teenage birth rate stood at 13% and 26% in urban and rural Ghana respectively (GSS, GHS & ICF, 2009). In 2014, a national prevalence of 30% was registered for teenage pregnancy, 14% of whom were adolescent girls aged between 15 and 19 years and the remainder being girls between ages 12 and 14 years (GHS, 2014), a figure higher than the 12% national prevalence recorded for 2013 (Gyesaw & Ankomah, 2013). Adolescent pregnancy rate in urban Ghana was pegged at 14% in 2015 while rural Ghana saw a prevalence of 17% rural areas meanwhile those living in Brong Ahafo, Central, and Volta regions accounted for 21-22% (GSS, GHS &ICF, 2015). These yearly figures show a fluctuating trend evident in the Ekumfi district as well as at the national level. This fluctuation may not reflect the true state of teenage pregnancy since some teenagers are likely to avoid the use of hospital or clinical services due to perceived stigma or embarrassment they may face. Hence, it is important that health professionals are encouraged to avoid shaming or stigmatising pregnant teenagers who seek health services.

A one year increase in age increased the odds of being pregnant in Ekumfi. In agreement, Habitu et al. (2018) in Northeast Ethiopia found that as the ages of teenage girls increased by one year, the odds of being pregnant increased. Similarly, results from Ethiopia (Central Statistical Agency, 2017), South Africa (Motthiba & Maputle, 2012) and Nigeria (Nwosu, 2017) also revealed a greater likelihood of pregnancy among older teen girls as compared to younger teen girls. Alemu & Vincent (2016) affirms stating that majority of teenage pregnancies seen in South Sudan was among girls between the ages of 17-19 years as

compared to those aged 14-16 years. However, other reports disagree stating higher likelihood among younger teenage girls compared older teens (Martin et al., 2018; Yussif et al., 2017). In Ekumfi, older teenagers were more likely to get pregnant because they were more likely to trade sex for gifts compared to younger teenagers. Perhaps this could have accounted for the significant increase in teenage pregnancies among older teenage girls. In other context, Habitu et al. (2018) argues that an increase in age increases exposure to sex and marriage leading to teenage pregnancy and early procreation (Habitu et al., 2018). Disparities in findings show that teenagers no matter their age group can fall victims of teenage pregnancy hence policy makers should target teenagers no matter their age group and educate them on sex, contraception and teenage pregnancy.

Teenagers who reside with their relatives had significantly higher odds of being pregnant as compared to those who reside with both parents. This is not surprising as in the Ghanaian society it is common to find children living with their relatives due to parental separation, divorce or financial constraints (Cebotari et al., 2017). In such cases, physical neglect of teenage girls is likely to expose them to having sexual relations with older men for money (Ochen et al., 2019). Results from a few studies in line with this finding agree stating that teenagers who do not live with one or both parents are prone to teenage pregnancy (Ochen et al, 2019; Gil, 2018; Panova et al., 2016). According to Ochen et al. (2019), the prevalence of teenage pregnancy in Uganda was higher among teenage girls whose parents were separated or divorced. Panova et al. (2016) supports this finding stating that family related factors such as divorce or non-intact family structure increases likelihood of teenage pregnancy. Disrupted family structure according to Gil (2018) largely results in adolescent pregnancy because of the lack of parental values, supervision or regulation.

Though married and cohabiting teenagers had greater odds of being pregnant as compared to single teenagers, this relationship was not significant. However, literature reports significant

relationship between the variables. Yussif et al. (2017) and Alemu & Vincent (2016) found that most teen mothers captured in studies were reported to be married exposing them to sex and early childbearing. Ayuba & Gani (2012) affirms this stating that 90% of teenage pregnancies in the developing world happen to girls who are married with reports from the WHO (2014) and Ezegwui et al. (2012) arguing that majority of teenage pregnancies are planned since childbirth is seen a requirement after marriage pressurising them to conceive quickly as per African culture (Ayuba & Gani, 2012). In cases where child marriage is enshrined in the culture of people, teenagers and their husbands should be educated on the pros of family planning and encouraged to use contraceptive methods that suit them.

5.1 Strengths and Limitations

The study used a cross sectional study design appropriate for the study. The statistical techniques employed adjusted for other possible co-variates that can be associated with teenage pregnancy making the factors found empirically sound.

This study focused solely on teenage girls in Ekumfi district making generalization of the findings from this study to other districts or Ghana as a whole impossible. Also, association found are not temporal due to the cross sectional study design used for the study.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATION

6.1 Conclusion

Approximately 15.8% of respondents in Ekumfi had ever been or are currently pregnant.

