



**EFFECTS OF PREGNANCY: A SYSTEMATIC REVIEW
OF THE HEALTH IMPACTS OF ADOLESCENT
PREGNANCY IN WEST AFRICA**

BY

MR. AUGUSTINE LAMBONMUNG

**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC
HEALTH (GLOBAL HEALTH)**

FACULTY OF PUBLIC HEALTH

THAMMASAT UNIVERSITY

ACADEMIC YEAR 2021

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THESIS

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ENTITLED

EFFECTS OF PREGNANCY: A SYSTEMATIC REVIEW OF THE HEALTH IMPACTS OF
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was approved as partial fulfilment of the requirements for
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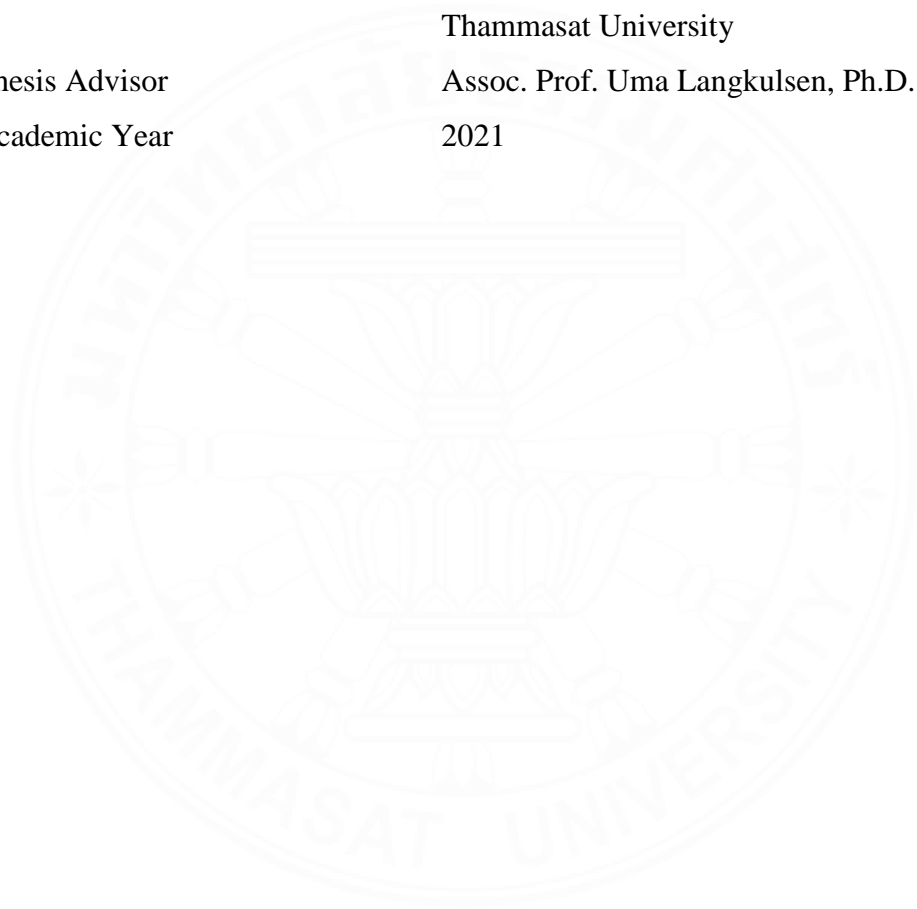
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ABSTRACT

Objectives: The purpose of this study is to bring to the fore how the health of adolescent girls is impacted by pregnancy and its child implications for women's rights and encourage relevant actors to prioritize the sexual and reproductive health and rights of adolescent girls in the designing and implementation of interventions.

Methods: A broad search framework was constructed and implemented to search for applicable studies online for a systematic review. Adolescent pregnancy, teenage pregnancy, risks, impacts, outcomes, effects, consequences were used as search terms to search the databases of Google, Google Scholar, SCOPUS, EBSCO, CINAHL, Web of Science, African Journals Online (AJOL) and Demographic and Health Services Reports: USAID Demographic Health Surveys in 2021 and reviewed following PRISMA guidelines.

Results: The 28 included studies for the review were all from West Africa, Ghana, Liberia and Nigeria. The study found anaemia, complications of pregnancy and obstetric and gynaecological risks, unsafe abortions and psychological effects to adversely impact the health of adolescent girls. In addition, adolescent pregnancy and its related factors could have implications for women's rights.

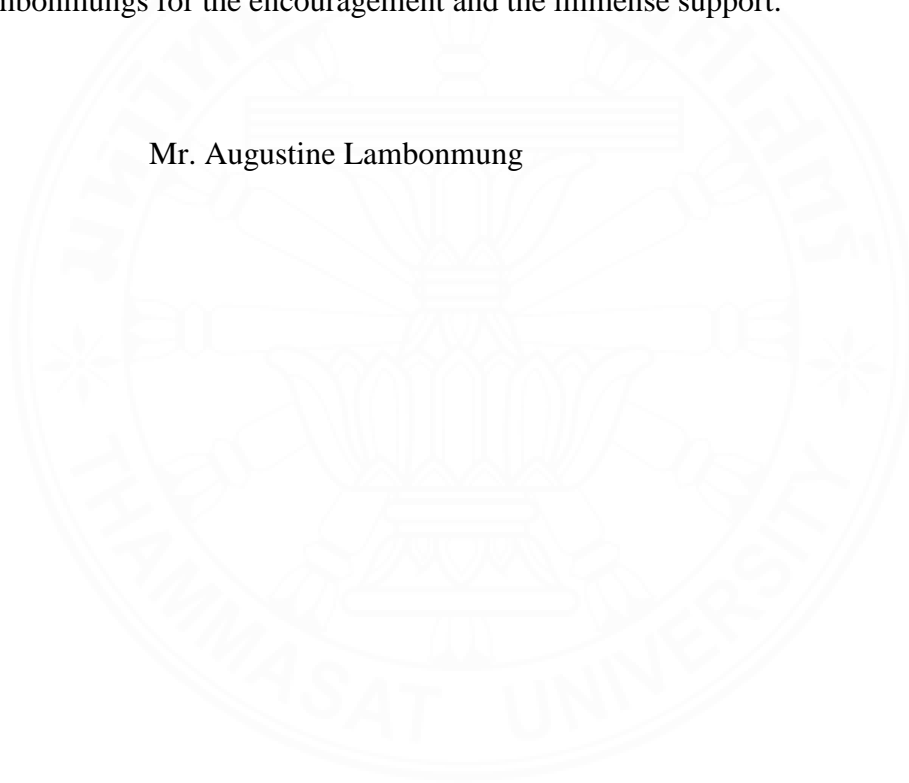
Conclusions: Pregnancy could be deleterious to the health and wellbeing of adolescent girls in various forms. This study categorized the adverse health outcomes in four ways. Anaemia, complications of pregnancy, obstetric and gynaecological effects, unsafe abortions and psychosocial impacts. Adolescent pregnancy could be detrimental to upholding the International Convention on the Rights of Women. Targeted interventions to prevent pregnancy in young women and mitigate these effects by stakeholders are encouraged.

Keywords: Adolescent pregnancy; health impacts; child rights; West Africa.

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Mr. Augustine Lambonmung



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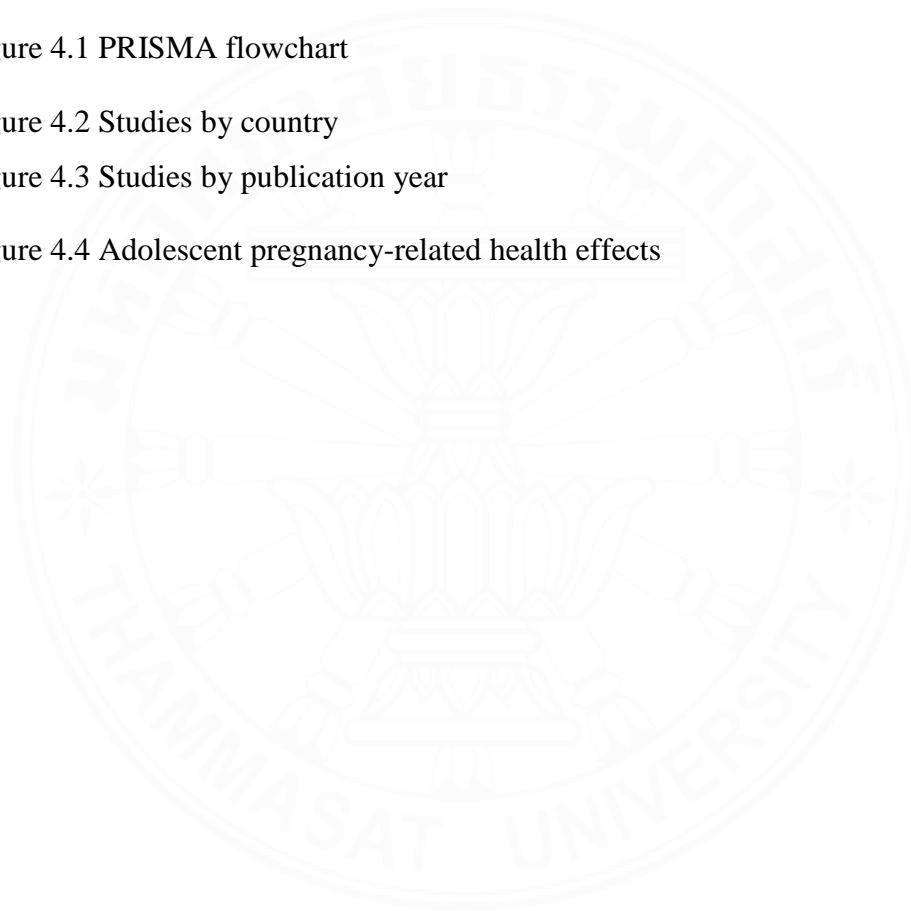


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LIST OF ABBREVIATIONS

Abbreviations

AAP

ANC

BMI

CSE

HIC

LMIC

NGOs

PRISMA

SRHR

UNFPA

UNICEF

USAID

WHO

Terms

American Pregnancy Association

Antenatal Care

Body Mass Index

Comprehensive Sexual Education

High Income Country

Low Middle Income Country

Non-Governmental Organizations

Preferred Reporting Items for Systematic
Reviews and Meta-Analyses

Sexual and Reproductive Health and
Rights

United

Nations Population Fund

United Nations International Children's
Emergency Fund

United States Agency for International
Development

World Health Organization

CHAPTER 1

INTRODUCTION

The adolescent population is not only uniquely crucial for economic reasons but also the sustenance of the human race. This transitional period of life however is saddled with a distinct set of challenges that can overwhelm the young adult without the much needed supportive environment. The adolescent girl in LMICs is particularly vulnerable to pregnancy, which can greatly impact her health as she undergoes these biological and psychosocial changes. They, therefore, deserve to be afforded the needed facilities and care to thrive soundly to make them productive and responsible members of society. This study reviewed the health impacts of pregnancy during adolescence in West Africa where the burden of adolescent pregnancy is probably the highest in proportion to the general population as compared to other sub-regions. It discussed its implications for women's rights as well.

Adolescents, 10-19 years of age is a transitional period between childhood and adulthood(World Health Organization, 2018). There are about 1.2 billion adolescents globally with over 50% of them from Asia. Despite this, Sub-Saharan Africa has the largest proportion of their general population(UNICEF, 2019a). For this group of young people to grow and make meaningful contributions to society, their fundamental human rights must be ensured, well educated, provision of jobs, inclusiveness and important issues relating to their health are effectively dealt with(Laski, 2015). Adolescents are faced with myriad health challenges with even an increased risk depending on which part of the world they find themselves in(N. J. Kassebaum et al., 2017). Sexual and reproductive health and rights among adolescents have been an ongoing global health concern given the fact that they are regarded as critical for the progress of society. For quality health and well-being of adolescents, the WHO has developed adolescent friendly national health guidelines to help address challenges like adolescent pregnancy and its related morbidity and mortality and including unsafe abortions(World Health Organization, 2012). To help address particularly sexual and reproductive health challenges confronting adolescents, the

world health governing body issued some recommendations to promote sexual and reproductive health and rights of adolescents(WHO, 2018).

