



DEBRE BERHAN UNIVERSITY

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COLLEGE OF HEALTH SCIENCE

DEPARTMENT OF PUBLIC HEALTH

**TEENAGE PREGNANCY AND ITS ASSOCIATED FACTORS AMONG IN SCHOOL
ADOLESCENTS IN DEBRE BERHAN TOWN, NORTH SHOA ZONE, NORTH EAST
ETHIOPIA**

BY:

SOFONIAS MEKONNEN (B.Sc.)


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Name of investigator	Sofonias Mekonnen
Name of advisor	Dr. Abebe Minda (PhD)
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Budget	26,121 Ethiopian Birr
Sponsorship organization	Wachamo University
Address of investigator	Mobile Number: 0932875454 E-mail Address: sofonias482@gmail.com

To be approved by the Examining Board of College of Health Science, Debre Berhan University.

Principal Investigator Name	Signature	Date
Sofonias Mekonnen	-----	23/10/2013
Main Advisor Name	Signature	Date
Dr. Abebe Minda (PhD)		23/10/2013
Internal Examiner Name	Signature	Date
Abinet Dagnaw (MSc)	-----	23/10/2013
External Examiner Name	Signature	Date
-----	-----	23/10/2013

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ABSTRACT

Background: Teenage pregnancy is the biggest killer of young girls worldwide; 1,000,000 teenage girls die or suffer serious injury, infection or disease due to pregnancy or childbirth every year. It led adolescents to less educational attainment and high school dropout, economic dependency, poor health and poverty. Ethiopia has one of the highest teenage fertility rates in Sub-Saharan Africa; however, magnitude of teenage pregnancy and its associated factors are not well studied.

Objective: This study intends to investigate the magnitude of teenage pregnancy and its associated factors among school adolescents of Debre Berhan Town, North Shoa Zone Administration, North East Ethiopia, 2021.

Methods: A quantitative institution-based cross-sectional study design was conducted among 518 in school female adolescents (teenagers) in Debre Berhan Town from April to May 2021. A stratified multistage sampling technique was employed to select study subjects. Data were collected using a structured questionnaire. Epi data version 3.1 and SPSS version 20.0 were used for data entry and analysis respectively. During the analysis of the data, both descriptive and inferential statistics were computed. Multivariable logistic regression analysis was used to identify independent predictors of teenage pregnancy. The association between independent and dependent variables were assessed using odd ratios (adjusted odd ratios) with their corresponding 95% confidence interval. Independent variables that have P-value less than 0.05 were taken as a significant predictor of teenage pregnancy.

Result: Four hundred and ninety five students were involved in the study with a response rate of 95.6%. Their mean age was 17.6 (\pm 1.22 SD). The prevalence of teenage pregnancy was 5.1% (95% CI: 3.2-7.1). Sexual and reproductive health education [AOR=5.397; 95% CI: 1.661-17.533], age at first sex [AOR=9.164; 95% CI: 1.891-44.413], domestic violence [AOR=4.901; 95% CI: 1.502-15.933] and sexual and reproductive health services [AOR=2.709; 95% CI: 1.064-6.897] were found to have statistically significant association with teenage pregnancy.

Conclusion: This study showed that, the prevalence of teenage pregnancy is low in the area compared to other studies. This might be due to the reason that contraceptive utilization might be increased in the area and variation in socio-economic & demographic factors. Even if, the prevalence is low in the area compared to other studies, especial attention is needed. Therefore, school-based sexual and reproductive health education and service should be strengthened.

Key Words: Teenage pregnancy, school adolescents, associated factors, teenagers.

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ABBREVIATIONS/ACRONYMS

ARHS	Adolescent Reproductive Health Services
AYFHS	Adolescent & Youth Friendly Health Services
BSc	Bachelor of Science
DALY	Disability Adjusted Life Years
EDHS	Ethiopian Demographic Health Survey
HIV/AIDS	Human Immune Virus/Acquired Immune Deficiency Syndrome
ID	Identification Number
MPH	Master of Public Health
MSc	Master of Science
NHS	National Health Services
PhD	Doctor of Philosophy
RH	Reproductive Health
SPSS	Statistical Package for Social Science
SRH	Sexual & Reproductive Health
SRHS	Sexual & Reproductive Health Services
SRS	Simple Random Sampling
STIs	Sexually Transmitted Infections
TP	Teenage Pregnancy
WHO	World Health Organization

1. INTRODUCTION

1.1. Background

Teenage pregnancy (TP), defined as a pregnancy before the age of 20 years (1, 2). It is a public health concern both in developed and developing world, and affecting more than 16 million girls and young women worldwide each year (3-7). Some 11% of all births globally are to girls aged 15–19, and the average global birth rate for adolescent girls aged 15–19 is 50 per 1,000 girls (8, 9).

According to the recent official data of World Health Organization, every year, an estimated 21 million girls aged 15 to 19 years, and 2 million girls aged under 15 years become pregnant in developing regions. Approximately 16 million girls aged 15 to 19 years and 2.5 million girls under 16 years give birth each year in developing regions (10, 11). Complications during pregnancy and childbirth are the leading cause of death for 15 to 19 year-old girls globally. Every year, some 3.9 million girls aged 15 to 19 years undergo unsafe abortions (11).

Latest statistics from the Ethiopia Demographic Health Survey indicated that, 13% of women between the ages of 15 and 19 have already given birth, and 2% are pregnant with their first child. Most teen pregnancies occur in the context of early marriage. Teen pregnancies are more common in rural than in urban areas (15% and 5%, respectively). Moreover, disparities are seen across regions with the highest among women in Afar (23%), Somali regions (19%) and 8% in Amhara compared to the lowest in Addis Ababa (3%). Teen pregnancy is highest among those without an education (28%); teen pregnancy rates at primary and secondary educational levels are at 12% and 3%, respectively (12).

Nowadays, the vast majority of teenage pregnancies occur in low- and middle-income countries characterized by poor health-care services; therefore, complications during pregnancy, birth, and postpartum phase (e.g., 42 days after birth) are the second cause of death among girls aging between 15 and 19 years worldwide. Additionally, it is estimated that some three million teenage girls undergo unsafe abortions, which may result in consecutive reproductive problems or even death (7).

Teenage pregnancy has long been identified as a risk factor for adverse perinatal and long-term outcomes. The occurrence of low birth weight has been observed to be much higher among children of teenage mothers than among children of women beyond adolescence, and giving birth during the teen years has been found to be associated with a higher risk of prematurity (11, 13).

1.2. Statement of the Problem

Teenage pregnancies have become a public health issue because of their observed negative effects on perinatal outcomes and long-term morbidity (14). Globally 15 million women under the age of 20 give birth, representing up to one-fifth of all births, 529,000 women die due to pregnancy, and childbirth related complication every year. The risk of death due to pregnancy-related causes is double among women aged 15-19 compared to women in their twenties. Young women are also at risk of unwanted pregnancies, sexually transmitted infections (STIs) and unsatisfactory or coerced early sexual relationships (3).

In the developing world, one-third to one-half of women become mothers before the age of 20 and pregnancy related complications have become the leading causes of death among them (3). Teenage pregnancy is highly associated with abortions, infant and maternal mortality, high rate of unemployment, school failure, dropouts, and limited future career opportunities (5). Teenage pregnancies and teenage motherhood are a cause for concern worldwide (5). According to the World Health Organization (WHO), about 16 million girls aging between 15 and 19 years and about one million girls younger than 15 years give birth every year in the world (2, 7, 15).

Teenage pregnancy is a major health concern because of its association with higher morbidity and mortality for both the mother and the child (8, 15, 16). Childbearing during adolescence is known to have adverse social consequences, particularly regarding educational attainment, as women who become mothers in their teens are more likely to drop out of school. Childbearing at a very young age is also linked to an increased risk of complications during pregnancy, childbirth, and higher rates of neonatal mortality (8). In Ethiopia, according to EDHS 2016 report related to teenage pregnancy, 13% of women age 15-19, 10% are already mothers and 2% are pregnant with their first child (12).

Adolescent pregnancy remains a major contributor to maternal and child mortality. Pregnancy and childbirth complications are the leading cause of death among 15 to 19 year-old girls globally, with low and middle-income countries accounting for 99% of global maternal deaths of women ages 15 to 49 years (17, 18). Adolescent mothers (ages 10 to 19 years) face higher risks of eclampsia, puerperal endometritis, and systemic infections than women aged 20 to 24 years (17, 19, 20). Additionally, some 3.9 million unsafe abortions among girls aged 15 to 19 years occur each year, contributing to maternal mortality and lasting health problems (21). Early childbearing can increase risks for new-borns, as well as young mothers. In low- and middle-income countries, babies born to mothers under 20 years of age face higher risks of low birth weight, preterm delivery, and severe neonatal conditions. New-borns born to adolescent mothers are also at greater risk of having low birth weight, with long-term potential effects (17, 22, 23).

The risk of maternal death for girls under age 15 in low and middle-income countries is higher than for women in their twenties. Teenage pregnancy also affects girls' education and income potential as many are forced to drop out of school, which ultimately threatens future opportunities and economic prospects. Maternal and prenatal health is of particular concern among teens who are pregnant or parenting. The worldwide incidence of premature birth and low birth weight is higher among adolescent mothers (17, 20).

Complications of pregnancy result in the deaths of an estimated 70,000 teen girls in developing countries each year (19). The World Health Organization estimates that the risk of death following pregnancy is twice as high for girls aged 15–19 than for women aged 20–24. The maternal mortality rate can be up to five times higher for girls aged 10–14 than for women aged 20–24. Illegal abortion also holds many risks for teenage girls in areas such as sub-Saharan Africa (17, 20).

Risks for medical complications are greater for girls aged under 15, as an underdeveloped pelvis can lead to difficulties in childbirth. Obstructed labour is normally dealt with by caesarean section in industrialized nations; however, in developing regions where medical services might be unavailable, it can lead to eclampsia, obstetric fistula, infant mortality, or maternal death (17, 19, 20, 24).

Building life skills, facilitating parent to child communication, establishing and strengthening of youth centres and school reproductive health clubs are important steps to improve adolescent reproductive health service utilization. This has a positive contributing factor to reduce teenage pregnancy (25).

Different studies conducted in the world as well as in Ethiopia have tried to show the prevalence and factors associated with teenage pregnancy, but most of the studies were done using secondary data (health facility and EDHS based studies and also based on published & unpublished studies by using search engines like PubMed, Cochrane Library and Google Scholar). Hence, due to the poor data recording system of our country, we may not get appropriate information from health facilities. Moreover, research results from health facilities lack representativeness to the general population. Therefore, this study was conducted to show the magnitude and determinants of teenage pregnancy in school adolescents in Debre Berhan Town, Northeast Ethiopia, 2021, by using primary data.

This study was conducted in school female adolescents in Debre Berhan Town to show the magnitude and which factor mostly affects teenage pregnancy by using primary data in the town. The study tries to fill the gap of adolescents' information on teenage pregnancy.

1.3. Significance of the Study

Research of teenage pregnancy on teenagers (adolescents) contributes to the much-needed evidence base to fill knowledge and poor adolescent and youth friendly sexual and reproductive health services. Teenage pregnancy increases when girls are denied the right to make decisions about their sexual and reproductive health and well-being. Thus, the aim of this study was to generate evidence on the current teenage pregnancy and to identify major factors associated with it. The result of this study might be helpful on improving and designing appropriate approaches of youth friendly health services.

This study will be important for different stakeholders to address the issues related to teenage pregnancy. The result found from this study is important for parents to develop clear and open communication (discussion) with their daughters about sexual and reproductive health issues (the result will be disseminated to schools, and the school will discuss with parents about this vulnerable issues). It is also helpful for schools to design strategies and create awareness about sexual and reproductive health on adolescents.

Another advantage found from this study is that for health facility to make their services (sexual and reproductive health services) adolescent and youth friendly health services. It is important for Non-Governmental Organizations to work on youths and adolescents to reduce teenage pregnancy.

Generally, the result found from this study helps to develop recommendations and interventions, which help to improve adolescent and youth sexual and reproductive health services in the study area. Since there is no similar study done in Debre Berhan Town previously the result might be important input to the site.

2. LITERATURE REVIEW

2.1. Prevalence of Teenage Pregnancy

Addressing the multiple factors underlying adolescent births, (teenage pregnancy) is indispensable for improving sexual and reproductive health and the social and economic well-being of adolescents. Rates of adolescent (teenage) pregnancy are increasing in developing countries, with higher occurrences of adverse maternal and perinatal outcomes (8, 16). Most of these teenage pregnancies and childbirths take place in west and central Africa, east and southern Africa, South Asia, Latin America, and the Caribbean. In sub-Saharan Africa, in the year 2013, 101 births per 1,000 girls were some of the highest rates of adolescent fertility in the world (26).

Poverty, low education, being from an ethnic minority, lack of access to sexual and reproductive health (SRH) information and services: all increase the likelihood for young women to become pregnant (14). Studies have shown that young people from families with a low socio-economic status have a higher chance of teenage pregnancies. In addition, social and cultural norms and values at the family and society level play a role. For example, parent/child closeness or connectedness, parental supervision or regulation of children's activities, and parents' values against teen intercourse (or unprotected intercourse) influence young people's risk for teenage pregnancy (6).