Older teenagers were more likely to have a pregnancy in their teenage. An increase in age increased the odds of teenager being a pregnant by 2.56 times. Early marriages was significantly associated with teenage pregnancy. Married or co-habiting teenagers had higher odds of being pregnant compared to those who were single but this association was not significant after adjusting for other variables.

Parental care was significant predictor of teen age pregnancy in Ekumfi. Teenagers who reside with their relative had significantly 8.78 times the odds of being pregnant as compared to those who reside with both parents.

6.2 Recommendation

1. Authorities of the GHS health directorate in Ekumfi should target teenagers no matter their age group and organize sensitization programmes on sex, contraception, and teenage pregnancy
2. Heath professionals in Ekumfi should be keen on educating teenagers who are living with relatives
3. Parents in the Ekumfi district must take interest in sex education and sexual behaviours of their children especially when they begin adolescence.
4. Chiefs, opinion leaders, parents and health professionals should begin advocacy to address early sexual debut of teenagers as well as the issue of early marriages to curb the occurrence of teenage pregnancy.

5. Teenagers who are in marriage should be encouraged by health professionals, together with their husbands, to use contraceptives.

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APPENDICES

Appendix I: PARTICIPANT INFORMATION SHEET

This information sheet is to inform the participants in the Ekumfi District about the research for them to make an informed decision of whether to participate in the study or not. It also outlines the nature of the research, what the research involves, risks, benefits and compensation.

Title of Study:

Prevalence of Teenage Pregnancy and Associated Factors in Ekumfi District

Introduction:

The principal investigator (PI) is Ellen Mawusi Agbemabiese**,** a Master of Public Health (MPH) student of the School of Public Health of the College of Health Sciences, University of Ghana. My email address is *nanamawusi120@gmail.com*. My telephone number is 0549466560.

Background and Purpose of Research:

I am carrying out a research on the topic: "Prevalence of Teenage Pregnancy and Associated Factors in Ekumfi District".

Nature of Research:

The research is a cross-sectional study with a quantitative approach. My interest is in finding out the Prevalence of Teenage Pregnancy and Associated Factors in Ekumfi District. It would be conducted among 368 teennagers.

PARTICIPANTS INVOLVEMENT

Duration/ what is involved:

A structured questionnaire would be used to elicit information from the study participants after the aim of the study has been explained to them and they are interested in participating. The questionnaire would be administered in English Language for literate respondents and translated into Twi or Fante for non-English literate respondents. This would last for 20 minutes.

Potential Risks:

This research poses minimal risk or no physical harm to the participant except the risk of having to share information which may seem personal.

Benefits:

Participants would have the opportunity to gain some knowledge and awareness on teenage pregnancy since each participant would be educated after data collection.

Cost:

There would be no cost incurred by participants for taking part of the study except their time.

Compensation:

Individuals who participate in the study by answering questionnaires would be given deodorants/ hand sanitizers worth not more GH¢ 3.00 as compensation for their time spent.

Confidentiality:

In ensuring anonymity, participants would only be identified with codes and numbers. No information regarding participants name or any other information that traces the data collected to the participants would be taken. Filled questionnaires would be kept under lock and key, with only the principal investigator having access.

Voluntary participation/ withdrawal:

Participation in the study is voluntary and not compulsory. Participants have the right to decide whether or not they want to be part of the study. You can also withdraw your consent at any time of the study.

Outcome and feedback:

Findings of the study will be shared with the selected hospitals which may improve health service delivery at the hospitals.

Feedback to participants:

A report would be presented to various stakeholders such as the Ghana Health Service, Ekumfi Health Directorate who formulate policies maternal health related issues. The report will be published in a journal.

Funding information:

This study is funded by the Principal Investigator.

Sharing of Participants Information/Data:

Participant information or data would be kept by me. Filled questionnaires would be kept under lock and key, with only the principal investigator having access. It would not be shared with anyone else.

Provision of Information and Consent for participants:

A copy of the information sheet and consent form will be given to you to sign or thumb-print before participation in the study

Who to Contact for Further Clarification/Questions:

If there are any clarifications or concerns you want addressed concerning this research, please contact Ellen Mawusi Agbemabiese at the School of Public Health on telephone number 0549466560. You can also contact me by e-mail *nanamawusi120@gmail.com*. For further clarification on ethical issues kindly contact the Ghana Health Service Ethical Review Committee Administrator, Nana Abena Apatu on phone number 0503539896.