In spite of this, and other local interventions, pregnancies among young girls in Low Middle-Income Countries (LMIC) are astronomically high. According to the WHO, about 16 million girls (15-19) years become mothers and a further 2 million younger than 15years give birth annually across the world with the majority of them occurring in LMICs specifically, countries in South Asia and Sub-Saharan Africa. In addition, some 3 million pregnancies are unsafely terminated which can negatively impact the health of these girls(World Health Organization, 2014a). Similar to other regions of the developing world, adolescent pregnancy in West Africa are among the highest in the world(Kassa et al., 2018a). The rate of adolescent pregnancy in the West African sub-region has been disturbingly and persistently high, a prevalence of about 25% spanning a period of about two decades (1992-2011)(Odimegwu & Mkwanzani, 2016). Three broad determining factors for adolescent pregnancy in the Sub region contributing significantly to this chronic public health concern were identified as; socio-cultural, environmental and economic, individual and health services(Yakubu & Salisu, 2018).

Moreover, pregnancy at a tender age could be devastating to young girls. Pregnant adolescent girls in LMICs are impacted by pregnancy in many facets of their lives particularly in health, employment, education and to some extent family members later in life(Tull, 2020).The health afflictions attributable to adolescent pregnancies are well documented. (N. J. Kassebaum et al., 2017) acknowledged the decline in mortality and morbidity of children and adolescents globally (from 1990-2015), it sadly observed that maternal and reproductive health-related issues are significantly contributing to the disease burden of adolescent girls in LMICs.

The issue of adolescent pregnancy as a public health challenge is due to the complexity in meeting the sexual and reproductive health needs and the provision of ANC services of adolescents. It requires a multi-sectoral and a collaborative approach in prevention of unwanted pregnancies and alleviating the consequences of adolescent pregnancy(Pinto e Silva & Surita, 2017). In this regard, the World Health Organization (WHO) issued 18 guidelines in 2011 seeking to prevent adolescent pregnancies and improve their reproductive health in Low Middle-Income Countries

(WHO, 2018). However, this global health challenge which has adverse consequences for birth outcomes, its ill health and poverty cycles can transverse generations(Deborah Bateson, 2020).

The adverse maternal adolescent health outcomes as revealed by the review could undermine gains in achieving the Sustainable Development Goal (SDG) 3-ensuring good health and well-being, specifically, targets 3.1 and 3.7. Adopted in the year 2015 by all member states of the United Nations (UN), the 17 development goals generally aims to improve well-being whilst protecting the planet. It focuses on poverty alleviation by adopting interventions for economic transformations that address critical needs relating to education, health, social and job prospects(Baeyens & Goffin, 2015). The SDG 3 and in particular targets 3.1 and 3.7 which are closely linked to the objectives of this review seek to reduce maternal mortality ratio and ensure wider coverage of sexual and reproductive health care services respectively(United Nations, 2018). Efforts towards the attainment of target 3.1 of SDG 3 could be undermined by the many adolescent maternal lives being lost through pregnancy in West Africa. The WHO in 2019, in a report published in 2020 found adolescent pregnancy and related complications as the leading cause of death among adolescent girls living in these countries(WHO, 2020).For target 3.7, the goal of a wider coverage of sexual and reproductive healthcare services for adolescent truly deserves some more attention as (Bradley et al., 2019) sees contraception usage as a surest way of preventing unintended pregnancy. This is even more so as low coverage and patronage of this essential service is noted as a major determining factor to the incidence of adolescent pregnancy(Yakubu & Salisu, 2018).

The restrictive legislation on abortion in over 90% of the countries in West Africa where about 85% of abortions are performed in an unsafe manner(Bankole et al., 2020) could not be exonerated from the high maternal mortalities. These prohibitive laws on abortion could have implications for the sexual and reproductive health and rights of this group of women as only women may require such services(United Nations Human Rights, 2018).

Restrictions on reproductive services to adolescents could be infringing on international conventions that are seeking to abolish all forms of discrimination, inequalities and abusive practices against women(United Nations Human Rights,

2017). International treaties like The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) and The African Charter on the Human and Peoples' Rights on the Rights of Women in Africa (Maputo Protocol) are some specific treaties adopted to ensure the protection of women's sexual and reproductive rights. The CEDAW also referred to as the international bill of rights of women calls on countries to guarantee adolescents access to reproductive health services and family planning (Women & Brown, 2015). Similarly, the Maputo Protocol aims to guarantee sexual and reproductive health including safe abortion care (article 14) (Ocran, 2007).

Issues like poverty, weak health systems, gender inequality, and some cultural practices like early marriages which are implicated in adolescent pregnancy add to its complexity for poor prognosis (Kassa et al., 2018a). The rights-based approach could be a useful solution to these medico-social problems of adolescent pregnancy. (Luk, 2018), believes that the upholding and safeguarding of adolescents' right to sexual and reproductive information and education, their right to sexual and reproductive care and services and right of participation could have a multiplier effect in advancing the health and well-being of adolescents. Highlighting how pregnancy is defiling the health of adolescent girls in West Africa through a systematic review could help in adopting more pragmatic approaches to check unplanned pregnancies, especially in younger adolescents and institute measures for improved adolescent maternal health outcomes. The study would also be beneficial in recognising the need for the fulfilment of sexual and reproductive health and rights of women. For the first time, this review intends to bring together the maternal health impacts of adolescent pregnancy in the context of West Africa.

1.1 Problem statement

Complications during pregnancy and childbirth are the leading cause of death for 15–19-year old girls globally.

There is a high prevalence of adolescent pregnancy in West Africa with its attendant consequences of increasingly poor health outcomes. There is no one single study that seeks brings together the adolescent maternal health outcomes associated with pregnancy.

1.2 Study purpose

This is to help highlight the health effects of pregnancy on the adolescent girl and how it is impacting the health and well-being of adolescent girls, and its possible implications for women's rights in West Africa.

1.3 Enquiry question

How is pregnancy impacting the health of adolescent girls in West Africa?

1.4 Objectives of the study

- 1) To identify and discuss how pregnancy adversely affects the health of West African adolescent girls.
- 2) Discuss the implications of adolescent pregnancy on women's rights and SDG 3
- 3) To propose potential responses by West African nation-states to lower the adverse impacts of adolescent pregnancy.

1.5 Expected end product

The final product of this study has possibly brought together all the currently existing and available relevant data on the health impacts of adolescent pregnancy in West Africa into a single document. The study would be useful for policymakers and practitioners to understand the health implications of adolescent pregnancy in the West African context to help inform the design and the implementation of interventions that will help decrease the incidence of adolescent pregnancies and contribute to the alleviation of its health impacts.

CHAPTER 2

REVIEW OF LITERATURE

This section discusses prior studies related to the review. This is to gain an in-depth understanding of existing data and research on the topic. The literature review will be based on publications not later than 2011 unless otherwise has important information that is of significant importance to the topic under discussion. This study uses the term adolescent girl to refer to girls aged between 10-19 years as defined by the World Health Organization, though, data on this group of young people are inadequate and fragmented in West Africa(World Health Organization, 2014a). The most relevant available literature on this population set would optimized.

2.1 Definition of an adolescent

Adolescence is a transitional period of 10-19 years from childhood to adulthood. They are further sub-grouped as early adolescents (10-14) years, middle (15-17) years and late adolescents (18-19)(World Health Organization, 2018). The biological changes that often take effect during adolescence and end in biological and sexual maturation extend over several years. The development of these secondary sex characteristics differs between both sexes. The pubertal process averagely happens at ages 10-12 years for girls and 12-14 years for boys and ends at 17-19 for girls and age 20 for boys(Christie, D., & Viner, 2005). This period of transition from childhood to adulthood is characterized by dynamic physical and psychosocial changes in a person's life. These behavioural and physiological changes during the developmental stages of an adolescent might make them appear as though they were adults, but without the capacity to think and act like one. The process of adolescence is influenced by the environment, genetic composition, mental factors, nutrition and the conditions under which they live, as a result, the period of adolescence significantly varies among individuals(Özdemir et al., 2016).

2.2 Adolescent behaviour

Behaviourally, the period of adolescence is volatile emotionally and can indulge in risky behaviours like operating vehicles at excessive speeds and drug use and sexual experimentation in their social transition to adulthood(Christie, D., & Viner, 2005). The developmental transition is a complexity of three main processes, abstinence, preparing to be ready to initiate sexual activity and the first sexual experience. Adolescent sexual behaviour is shaped by a number of factors, relating to biological sexual maturation, parents and peers attitude towards sex and practices in their environment that supports sexual intimacies. The interaction of one or multiple of the above-mentioned factors would significantly influence the adolescent girl for her first and subsequent sexual activities and hence a higher probability of contracting sexually transmitted diseases and or becoming pregnant as an adolescent (Somerville et al., 2017).

2.3 Definition of adolescent pregnancy

Adolescent pregnancy is a pregnancy in girls of 10-19 years of age. Statistics on adolescent birth and pregnancy rates for the purposes of comparison by countries are often reported for 15-19 years of age per 1000 of a given population(World Health Organization, 2014a). Pregnancy is daunting particularly during adolescence, regardless of whether planned or unplanned(American Pregnancy Association, 2021). The incidence of adolescent pregnancy is difficult to determine in some countries due to sociocultural factors and legislative instruments that frown on induced abortion. As a result, there is limited data and at best an estimation, this mostly is the case in many developing countries(World Health Organization, 2014a). This review will be based on the WHO's definition for adolescent pregnancy (10-19 years) with a focus on how the health of the adolescent girl is impacted when they pick seed during this transitional stage in life. The review did not discuss other important challenges such as poverty, lack of education and the health of the unborn child in this context, since the central theme of this study was to highlight adolescent pregnancy as

an issue of health determinant that significantly can contribute to morbidity and mortality among this group if not checked.

The phenomenon that has become a grave public health concern, especially in the developing world and West Africa, has attracted the attention of governments and Civil Society Organizations (CSO) over the years. Attempts in controlling the incidence of adolescent pregnancy and its impacts have not yielded many results in the sub-region (Kassa et al., 2018b)

2.4 Global trend of adolescent pregnancy

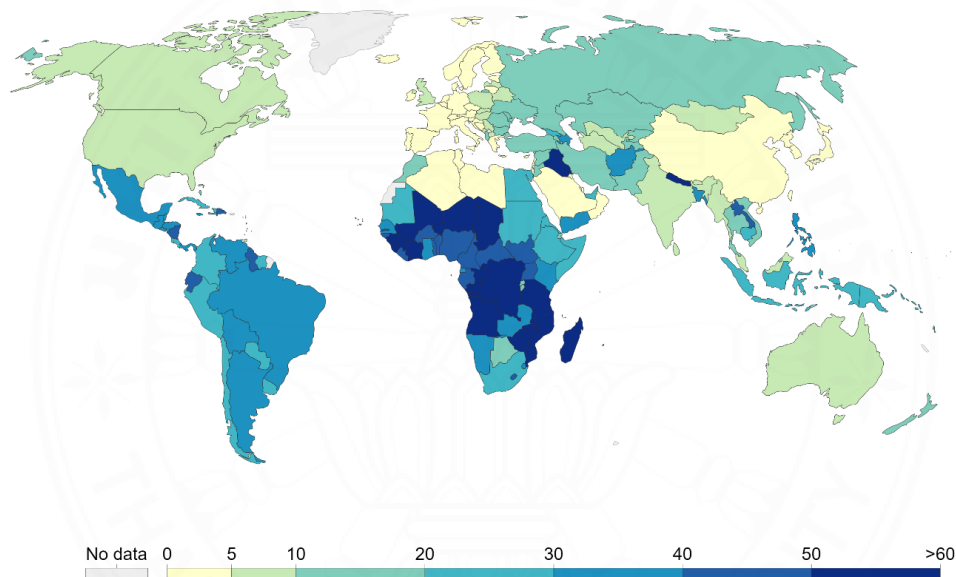
Adolescent pregnancy has historically existed globally as it was not frowned upon. It was not uncommon for adolescent girls to be married or to become pregnant and deliver. Compared to the past centuries, girls today are biologically capable of becoming pregnant at earlier ages. The situation of adolescent pregnancy today is not totally different especially in the developing world, mainly due to the early onset of menarche among young girls coupled with some socio-economic factors. Early initiation of sexual activity and the low usage of contraception has resulted in an increased rate of adolescent pregnancy in the second half of the twentieth century (Kirchengast, 2016). According to the WHO, about 18 million adolescents girls become mothers annually across the world with the majority of them occurring in LMICs specifically, countries in the South Asia and Sub-Saharan Africa bearing the brunt. In addition, some 3 million pregnancies are unsafely terminated which can negatively impact the health of these girls (World Health Organization, 2014a). Some progress has been achieved towards the quest in the reduction of adolescent parenting from about 170 in the 1950s to about 106 births per 1000 adolescent girls. Further decreasing from 67 per 1000 women in 1990 to 47 per 1000 women in 2015 globally (UNFPA, 2015). This is projected to increase in the coming decade as the adolescent population increases in particular in the African region (Ahinkorah et al., 2021). Some seven countries, Bangladesh, Brazil, Congo DR, Ethiopia, India, Nigeria, and the United States of America, all in the Global South except the US, are regarded as having the highest burden of adolescent pregnancies in the world (UNFPA, 2015). This figure still remains unacceptably high as it is about four times what prevails in the developed world

where it has long been considered public health threat and as such has been pragmatically checked.