The prevalence of adolescent motherhood is much higher in low-income countries when compared to high-income countries (15). The proportion of adolescents giving birth ranged from 2% in China, to 18% in Latin America and the Caribbean, to more than 50% in sub-Saharan Africa (6). Half of all adolescent births occur in only the following seven countries: Bangladesh, Brazil, the Democratic Republic of the Congo, Ethiopia, India, Nigeria, and the United States (6, 15, 27).

In Africa, where premarital sex is not accepted, especially for young women, unintended pregnancies mostly happen outside marriage (15). This often implies secret, unsafe abortions under unhygienic conditions performed by people who lack the necessary skills in places that do not meet minimal medical standards. African countries lead the world in teen pregnancies, with Niger on the top list of 203.6 births/100,000 teenage women, followed by Mali (175.4), Angola (166.6), Mozambique (142.5), Guinea (141.6), Chad (137.1), Malawi (136.9), and Cote d'Ivoire (135.4) (15, 28).

Across sub-Saharan Africa, it is estimated that 14 million unintended pregnancies occur every year, with almost half occurring among women aged 15–24 years (29-31). Recent data indicate that 18% of adolescent girls aged 15–19 years in eastern/southern region of Africa and 21% in western/central region of Africa had initiated childbearing (15).

Ethiopia has one of the highest adolescent fertility rates in sub-Saharan Africa – 72 births for every 1000 young women aged 15–19 years (15, 32). According to EDHS 2016, in Ethiopia, 13% of adolescent women age 15-19 are already mothers or pregnant with their first child. Teenagers in rural areas are three times more likely to have begun childbearing than their urban peers: 15% of rural teenagers have had alive birth or are pregnant, as compared with 5% of urban teenagers (12). By region, teenage childbearing is highest in Afar (23%) and Somali (19%) and lowest in Addis Ababa (3%) and Amhara (8%). Teenage childbearing decreases with increasing education. The percentage of teenagers who have begun childbearing rises from 3% among those with more than a secondary education to 12% among those with a primary education and 28% among those with no education. Teenage childbearing is less common in the wealthiest households: 6% of women age 15-19 from the highest wealth quintile have begun childbearing, as compared with 24% of those from the lowest quintile. Women start having sexual intercourse at an earlier age than men do, which is 6% of women age 15-19 had sexual intercourse and married before age 15, compared with less than 1% of men in the same age group (12).

The recent World Health Organization (WHO) estimate showed that the rate of adolescent pregnancy will grow by the end of 2030, and a major increase in adolescent pregnancy is projected to be in Africa (32). The worldwide average rate of births per 1000 young women aged 15-19 years is 65, with average rates of 25 in Europe, 56 in the Middle East and North Africa, 59 in Central Asia, 78 in Latin America, and 143 in Sub-Saharan Africa (29). About 14 million women 15–19 years old give birth each year, about 11 % of all births worldwide, 95 % of these births occur in low- and middle-income countries (29, 33).

Each year, births to adolescent girls aged 15 to 19 years account for 16% of all births in sub-Saharan Africa. The Ethiopian Demographic and Health Survey (EDHS) report also showed that the percentage of adolescents who started childbearing was high, 12.4% in 2011 and 12.5% in 2016 (12, 16).

Different pieces of literature showed that the prevalence of teenage pregnancy varies across regions of the world. In the Asia Pacific regions, it ranges up to 43% in Bangladesh and from 11.1% to 47.3% in Nepal. In Jordan, the prevalence is 25%. The prevalence of teenage pregnancy also varies in Africa; for instance, in Nigeria, it ranges from 6.2% in Niger Delta state to 49% in Abia State. In South Africa, East Africa (Kenya), Assossa (Ethiopia), and Sudan, it ranges from 2.3 to 19.2%, 31%, 20.4%, and 31%, respectively (14).

According to a study conducted by Amoran, a comparative analysis on the predictors of teenage pregnancy and its prevention in a rural town in Western Nigeria, the prevalence of teenage pregnancy among the study population was 22.9%. This is similar to other studies conducted by Ajala, factors associated with teenage pregnancy and fertility; and by Edukugbo, teenage-pregnancy-anatomy-number-one-killer-girls, in Nigeria

(32). A systematic review study conducted within South Asia, the recorded teenage pregnancy rate is highest in Bangladesh 35% followed by Nepal 21% and India 21% (34). Another study conducted in Uganda, 25% of adolescents aged 15-19 years have begun childbearing while 19% of women age 15-19 have given birth with variation in prevalence between rural and urban settings (27 versus 19%, respectively) (5, 30).

A study in Rwanda indicated that the prevalence of teenage pregnancy is 7.23% (35). According to the study of the National Health Service (NHS) of United Kingdom on teenage pregnancy, Scotland had an overall teenage pregnancy rate of 30.2 per 1,000, while England & Wales had a rate of 33.0 (36). A study conducted in Soweto, South Africa, found that 23% of pregnancies carried by 13–16 year old young women and 14.9% in the 17–19 year age range ended in abortion (29). A study on the multi-level analysis of risk and protective factors in five African countries showed that, adolescent pregnancy and early motherhood is common in the five countries, ranging from 18% among adolescents in Kenya to 29% in Malawi and Zambia, and in Tanzania and Uganda 27% & 25% respectively (37). A community based case-control study conducted in Lira District, Uganda indicated that the district has the highest rate of teenage pregnancy in Northern Uganda (greater than 25%) (38). A study performed on systematic review and meta-analysis in 24 African countries proved that the overall pooled prevalence of adolescent pregnancy in Africa was 18.8% and 19.3% in the Sub-Saharan African region. The prevalence was highest in East Africa (21.5%) and lowest in Northern Africa (9.2%) (8).

Teenage pregnancy is a serious problem among adolescence in Ethiopia. A study done among adolescence in Addis Ababa showed that the median age at first pregnancy was 16 years, with 2 in 3 women becoming mothers before the age of twenty. From 957 female respondents 50% had been pregnant in the past and 74 % of these pregnancies resulted in abortions (29). An institution or a facility-based quantitative cross-sectional study conducted in Assosa General Hospital and Arba Minch Town showed that the prevalence of teenage pregnancy was 20.4% and 7.7% respectively (26, 39). Another community-based quantitative cross-sectional study performed in Wogedi, South Wollo Zone indicated that the prevalence of teenage pregnancy was 28.6% (14).

2.2. Determinants of Teenage Pregnancy

Several studies have identified the predictors of unsafe sexual practices during the early adolescent years, such as individual, socio-demographic, familial, and relational characteristics, poverty, cultural and family patterns of early sexual experience and lack of school or career goals (40). Adolescence pregnancy has been associated with sex without reliable contraception due to ignorance, fear of parents finding out, shyness in going to the clinic and disapproval from the boyfriend. Sexual coercion, poor sexual communication

between partners, poverty, alcohol consumption, fear of hormonal contraceptives and poor school-based sexual education also have been associated with teenage pregnancy (29, 41).

Adolescent pregnancy interferes with young women's educational attainment, resulting in fewer job opportunities for young women. Several studies have argued that young school girls engage in sex with older partners and have transactional sex, whereby gift or money are exchanged for sex. Such relationships result in young women having little or no negotiating power with their partners to insist on condoms usage a situation which may result in high risk of becoming pregnant and contracting sexually transmitted infections (STIs), including HIV/AIDS (29). Access to reproductive health services is another factor, which contributes to adolescent pregnancy since young people always want to be able access sexual and reproductive health information and services without exposed to public stigma. Many studies have focused on the practices of adolescents in general and outcomes of their pregnancies, but very limited understanding of factors that place particular increased risk of adolescent pregnancy (29).

Literature showed that different sociodemographic (socioeconomic), cultural and other individual factors were associated with teenage pregnancy. Approximately 90% of teenage pregnancies in the developing world are of girls who are married, owing to their high exposure to sex and pressure to conceive quickly after marriage. As a result, the majority (75%) of married teenage pregnancies are planned (14). Employment status, poverty, marital status, type of occupation, culture, peer pressure, early marriage, forced marriage, rape, and the need for a dowry were factors associated with teenage pregnancy (4, 14, 28).

2.2.1. Household Related Factors

A study conducted in Rwanda stated that household size and the educational level of the household-head are significantly associated with teenage pregnancy. Furthermore, the results indicate that the size of the household plays a significant role in teenage pregnancy in Rwanda. The results show a significant reduction of teenage pregnancies as the size of the household increases. Medium-size households were more than 60% less likely to have teenage girl pregnant compared to small households of less than five members. The study further argues that low education levels of household heads is a significant predictor for the occurrence of teenage pregnancy. In this study, findings show that teens in families where the household head has a secondary and above level of education are significantly less likely to become pregnant. Furthermore, even if household composition and domestic violence among parents are determinants of teenage pregnancy they have not significant association with teenage pregnancy in this study (in the case of Rwanda) (35).

A study investigated in Ethiopia; on multilevel analysis (multilevel predictors of teenage pregnancy) showed that age at first marriage, sexual experience and media exposure had a statistically significant

association with teenage pregnancy. In this study, the odds of experiencing pregnancy at teenage was 7.9 times higher among women who were sexually active before age 15 compared with women who were sexually active at the age of 18 and above. A woman who was married at an early age (before 15 years) had 30.1 times higher odds of experiencing pregnancy at an early age compared with a woman who was not married before the legal age of 18 years. Another community-based case-control study demonstrated in Degua Tembien District, Tigray stated that being married, was predictors of teenage pregnancy (6). This study indicated that teenagers who were married were 16 times more likely to have teenage pregnancy than those who were single. Another study conducted in five East African countries; on a multi-level analysis of risk and protective factors indicated that educational attainment, age at first sex, family structure and exposure to media were significantly associated with adolescent pregnancy (37).

2.2.2. Socio-economic and Demographic Factors

A study in a systematic review and narrative synthesis on predictors of pregnancy among young people in sub-Saharan Africa stated that sexual coercion and pressure from male partners, low or incorrect use of contraceptives, and poor parenting or low parental communication and support are the most obvious predictors of pregnancy among young people (4). A community based case-control study conducted in Lira District, Uganda indicated that demographic, behavioural, familial and social factors are important predictors of teenage pregnancy (38).

A case-control study conducted in Ethiopia using data set obtained from 2016 EDHS showed that, age of household head range between 25 and 34 years, wealth index, knowledge of ovulatory cycle, knowledge of family planning method, contraceptive use, and reasons for not using contraceptives found to be the determinants of teenage pregnancy (15). In this study, household head's age being between 25 and 34 years is 5.3 times more likely to have teenage pregnancy when compared to the age group of 15–24 years. In addition, teenagers who were unaware of family planning method were 2.67 times more likely to get pregnant than those who are aware of family planning methods (15, 42).

Another community-based case-control study demonstrated in Degua Tembien District, Tigray stated that family monthly income, being in the age group of 18±19 years, communication with parents on sexual issues and maternal history of teenage pregnancy were predictors of teenage pregnancy (6). This study indicated that, teenagers who did not communicate about RH issues with their parents were more exposed to teenage pregnancy than their counter parts (that is 7 times more likely to become pregnant) (6).

Other community-based cross-sectional study performed in Wogedi, South Wollo Zone showed that rural residence, parental marital status (divorce), contraceptive non-use and age are determinants of teenage

pregnancy (14). In this study, contraceptive nonusers were nearly 11 times more likely to be pregnant compared to those who used contraceptives (14).

2.2.3. Health Service Related Factors

Health service-related factors (cost of contraceptives, inadequate and unskilled health workers, long waiting time and lack of privacy at clinics, lack of comprehensive sexuality education, misconceptions about contraceptives, and non-friendly adolescent reproductive services,) are influencing factors of adolescent pregnancies in Sub-Saharan Africa (15, 28).

A study in a systematic review on determinants of adolescent pregnancy in sub-Saharan Africa stated that cost of contraceptives, inadequate and unskilled health workers, long waiting time and lack of privacy at clinics were predictors of teenage pregnancy (28). Lack of comprehensive sexuality education, misconceptions about contraceptives, non-friendly adolescent reproductive services, and negative attitude of health workers towards providing reproductive health services for adolescents were also identified as influencing factors for adolescent pregnancies (28). This study is supported by a study conducted in a systematic review and narrative synthesis on predictors of pregnancy among young people in sub-Saharan Africa (4).

2.2.4. Social Disorganization Factors

A study conducted in a multi-country cross-sectional study on factors associated with teen pregnancy in sub-Saharan Africa reported that poverty, female unemployment and family disruption were identified as predictors of teenage pregnancy (43). This study is supported by a study conducted in a multilevel analysis of factors associated with teenage pregnancy in Ethiopia (42).

Studies have shown that teenage pregnancy has poor maternal and perinatal health outcomes (14). Complications during pregnancy and childbirth are the second cause of death for 15-19-year-old girls globally (14, 16). Every year, some 3 million girls aged 15 to 19 undergo unsafe abortions. Babies born to adolescent mothers face a substantially high risk of dying than those born to women aged 20 to 24 (14).

Teenage pregnancy also has significant long-term social consequences for the adolescents, their children, their families and their communities (26). School dropout, poverty, high rate of marriage, pregnancy-induced hypertension, and induced abortion are some of the consequences of adolescent pregnancy on the mother (14, 26, 39). Preterm delivery, low birthweight, stillbirth, and high foetal and neonatal mortality are some of the consequences of teenage pregnancy for the foetus (14, 26, 44).