APPENDIX II: CONSENT FORM FOR STUDY PARTICIPANTS

STUDY TITLE:

PREVALENCE OF TEENAGE PREGNANCY AND ASSOCIATED FACTORS IN EKUMFI DISTRICT

PARTICIPANTS' STATEMENT

I ack□wledg□that I have read or have had the purpose and contents of the Participants' Information Sheet read and satisfactorily explained to me in a language I understand (English [ ] Twi [ ] Fante [ ]). I fully understand the contents and any potential implications as well as my right to change my mind (i.e. withdraw from the research) even after I have signed this form.

I voluntarily agree to be part of this research.

Name or Initials of Participant…….. ID Code ……

Participants' Signature …… OR Thumb Print……

Date: …….

INTERPRETERS' STATEMENT

I interpreted the purpose and contents of the Participants' Information Sheet to the aforenamed participant to the best of my ability in □e (En□ish T□i Fante) language to his proper understanding.

All questions, appropriate clarifications sort by the participant and answers were also duly interpreted to his/her satisfaction.

Name of Interpreter……

Signature of Interpreter…… Date:……

Contact Details:……

STATEMENT OF WITNESS:

I was present when the purpose and contents of the Participant Information Sheet was read and explained satisfactorily to the participant in the language he/she understood (Eng□sh □ Twi □ante)

I confirm that he/she was given the opportunity to ask questions/seek clarifications and same were duly answered to his/her satisfaction before voluntarily agreeing to be part of the research.

Name:……

Signature…….... OR Thumb Print …….....

Date:……

INVESTIGATOR STATEMENT AND SIGNATURE:

I certify that the participant has been given ample time to read and learn about the study. All questions and clarifications raised by the participant have been addressed.

Researcher's name…….

Signature …….

Date…….

Appendix III (QUESTIONNAIRE)

QUESTIONNAIRE ON THE PREVALENCE OF TEENAGE PREGNANCY AND ASSOCIATED FACTORS IN EKUMFI DISTRICT
This is a research on The Prevalence of Teenage Pregnancy and Associated Factors in Ekumfi District. The study is trying to find out the prevalence and factors that affect teenage pregnancy Ekumfi District. Hence, kindly share your experiences to help attain this goal by responding to the following questions.

	QUESTIONS	CODING CATEGORIES	SKIP TO	CODES
	1. **SOCIO-DEMOGRAPHIC FACTORS**			
a	Age (State your last birthday age)	……		age
b	Marital status	**Married……..……..1** **Cohabiting……..2** **Single……...3**		mstat
c	If you are married, at what age did you get married	**……**		Mar_age
d.	Are you employed?	**1. Yes [ ]** **2. No [ ]**		employ
e	If you are employed, what is your occupation?	**…….**		occp
f.	Educational level	**Tertiary……4** **Secondary……..3** **Primary……2** **Vocational…….....1** **None……..0**		educ
E	Household Income (monthly)	**1. 0-500 Ghc [ ]** **2. 501- 1000 Ghc [ ]** **3. 1001-1500 Ghc [ ]** **4. > 1500 Ghc [ ]**		Hh_income
F	Religion	**1. Christian [ ]**		reli

		2. Muslim [ ] **3. Other [ ]** **Specify……**		
G	Place of Residence	**1. Rural [ ]** **2. Urban [ ]**		residence
	2. HISTORY OF SEXUAL & REPODUCTIVE HALTH			
	Age at first sexual intercourse	……..		Fsex_age
	Have you ever used contraception?	0. No [ ] 1. Yes [ ]		contracep tive
	Are you currently using any contraceptive?	0. No [ ] 1. Yes [ ]		Cur_cont ra
	If yes, what contraceptive method did you use? (**tick as many as apply**)	1. Condoms [ ] 2. Injectable [ ] 3. Implants [ ] 4. Pills [ ] 5. Withdrawal [ ] 6. Sterilization [ ] 7. Emergency contraception 8. Lactational Amenorrhoea Method [ ] 9. IUD [ ] 10. Others [ ]		
3.PERCEPTION ON TEENAGE PREGNANCY				
	Teenage pregnancy is risky	**0. Yes** **1. No** **2. No idea**		risky
	Pregnant teenagers suffer stigma and isolation	**0. Yes [ ]** **1. No [ ]** **2. No idea [ ]**		stigma
	Sex is not permitted before	**0. Yes [ ]** **1. No [ ]**		

	marriage in your culture	**2. No idea [ ]**		
	It is okay for a teenager in your family to be get pregnant	**0. Yes [ ]** **1. No [ ]** **2. No idea [ ]**		
	Do you have sex with random men without protection sometimes?	**0. Yes [ ]** **1. No [ ]**		
	Do you ever feel like the company of friends you keep influence your sexual activity?	**0. Yes [ ]** **1. No [ ]**		