The figure below shows adolescent birth rates across different geographical regions globally (Figure 2.1). It illustrates a disproportionately high adolescent birth rate in the global south as compared to the global north. Coincidentally, these are the regions that are underdeveloped and poor.

Adolescent birth rate in women aged 10-19 years, 2016

Number of livebirths per 1,000 women aged 10-19 years (defined as the adolescent fertility rate).



Source: Institute for Health Metrics & Evaluation (IHME)

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Figure 2.1 Global adolescent birth rate(10-19) years

Source: Institute for Health Metrics & Evaluation (IHME), 2017.

2.5 Adolescent pregnancy trend in West Africa

Similar to other regions of the developing world, adolescent pregnancy in West Africa are among the highest in the world with the Sub-Saharan Africa leading in the prevalence of adolescent pregnancies worldwide(Ahinkorah et al., 2021). A cross-sectional study(Odimegwu & Mkwanaenzi, 2016) on the determining factors of adolescent pregnancy in Sub-Saharan Africa, indicated that the rate of adolescent

pregnancy in the West African sub-region has been disturbingly and persistently high. It found adolescent pregnancy prevalence to be more than 25% spanning a period of about two decades. The study attributed the lack of success in controlling the adolescent pregnancy to some cultural and religious factors that encourage child marriage and patriarchy in this part of the globe. A study by Kassa and colleagues found an average of 17.7% prevalence of adolescent pregnancy in West Africa with Nigeria the most populous nation in the Sub-region recording one of the highest globally, up to over 50%(Kassa et al., 2018b). According to UNFPA, West Africa has the highest adolescent birth rate of 112 per 1000 births in LMIC(UNFPA, 2015). With the highest proportion of the adolescent population, the public health threat of adolescent pregnancy might even be higher if appropriate interventions are not put in place to curtail the high incidences of adolescent girl pregnancy in the West Africa.

Figure 2.2 below illustrates the prevailing rate of adolescent pregnancy in Africa in percentages. The bar chart shows West Africa (17.7) with the third-highest percentage rate of adolescent pregnancy only behind East (21.5) and Southern (20.4) Africa respectively. The least is by northern Africa with 9.2%. The prevalence rate in the Sub Sahara Africa is recorded as 19.3 per cent.

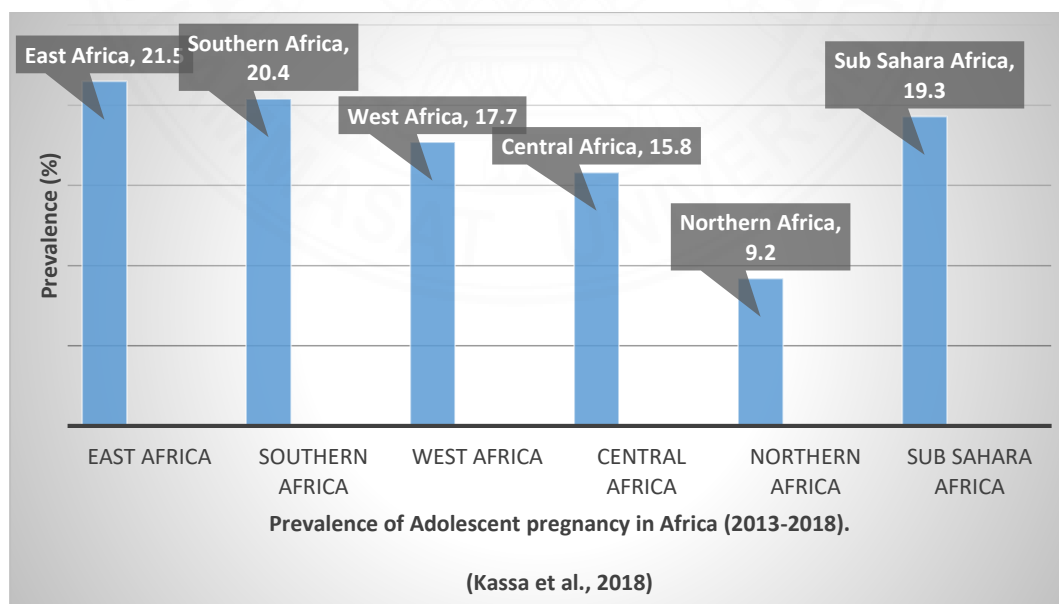


Figure 2.2 Prevalence of adolescent pregnancy in Africa

Source: Kassa et al., 2018.

2.6 Factors associated with adolescent pregnancy

The associated factors implicated in adolescent pregnancy are multifaceted and interconnected and interact in one way or the other or singularly in some instances to contribute significantly to adolescent pregnancy and its numerous consequences in West Africa.

The blight of adolescent pregnancy is attributable to extreme poverty, girls with little or no education. It is also more likely to recur among children of adolescent mothers(Hayward, 2011). It is not surprising that adolescent pregnancy prevails more in the third world where the majority of the people are wallowing in abject poverty. Adolescents from poor family backgrounds who unfortunately become victims also might remain poor as a result of pregnancy and are more likely to repeat the cycle with generations. Girls who have low levels of education due to poverty and gender inequalities are also associated with adolescent pregnancy. Lack of education gives them little hope of realizing their dreams, making early childbearing a way of making girls feel relevant in mostly these deprived societies. Limited access to and the knowledge on the use of contraception, lack of sexual and reproductive health services add to the vulnerabilities of adolescent pregnancy. Some might see this exposure as representing the only little window of hope in society.

Three broad determining factors for adolescent pregnancy were identified as; socio-cultural, environmental and economic, individual and health services related factors were recognized as contributing significantly to this chronic public health concern. The authors suggests that it is important for policy actors to appreciate the context in which these elements contribute to adolescent pregnancy in order for an effective intervention geared towards the alleviation of adolescent pregnancy(Yakubu & Salisu, 2018).

According to (Odimegwu & Mkwanzani, 2016), adolescent pregnancy in West Africa has a significant association with a high level of adolescent fertility and the importance placed on some religions and cultures which encourages child marriage.

The belief in reducing family size and raising capital through dowry payment by marrying off girls has done little to help reduce child marriage. No previous studies have comprehensively discussed the health implications of adolescent pregnancy on the adolescent girl in West Africa by systematically reviewing its health impacts. Hayward, 2011 suggested a two-prong approach to the issue of adolescent pregnancy. His approach to tackling the issue by putting in place measures to curtail the occurrence of adolescent pregnancy at tier one. The second level of dealing with the issue is by putting in place targeted interventions aiming at the numerous girls who unfortunately and in most cases accidentally become pregnant. It is in this light that this paper seeks to bring to the attention the negative health consequences of pregnancy on the health of the adolescent girl in West Africa where the burden of adolescent pregnancy is disproportionately high given the total adolescent population as compared to other regions of LMIC.

2.7 Consequences of adolescent pregnancy

Pregnancy in no doubt could severally and severely adversely impact the health of girls directly and indirectly. Several studies have found adolescent pregnancies to be associated with negative consequences, short term and medium to long term. The life of an adolescent girl can be drastically affected by pregnancy especially if it comes unplanned. Pregnant adolescent girls in LMICs are impacted by pregnancy in many facets of their lives particularly in health, employment, education and to some extent family members later in life(Tull, 2020). The poor healthcare systems and other socio-economic factors make it even more challenging for pregnant adolescent girls to access antenatal services until the later stages of their pregnancies making them more likely to deliver prematurely and low birth weight is also a common occurrence, thus contributing to higher infant mortality by adolescent mothers (Hayward, 2011).

A study by(Nicholas J. Kassebaum et al., 2019) reviewed the levels and trends of mortality and nonfatal health of children including adolescents from 1990 to 2015, acknowledged the decline in mortality and morbidity of children and adolescents globally, it sadly observed that maternal and reproductive health-related issues are

significantly contributing to the disease burden of adolescent girls in LMICs. The drivers as stated in the study includes maternal hypertensive disorders, ectopic pregnancy, abortions and miscarriages together with direct maternal causes like pulmonary embolism, cardiomyopathy(pre-existing and or non-obstetric)and complications related to surgery. Though the study did not solely focus on adolescent girls, the result is consistent with a more recent report by WHO on adolescents in the West African Sub-region(WHO, 2020) has found adolescent pregnancy and related complications as the leading cause of death among girls living in these countries.

Laski noted that adolescent pregnancy can expose adolescent girls to death, injuries and some obstetric condition like fistula. This is attributed to the increased risk of complications associated with adolescent pregnancies, deliveries and abortions. Though the research was not primarily focused on adolescent pregnancy, it, however, recognizes the negative health impact on the adolescent girl(Laski, 2015).

Nguyen et al, found that in spite of effective Antenatal Care (ANC) services, even if well utilized by both adolescent and older women, nutritionally, the adolescent girl's health was poorer as compared to the latter using Body Image Index (BMIs). It also reported that adolescent girls needed a longer period of time to recover post-delivery. Nguyen et al. suggested that the threat of ill health on the adolescent girl during pregnancy is real even if there exists effective and efficient care during pregnancy(Nguyen et al., 2017).

On how the mental health of an adolescent can be unbalanced by pregnancy, (Corcoran, 2016)admits that there is a high prevalence of mental illness among adolescents, attributing it mainly to poverty. It identified Depression and Conduct disorder as those most likely to affect adolescent mothers. They found an increased risk of depression and conduct disorder during pregnancy which could be exacerbated by a myriad of factors such as slum dwelling and child abuse among others. This study was carried out in HIC where mental health services may be better accessed by adolescent girls than in the LMIC. It will be curious to know if pregnancy among adolescent girls in the West African sub-region would possibly expose them to the same mental health challenges if any.

Adolescent mothers are at an increased risk of obstetric and gynaecological, medical and social challenges than older mothers. According to

(Hayward, 2011), more adolescents (15-19) years die from pregnancy and labour-related complications in LMICs. Twice as many adolescents are more likely to perish when giving birth than mothers in their twenties with adolescents accounting for about 13% of global maternal death, negatively influencing the global war on maternal death and other related SDGs.

Stigmatization by society is another unforgiving consequence according to (Tull, 2020), it is believed that the adolescent girl did not adhere to societal norms and values regardless of the underlying cause and whether the pregnancy was desired or not or even whether it was as a result of abuse. Culturally, it is the making of the poor girl in getting herself pregnant and hence some cultures would use crude ways and means in identifying and shaming the girl.

A study on the long-term effects of adolescent pregnancy in Northern Ghana found that there were more frequent abortions, caesarean sections, stillbirths and lived in extreme poverty in later life subsequently after they became pregnant as adolescents (Yussif et al., 2017). Though the research was conducted in a community in Northern Ghana, its findings were consistent with similar studies.

2.8 Conceptual framework of the study

The diagram below is a visual representation of the variables and their interrelationships. This visual representation of the study will help to comprehensively explain the relationships of the key concepts of the study. This framework is based on the reviewed literature and the constructs of the roles of the concepts are important, also, figure 2.3 is used to give an interpretative meaning to the reality of adolescent pregnancy in West Africa rather than casual and analytical interpretation.