Consequences of teenage pregnancy are numerous encompassing obstetric, health, economic and social problems. Firstly, teenage mothers are at higher risk of obstetric complications such as incontinence from

obstetric fistulae, eclampsia, post-partum haemorrhage, sepsis and a five-fold increased risk of maternal mortality (38, 39, 43, 44). Additionally, disadvantageous prospects exist for the teenage mother, including lower educational attainment and school dropout resulting in lower income-earning potential and perpetuation of poverty (43). Secondly, the children that teenagers bear experience higher levels of birth complications, poor health outcomes and deprivation (43). Therefore, curbing teenage pregnancy has become an urgent health and social matter, particularly in sub-Saharan Africa.

Conceptual Framework

There are many models for assessing teenage pregnancy. From these models, Shaw & McKay demographic and socioeconomic model covers the major dimensions of teenage pregnancy. It is comprehensive and well organized. Therefore, it enables the establishment of correlations with good predictability (43). This adapted conceptual framework depends on Shaw & McKay's model; in addition, it involves findings from the literature review (35, 43). The framework has four constructs. They are demographic and sociodemographic factors, health service characteristics/health service-related factors, social disorganization factors and household related factors.

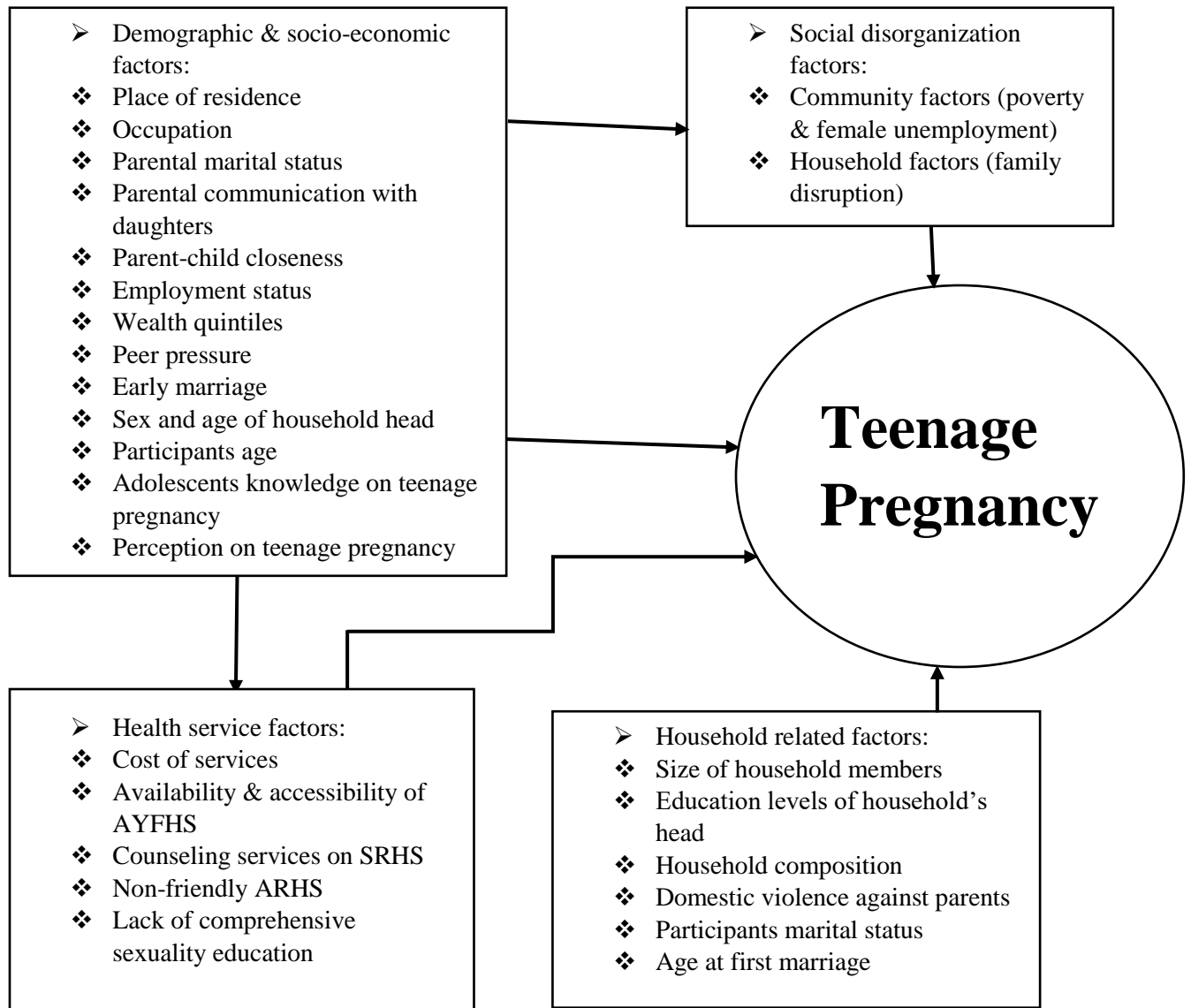


Figure 1: Conceptual framework of magnitude of teenage pregnancy and its associated factors among school adolescents of Debre Berhan Town, 2021. (Adapted from Odimegwu & Mkwanzani, 2016; Uwizeye & Muhayiteto, 2020).

3. OBJECTIVES

3.1. General Objective

- ❖ To assess teenage pregnancy and its associated factors among in school adolescents of Debre Berhan Town, North Shoa Zone, North East Ethiopia, 2021.

3.2. Specific Objectives

- ❖ To determine the magnitude of teenage pregnancy
- ❖ To identify factors associated with teenage pregnancy among in school adolescents in Debre Berhan Town.

4. METHODS AND MATERIALS

4.1. Study Area

The study was conducted in Debre Berhan Town, which is found 130 km away from Addis Ababa in the Northeast, and 693 km away from Bahir Dar, in Amhara National Regional State in the Southeast. According to the 2007 national census, the projected population size of the town is estimated to be 120,399, of which 42.2% and 54.8% are males and females respectively. The town has nine kebeles, three-government health centers, one private and one government hospital, five health posts and twenty-three private pharmacies. There are six secondary high schools (both two private and four government secondary high schools) in the town. Based on Debre Berhan Town Administration Education Office, there are 6835 students in the year 2013 in these six schools (from grade 9-12) of which 4051 are female students.

4.2. Study Design and Period

A quantitative school-based cross-sectional study was conducted from April-May 2021.

4.3. Population

4.3.1. Source Population

- All in school female adolescents (female teenagers) in Debre Berhan Town.

4.3.2. Study Population

- All secondary high school female adolescents.

4.4. Inclusion and Exclusion Criteria

4.4.1. Inclusion Criteria

- ❖ All secondary high school female adolescents aged 15-19 years.

4.4.2. Exclusion Criteria

- All secondary high school female adolescents aged below 15 years.

4.5. Sample Size Determination

A single population proportion formula was used to estimate the sample size of study participants included in this study.

$$n_i = [(Z \alpha/2)^2 * P (1-P)]/d^2$$

Where, n_i = initial sample size

$Z_{\alpha/2}$ = critical value for normal distribution (standard curve) at 95% confidence level which equals to (z value at $\alpha = 0.05$)

P = proportion of teenage pregnancy

d = margin of error to be tolerated

The following assumptions were made to determine the sample size: to obtain the minimum required sample size, the population proportion for the teenage pregnancy among school adolescents was taken to be 28.6% from the previous study (14). With the margin of error 5% and 95% confidence interval and finally by adding 10% for non-response rate compensation. Therefore, the minimum required sample size was calculated as follows;

$$n_i = (1.96)^2 * (0.286 * 0.714) / (0.05)^2 \approx 314$$

$n_i = 314$ study participants

Therefore, by adding a 10% of non-response rate and multiplying by a design effect of 1.5 the sample size was 518.

Table 1: Sample size calculation based on significant factors (variables) for the investigation of magnitude of teenage pregnancy & its associated factors among school adolescents of Debre Berhan Town, 2021.

Variables	CI	Power	Ratio (Unexposed: Exposed)	% outcome in unexposed group	% outcome in exposed group	OR	Sample size
Marital status	95%	80%	1:1	37.85%	52.6%	1.822	382
Occupation	95%	80%	1:1	3.56%	52.6%	30.062	32
Living arrangement	95%	80%	1:1	4.64%	15.56%	3.787	274
Participants Age	95%	80%	1:1	23.76%	3.17%	0.1051	104

Because the calculated sample size based on single population proportion formula is larger than calculated sample size based on significant factors (variables), we took the calculated sample size based on single population proportion formula. Therefore, the final sample size was 518.

4.6. Sampling Techniques and Procedure

A stratified multi-stage sampling technique was used and 518 school female adolescents were enrolled in the study. During the study period, 4,051 secondary high school female adolescents are attending their education in Debre Berhan Town. There are six secondary high schools in the town (two private & four government secondary high schools). A stratified sampling technique (the schools are divided by pace of income or wealth status in to private and government secondary high schools) was employed in order to select study units. After stratifying schools into private and government secondary high schools, three schools (one private and two government secondary high schools) were selected randomly. Then grade 11 & 12 from Millennium, grade 9 & 12 from H/Mariam Mamo and grade 10 and 11 from Debre Eba schools were selected randomly. Next, 6 sections from G-11 & 12 both from Millennium, 16 sections from G-10 & 11 both from Debre Eba and 18 sections from G-9 & 12 both from H/Mariam Mamo schools was selected randomly. Finally, by using proportion to population size calculation (proportion to population size allocation; when the total sample size is distributed about different strata in proportion to the size of the strata) the numbers of students were assigned to each selected sections. That is:

$$n_i = n \times N_i/N,$$

Where n_i = strata, n = sample size, N_i = population of each stratum (selected sections of G-11 & 12 from Millennium, G-10 & 11 from Debre Eba and G-9 & 12 from H/Mariam Mamo schools) and N = total population of the strata (selected sections of G-11 & 12 from Millennium + G-10 & 11 from Debre Eba + G-9 & 12 from H/Mariam Mamo schools = 1026). For example, let us take selected sections of G-11 from Millennium school (that is $N_i = 68$); $n_i = 518 \times 68/1026 = 34$.

Then the total number of 15-19 years old female students in each selected sections of each selected grade level was obtained from the school administration. A separate sampling frame was prepared for each selected sections of each grade level of each school (population of each stratum was considered as a sampling frame of each selected sections of each grade level of each school). Then, the final participants were randomly selected from the sampling frame of each selected sections of each grade level through a computer-generated method (it is one of the three methods in simple random sampling to select study participants and it works by using excel software). First, we should have a sampling frame (let us say “ N_i ”). Then write “ N_i ” is equal to that sampling frame on excel. Next, write the sign equal to and RANDBETWEEN. After that, write one up to “ N_i ” (sampling frame) on excel. Finally drag to down until it reaches the required number. For instance, let us take grade-11 from Millennium school ($N_i = 68$ and $n_i = 34$). Write $N_i = 68$; =RANDBETWEEN (1, 68). Finally drag to dawn until 34. These thirty-four (34) students are study participants from grade-11 students at Millennium school.

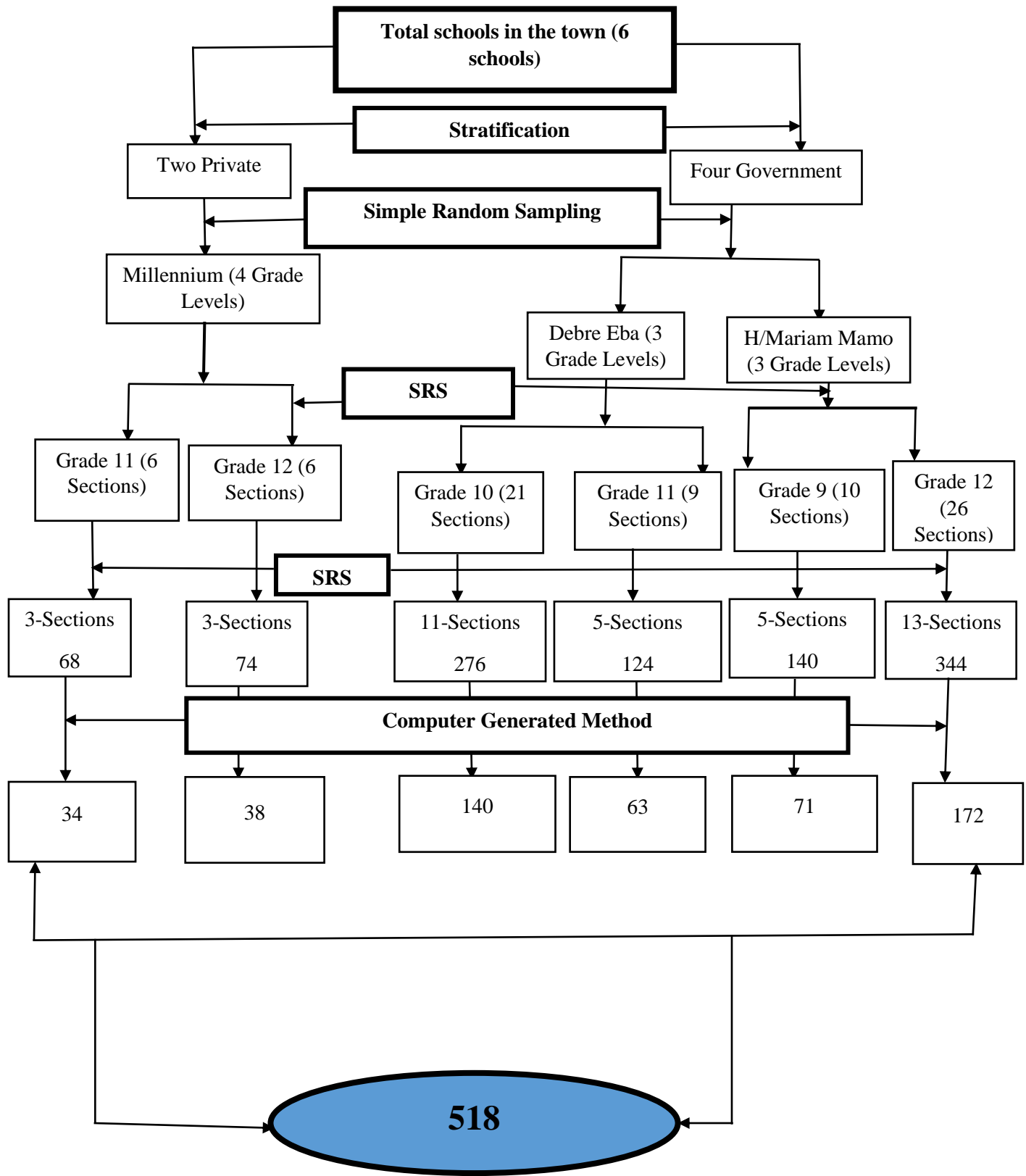


Figure 2: Schematic presentation of sampling procedure for magnitude of teenage pregnancy and its associated factors among school adolescents of Debre Berhan Town, North Shoa Zone, North East Ethiopia, 2021.

4.7. Variables

4.7.1. Dependent Variable

- ❖ Teenage pregnancy

4.7.2. Independent Variables

- Demographic and socio-economic factors
 - ❖ Place of residence
 - ❖ Occupation
 - ❖ Parental marital status
 - ❖ Communication with parents about sexual issues/reproductive health issues
 - ❖ Parent-child closeness or connectedness
 - ❖ Employment status
 - ❖ Wealth quintiles
 - ❖ Peer influence/pressure
 - ❖ Early marriage
 - ❖ Sex and age of the household head
 - ❖ Participants age
 - ❖ Adolescents/teenagers knowledge on early pregnancy
 - ❖ Perception on teenage pregnancy
- Health service characteristics/Health service-related factors
 - ❖ Cost of services
 - ❖ Availability and accessibility of sexual and reproductive health services
 - ❖ Counseling services on sexual and reproductive health services
 - ❖ Non-friendly adolescent reproductive services
 - ❖ Lack of comprehensive sexuality education
 - ❖ Misconceptions about contraceptives
- Social disorganization factors
 - ❖ Community precursors/factors
 - Poverty
 - Female unemployment
 - ❖ Household precursors/factors
 - Family disruption
- Household related factors

- ❖ Size of the household
- ❖ Education levels of household's head
- ❖ Household composition
- ❖ Domestic violence among parents
- ❖ Participants marital status
- ❖ Age at first marriage

4.8. Operational Definitions

Teenage pregnancy: Pregnancy in adolescents 15-19 years who believe that they are pregnant and confirmed by a health care providers (14).

School adolescents: Those persons who are within the age group of 10-19 years and who attend school.

School teenagers: Persons who are between the ages of 13 and 19 years and attend school.

Sexual and reproductive health: Essential elements of the right to health/significant public health issue, including in emergencies.

Adolescent sexual and reproductive health: The physical and emotional wellbeing of adolescents and includes their ability to remain free from unwanted pregnancy, unsafe abortion, STIs (including HIV/AIDS), and all forms of sexual violence and coercion.

Youth friendly health services: Those health services that are accessible, acceptable, equitable, appropriate and effective for different youth subpopulations.

Adolescent friendly services: defined as the friendly environment and such favorable condition where adolescents can get access to ASRH services in comfortable and easy manner/services that meet the needs of young people sensitively and effectively and are inclusive of all adolescents.

Teenagers: persons who is between 13-19 years old.

Adolescents: Persons in the age range of 10-19 years (a transition period between childhood & adulthood).

Youths: Those between the ages of 15 to 24 years.

Reproductive health: A state of complete physical, mental, social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes.

Sexual health: A state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity (the integration of somatic, emotional,

intellectual and social aspects of sexual being, in ways that are positively enriching and that enhance personality, communication and love).

4.9. Data Collection Tools and Techniques

4.9.1. Data Collection Tools/Instruments

Data collection was carried out with structured, self-administered questionnaires. Questionnaires were prepared after reviewing different literatures and constructs adapted from WHO standard tool developed to assess sexual and reproductive health of adolescents and youths. Appropriate modifications were made to fit with the local set up.

Questionnaires were first be prepared in English and translated in to Amharic language and then re-translated to English language by two independent M.Sc. holder health professionals to check for consistency and clarity. Data was collected by using the Amharic version.

The questionnaires were pre-tested on 5% of the total sample size in one high secondary school female adolescent of Debre Berhan Town outside of the selected schools to see exactness of responses for the questions to be asked, language clarity and appropriateness of the tool before the actual data collection will be conducted. Based on the problems identified on the pre-test, the questionnaires were revised.

Doing pre-test is appropriate to decrease inconveniences and possible ambiguities of the prevailing data collection tools, and to increase validity and reliability of the tools before undertaking actual data collection.

4.9.2. Data Collection Procedures

Five data collectors, with Bachelor's degrees in nursing and having data collection experience were recruited. One supervisor, with a master's of public health was employed. The supervisor and data collectors were females in order to minimize participants' discomfort. One day training was given through lecture and discussion method for data collectors and the supervisor before actual data collection date. Data collectors were used sections of each selected grade level of each selected schools to approach to study participants.

4.10. Data Quality Management

To maintain the quality of data, structured and pre-tested questionnaires were used and training was given to data collectors and supervisor on data collection procedure and the objective of the study. To check reliability (validity) of instruments or to measure internal consistency of a tool, Cronbach alpha test was used. That is, the value of Cronbach alpha in the pretest was 0.8. Data was frequently be checked in the

field by the supervisor. During data collection, questionnaires were reviewed and checked daily for completeness and accuracy by supervisor and principal investigator.

4.11. Data Processing and Analysis

The collected data was checked, cleaned, coded and entered by using double entry method in EPI data version 3.1. The data was exported to Statistical Package for Social Sciences (SPSS) version 20. Data was checked, edited and cleaned for error related to inconsistencies and missing value then it was recoded, categorized and sorted for further analysis. Descriptive statistics (proportions, percentages, standard deviations, mean frequency distribution, and cross tabulation) were used to describe the respondents by socio-demographic characteristics and other relevant variables. Furthermore, logistic regression specifically bivariate and multivariate analyses were used to determine the effect of various factors on the outcome variable (teenage pregnancy).

In bivariate analysis, all independent variables were entered into the model and variables with p-value less than 0.25 were included in multivariate logistic regression model in order to assess the independent predictors of teenage pregnancy. P-value < 0.05 was considered as significant predictors of teenage pregnancy. The result of the study was presented in text, tables, graphs and charts.

4.12. Ethical Consideration

Ethical clearance (approval) was obtained from Debre Berhan University College of Health Science Ethical Review Board. Next, cooperation letter was obtained from Public Health Department. Finally, permission to collect data was obtained from each selected schools of Debre Berhan Town. Information was given for the study participants about the voluntary participation and they can stop the interview at any time if they are not comfortable. The participation in this study was based on their willingness and free from coercion, undue influence, inducement or intimidation. To ensure the confidentiality of participants, personal identifiers were not be recorded on the questionnaire.

Informed consent was obtained from each study participant. Each respondent was informed about the objective of the study that will contribute necessary information for policy makers and other concerned bodies. Any involvement in the study was after their complete verbal consent was obtained. They were also informed that all data obtained from them will be kept confidential by using codes instead of any personal identifiers and is meant only for the purpose of the study.

5. RESULT

5.1. Socio-demographic Characteristics

The study involved 495 participants with a response rate of 95.6%. Their mean age was 17.6 (\pm 1.22 SD). The majority (90.7%), (85.7%) and (94.3%) of respondents were Orthodox Christians, urban residents and not married respectively. Concerning to the age category, 201 (40.6%) of the participants were in the age category between 15-17 years whereas 294 (59.4%) of them were in the age category between 18-19 years. Regarding ethnicity and education level, the majority (92.1%) and (41%) of the respondents were Amhara and grade 12 respectively (Table 2).

Table 2: Socio-demographic characteristics of respondents who were in the age group of 15-19 years in Debre Berhan Town, North Shoa Zone, North East Ethiopia 2021 (n = 495).

Variable	Category	Frequency	Percent
Age in years	15-17	201	40.6
	18-19	294	59.4
Residence	Urban	424	85.7
	Rural	71	14.3
Grade level of respondent	9 th	64	12.9
	10 th	133	26.9
	11 th	95	19.2
	12 th	203	41
Religion of respondent	Orthodox	449	90.7
	Muslim	17	3.4
	Protestant	27	5.5
	Other	2	0.4
Ethnicity of respondent	Amhara	456	92.1
	Oromo	25	5.1
	Tigre	11	2.2
	Other	3	0.6
Household head sex	Male	354	71.5
	Female	141	28.5
Household head age	<30 years	10	2
	30-44 yrs.	187	37.8
	45-54 yrs.	208	42
	55-64 yrs.	76	15.4
	>64 years	14	2.8
Educational status of father	No formal education	190	43.0
	Elementary	65	14.7
	Secondary	49	11.1
	College and above	138	31.2

Occupation of father	Government employee	116	26.2
	Self-employee	101	22.9
	Merchant	71	16.1
	Farmer	145	32.8
	Other	9	2
	<hr/>		
Mother's educational status	No formal education	241	50.3
	Elementary	73	15.2
	Secondary	53	11.1
	College and above	112	23.4
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Occupation of mother	Government employee	95	19.8
	Self-employee	110	23
	Merchant	73	15.2
	Housewife	198	41.3
	Other	3	0.7
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Family monthly income (Birr)	<1500	81	16.4
	1500-7500	303	61.2
	>7500	111	22.4
<hr/>			
Parental marital status	Married	354	71.5
	Widowed	64	12.9
	Divorced	77	15.6
<hr/>			

5.2. Sexual and Reproductive Health Characteristics

The majority (78.2%) of the respondents reported that they did not receive sexual and reproductive health education in their school. Only 108 (21.8%) of the respondents reported that they received sexual and reproductive health education at school. Regarding to communication with parents about sexual issues, 352 (71.1%) of the respondents did not communicate with their parents about sexual issues but 143 (28.9%) of the participants did it. Majority of the respondents (88.5%) reported that they heard about family planning. From these, 308 (70.3%) of participants heard from television (Figure 3).

Majority (82.2%) of the respondents got information about menstruation. Regarding to pornography films, 138 (27.9%) of the respondents watched pornography films. Concerning to domestic violence, 23 (4.6%) of them mentioned that they had a domestic violence by their parents or their nearest relatives. Majority of the respondents, (71.9%) reported that they did not use contraceptives (Table 3).

Table 3: Sexual and reproductive health characteristics among study participants who were in the age group of 15-19 years in Debre Berhan Town, North Shoa Zone, North East Ethiopia 2021 (n = 495).

Variable	Category	Frequency	Percent
Got SRHE at school	Yes	111	22.4
	No	384	77.6
Ever had sexual intercourse	Yes	176	35.2
	No	321	64.8
Age at first sexual intercourse	10-15 years	17	9.7
	16-17 years	73	41.4
	18-19 years	86	48.9
Communicate with parents about sexual issues	Yes	143	28.9
	No	352	71.1
Ever had pregnancy	Yes	25	5.1
	No	470	94.9
Age at first pregnancy	10-15 years	7	28
	16-17 years	11	44
	18-19 years	7	28
Peer pressure on sexual activity	Yes	113	22.8
	No	382	77.2
Information about FP	Yes	438	88.5
	No	57	11.5
Watch pornography films	Yes	138	27.9
	No	357	72.1
Ever had domestic violence by parents	Yes	23	4.6
	No	472	95.4
Use contraceptives	Yes	139	28.1
	No	356	71.9
Ever had marriage	Yes	28	5.7
	No	467	94.3
Age at first marriage	10-15 years	8	28.6
	16-17 years	8	28.6

		18-19 years	12	42.8
Receive information about menstruation	Yes		407	82.2
	No		88	17.8

Note: - SRHE=Sexual and Reproductive Health Education, FP=Family Planning.