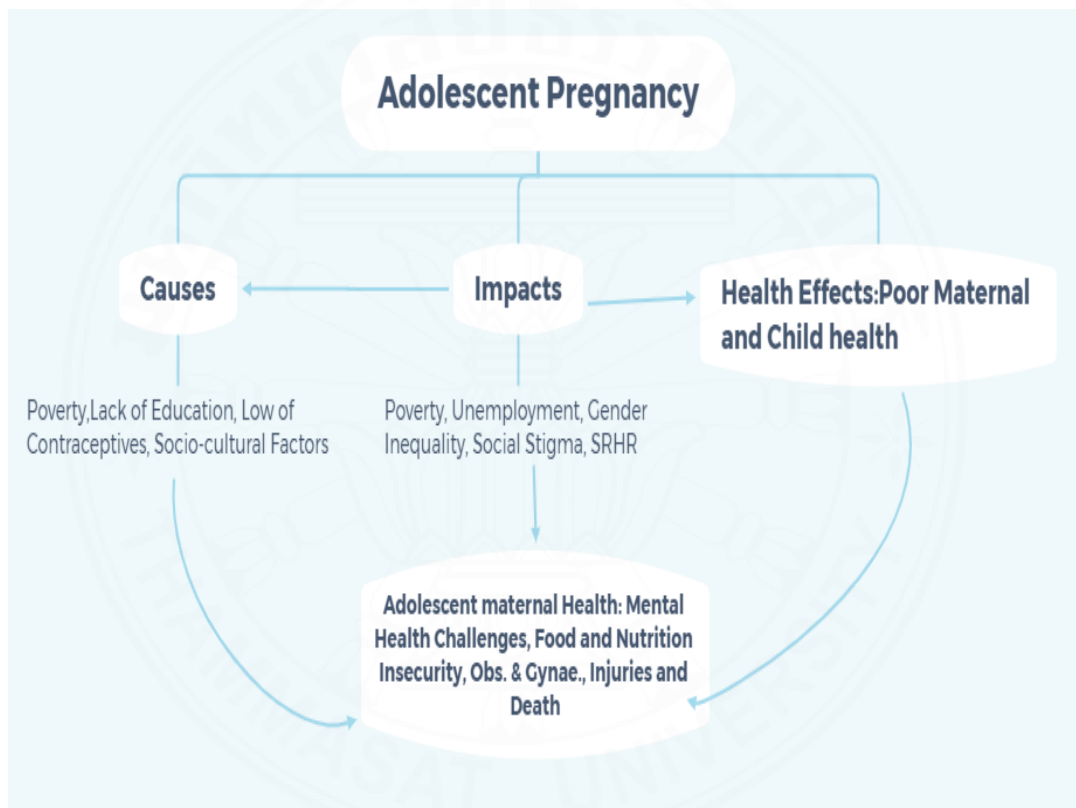


Figure 2.3 Conceptual framework

CHAPTER 3

RESEARCH METHODOLOGY

This chapter discusses the approach by which the objectives of the review were met. It illustrates the methods that were applied throughout the process to the end product of the study. The study method, study area, search strategy, data sources, data extraction and validation.

3.1 Study design

The methodology and design for the study is a systematic review. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed in the conduct of this review (Page et al., 2021).

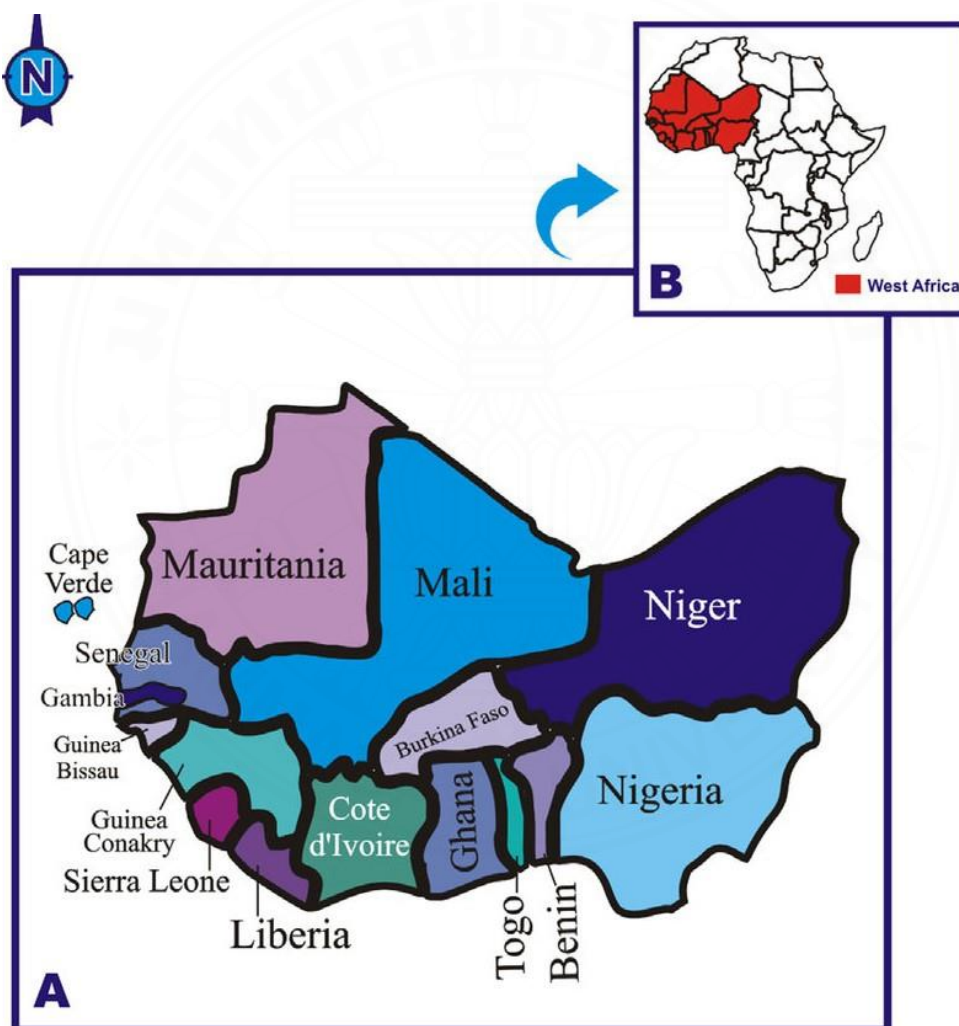
3.2 Study area

The geographical area of the study is the Western region of Africa (West Africa). As shown in figure 3.1, the West African sub-region consists of some 15 countries with three different official national languages. Anglophone countries are Ghana, Gambia, Liberia, Nigeria and Sierra Leon. Francophone countries include Benin, Burkina Faso, Côte d'Ivoire, Mali, Niger, Senegal and Togo and the three Portuguese speaking countries are Cape Verde, Guinea and Guinea Bissau (African Development Bank, 2022). West Africa is home to 5 per cent of the world's population. A population of 367 million, almost half of the population is 15 years old and younger (UNICEF, 2019b).

The study focused on English speaking countries (Ghana, Gambia, Liberia, Nigeria and Sierra Leon) since it relied on publications only in English language. However, due to time and inexperience of researcher, the study was elected to focus on three selected countries, Ghana, Liberia and Nigeria in West Africa.

The three selected countries are English speaking countries since publication in English language only were considered for the study. The selected countries have achieved some political stability at least in the last decade, a relative high girl child school retention and having one of the lowest incidences of adolescent pregnancy in the sub-region. Liberia is a country emerging from a devastating civil war

and has a very high rate of child marriage, a low level of educated girls and has a high incidence of adolescent pregnancy in Sub Sahara Africa. Nigeria, the most populated nation in West Africa is considered one of the countries with the highest rate of adolescent pregnancy globally. With about 11% of their respective populations being adolescent girls (10-19) years, they have high adolescent birth rates. Ghana with 78 per 1000 girls (15-19) years is the least followed by Nigeria with 106 and Liberia with 128(UNICEF, 2019b).



A: Map showing West African countries

B: Map of Africa indicating West African countries

Figure 3.1 Study area

Source:(Okoroiwu et al., 2021).

3.3 Search strategy

The methodology and design for the study is a systematic review. A review protocol was developed and registered in PROPERO (CRD42021289636) and approved by Thammasat University (No. 020/2564). Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021) were strictly adhered to though meta-analysis was not performed. A broad search framework was constructed and implemented for an online search of applicable studies. Google, Google Scholar, SCOPUS, EBSCO, CINAHL, Web of Science, African Journals Online (AJOL) and Demographic and Health Services (DHS) Reports: USAID were searched in November 2021 using these terms: Adolescent pregnancy, Adolescent birth, Teenage pregnancy. Search terms like outcomes, risks, impacts, effects, consequences and associated factors were also used.

3.4 Inclusion criteria and exclusion criteria

The inclusion criteria that were applied for the purposes of gathering the literature for the review are as follows;

- 1) Journals and articles published from the year 2016 to 2021 were considered for inclusion.
- 2) Publications in the English Language relating to the search terms and relevant for the review were included.
- 3) Publications that discussed adolescent pregnancies in the selected countries were also used.
- 4) Similarly, publications that analysed the effects of pregnancy adolescent women between the ages of 10- 19 years determined to be useful to the review were also used.
- 5) Reports and publications by organizations (governmental and non-governmental) bodies on the impacts of adolescent pregnancy in West Africa were evaluated for inclusion.

3.5 Exclusion criteria

- 1) Publications that lacked relevant data on pregnant adolescents aged 10-19 years.
- 2) Publications that are not related to adolescent pregnancy.
- 3) Publications that are not original such as commentaries, news articles, guideline documents and policy extracts.
- 4) Non English language publications were also excluded.

3.6 Quality assessment and data extraction

The Joanna Briggs appraisal tool was independently used by the reviewer to ascertain their quality for inclusion or exclusion. The tool is a checklist made up of a set of eleven questions.(Aromataris et al., 2015) Where there was insufficient information as a result of inadequate data, the full text of the disputed abstract was obtained and a second and third reviewers mediated following a discussion on the issue. Included studies were those that satisfactorily met the prior set inclusion criteria considering the appropriateness of the methods employed and how unbiased they are in terms of designing, conducting and analysing the studies. Tools and processes for risk of bias assessment were initially tested on some few selected studies prior to use.

3.7 Data items

Selected data items used for the study are summarized by: sample size, sample characteristics, study outcome and timescale to reflect the health impact of adolescent pregnancy.

3.8 Data analysis

Qualitative analysis

This approach was adopted in discussing the context of the health impact of adolescent pregnancy in West Africa and also used to explain in words the perspective in which they occur. It also helped shed light on the health impact of adolescent pregnancy to provide a better understanding of the plight of adolescent girls and its child rights implications during this stressful period of transition.



CHAPTER 4

RESULTS AND FINDINGS

This chapter presents the study findings from the systematic review fashioned by the study objectives, where the following all the results for the included studies on the review of health impacts of adolescent pregnancy on adolescent girls in West Africa have been summarized in tables and diagrams.

4.1 Findings

The broad online search produced initial 279 results and 7 others from demographic health services. Sixty-eight items were removed before screening (56 duplicate items were identified and 12 were not in the English Language). Further 109 were excluded after the title and year of publications were assessed. As shown in the PRISMA chart below in figure 1, one hundred and two studies and seven reports were retrieved for inclusion assessment. After reviewing the abstracts, 55 additional studies were excluded leaving 54 for full article assessment as per the prior exclusion criteria and a total of 28 studies were included for the review. These studies conducted in the West African Sub-region, were included after they were blindly reviewed by two independent reviewers (AL, CA) and a third reviewer (IO) whenever there was no consensus between AL and CA. Figure 4.1 (PRISMA Flow Chart) illustrates the screening steps adopted for the inclusion of studies.

The majority of the studies used were five each of qualitative and cross-sectional studies, (5) were surveys. Three of the surveys are demographic and health surveys and two national surveys. There were 3 retrospective studies. Two (2) each of the studies used descriptive, prospective and longitudinal designs. One of the two longitudinal studies used Adolescent Birth Outcomes, Ghana (ANBOG). There was one each of randomized control trial, exploratory, observational and a mixed study design (qualitative and quantitative) studies used for the review.

The PRISMA flowchart below summarizes the screening steps for the review.

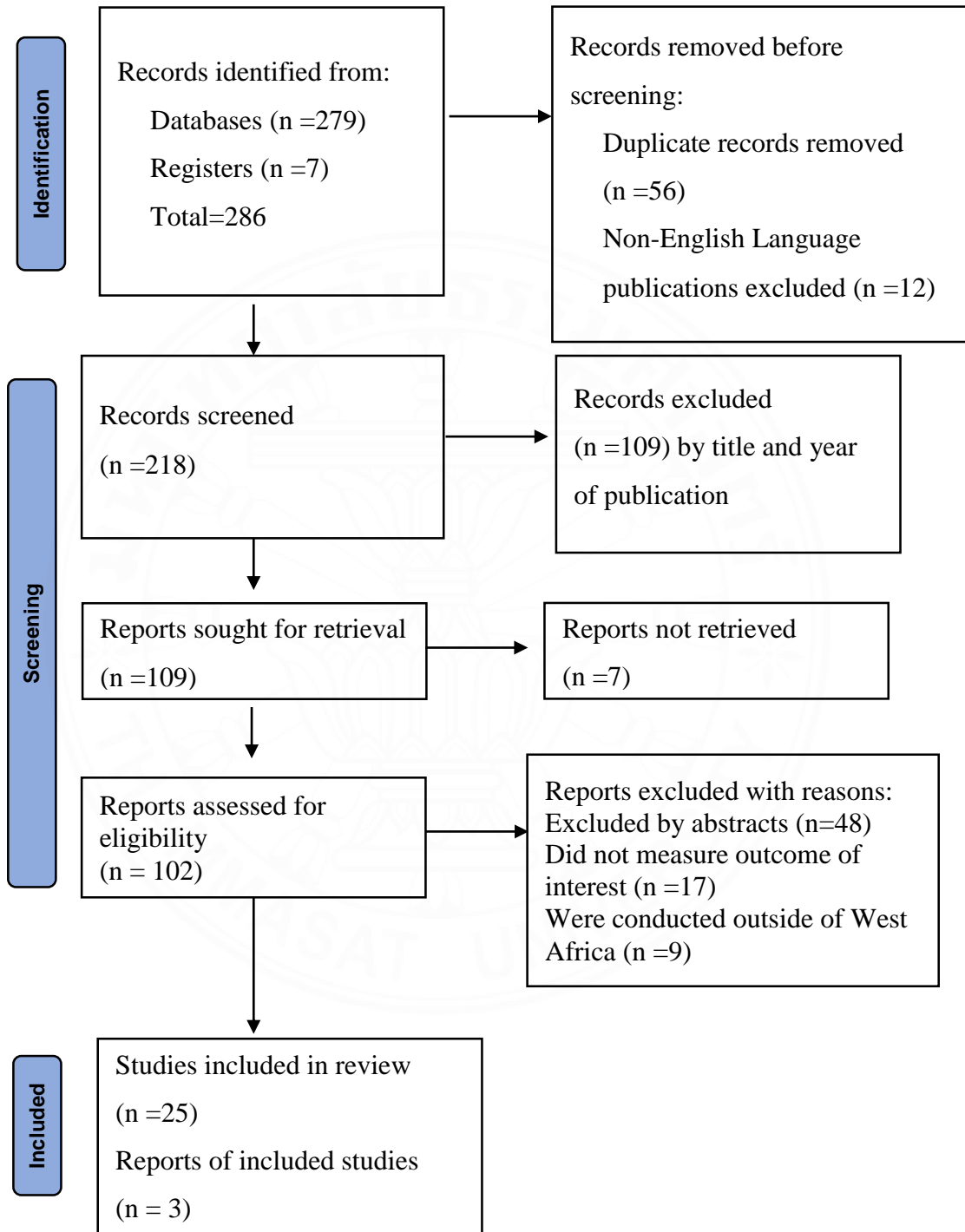


Figure 4.1 Health impact of adolescent pregnancy on adolescent girls in West Africa, PRISMA diagram.

4.2 CHARACTERISTICS OF INCLUDED STUDIES

The twenty-eight studies which reported the desired outcome which met the prior set inclusion criteria used for the study are represented in the diagram below in figure 4.2. Most of the included studies (54%) were conducted in Ghana, followed by Nigeria (39%) and the least (7) by Liberia. One of the included studies was conducted across West Africa and included all the three selected countries. The extracted data for the study were conducted using varied research methodologies. Majority of the studies used were cross-sectional (6) and (5) were surveys. Of the five surveys, (3) were demographic and health surveys and (2) were national surveys. There were (2) case controls studies and one each of retrospective, Adolescent Birth Outcomes, Ghana (ANBOG), prospective, comparative, exploratory, descriptive, semi-structured and a mixed(qualitative and qualitative).

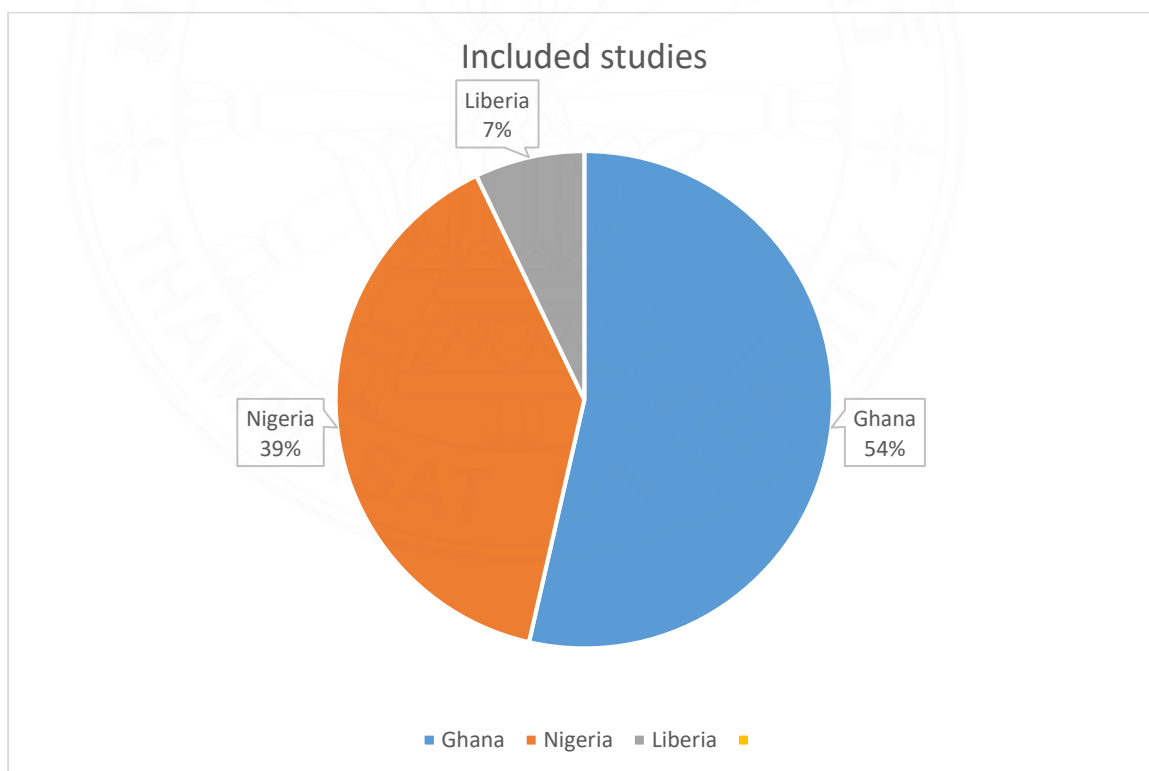


Figure 4.2. The pie chart above shows the percentage of studies and the country they represent.

Participants of the studies used had a least sample size of 17 to the highest sample size of 26,055. These studies were carried out in both rural and urban settings, institution based and community based. A total of 47,479 adolescent girls eligible for the studies were pregnant either during or before the studies were undertaken. Their ages ranged from 11 as the youngest to the oldest of 24years and included educated and non-educated, married and unmarried. Their pregnancies were desired and undesired. Some of the pregnancies were carried to term, birthed, whilst others were aborted.

Some key informants comprising of parents, teachers, adolescent mothers and partners and health care providers participated in some of the qualitative studies used, providing useful and relevant information on how pregnancy impacts the health of adolescent girls.

It is worth of note that none of the studies included in this review included studies on vulnerable adolescent groups like the disabled or those living with Non-communicable Diseases (NCD) or victims of pandemics like HIV and Ebola which have devastated the sub-region. Also there was no study found to have investigated covid-19 positive pregnant adolescent girls in West Africa.

Per the number of studies for a publication year, as shown in the Bar Graph below in figure 4.3, most of the included studies were published in 2021(10), 2019 had 7 publications, 6 of the studies were published in 2020, 3 for 2017 and one each for 2018 and 2016.

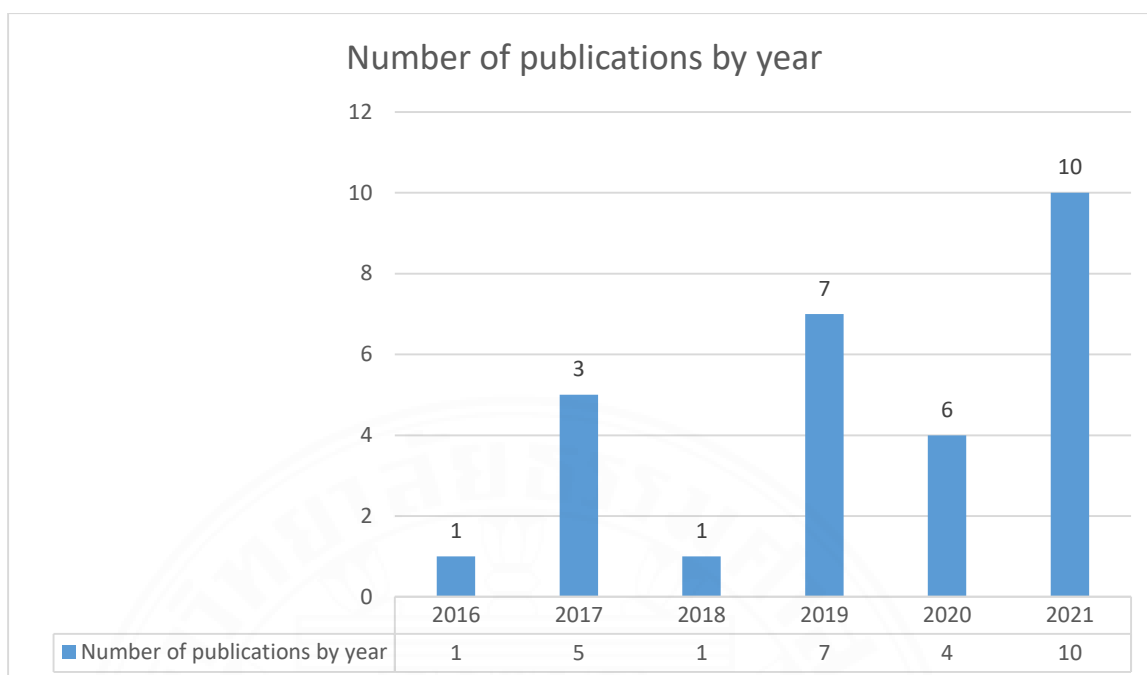


Figure 4.3 Representation of studies by publication year

The main variables that were assessed were age, ANC attendance, place of residence (rural/urban), education, marital and socioeconomic statuses. Other factors related to ANC services like, cost of ANC services, pregnant adolescent friendly related services, skilled personnel, negative attitude of care providers and inadequate counselling, issues of individual behaviour such as lifestyle and use of alcohol and tobacco, fear of stigmatization, low self-esteem, abuse, inadequate education and knowledge on pregnancy and child bearing were all considered. The main characteristics of the included studies and participants are summarised below in Table 4.1. The health impacts as reported the studies and the respective study designs and settings are also presented in Table 4.2 below.

Table 4.1— Characteristics of included studies.