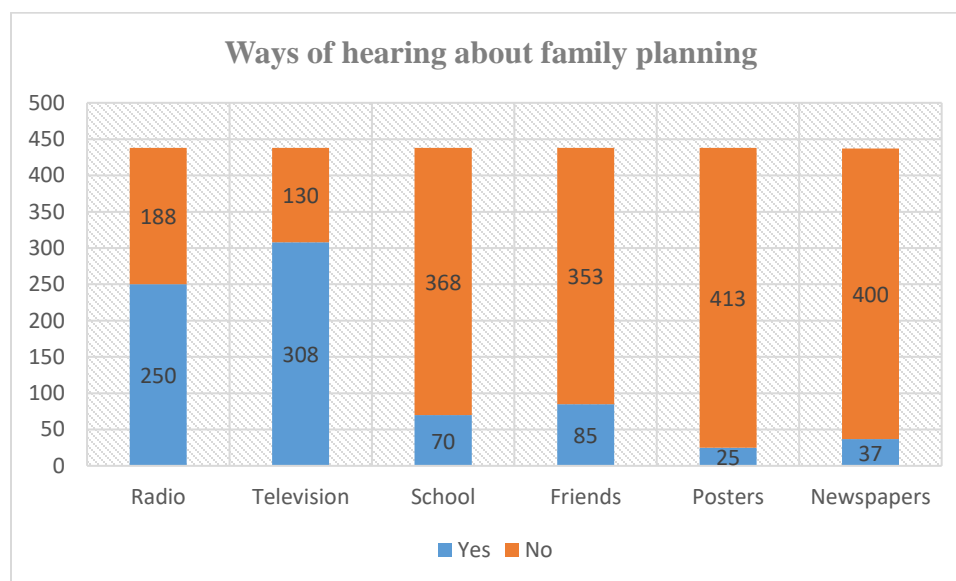


Figure 3: Proportion of ways of hearing about family planning of the study participants among in school adolescents in Debre Berhan Town, 2021 (n = 438).

Among 138 (27.9%) of participants who watched pornography films, 11 (8%) of them had history of pregnancy. Among 357 (72.1%) of participants who did not watch pornography films, 14 (3.9%) of them had history of pregnancy (Figure 4).

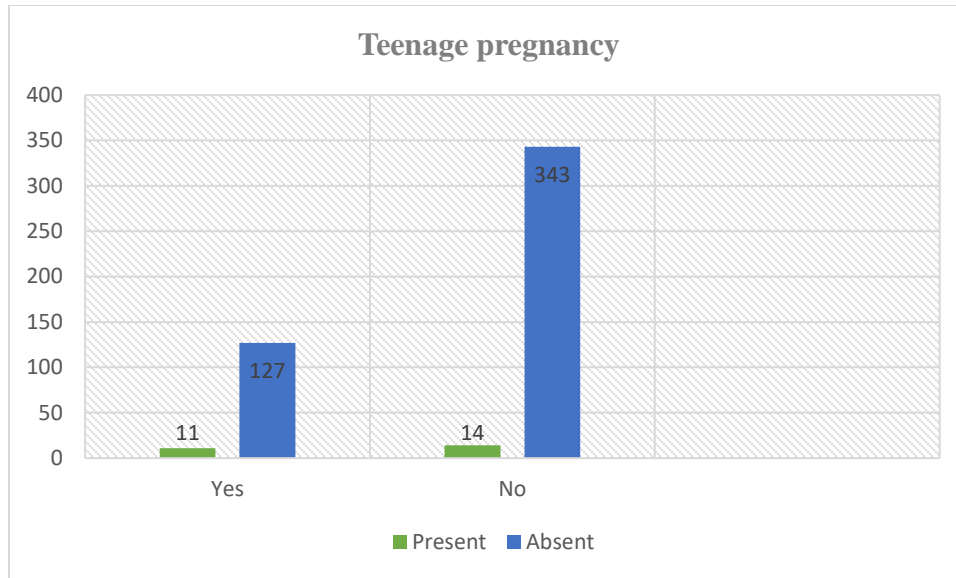


Figure 4: Proportion of teenage pregnancy who watched pornography films (n = 138) and who did not watch pornography films (n = 357) among in school adolescents in Debre Berhan Town, 2021.

5.3. Health Service Characteristics

The majority (80.6%) of the respondents reported that they did not get sexual and reproductive health services at school but 96 (19.4%) of the participants got sexual and reproductive health services from their school. Concerning availability of health facility, 417 (84.2%) of the participants mentioned that they had health facility in their kebele. From these, 234 (56.1%), 120 (28.8%), 34 (8.2%) and 29 (7%) of the respondents mentioned that they had health center, hospital, health post and private clinic respectively. Almost half, (49.5%) of the respondents had gone to health facility for seeking sexual and reproductive health services. With regard to sexual & reproductive health counseling service, only 58 (11.7%) of the respondent received the service from their schools. Concerning affordability of sexual and reproductive health service, 166 (33.5%) of the respondents reported that the service was affordable. Regarding availability & accessibility of adolescent and youth friendly health services, only 169 (34.1%) of the respondent reported that the service was available, accessible and friendly at the health facilities (Table 4).

Table 4: Health service characteristics among study participants who were in the age group of 15-14 years in Debre Berhan Town, North Shoa Zone, North East Ethiopia, 2021 (n = 495).

Variable	Category	Frequency	Percent
Got SRHS at school	Yes	96	19.4
	No	399	80.6
Availability of health facility	Yes	417	84.2
	No	78	15.8
Type of health facility	Hospital	120	28.8
	Health center	234	56
	Health post	34	8.2
	Private clinic	29	7
Go to health facility for seeking SRHS	Yes	245	49.5
	No	250	50.5
Got SRH counseling service	Yes	58	11.7
	No	437	88.3
SRHS cost affordable	Yes	166	35.5
	No	329	65.5
AYFHS Accessibility	Yes	169	34.1
	No	326	65.9
Have misconception about contraceptives	Yes	202	40.8
	No	293	59.2

Note: - AYFHS=Adolescent & Youth Friendly Health Service, SRHS=Sexual & reproductive health service, SRH=Sexual & Reproductive Health.

Concerning misconception about contraceptives, 202 (40.8%) of the respondents had at least one misconception about contraceptives (Figure 5).

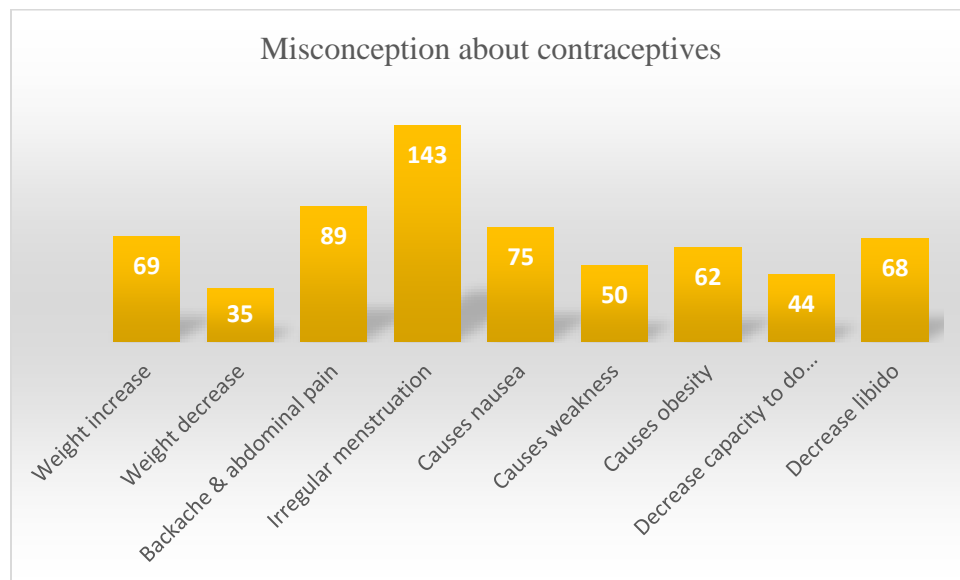


Figure 5: Contraceptive misconceptions of study participants who were in the age group of 15-19 years in Debre Berhan Town, North Shoa Zone, North East Ethiopia, 2021 (n = 202).

5.4. Factors Associated with Teenage Pregnancy

The results from bivariate logistic analysis showed that there was a significant association between grade levels, residence, and age of household head, participant father alive, participant father & mother live together, parent-daughter interaction, disruption in family, got sexual & reproductive health education, age at first sex; participant ever had marriage and peer influence on teenage pregnancy at p-value < 0.25. In addition, watching pornography films, domestic violence, contraceptive use, exposure to sexual & reproductive health service, sexual & reproductive health cost and availability and accessibility of adolescent & youth friendly health service had significant association with teenage pregnancy (at p-value < 0.25). Other independent variables (p-value > 0.25) in the crude analysis were excluded for multiple logistic regression analysis. The independent variables with p-value <0.05 in multiple logistic regression analysis were taken as significant predictor of teenage pregnancy.

Variables having a p-value < 0.25 during the bivariate analysis were entered to multivariable logistic regression analysis. The multivariable logistic regression model showed four independent predictors of teenage pregnancy out of nineteen reported from bivariate analysis. They were age at first sex (16-17 years & 18-19 years), sexual and reproductive health education at school, domestic violence, and sexual and reproductive health service at school (Table 5).

The regression analysis indicated that adolescents who did not get sexual and reproductive health education were 5.397 times more likely to become pregnant compared with those adolescents who got sexual and reproductive health education (AOR= 5.397 [95% CI: 1.661-17.533]). Those adolescent who had first sexual intercourse at the age of 18-19 years were 9.164 times more likely to become pregnant compared to those who had first sexual intercourse at the age of 10-15 years (AOR=9.164 [95% CI: 1.891-44.413]). In addition, those adolescents who had first sexual intercourse at the age 16-17 years were 5.056 times more likely to become pregnant compared with those adolescents who were at the age group of 10-15 years (AOR=5.056 [95% CI: 1.188-11.518]).

It was also observed that, adolescents who had domestic violence were almost 5 times more likely to become pregnant compared with those who had not domestic violence (AOR=4.901 [95% CI: 1.502-15.933]). Concerning to sexual and reproductive health services, adolescents who did not get sexual and reproductive health services were nearly 3 times more likely to become pregnant compared to those who got sexual and reproductive health services (AOR=2.709 [95% CI: 1.064-6.897]).

Table 5: Bivariate and multivariate logistic regression analysis on teenage pregnancy among in school adolescents in Debre Berhan Town, North Shoa Zone, North East Ethiopia, 2021 (n = 495).

Variables	Ever pregnant (n=495)		COR (95% CI)	AOR (95% CI)
	Yes	No		
Grade level				
9 th	4 (6.2%)	60 (93.8%)	1.197 (0.383-3.744)	0.779 (0.145-4.175)
10 th	4 (3.0%)	129 (97%)	2.573 (0.835-7.930)	0.594 (0.136-2.603)
11 th	2 (2.1%)	93 (97.9%)	3.710 (0.831-16.56)	1.320 (0.233-7.481)
12 th	15 (7.4%)	188 (92.6%)	1	1
Residence				
Urban	17 (4%)	412 (96%)	3.343 (1.381-8.093)	2.370 (0.687-8.175)
Rural	8 (12.1%)	58 (87.9%)	1	1
Age of household head				
<30 years	2 (20%)	8 (80%)	0.667 (0.077-5.749)	0.535 (0.023-12.607)
30-44 years	8 (4.3%)	179 (95.7%)	3.729 (0.712-19.54)	4.069 (0.368-15.014)
45-54 years	11 (5.3)	197 (94.7%)	2.985 (0.593-15.02)	2.652 (0.269-26.109)
55-64 years	2 (2.6%)	74 (97.4%)	6.167 (0.792-48.03)	5.860 (0.381-10.140)
>64 years	2 (14.3%)	12 (87.7%)	1	1
Father alive				
Yes	18 (4.1%)	423 (95.9%)	3.500 (1.390-8.814)	0.914 (0.182-4.592)
No	7 (13%)	47 (87%)	1	1
Father & mother live together				
Yes	14 (3.8%)	350 (96.2%)	2.292 (1.013-5.185)	1.634 (0.497-5.372)
No	11 (8.4%)	120 (91.6%)	1	1
Parent-daughter interaction				
Good	19 (4.4%)	416 (95.6%)	1	1
Poor	6 (10%)	54 (90%)	2.433 (0.931-6.358)	2.437 (0.334-17.786)
Disruption in family				
Yes	6 (10%)	54 (90%)	1	1
No	19 (4.4%)	416 (95.6)	0.411 (0.157-1.074)	0.700 (0.97-5.077)
Got SRHE at school				
Yes	13 (11.7%)	98 (88.3%)	1	1
No	12 (3.1%)	372 (96.9%)	4.112 (1.819-9.296)	5.397 (1.661-17.533)*
Age at 1 st sex				
10-15 years	8 (47.1%)	9 (52.9%)	1	1
16-17 years	11 (15.1%)	62 (84.9%)	5.010 (1.589-15.79)	5.056 (1.188-11.518)*
18-19 years	6 (7%)	8 (93%)	11.852 (3.352-41.9)	9.164 (1.891-44.413)*
Participant ever married				
Yes	3 (10.7%)	25 (89.3%)	0.412 (0.115-1.470)	20.53 (0.400-10.525)
No	22 (4.7%)	425 (95.3%)	1	1
Peer influence				
Yes	10 (8.8%)	103 (91.2%)	0.421 (0.184-0.965)	1.990 (0.689-5.746)

No	15 (3.9%)	367 (96.1%)	1	1
Watch pornography film				
Yes	11 (8%)	127 (92%)	1	1
No	14 (3.9%)	343 (96.1)	0.471 (0.208-1.065)	0.920 (0.322-2.630)
Domestic violence				
Yes	5 (21.7%)	18 (78.3%)	6.278 (2.116-18.66)	4.901 (1.502-15.933)*
No	20 (4.2%)	452 (95.8%)	1	1
Use contraceptive				
Yes	11 (7.9%)	128 (92.1%)	0.476 (0.211-1.071)	1.229 (0.397-3.803)
No	14 (3.9)	342 (96.1)	1	1
Got SRHS at school				
Yes	10 (10.4%)	86 (89.6%)	1	1
No	15 (3.8%)	384 (96.2%)	2.977 (1.293-6.851)	2.709 (1.064-6.897)*
Health facility type				
Hospital	3 (2.5%)	116 (97.5%)	4.64 (0.884-24.35)	3.040 (0.446-20.724)
Health center	15 (6.5%)	216 (93.5%)	1.728 (0.468-6,385)	1.677 (0.354-7.948)
Health post	4 (11.8%)	30 (88.2%)	0.9 (0.184-4.406)	0.716 (0.108-4.734)
Private clinic	3 (10.7%)	25 (89.3%)	1	1
Got SRHS at health facility				
Yes	19 (7.8%)	226 (92.2%)	0.292 (0.115-0.745)	0.333 (0.064-1.738)
No	6 (2.4%)	244 (97.6%)	1	1
SRHS cost affordable				
Yes	12 (7.2%)	154 (92.8%)	0.528 (0.235-1.184)	1.832 (0.495-6.788)
No	13 (4%)	316 (96%)	1	1
Availability & accessibility of AYFHS				
Yes	13 (7.7%)	156 (92.3%)	0.459 (0.204-1.029)	0.532 (0.144-1.970)
No	12 (3.7%)	314 (96.3%)	1	1

Note: - 1=Reference category, AYFHS=Adolescent & Youth Friendly Health Service, *=P-value<0.05, SRHS=Sexual & Reproductive Health Service, SRHE=Sexual & Reproductive Health Education, COR=Crude Odd Ratio, AOR=Adjusted Odd Ratio, CI=Confidence Interval.