Author/year	Study setting/country	Study participants	Sample size	Ages of participants (years)	Level of education	Employment status	Marital status	Gestational age (weeks)	Residence	Antenatal Care attendance
Adeniyi et al., 2021	Federal teaching hospital, Ido, Ekiti/Nigeria	Pregnant teenagers	116 (58 cases and 58 controls)	14-19 15.5% (<16 yrs.)	Secondary and tertiary=48.2% No education=1.7%	Earn income=8.6%	Unmarried=82.8% Married=8.6%	Not given	Not stated	Yes=32.8% No =67.2%
Ampiah et al., 2019	Seven district health centres in the Ashanti region/Ghana	Pregnant teenagers	998 (119 teenagers)	13-19	Not stated	Socioeconomic status not indicated	Not described	Up to 36 weeks	Not stated	Yes=All
Annan et al., 2021	Twenty-nine communities in Kumasi metropolis/Ghana	Pregnant teenagers	416	13-19	Not stated	Socioeconomic status not indicated	Not described	Up to 32 weeks	urban	Yes
Annan et al., 2021	Health centre based in Ashanti/Ghana	Pregnant adolescents	416	13-19	None=4.6%	Unemployed=71.6% Employed=28.4%	Married=24% Single=76%	Up to 32weeks	Not stated	Not indicated
Appiah et al., 2021	Ledzorkuku-Krowor in Greater Accra/Ghana	Pregnant adolescents	423	12-19 (16-19=71.4%)	No education=16.5%	Petty trading=45.2%	Married=9%	Up to 32weeks	Not stated	Yes

Author/y ear	Study setting/country	Study participants	Sample size	Ages of participants (years)	Level of education	Employment status	Marital status	Gestational age (weeks)	Residence	Antenatal Care attendance
Ayamolo et al., 2019	Osun State, South-West Nigeria	Pregnant and child-rearing teenagers	120	13-20	Non=11.7% Primary and above=88.3%	Socioeconomic status not indicated	Married=46.7% Single=50%	Not given	Not stated	Not indicated
Bain et al., 2019	Jamestown Accra/Ghana	Adolescents (30)	53	14-19	Students=3	Unemployed=17	Single=27	Not given	Not stated	Not indicated
Bain et al., 2020	Jamestown, Accra/Ghana	Adolescents, parents, teachers	54	Not described	Not stated	Socioeconomic status not indicated	Not described	Not given	Not stated	Not indicated
Dare et al., 2016	Angwan Rukuba, Jos, Plateau State/Nigeria	33 teenagers (pregnant or mothers) and 67 were never pregnant	100	13-18 (13-14=38 15-16 =42 17-18=20)	Primary education=60%, No education =2%	Unemployed=7% Street hawkers=30%	Not described	Not given	Not stated	Not indicated
Envuladu et al., 2017	Two local government areas of Plateau State/Nigeria	Adolescents (males and females), teachers, healthcare providers	24	18-19 (adolescents)	Not stated	Socioeconomic status not indicated	Not described	Not given	Not stated	Not indicated

Author/year	Study setting/country	Study participants	Sample size	Ages of participants (years)	Level of education	Employment status	Marital status	Gestational age (weeks)	Residence	Antenatal Care attendance
Gbogbo, 2020	Hohoe municipality/Ghana	Adolescents (mothers, pregnant)	92	15-19	Basic school dropout=77	Employed=2 Unemployed=90	Married=4 Unmarried=88	Not given	Rural=9	Not indicated
Ghana 2017 DHS, 2018	National/Ghana	Pregnant adolescents	365	<20	Not stated	Socioeconomic status not indicated	Not described	Not given	Not stated	Not indicated
Gyimah et al., 2021	Ashanti region/Ghana	Pregnant adolescents	416	13-19	Only basic education 61.3%	Employed=28.4% Unemployed=71.6%	Married=24% Single=76%	16 wks average	Urban=58.4% Rural=41.6%	Not indicated
Gyimah et al., 2021	Twenty-nine districts of Kumasi Metropolis/Ghana	Pregnant adolescents	416	13-19	Junior High School=61.3%	Unemployed=71.6%	Unmarried=76.0%	Up to 32weeks	Not stated	Yes
Keogh et al., 2021	National/Ghana	Adolescents	4,139 (1,039 adolescents)	15-24	Not stated	Socioeconomic status not stated	Not described	Not given	Not stated	Not indicated
Konneh and Sharoni, 2020	Jackson Doe Referral Hospital/Liberia	Adolescents and adult mothers	1,265 (540, 43% adolescents)	11-19	Primary =65.9%	Socioeconomic status not indicated	Not described	Not given	Not stated	Not indicated

Author/y ear	Study setting/country	Study participan ts	Sample size	Ages of participan ts (years)	Level of education	Employment status	Marital status	Gestatio nal age (weeks)	Residence	Antenat al Care attendan ce
Krugu et al., 2016	Bolgatanga municipality/Ghana	Young women with pregnancy experience	20	14-19	School dropouts=11	Socioeconomic status not indicated	Married=7 Single=13	Not given	Not stated	Not indicated
Kuyinu et al.,2017	Lagos Island/Nigeria	Pregnant adolescents	246	16-19 (adolescent girls)	Not stated	Socioeconomic status not indicated	Not described	1 st -3 rd trimester	Not stated	1 st -3 rd trimester
Liberia 2019-20 DHS, 2021	National/Liberia	Pregnant adolescents	213	<20	Not stated	Socioeconomic status not indicated	Not described	Not given	Not stated	Not indicated
Nigeria 2018 DHS, 2019	National/Nigeria	Pregnant adolescents	47	<20	Not stated	Socioeconomic status not indicated	Not described	Not given	Not stated	Not indicated.
Nonterah et al., 2019	Navarongo War Memorial Hospital/Ghana	Pregnant women	506 (33 adolescents)	< 20	Not stated	Socioeconomic status not indicated	Not described	5-36 weeks	Not stated	Yes
Oladeji et al.,2019	Ibadan, Southwest Nigeria.	Pregnant adolescents and adults	9,352 (772 adolescents)	<19	Not stated	Socioeconomic status not indicated	Married or cohabiting=53.4%	21.3 weeks	Not stated	Not indicated

Author/year	Study setting/country	Study participants	Sample size	Ages of participants (years)	Level of education	Employment status	Marital status	Gestational age (weeks)	Residence	Antenatal Care attendance
Olajubu et al., 2021	Ile-Ife, Osun State/Nigeria	Pregnant teenagers	241	14-19	Educated=90%	No source of income=64.3%	Married=32.8% Single= 67.2%	Not given	Not stated	Not indicated
Olorunsaiye et al., 2021	Jos, Plateau state/ Nigeria	Adolescents and young women with experience of adolescent pregnancy	17	16-24	All completed at least Junior High School	Employed=41.2% Unemployed=17.6%	Never married=82.3% Separated or divorced=17.7%	Not given	Not stated	Not indicated
Oyeyemi et al., 2018	Maiduguri, capital of Borno state/Nigeria	Young mothers	220 (110 adolescents)	14-17	No education=75.8%	Farmers=54.5% Traders=50.7%	Married=51.1% Unmarried=40%	Not given	Not stated	Yes=47.4% No=59.2%
Siakwa et al., 2020	Three hospitals in Cape Coast Metropolis/Ghana	Pregnant teenagers	1,006 (503 adolescents)	13-19	No education=16.0% Basic education=65.9%	Employed=33.7% Unemployed=66.3%	Married=16.8% Single=78.2%	18wks average	Urban	Yes=88%
Tetteh et al., 2020	Nigeria	Teenagers with pregnancy	26,055 (Nigeria=8,423)	15-19	Non=25.8% Primary and above=74.2%	Socioeconomic status not indicated	Married=22.8% Not married=77.2%	Not given	Urban=45.1% Rural=54.9%	Not indicated

Author/year	Study setting/country	Study participants	Sample size	Ages of participants (years)	Level of education	Employment status	Marital status	Gestational age (weeks)	Residence	Antenatal Care attendance
Yussif et al., 2017	A community in Northern Ghana	Women experience	143 (46 adolescents)	<19 yrs.	No education=40	Traders=90%	Married=93%	Not given	Not stated	Not indicated

Table 4.2— Main effects of adolescent pregnancy.

Title	Country/study setting	Type of study	Impact of pregnancy on maternal adolescent health
Complications of pregnancy among adolescents and adult mothers treated in a public hospital, the republic of Liberia: a retrospective comparative study	Liberia/Jackson Referral Hospital	Doe Retrospective study	The most prevalent complication of pregnancy among teenagers was Anaemia.
Factors associated with iron deficiency anaemia among pregnant teenagers in Ashanti Region, Ghana: a hospital-based prospective cohort study	Ghana/29 communities in Kumasi Metropolis	Prospective cohort study	Iron deficiency anaemia is common among the pregnant teenagers studied.
Dietary diversity and its correlates among pregnant adolescent girls in Ghana	Ghana/Ashanti region	Longitudinal/Adolescent Nutrition Birth Outcomes, Ghana (ANBOG) study	High inadequate dietary intake during pregnancy.
Obstetric outcomes: a comparison of teenagers and adults in the Cape Coast Metropolis, Ghana	Ghana/ three Hospitals in Cape Coast Metropolis	Observational study	Immature pelvic structures of pregnant teenagers could cause cephalo-pelvic disproportion, which would lead to injury to the pelvic structures, thereby causing bleeding after delivery.
Beyond love: a qualitative analysis of factors associated with teenage pregnancy among young women with pregnancy experience in Bolgatanga, Ghana	Ghana/ Bolgatanga municipality, northern Ghana	Qualitative study	Saddened or unhappy.

Title	Country/study setting	Type of study	Impact of pregnancy on maternal adolescent health
Comparative analysis of trends and determinants of anaemia between adult and teenage pregnant women in two rural districts of Ghana	Ghana/7 district health centres in the Ashanti region	Retrospective study	The teenage group was found as more anaemic.
The long-term effects of adolescent pregnancies in a community in Northern Ghana on subsequent pregnancies and births of the young mothers	Ghana/Community based	Cross-sectional study	The findings of this study have shown that women with adolescent pregnancies experience more abortions.
Outcome of teenage pregnancy in a low resource setting: a comparative study	Nigeria/Federal teaching hospital. Ido, Ekiti	Retrospective study	Pregnancy-related complications such as hypertensive disorders of pregnancy, cephalo-pelvic disproportion/obstructed labour, and anaemia were among teenagers.
Association between adolescent motherhood and maternal and child health indices in Maiduguri, Nigeria: a community-based cross-sectional study	Nigeria/Maiduguri, capital of Borno state	Cross-sectional study	Adolescent mothers were more likely to experience fistula, to have a postpartum haemorrhage.
Causative factors for sexual and reproductive health status of pregnant adolescent girls in urban communities of Lagos, Nigeria	Nigeria/Lagos Island	Mixed (qualitative and quantitative)	The presence of morbidity in the form of anaemia.

Title	Country/study setting	Type of study	Impact of pregnancy on maternal adolescent health
Sexual and reproductive health challenges of adolescent males and females in some communities of Plateau State Nigeria	Nigeria/two local government areas of Plateau State	Exploratory qualitative	Unsafe abortion.
Psychosocial effects of pregnancy on teenage mothers in Angwan Rukuba community, Jos, Plateau State, Nigeria	Nigeria/Angwan Rukuba, Jos, Plateau State	Descriptive study	Depression and substance abuse were the major psychosocial effects of pregnancy among respondents.
Nutritional status and birth outcomes among adolescents in Ashanti, Ghana	Ghana/29 districts of Kumasi Metro	Longitudinal study	Anaemia.
Nutritional knowledge and dietary intake habits among pregnant adolescents attending antenatal care clinics in urban community in Ghana	Ghana/Ledzorkuku-Krowor in Greater Accra	Cross-sectional study	Eating habit of adolescent pregnant women was not encouraging.
Decision-making preferences and risk factors regarding early adolescent pregnancy in Ghana: stakeholders' and adolescents' perspectives from a vignette-based qualitative study	Ghana/Jamestown, Accra	Qualitative study	Feelings ranged from, fear, anger, disappointment, frustration, miserable, regret, being shy.
Stress and resilience among pregnant teenagers in Ile-Ife, Nigeria	Nigeria/Ile-Ife, Osun State	Cross-sectional study	The majority of the respondents were categorized as having a moderate level of perceived pregnancy-related stress.
To keep or not to keep? Decision making in adolescent pregnancies in Jamestown, Ghana	Ghana/Jamestown Accra	Qualitative/Semi-structured in-depth interview	Adolescents who had abortion experiences were carried out under unsafe circumstances.

Title	Country/study setting	Type of study	Impact of pregnancy on maternal adolescent health
Contraceptive and abortion practices of young Ghanaian women aged 15-24: evidence from a nationally representative survey	Ghana/Household based	National survey	Over half of young women used abortion methods obtained from non-formal providers.
Teenage pregnancy and experience of physical violence among women aged 15-19 years in five African countries: analysis of complex survey data	Nigeria	Survey	The physical violence among pregnant adolescents was five times higher compared to those who were not pregnant.
Predictors of adverse birth outcomes among pregnant adolescents in Ashanti Region, Ghana	Ghana/Health centre based in Ashanti	Prospective study	Experienced illness.
Descriptive epidemiology of anaemia among pregnant women initiating antenatal care in rural Northern Ghana	Ghana/Navarongo Memorial Hospital	War Cross-sectional study	Expectant mothers less than 20 years old were more likely to be anaemic.
Early motherhood: voices from female adolescents in the Hohoe Municipality, Ghana—a qualitative study utilizing Schlossberg's Transition Theory	Ghana/Hohoe municipality	Qualitative study	Suicidal thoughts after pregnancy confirmation and the feeling of rejection by family and friends.
Exploring differences between adolescents and adults with perinatal depression—data from the expanding care for women with perinatal depression trial in Nigeria	Nigeria/Ibadan, Southwest Nigeria	Cluster randomized controlled trial	Adolescents had major depression compared with adults. Adolescents had a significantly poorer adjustment and attitudes to pregnancy.
Perceived social support and depression among pregnant and child-rearing teenagers in Ile-Ife, Southwest Nigeria	Nigeria/Ile Ife, a community in Osun State, South-West Nigeria	Descriptive study	Adolescents were categorized as having a mild mood disturbance, experienced borderline clinical depression, had moderate

Title	Country/study setting	Type of study	Impact of pregnancy on maternal adolescent health
"It's like being involved in a car crash": teen pregnancy narratives of adolescents and young adults in Jos, Nigeria	Nigeria/Jos, Plateau State	Qualitative study	depression, and some were categorized as severely depressed. Emotions described included fear, self-condemnation and guilt about shaming their family.
Ghana Special Maternal Health Survey 2017	Ghana/National	Demographic and Health Survey	Drinking milk/coffee/alcohol/other liquid with sugar, drinking a herbal concoction, drinking another home remedy, using a herbal enema, inserting a substance into the vagina, heavy massage, excessive physical activity, tablets (exact kind unknown), and other.
)Demographic and Health Survey 2019-20	Liberia/National	Demographic and Health Survey	Experienced physical violence during pregnancy.
Nigeria Demographic and Health Survey, 2018	Nigeria/National	Demographic and Health Survey	Mothers' medical conditions resulting in caesarean sections.

4.3 Adverse Maternal Health Outcome of Adolescent Pregnancy in West Africa

The review found four main themes on how pregnancy affects the health and wellbeing of adolescent girls in West Africa. They are; *anaemia, complications of pregnancy and obstetric and gynaecological effects, unsafe abortions and psychological effects*. The 4 main adolescent pregnancy-related health impacts in West Africa as per the study are shown in the diagram below in figure 4.4.

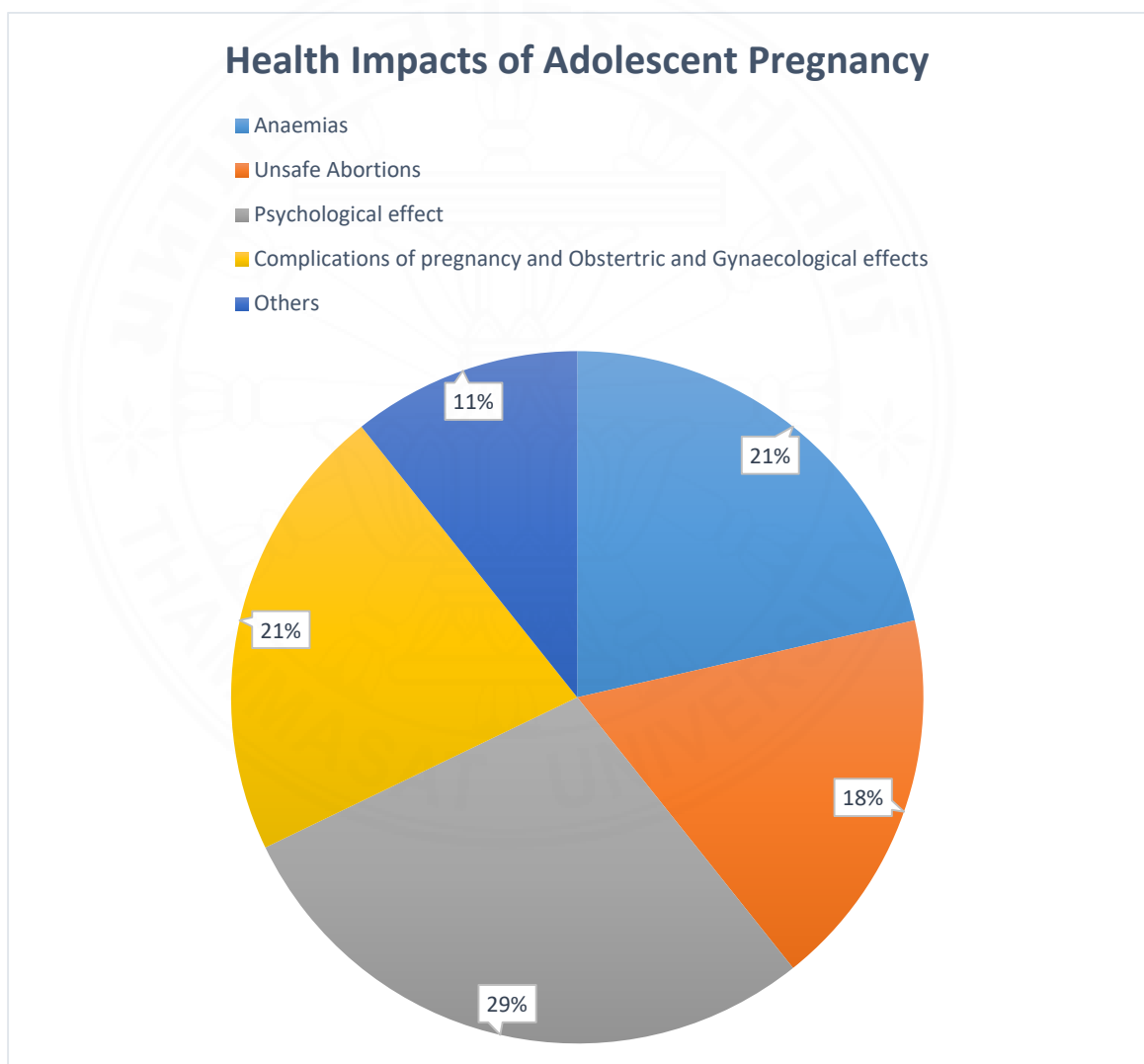


Figure 4.4 Adolescent pregnancy-related health effects in West Africa.

As shown in the above diagram, the four main ways by which pregnancy is impacting the health of adolescent girls in West Africa (Nigeria, Ghana, and Liberia) are; anaemia, psychological effect, unsafe abortions and Pregnancy-related complications obstetric and gynaecological effects. These impacts could be felt from conception to delivery and even beyond.

4.4 ANAEMIA

Also identified as impacting the health of adolescents' girls with pregnancy experience is anaemia. Anaemic conditions associated with adolescent pregnancy was reported in all three countries used for the review. Four out of the six studies were carried out in the former British West African colony of Ghana. The remaining two were investigated in Nigeria and Liberia, one each. The methods used for the various studies are retrospective 2, prospective 1, longitudinal 1, cross-sectional 1, and one of a combined method of qualitative and quantitative approaches. For the years of publication, two each in 2019 and 2021 and one each in 2017 and 2020 were included. Anaemia as determined by the studies is a common complication that occurs among pregnant adolescents in these countries compared to other age groups of pregnant women. Higher anaemia among adolescents (Konneh & Sharoni, 2020), iron deficiency anaemia common among pregnant teenagers (Annan, Gyimah, Apprey, Edusei, et al., 2021), teenage group found more anaemic (Ampiah et al., 2019), the presence of morbidity in the form of anaemia (Kuyinu et al., 2020) found anaemic (Gyimah, Annan, Apprey, Asamoah-Boakye, et al., 2021) and adolescent expectant mothers more likely to be anaemic (Nonterah et al., 2019) were the findings under this theme.

4.5 PREGNANCY-RELATED COMPLICATIONS AND OBSTETRIC AND GYNAECOLOGICAL EFFECTS

Another ill health effect of adolescent pregnancy as determined by the review is complications of pregnancy and obstetric and gynaecological consequences. These studies that measured outcomes on the above were published in 2017(1), 2019(2,) 2020(1) and 2021(2). The study countries were Nigeria (4) and Ghana (2).

They were single studies each of observational, retrospective, cross-sectional, descriptive, and retrospective and survey. The various unpleasant health effect during pregnancy in adolescent girls categorised as complications of pregnancy and obstetric and gynaecological effects reported are immature pelvic structures of pregnant teenagers could cause caphalo-pelvic disproportion, injuring pelvic structures, thereby causing postpartum bleeding(Siakwa et al., 2020), hypertensive disorders of pregnancy and obstructed labour among teenagers(Adeniyi et al., 2021), likelihood of fistula experience and postpartum haemorrhage(Oyeyemi et al., 2019), pregnancy related illness(Annan, Gyimah, Apprey, Asamoah-Boakye, et al., 2021) and some underwent caesarean sections as a result of mother's medical conditions(National Population Commission (NPC) [Nigeria] & ICF, 2019).

4.6 UNSAFE ABORTIONS

Unsafe abortion among pregnant adolescents was identified as causing havoc to the lives of adolescent girls in the area under review by the study. From the review, 2 of these studies were published in 2017, 2018, 2019, and 2021 had one each publication. Cross-sectional (1), exploratory (1), qualitative (1) and survey (2) were the methods employed for the studies. The studies were from Ghana (5) and The Federal Republic of Nigeria (1). Abortions under unsafe circumstances were found to be a common health hazard for to be teenage mothers. Most abortions services were procured under unsafe and informal circumstances. Most abortions were unsafe(Envuladu et al., 2017), adolescents experienced more abortions(Yussif et al., 2017), abortions were performed under unsafe circumstances(Bain et al., 2019), methods for abortions were obtained from non-formal providers(Keogh et al., 2021) and crude methods like insertion of objects into the vagina, heavy message and drinking a herbal concoction were used(Ghana Statistical Service (GSS), Ghana Health Service (GHS), 2018).

4.7 PSYCHOLOGICAL EFFECTS

This category of included studies is five and four from Nigeria and Ghana respectively. The studies were conducted in 2016(1), 2017(1), 2019(1), 2020(2) and most were carried out in 2021(3). Four of the studies that described the psychological effect of adolescent pregnancy used a qualitative approach for the studies. Two used a descriptive design and one method each of cross-sectional and cluster randomized control trial. The mental health and psychological related impact of adolescent pregnancy findings reported by the studies are; sadness and unhappy mood(Krugu et al., 2017), moderate to severe depression and major psychosocial effects of pregnancy(Dare et al., 2016)(Ayamolowo et al., 2019), feelings of fear, anger, shyness, miserable (Bain et al., 2020) were described. Findings of pregnancy-related stress(Olajubu et al., 2021), suicidal thoughts and ideations and feeling of rejection(Gbogbo, 2020), fear self-condemnation and guilt(Olorunsaiye et al., 2021)and poorer coping ability and attitude to pregnancy(Oladeji et al., 2019) were also found through this review

Lastly, four of the studies included for the review measured other outcomes different from the themes above regarding food and nutrition security. They reported high inadequate dietary intake during pregnancy in adolescents(Gyimah, Annan, Apprey, Edusei, et al., 2021) and not encouraging eating habits of pregnant adolescent women(Appiah et al., 2021) respectively.(Tetteh et al., 2020) and (Liberia Institute of Statistics and Geo-Information Services (LISGIS), Ministry of Health [Liberia], 2021) experiences of physical violence by pregnant adolescent girls.