6. DISCUSSION

The study was conducted to determine the prevalence of teenage pregnancy and its associated factors among in school adolescents of Debre Berhan Town. The prevalence of teenage pregnancy in the study was low (5.1%) compared to other studies conducted in various parts of the world. Some of the reasons for these differences could be variations in sociodemographic, cultural, sexual, and reproductive health characteristics of adolescents. The survey showed a lower magnitude of teenage pregnancy than EDHS 2016 (13%) (12). The discrepancy may be due to methodological variations: EDHS included adolescents in the community whereas this study focused only on high school adolescents.

In this study, the factors associated with teenage pregnancy were age at first sex, sexual and reproductive health education, sexual and reproductive health services, and domestic violence. The finding in this study is comparable with those of study conducted in Arba Minch (7.7%) (26), in Niger Delta state, Nigeria (6.2%) (32) and in Lira district, Rwanda (7.23%) (35). This similarity could be due to the presence of some related sociodemographic, cultural, and individual adolescent characteristics in the current and those studies.

The result found in this study is lower than those of study conducted in Wogedi, South Wollo (28.6%) (14), Assossa (20.4%) (39) and Western Nigeria (22.9%) (32). This difference could be due to the variation of geographical area and study design. In addition, it could be due to the reason that the previous study was conducted on a community and health facility based study design.

Sexual and reproductive health education had strong association with teenage pregnancy. In this study, adolescents who did not get sexual and reproductive health education were 5.397 times more likely to be pregnant compared with those adolescents who got sexual and reproductive health education. This is congruent to other study in sub-Saharan Africa countries (1, 28). This might be because adolescents who did not get sexual and reproductive health education may not know their fertile period, they are at a risk of unprotected sexual intercourse, and they are exposed to unintended pregnancy. Study in Addis Ababa (29) and in Degua Tembien (6) showed that, age at first sex has significant effect on teenage pregnancy. The current study revealed that, those adolescent who had first sexual intercourse at the age of 18-19 years were 9.164 times more likely to become pregnant compared to those who had first sexual intercourse at the age of 10-15 years. In addition, those adolescents who had first sexual intercourse at the age 16-17 years were 5.056 times more likely to become pregnant compared with those adolescents who were at the age group of 10-15 years. This might be because as the age increases there is a hormonal and physiological change and their body is ready for pregnancy. This implies that students who practiced sexual intercourse earlier in their life are less likely to be pregnant.

Regarding to domestic violence, adolescents who had domestic violence were almost 5 times more likely to become pregnant compared with those who had not domestic violence. This finding was consistent with other researches (4, 28). Different studies (4, 28) revealed that sexual and reproductive health services had significant factor for teenage pregnancy. From this study, adolescents who did not get sexual and reproductive health services were nearly 3 times more likely to become pregnant compared to those who got sexual and reproductive health services. Therefore, reducing teenage pregnancy is possible through providing sexual and reproductive health services for adolescents.

Strengths and Limitations of the Study

Strengths

- Since it is one of the few studies in this area, it provides baseline information for those interested.

Limitations

- Since the study design employed is a cross-sectional, causality may not be inferred.
- Disclosing their pregnancy history is not easy for Ethiopian teenagers due to religious prohibition and cultural hindrance as well because pregnancy before marriage is discouraged. This could minimize the number of teenagers included in this study.
- From the very nature of the study, it assesses personal and sensitive issues related to sexual behaviors, which might have caused underreporting of teenage pregnancy experiences.
- Since there is wide confidence interval, it may decrease the precision.

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

This study showed that, the prevalence of teenage pregnancy is (5.1%), which is low in the area compared to other studies. This might be due to the reason that contraceptive utilization might be increased in the area and variation in socio-economic & demographic factors. Watching pornography films are an important factor that predispose adolescents to early sexual engagement and related negative consequences. Parent-daughter interaction (communication) about the issue of sexuality and reproductive health is essential. Because female students who have good parent-daughter interaction may get good opportunity to have free discussion about sexuality and reproductive health issues thereby transfer of life skill and is possible to protect themselves from teenage pregnancy. Sexual and reproductive health education, age at first sex, domestic violence and sexual and reproductive health service were found to be significant predictors of teenage pregnancy.

7.2. Recommendation

For schools:

- Provide sexual and reproductive health education for students.
- Provide sexual and reproductive health service for students.

For Debre Berhan town health office:

- Give attention for adolescents about sexual and reproductive health issues.

For Debre Berhan town health facility:

- Strengthen provision of adolescent and youth friendly health services.

For non-governmental organization:

- Work on adolescents & youths to reduce teenage pregnancy.

For parents or caregivers:

- Follow their teens about social media and the ways their teens may use it, as well as the common risks, to help them understand and navigate the technologies.
- Strengthen good parent-daughter interaction.

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ANNEXES

Annex 1: English Version Questionnaires

Information Sheet

Good morning/Good afternoon? My name is----- . I came from-----.

Today I am here to collect data on the research undergoing by Sofonias Mekonnen (Reproductive health and family planning MPH candidate at Debre Berhan University with the objective of the investigation of magnitude of teenage pregnancy and its associated factors among school adolescents of Debre Berhan Town. This self-administered questionnaire is extremely essential to investigate magnitude of teenage pregnancy and its associated factors among school adolescents of Debre Berhan Town. Therefore, you are selected to participate in this study just by chance.

Study Title: Magnitude of teenage pregnancy and its associated factors among school adolescents of Debre Berhan Town, North Shoa Zone, North East Ethiopia, 2021.

Objective of the Study: Objective of this research is to investigate magnitude of teenage pregnancy and its associated factors among school adolescent students.

Purpose of the Study: Purpose of this study is to investigate magnitude of teenage pregnancy and its associated factors among school adolescent students of Debre Berhan Town. Another purpose of this study is for the partial fulfilment of master's degree in Public Health/Reproductive Health and Family Planning. The information you provide is extremely important in order to generate useful information for planning appropriate reproductive health strategies and interventions for both preparatory and high secondary school students. To attain this purpose your genuine participation in filling the questionnaire with truth information is very important and highly appreciated.

Benefits and Risks of the Study: The process of the study has no payment, or special benefit. I would like to assure you that; the study have no any physical or psychological trauma, but participation in the study by giving your correct answer can play great role in the successfulness of the study and also it will provide great input to bring change in quality of adolescent and youth friendly reproductive health service to youths and adolescents.

Right of the Participants: Your participation in the study will be totally based on your willingness. You have the right to skip any question that you do not want to answer. Therefore, you are kindly requested to respond genuinely and voluntary with patience. To fill these questions, it may take 20-30 minutes.

Confidentiality: Your name will not be written in this study and will never be used in connection with any information you tell us. I would like to assure you that the study is confidential.

Informed Consent

I have read this form or it has read to me in the language I understand all conditions stated above.

Are you willing to participate in the study?

1. Yes, I agree to participate. 2. No, I do not agree to participate.

Data Collector: I confirm that I have explained to the participant all relevant information about the study as indicated above. Name: ----- . Signature----- . Date----- .

Principal Investigator’s Name: Sofonias Mekonnen

Email Address: sofonias482@gmail.com or sofisofofa415@gmail.com

Mobile Number: 0932875454

Result of Interview Questionnaire:

1. Completed 2. Respondent not available 3. Refused 4. Partially completed

Checked by: Supervisor’s name----- . Signature----- . Date----- .

Thank you for your cooperation!

Instruction: Circle the code number given in front of the answer you choose and for questions that you give direct answer, write the answer in the space provided.

Part I: Questions related to socio-economic and demographic characteristics of study participants.

S. No	Question item	Response	Skip
101	How old are you?	-----in years	
102	What is your religion?	1. Orthodox 2. Muslim 3. Protestant 4. Catholic	

		5. Other (specify)-----	
103	What is your ethnicity?	1. Amhara 2. Oromo 3. Tigre 4. Other (specify)-----	
104	What is your grade level?	1. Grade 9 th 2. Grade 10 th 3. Grade 11 th 4. Grade 12 th	
105	Where is your place of residence?	1. Urban 2. Rural	
106	What is the sex of your household head?	1. Male 2. Female	
107	What is the age of your household head?	1. Less than 30 2. Between 30 and 44 3. Between 45 and 54 4. Between 55 and 64 5. Greater than 64	
108	Is your father alive?	1. Yes 2. No	If no, skip to 111
109	If yes, what is the educational status of your father?	1. Illiterate 2. Can read & write 3. Elementary (from grade 1-8) school 4. Secondary (from grade 9-12) school 5. College & above	
110	If you say yes for question No. 108, what is the occupation of your father?	1. Government employee 2. Self-employee 3. Merchant 4. Farmer 5. Other (specify)-----	
111	Is your mother alive?	1. Yes 2. No	If no, skip to 114

112	If your response is yes, what is the educational status of your mother?	<ol style="list-style-type: none"> 1. Illiterate 2. Can read and write 3. Elementary (from grade 1-8) school 4. Secondary (from grade 9-12) school 5. College and above 	
113	If you say yes for question No. 111, what is the occupation of your mother?	<ol style="list-style-type: none"> 1. Government employee 2. Self-employee 3. Merchant 4. Farmer 5. House wife 6. Other (specify)----- 	
114	How many is your family monthly income in Ethiopian Birr?	<ol style="list-style-type: none"> 1. Less than 1500 2. Between 1501 and 7500 3. Greater than 7500 	
115	With whom you live?	<ol style="list-style-type: none"> 1. Alone 2. With mother 3. With father 4. With both parents 5. Other (specify)----- 	
116	Is your father and mother living together?	<ol style="list-style-type: none"> 1. Yes 2. No 	
117	What is your marital status?	<ol style="list-style-type: none"> 1. Single 2. Married 3. Separated (divorced) 	
118	What is your parental marital status?	<ol style="list-style-type: none"> 1. Married 2. Widowed 3. Divorced (Separated) 	
119	What is your interaction with your parent?	<ol style="list-style-type: none"> 1. Good 2. Poor 	
120	Is there any disruption in your family?	<ol style="list-style-type: none"> 1. Yes 	

		2. No	
121	How many is your family member?	1. Three or less 2. Between four & six 3. Seven and above	
122	Do you have your own mobile phone?	1. Yes 2. No	

Part II: Questions related to sexual and reproductive health characteristics of study participants.

S. No	Question item	Response	Skip
201	Do you receive sexual and reproductive health education at your school?	1. Yes 2. No	
202	Have you ever had sex?	1. Yes 2. No	If no, skip to 204
203	If you say yes for question No. 202 at what age had sexual intercourse?	1. Between 10-15 years 2. Between 16-17 years 3. Between 18-19 years	
204	Do you communicate with parents about sexual issues?	1. Yes 2. No	
205	Have you ever had pregnancy?	1. Yes 2. No	If no, skip to 207
206	If your response is yes for question No. 205 at what age you got pregnant?	1. Between 10-15 years 2. Between 16-17 years 3. Between 18-19 years	
207	Have you ever had married?	1. Yes 2. No	If no, skip to 209
208	If your answer is yes for question No. 207 at what age you got married?	1. Between 10-15 2. Between 16-17 3. Between 18-19	
209	Do you influence by peers on sexual activity?	1. Yes 2. No	
210	Have you heard about family planning?	1. Yes 2. No	If no, skip to 212

211	If you say yes for question No. 210 in what way you heard? One more answer.	<ol style="list-style-type: none"> 1. From radio 2. From television 3. From school 4. From friends 5. From posters 6. From newspapers (magazines) 	
212	Have you received information about menstruation?	<ol style="list-style-type: none"> 1. Yes 2. No 	
213	Do you watch pornography films?	<ol style="list-style-type: none"> 1. Yes 2. No 	
214	Have you ever had domestic violence by your parents?	<ol style="list-style-type: none"> 1. Yes 2. No 	If no, skip to 216
215	If you say yes for question No. 214 by whom had you domestic violence?	<ol style="list-style-type: none"> 1. By my father 2. By my mother 3. By my brother 4. By my sister 5. If other specify----- 	
216	How many sexual partners have you ever had in your lifetime?	<ol style="list-style-type: none"> 1. One 2. Two 3. Three 4. More than three 5. Not having sexual intercourse 	
217	When is the exact time to take emergency contraceptives?	<ol style="list-style-type: none"> 1. Within 72 hours after unprotected sexual intercourse 2. After 72 hours after unprotected sexual intercourse 	
218	Do you use contraceptives?	<ol style="list-style-type: none"> 1. Yes 2. No 	
219	If you say no for question No. 218 what is your reason for not using contraceptives?	<ol style="list-style-type: none"> 1. Not having sex 2. Infrequent sex 3. Religious prohibition 4. Don't have access 5. Family influence 	

Part III: Questions related to health service characteristics of study participants.

S. No	Question item	Response	Skip
301	Is there any service provided regarding sexual and reproductive health at school?	1. Yes 2. No	
302	Is there availability of health facility in your kebele?	1. Yes 2. No	If no, skip to 304
303	If your response is yes for question No. 302, What type of health facility is there?	1. Hospital 2. Health center (station) 3. Health post 4. Private clinic 5. All are present	
304	Have you ever gone to health facility to get sexual and reproductive health services?	1. Yes 2. No	
305	Do you get any counseling service regarding to sexual and reproductive health in your school?	1. Yes 2. No	
306	Is the cost of sexual and reproductive health service affordable for you?	1. Yes 2. No	
307	Is there availability & accessibility of adolescent and youth friendly health services at health facility?	1. Yes 2. No	
308	Do you have a misconception (misinformation) about contraceptives?	1. Yes 2. No	
309	If your response is yes for No. 308 what are your misconceptions about contraceptives? More than one answer is possible.	1. It causes weight increase 2. It causes weight decrease 3. It causes backache and abdominal pain 4. Menstruation becomes irregular 5. It causes nausea 6. It causes weakness 7. It causes obesity 8. It decreases capacity to do heavy work	

		9. Its decreases libido (sexual desire)	
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Part IV: Additional questions related to parent-daughter interaction

S. No	Question Item	Response	Skip
401	Do your parents communicate with you on issues related to sexuality, love and friendship openly?	1. Yes 2. No	
402	Do your either parents know about your love or sexual partner?	1. Yes 2. No	
403	Do your parents follow you where and with whom you stay when you are out of home?	1. Yes 2. No	
404	Do your parents like your love and sexual relationship with a boyfriend?	1. Yes 2. No	

Annex 2: Amharic Version Questionnaires (አማርኛ መጠይቅ)

የመረጃ ፎርም

እንደምን አደርሽ (እንደምን ዋልሽ)? ስሜ _____ ነው። የመጣሁት ከ _____ ነው።

ዛሬ እዚህ የተገኘሁት በደብረብርሃን ዩኒቨርሲቲ ጤና ሳይንስ ኮሌጅ በማህበረሰብ ጤና አጠባበቅ ትምህርት ክፍል የስነ-ተዋልዶ ጤናና የቤተሰብ ምጣኔ የማስተርስ ተማሪ በሆኑት በአቶ ሶፎንያስ መኮንን ለሚሰራ ጥናት መረጃ ለመሰብሰብ ሲሆን የጥናቱ ዓላማም እድሜያቸው ከ15-19 ዓመት የሆኑና በደብረብርሃን ከተማ በሚገኙ የሁለተኛ ደረጃ ትምህርት ቤቶች የሚማሩ ተማሪዎች የእርግዝና መጠን (ሁኔታ) ምን እንደሚመስልና ተያያዥ ነገሮች (ምክንያቶች) ላይ በተመለከተ ምን እንደሚመስል ጥናት ለማድረግ ነው። ይህ መጠይቅ እድሜያቸው ከ15-19 ዓመት የሆኑና በደብረብርሃን ከተማ በሚገኙ የሁለተኛ ደረጃ ትምህርት ቤቶች የሚማሩ ተማሪዎች የእርግዝና መጠን (ሁኔታ) ምን እንደሚመስልና ተያያዥ ምክንያቶች ላይ በተመለከተ ጥናት ለማካሄድ እጅግ በጣም አስፈላጊ ነው። ስለዚህ አንቺም ለጥናቱ ተሳታፊዎች አንዷ በመሆን በአጋጣሚ ተመርጠሻልና በጥናቱ እንድሳተፈ በትህትናና በአክብሮት ተጋብዘሻል።

የጥናቱ ርዕስ: እድሜያቸው ከ15-19 ዓመት የሆኑና በደብረብርሃን ከተማ በሚገኙ የሁለተኛ ደረጃ ትምህርት ቤቶች የሚማሩ ተማሪዎች የእርግዝና መጠን (ሁኔታ) ምን እንደሚመስልና ተያያዥ ምክንያቶች (ችግሮች) ላይ በተመለከተ የዳሰሳ ጥናት ለማድረግ ነው።

የጥናቱ ዓላማ: የዚህ ጥናት ዓላማ እድሜያቸው ከ15-19 ዓመት የሆኑና በደብረብርሃን ከተማ በሚገኙ የሁለተኛ ደረጃ ትምህርት ቤቶች የሚማሩ ተማሪዎች የእርግዝና መጠን (ሁኔታ) ምን እንደሚመስልና ተያያዥ ምክንያቶች (ችግሮች) ላይ በተመለከተ ምን እንደሚመስል ለመዳሰስ ነው።

የጥናቱ ጥቅም: የዚህ ጥናት ጥቅም እድሜያቸው ከ15-19 ዓመት የሆኑና በደብረብርሃን ከተማ በሚገኙ የሁለተኛ ደረጃ ትምህርት ቤቶች የሚማሩ ተማሪዎች የእርግዝና መጠን (ሁኔታ) ምን እንደሚመስልና ተያያዥ ምክንያቶች (ችግሮች) ላይ በተመለከተ ምን እንደሚመስል ለመዳሰስ ነው። የዚህ ጥናት ሌላው ጥቅም ለጥናት አድራጊው በማህበረሰብ ጤና (በስነ-ተዋልዶ ጤናና በቤተሰብ ምጣኔ) ላይ ለሁለተኛ ዲግሪ መመሪያ ጽሁፍ ለማዘጋጀት ነው። ስለዚህ አንቺ የምሰጭን መረጃ ለመሰናዶና ለከፍተኛ ሁለተኛ ደረጃ ተማሪዎች ተገቢ የሆኑ የስነ-ተዋልዶ ጤና አግልግሎቶችን ለማቀድና ለመስጠት እጅግ በጣም አስፈላጊ ነገር ነው። ይህን ዓላማ ለማሳካት የአንቺ ቀናና ትክክለኛ መልስ መጥይቁን በመሙላት የምታደርገው ተሳትፎ በጣም ጠቃሚና እንዲሁም የሚደነቅና የሚበረታታ ነው።

የጥናቱ ጥቅምና ጉዳት: በዚህ የጥናት ሂደት ላይ መሳተፍ ለአንቺ ምንም አይነት ክፍያ ወይም ልዩ ጥቅም የለውም (አያስገኝም)፤ በጥናቱ ላይ ስለተሳተፍሽ በአንቺ ላይ ምንም አይነት አካላዊም ሆነ ስነ-ልቦናዊ ጉዳት የለውም (አያመጣብሽም)። ነገር ግን አንቺ በዚህ ጥናት ትክክለኛ መልስ በመስጠት መሳተፍሽ ለዚህ ጥናት መሳካት ከፍተኛ ሚና የሚጫወት ሲሆን በተጨማሪም የወጣቶችን የስነ-ተዋልዶ ጤና አገልግሎት አሰጣጥ ጥራት ላይ ለውጥ ለማምጣት ከፍተኛ አስተዋጽኦ አለው።

የተሳታፊዎች መብት: የአንቺ በዚህ ጥናት ላይ መሳተፍ ሙሉ በሙሉ በአንቺ ፈቃደኝነት ላይ የተመሰረተ ነው፤ መልስ ለመስጠት የማትፈልገውን ማንኛውም ጥያቄ የመተው (የመዘለል) መብት አለሽ። ስለዚህ ቀናና በፈቃደኝነት ላይ የተመሰረተ ምላሽ እንድሰጭ በአክብሮት እጠይቅሻለሁ። እነዚህን ጥያቄዎች ለመሙላት ከ20 እስከ 30 ደቂቃዎችን ሊወስድ ይችላል።

የጥናቱ ተሳታፊዎች ምስጢራዊነት: በዚህ ጥናት ላይ የአንቺ ስም አይጻፍም እንዲሁም ከጥናቱና ከሰጠሽን መረጃ ጋር ስምሽ ምንም ዓይነት ግንኙነት የለውም። ስለዚህ ጥናቱ ፍጹም ምስጢራዊ ሆኖ እንደሚካሄድ ላረጋግጥልሽ እፈልጋለሁ።

የተሳታፊዎች ስምምነት

ይህንን የመረጃ ስምምነት ቅጽ አንብቤያለሁ ወይም በማውቀው ቋንቋ ተነባልኛል፤ በመሆኑም የጥናቱን ሁኔታ ተረድቻለሁ። በዚህ ጥናት ለመሳተፍ ፈቃደኛ ነኝ?

1. አዎ ለመሳተፍ ተስማምቻለሁ (ፈቃደኛ ነኝ)። 2. አይ ለመሳተፍ አልተስማማሁም (ፈቃደኛ አይደለሁም)።

መረጃ ሰብሳቢ: ከላይ እንደተገለጸው ለተሳታፊዎች ስለጥናቱ ሁሉንም አስፈላጊ መረጃዎች በዝርዝር ገለጻ አድርጌያለሁ።

ስም-----:: ፊርማ-----:: ቀን-----::

የዋና አጥኝ ስም: ሶፎንያስ መኮንን

የኢሜል አድራሻ: sofonias482@gmail.com ወይም sofisofofa415@gmail.com

ሞባይል ቁጥር: 0932875454

የቃለ-መጠይቁ መጠይቅ ውጤት:

1. የተሟላ 2. ተሳታፊው አልተገኘም 3. አልተስማማችም 4. በከፊል የተሟላ

ያረጋገጠው ተቆጣጣሪ (ሱፐርቫይዘር) ስም-----:: ፊርማ-----:: ቀን-----::

ለትብብርሽ ወይም ለተሳትፎሽ አመሰግናለሁ!

መመሪያ: ለጥያቄው መልስ የሚሆኑ ፊት ለፊት ያሉ ቁጥሮችን አክብቢ፤ የጽሁፍ መልስ ለሚያስፈልገው ደግሞ በክፍት ቦታው ላይ መልስ ጻፊ።

ክፍል 1: ማህበራዊ፣ኢኮኖሚያዊና ዲሞክራሲያዊ ባህሪያትን በተመለከተ የተዘጋጀ መጠይቅ

ተ.ቁ	የጥያቄው አይነት	ምላሽ	ማለፍ (መዝለል)
101	እድሜሽ ስንት ነው?	-----ዓመት	
102	ሃይማኖትሽ ምንድን ነው?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ ከሆነ ጥቀሽ-----	
103	ብሄርሽ ምንድን ነው?	1. አማራ 2. አሮሞ 3. ትግሬ 4. ሌላ ከሆነ ጥቀሽ-----	
104	ስንተኛ ክፍል ነሽ?	1. 9 ^ኛ ክፍል 2. 10 ^ኛ ክፍል 3. 11 ^ኛ ክፍል 4. 12 ^ኛ ክፍል	

105	የምትኖረው የት ነው?	1. ከተማ 2. ገጠር	
106	የእናንተ ቤተሰብ ሃላፊ (አስተዳዳሪ) ጾታ ምንድን ነው?	1. ወንድ 2. ሴት	
107	የእናንተ ቤተሰብ ሃላፊ እድሜ ስንት (ምን ያክል) ነው?	1. ከ30 ዓመት በታች 2. በ30 እና በ 40 ዓመት መካከል 3. በ 45 እና በ 54 ዓመት መካከል 4. በ55 እና በ64 ዓመት መካከል 5. ከ64 ዓመት በላይ	
108	አባትሽ በህይወት አሉ?	1. አለ (አዎ) 2. የለም	መልስሽ የለም ከሆነ ወደ ቁጥር III እለፊ (ሂጂ)
109	መልስሽ አዎ ከሆነ የትምህርት ደረጃቸው እንዴት ነው?	1. ያልተማሩ 2. ማንበብና መጻፍ የሚችሉ 3. የመጀመሪያ ደረጃ (ከ1 ^ኛ -8 ^ኛ ክፍል) 4. ሁለተኛ ደረጃ (ከ9 ^ኛ -12 ^ኛ ክፍል) 5. ኮሌጅና ከዚያ በላይ	
110	ስራቸው ምንድን ነው?	1. የመንግስት ሰራተኛ 2. የግል ስራ 3. ነጋዴ 4. ገበሬ (አርሶ-አደር) 5. ሌላ ከሆነ ጥቀሽ-----	
111	እናትሽ በህይወት አሉ?	1. አዎ 2. የለችም	መልስሽ የለችም ከሆነ ወደ ቁጥር 114 ሂጂ
112	መልስሽ አዎ ከሆነ የትምህርት ደረጃቸው እንዴት ነው?	1. ያልተማሩ 2. ማንበብና መጻፍ የሚችሉ 3. የመጀመሪያ ደረጃ (ከ1 ^ኛ -8 ^ኛ ክፍል) 4. ሁለተኛ ደረጃ (ከ9 ^ኛ -12 ^ኛ ክፍል) 5. ኮሌጅና ከዚያ በላይ	
113	ስራቸው ምንድን ነው?	1. የመንግስት ሰራተኛ 2. የግል ስራ 3. ነጋዴ 4. ገበሬ (አርሶ-አደር) 5. የቤት እመቤት 6. ሌላ ከሆነ ጥቀሽ-----	
114	የእናንተ ቤተሰብ የወር ገቢ ስንት (ምን ያክል) ነው?	1. ከ1500 ብር በታች 2. በ1501 እና በ7500 ብር መካከል 3. ከ7500 ብር በላይ	
115	ከማን ጋር ነው የምትኖረው?	1. ብቻዬን 2. ከእናቴ ጋር 3. ከአባቴ ጋር 4. ከእናቴና ከአባቴ ጋር 5. ከሌላ ጋር ከሆነ ጥቀሽ-----	
116	እናትሽና አባትሽ አንድ ላይ ነው የሚኖሩ?	1. አዎ 2. አንድ ላይ አይኖሩም	
117	የጋብቻ ሁኔታሽ ምንድን ነው?	1. ነጠላ (ያላገባች) 2. ያገባች 3. አግብታ የፈታች	
118	የእናንተ ቤተሰብ የጋብቻ ሁኔታ ምንድን ነው?	1. ያገቡ 2. እናት ባሏ የሞተባት (ባል ሚስቱ የሞተችበት)	

		3. የፈቱ (በፍች የተለያዩ)	
119	ከቤተሰብ ጋር ያለ ግንኙነት እንዴት ነው?	1. ጥሩ 2. አናሳ (ዝቅ ያለ)	
120	በእናንተ ቤተሰብ ውስጥ ብጥብጥ፣ ንዝንዝ ወይም ጭቅጭቅ አለ?	1. አዎ አለ 2. ሹረ የለም	
121	የእናንተ ቤተሰብ ስንት (ምን ያክል) ነው?	1. ሶስት ወይም ከዚያ በታች 2. ከአራት እስከ ስድስት 3. ሰባትና ከዚያ በላይ	
122	የራስሽ የሆነ የምባይል ስልክ አለሽ?	1. አዎ 2. የለም	

ክፍል 2: ጾታዊ (ወሲባዊ) እና የስነ-ተዋልዶ ጤና ባህሪያትን በተመለከተ የተዘጋጀ መጠይቅ

ተ.ቁ	የጥያቄው አይነት	ምላሽ	ማለፍ (መዝለል)
201	በትምህርት ቤት ውስጥ የጾታዊና የስነ-ተዋልዶ ጤና ትምህርት አግኝተሽ (ተምረሽ) ታውቁያለሽ?	1. አዎ 2. አግኝቼ (ተምሬ) አላውቅም	
202	የግብረሰጋ (ወሲባዊ) ግንኙነት አድርገሽ ታውቁያለሽ?	1. አዎ 2. የለም (አድርጌ አላውቅም)	መልስሽ የለም ከሆነ ወደ ቁጥር 204 ሂጂ
203	ለጥያቄ ቁጥር 202 መልስሽ አዎ ከሆነ በስንት ዓመትሽ ነው የግብረሰጋ ግንኙነት ያደረግሽ?	1. ከ10-15 ዓመት ውስጥ 2. ከ16-17 ዓመት ውስጥ 3. ከ18-19 ዓመት ውስጥ	
204	ስለ ጾታዊ (ወሲባዊ) ጉዳዮች ከቤተሰቦችሽ ጋር ተነጋግረሽ (ተወያይተሽ) ታውቁያለሽ?	1. አዎ 2. የለም (ተወያይቼ አላውቅም)	
205	አርግዘሽ ታውቁያለሽ?	1. አዎ 2. የለም (አርግዜ አላውቅም)	መልስሽ የለም ከሆነ ወደ ቁጥር 207 ሂጂ
206	ለጥያቄ ቁጥር 205 መልስሽ አዎ ከሆነ በስንት ዓመትሽ ነው ያረገዘሽ?	1. ከ10-15 ዓመት ውስጥ 2. ከ16-17 ዓመት ውስጥ 3. ከ18-19 ዓመት ውስጥ	
207	አግብተሻል ወይ?	1. አዎ 2. የለም (አላገባሁም)	መልስሽ የለም ከሆነ ወደ ጥያቄ ቁጥር 209 ሂጂ
208	ለጥያቄ ቁጥር 207 መልስሽ አዎ ከሆነ በስንት ዓመትሽ ነው ያገባሽ?	1. ከ10-15 ዓመት ውስጥ 2. ከ16-17 ዓመት ውስጥ 3. ከ18-19 ዓመት ውስጥ	
209	ስለ ጾታዊ (ወሲባዊ) ግንኙነት የአቻ ግፊት (ተጽዕኖ) ተደርጎብሽ ያውቃል?	1. አዎ 2. የለም (ተደርጎብኝ) አያውቅም	
210	ስለ ቤተሰብ ምጣኔ ሰምተሽ ታውቁያለሽ?	1. አዎ 2. የለም (ሰምቼ አላውቅም)	መልስሽ የለም ከሆነ ወደ ጥያቄ ቁጥር 212 ሂጂ
211	ለጥያቄ ቁጥር 210 መልስሽ አዎ ከሆነ ስለ ቤተሰብ ምጣኔ (እቅድ) ከምንድን ነው የሰማሽ? ከአንድ በላይ መልስ ይቻላል።	1. ከሬድዮ 2. ከቴሌቪዥን 3. ከትምህርት ቤት 4. ከጻደኛ 5. ከፖስተር 6. ከጋዜጣ (ከመጽሕፍት)	
212	ስለ የወር አበባ መረጃ አግኝተሽ ታውቁያለሽ?	1. አዎ 2. የለም (አግኝቼ አላውቅም)	

213	ወሲባዊ ፊልሞችን (የወሲብ ድርጊቶችን የሚያሳዩ ፊልሞችን) ተመልክተሽ ወይም አይተሽ ታውቁያለሽ?	1. አዎ 2. የለም (ተመልክቼ አላውቅም)	
214	በቤተሰብ የቤት ውስጥ ጥቃት (ጾታዊ ጥቃት) ተደርጎብሽ ያውቃል?	1. አዎ 2. የለም	
215	ለጥያቄ ቁጥር 214 መልስሽ አዎ ከሆነ በማን ነው የቤት ውስጥ ጥቃት (ጾታዊ ጥቃት) የደረሰብሽ?	1. በአባት 2. በእናት 3. በወንድም 4. በእህት 5. በሌላ ከሆነ ጥቅሽ-----	
216	ከስንት (ከምን ያክል) ሰዎች ጋር የግብረሰጋ ግንኙነት አድርገሽ ታውቁያለሽ? ወይም ስንት የወሲብ አጋር አለሽ?	1. አንድ 2. ሁለት 3. ሶስት 4. ከሶስት በላይ 5. አድርጌ አላውቅም	
217	የድንገተኛ ጊዜ የእርግዝና መከላከያ ለመውሰድ ትክክለኛው ጊዜ መቼ ነው ብለሽ ታስቢያለሽ?	1. ልቅ የሆነ የግብረ-ሰጋ ግንኙነት ከተደረገ በኋላ በ72 ሰዓታት ውስጥ 2. ልቅ የሆነ የግብረ-ሰጋ ግንኙነት ከተደረገ በኋላ ከ72 ሰዓታት በኋላ	
218	የእርግዝና መከላከያ ትጠቀሚያለሽ?	1. አዎ 2. የለም (አልጠቀምም)	
219	ለጥያቄ ቁጥር 218 መልስሽ የለም ከሆነ የእርግዝና መከላከያ ላለመጠቀምሽ ምክንያትሽ ምንድን ነው?	1. የግብረ-ሰጋ ግንኙነት ስለማላደርግ 2. አልፎ አልፎ ብቻ የግብረ-ሰጋ ግንኙነት ስለማድረግ 3. ሃይማኖቱ (እምነቱ) ስለሚከለክለኝ 4. የእርግዝና መከላከያ አቅርቦት ስለሌለ 5. በቤተሰብ ተጽዕኖ ምክንያት	

ክፍል 3: የጤና አገልግሎት አሰጣጥ ባህሪያትን በተመለከተ የተዘጋጀ መጠይቅ

ተ.ቁ	የጥያቄው አይነት	ምላሽ	ማለፍ (መዘለል)
301	በእናንተ ትምህርት ቤት የጾታዊና የስነ-ተዋልዶ ጤና አገልግሎት ይሰጣል?	1. አዎ 2. የለም (አይሰጥም)	
302	በእናንተ ቀበሌ (በምትኖሪበት ቀበሌ) የጤና ተቋም አለ?	1. አዎ 2. የለም	መልስሽ የለም ከሆነ ወደ ጥያቄ ቁጥር 304 ሂጂ
303	ለጥያቄ ቁጥር 302 መልስሽ አዎ ከሆነ ጤና ተቋሙ ምን አይነት ነው?	1. ሆስፒታል 2. ጤና ጣቢያ 3. ጤና ኬላ 4. የግል ክሊኒክ 5. ሁሉም አሉ	
304	የጾታዊና የስነ-ተዋልዶ ጤና አገልግሎቶችን ለማግኘት ወደ ጤና ተቋም ሄደሽ ታውቁያለሽ?	1. አዎ 2. የለም (ሄጄ አላውቅም)	
305	በትምህርት ቤት ውስጥ ስለ ጾታዊና ስነ-ተዋልዶ ጤና የምክር አገልግሎት አግኝተሽ ታውቁያለሽ?	1. አዎ 2. የለም	
306	የጾታዊና የስነ-ተዋልዶ ጤና አገልግሎት ለማግኘት ዋጋው ተመጣጣኝ ነውን?	1. አዎ 2. ተመጣጣኝ አይደለም	

307	በጤና ተቋም የሚሰጠው አግልግሎት ወጣቶችን ያማከለ ነውን?	1. አዎ 2. አይደለም	
308	ስለእርግዝና መከላከያ የተሳሳተ መርጃ (አመለካከት) አለኝ ብለሽ ታስቢያለሽ?	1. አዎ 2. የለም (አላስብም)	
309	ለጥያቄ ቁጥር 308 መልስሽ አዎ ከሆነ ስለእርግዝና መከላከያ የተሳሳቱ መረጃዎችሽ (አመለካከቶችሽ) ምንድን ናቸው? ከአንድ በላይ መልስ ይቻላል።	1. ክብደት ይጨምራል 2. ክብደት ይቀንሳል 3. የራስ ምታትና የሆድ ህመም ያምጣል 4. የወር አበባ ያዛባል 5. ማቅለሽለሽ ያመጣል 6. ድካም ያመጣል 7. ውፍረት ይጨምራል 8. ከባድ ስራ ለመስራት አቅም ይቀንሳል 9. ወሲባዊ ፍላጎትን (የግብረ-ሰጋ ግንኙነት ፍላጎትን) ይቀንሳል	

ክፍል 4: የወላጆችና የሴት ልጆችን ግንኙነት በተመለከተ ተጨማሪ ጥያቄዎች

ተ.ቁ	የጥያቄው አይነት	ምላሽ	ማለፍ (መዘለል)
401	ወላጆችሽ ከወሲብ፣ ከፍቅርና ከጓደኝነት (የወንድ ጓደኛ) ጋር በተያያዘ (በተገናኘ) ከአንድ ጋር በግልጽ ያወራሉ?	1. አዎ 2. የለም (አያምሩም)	
402	ከወላጆችሽ አንዱ (አባትሽ ወይም እናትሽ) ፍቅረኛ ወይም የወንድ ጓደኛ እንዳለሽ ያውቃሉ?	1. አዎ 2. የለም (አያውቁም)	
403	ከቤት ውጭ በምትሆኝ ጊዜ ወላጆችሽ የትና ከማን ጋር እንደቆየሽ ይከታተሉሻል (ይጠይቁሻል)?	1. አዎ 2. የለም (አይጠይቁኝም)	
404	ወላጆችሽ ከወንድ ጓደኛሽ ጋር ያለሽን የፍቅርና የወሲብ ግንኙነት ይወዳሉ?	1. አዎ 2. የለም (አይወዱም)	

DEDICATION

This paper is dedicated to my parents **Ato Mekonnen Wondim** and **W/ro Adelahu Andargie** and my brothers **Dires Mekonnen** & **Kassahun Mekonnen**. Especially this paper is dedicated to my amiable girlfriend **W/rt Ayal Getachew**. The completion of this thesis is made possible through the help and ambition of them. God bless and give longer life for them.