CHAPTER 5

DISCUSSIONS AND RECOMMENDATIONS

This section of the study discusses the findings as summarized in figure 4.4 in relation to the objectives of the study.

The purpose of the study is to systematically review the health implications of pregnancy on the adolescent girl and how it is impacting the health and well-being of adolescent girls and child rights implications in West Africa. The following objectives were set for the review;

- 1) To identify and discuss the adverse impacts arising from pregnancy in West African adolescent girls.
- 2) To discuss the implications of adolescent pregnancy on women's right to sexual and reproductive health care.
- 3) To propose potential responses by West African nation-states to lower the adverse impacts of adolescent pregnancy.

5.1 DISCUSSION

Pregnancy is deemed necessary for procreation and the sustenance of the human race. It is however not without health consequences magnified in some age groups of women like adolescents. Although the health impacts are felt differently by individuals under varied circumstances, the adverse maternal outcomes in adolescents are well documented. (Tull, 2020) suggests that studies conducted decades ago reported the deleterious medical effect that accompanies adolescent pregnancy. This is contrary to what this review has revealed. All the adverse adolescent maternal outcomes found were from studies published in the last six years preceding this review, in the twenty-first century where the advancement in medical care is complemented by sophisticated Information Communication Technology (ICT) driving the quality and efficacy of health care, bringing about an increment in quality and longer life span since the turn

of the century (Azzopardi et al., 2019). To the extent of which the objectives of the study are met are discussed below.

5.1.1 Objective 1). To identify and discuss the adverse impacts arising from pregnancy in West African adolescent girls.

The study found pregnancy in adolescent girls aged between 10-19 years could independently be associated with anaemias, psychological effects, pregnancy-related complications, obstetric and gynaecological effects and unsafe abortion practices. What perhaps is not clear are the association of inadequate dietary intake, unhealthy eating habits and intimate partner violence with adolescence pregnancy since only a couple of studies reported these outcomes.

The review found adolescent mothers to be to be anaemic, they overly become exposed to pregnancy related complications, obstetric and gynaecological effects as well as pregnancy related psychosocial stresses. These findings by this study is consistent with (Kurth et al., 2010) stating that adolescent women are categorized within specialized risk group of expectant mothers due to their special nature which is incomparable to older women and hence routine ANC might not be enough to avert complications. Mombo-Ngoma et al found pregnant adolescents to be at an increased health risk (Mombo-Ngoma et al., 2016). Laski and colleagues describes higher risks in the form of complications during pregnancy and deliveries and abortions. Acknowledging that injuries, obstetric fistulas and even death could be occasioned resulting from pregnancy in young women (10-19) years (Laski et al., 2021). The negative health outcomes emanating from adolescent pregnancy is considered a public health hazard contributing significantly to maternal and child morbidity and mortality and has been reported widely (Kassa et al., 2021a). The health effects as stated above are manifested right from the period of conception and may last a life-time. A way to curtail these threats on the health of young girls and preserve the sanctity of their health would be to institute measures that will drastically reduce the incidence of adolescent pregnancy as it will take a longer period of time for an adolescent girl to recover from the impact of pregnancy even if they received optimal care during pregnancy (Nguyen et al., 2017). Since the scars from this experience might be debilitating to live with, targeted preventive interventions should be prioritized for implementation.

The study found adolescent mothers to be anaemic, they overly become exposed to pregnancy-related complications, obstetric and gynaecological effects, exposed to unsafe abortions as well face pregnancy-related psychosocial stresses. These findings by this study are consistent with (Kurth et al., 2010) stating that adolescent women are categorized within the specialized risk group of expectant mothers due to their special nature which is incomparable to older women and hence routine ANC might not be enough to avert complications. Young maternal age is found to be at an increased health risk during pregnancy (Mombo-Ngoma et al., 2016). Liang and colleagues describe higher risks in the form of complications during pregnancy and deliveries and abortions. Acknowledges that injuries, obstetric fistulas and even death could be occasioned resulting from pregnancy(Liang et al., 2019). Negative health outcomes emanating from adolescent pregnancy is considered a public health hazard contributing significantly to maternal and child morbidity and mortality and has been reported widely(Kassa et al., 2018a). The health effects as stated above could manifest at the various stages of pregnancy and long after delivery. A way to curtail these threats on the health of young girls and preserve the sanctity of their health would be to institute measures to drastically reduce the incidence of adolescent pregnancy as it will take a longer period for an adolescent girl to recover from the impact of pregnancy even if they received optimal care during pregnancy(Nguyen et al., 2017).

As has been revealed through this study, pregnancy in no doubt could severally and severely adversely impact the health of girls in West Africa. One such negative health outcome is anaemia. Adolescents are vulnerable to iron deficiency and anaemia due to increased demand of iron, poor iron dietary intake, high infection rates and intestinal worm infestations together with pregnancy(World Health Organization, 2016).Pregnancy during this period can contribute substantially to make them anaemic with effective interventions. Anaemia during pregnancy is due to physiological changes resulting in haemodilution and the increased requirements of iron(Adam, I., & Ali, 2016). A cross-sectional retrospective quantitative study found most (68.9%) of parturient adolescents to be anaemic(Salge, 2016). This is consistent with the findings of this review. Cognitive performance is thought to be affected by anaemia, in particular iron deficiency anaemia. Iron deficiency anaemia as a common phenomenon in adolescent pregnancy and (Sonmez & Basbug, 2018)argues that iron treatment is

required for a positive maternal outcome. Anaemic pregnant adolescents are found to have post-partum haemorrhage, preeclampsia and heart failures. It adds that the adverse maternal outcomes did not only result from the anaemic conditions but the adolescent pregnancy itself (Jusoh et al., 2015), thus emphasizing the need to deal with the root cause which is adolescent pregnancy.

Pregnancy-related complications, obstetric and gynaecological effects are also known to cause various degrees of harm to the health of adolescents during pregnancy. Pregnancy-induced hypertension, caesarean sections are commonly associated with adolescent pregnancy (Abebe et al., 2020). This is considered not only risky for adolescent childbearing but a risk factor for later pregnancies as well (Yussif et al., 2017). The development of obstetric fistulas among adolescent mothers accounted for upto 86% of treated cases with majority of them from sub-Saharan Africa in a clinical review study (Tebeu et al., 2012).

Another serious health impact is on mental state disturbances. This is consistent with (Kassa et al., 2021b) who recorded postpartum depression in adolescent mothers as has been reported by this study. In a systematic review in Sub Saharan Africa and globally on adolescent girls and young women's psychosocial experiences post-abortion, the prevalence of shame and abandonment as an experienced by adolescents of all ages were found by (Zia et al., 2021). This population subgroup at this critical developmental stage are noted for the fragility in terms of mental health stability (Silva et al., 2020) and therefore pregnancy should be avoided if undesired especially among the younger adolescents, less than fifteen years who are known to suffer gravely to prevent it from becoming a precursor to mental health disorders.

Reduced uptake and use of contraception and reproductive health-related services among adolescents is a painful reality. Limited access to safe abortion services mainly due to prohibited legislations in West Africa where over 70% of women of reproductive ages 15-45 years face restrictive abortion laws (Bankole et al., 2020). The Islamic, Christian and traditional African religious beliefs in West Africa make it challenging for the implementation of scientific interventions like abortion care (Falade, 2019). Some attitudes of healthcare providers influenced by religion, access and stigma and victimization have contributed to the clandestine abortion practices as it discourages women to use the limited available safe abortion services (Loi et al., 2015).

This forces many young girls in need of this service to resort to hazardous practices at the peril of their lives (Atuhaire, 2019).

Despite this, the adolescent girl is blamed for pregnancy and the aftermath of unsafe abortions (Munakampe et al., 2018). This unfortunate situation seems to infringe on their right to health and women's reproductive right and can ripple to hinder their full participation and could expose them to Gender Based Violence (GBV). These concerns has led to the WHO has issuing a nine guideline for information on contraception and services through the application of human right principles to the provision of reproductive health services (World Health Organization, 2014b). The Maputo Protocol on the Rights of Women in Africa should be given the much needed attention to its operationalization to uphold women's right. Early marriages (under 18 years) which contributes to adolescent pregnancy is discouraged by the protocol. It further calls upon duty bearers in Article 14 for ensuring women's right to health, including respecting and promoting their sexual and reproductive health (Ocran, 2007). Adopting Human Rights Based Approach (HRBA) could promote increased access to sexual reproductive health services and rights of women, in particular adolescents.

5.1.2.3 Objective 2). To discuss the implications of adolescent pregnancy on SDG 3 in West Africa.

The adverse maternal adolescent health outcomes as revealed by the review is discussed broadly in relation to the Sustainable Development Goal (SDG) 3- ensuring good health and well-being, specifically, targets 3.1 and 3.7. Adopted in the year 2015 by all member states of the United Nations (UN), the 17 development goals generally aims to improve well-being whilst protecting the planet. It focuses on poverty alleviation by adopting interventions for economic transformations that address critical needs relating to education, health, social and job prospects (Baeyens & Goffin, 2015). The SDG 3 and in particular targets 3.1 and 3.7 which are closely linked to the objectives of this review seek to reduce maternal mortality ratio and ensure wider coverage of sexual and reproductive health care services respectively (United Nations, 2018). Key to the latter is ensuring that family planning is universally accessible, information and education and the synchronization of reproductive healthcare services into national healthcare strategies and programming by making health the lead sector

in adolescent health and reproductive care in a multi-sectoral approach (George et al., 2021). Efforts towards the attainment of target 3.1 of SDG 3 could be undermined by the many adolescent maternal lives being lost through pregnancy in West Africa. The WHO reported in 2019 that complications arising out of adolescent pregnancies are the leading cause of death of young girls in the sub-region (WHO, 2020). The adverse maternal outcomes could be attributable to the low coverage of adolescent targeted essential interventions (Odimegwu & Mkwanaenzi, 2016). Also contributing to maternal mortality in this regard is the lack of and or poor access to safe abortion services. Availability and access to safe abortion care services are basically non-existent in the sub-region largely due to legal and cultural prohibitions (Bankole et al., 2020). The absence of these services which is considered a critical component for the management of adolescent pregnancy (Goicolea et al., 2010), forces many an adolescent girl in need of such services as found through this study to engage in deadly abortion practices. They employ the services of quacks and use hazardous substances like drinking of ground bottles and herbal concoctions (Keogh et al., 2021) (Envuladu et al., 2017) resulting in the loss of precious innocent lives. This could slow down the momentum to achieving the less than 70 deaths per 100000 live births globally as projected by 2030.

For target 3.7, the goal of a wider coverage of sexual and reproductive healthcare services for adolescent truly deserves some more attention as (Bradley et al., 2019) sees contraception usage as a surest way of preventing unintended pregnancy. This is even more so as low coverage and patronage of this essential service is noted as a major determining factor to the incidence of adolescent pregnancy (Yakubu & Salisu, 2018). The rate of adolescent pregnancy in the sub region is among the highest globally (UNICEF, 2019b). The high prevalence of adolescent pregnancy could account for the increased abortions in the countries in this region (Yussif et al., 2018). Increased information sharing on contraceptives will not only help prevent undesired pregnancies but could reduce the demand for post abortion care services (Akande et al., 2020). This study found poor post abortion care as adding to the unorthodox and clandestine means of dangerous abortion practices in West Africa by young women as a major contributor to the many health challenges due to adolescent pregnancy. This suggests that much more needs to be done to promote the uptake and usage of contraception by adolescents.

Key to the expansion of coverage and uptake of contraceptions is education and information dissemination. Adopting and comprehensively implementing WHO's guidelines on adolescent sexual and reproductive health and rights (WHO, 2018), can help push the wheels of progress to attaining the above target as sexual and reproductive health and right is a critical tool for fulfilling developmental goals (World Health Organization, 2014b). Ensuring universal coverage of sexual and reproductive healthcare as far as the adolescent girl population in West Africa is concerned could help build their capacity to take charge of their sexual live and significantly consolidate gains in the realization of SDG 3.

CONCLUSION

In conclusion, the review identified anaemia, complications of pregnancy and obstetric and gynaecological effects, unsafe abortions and mental health-related effects as negatively impacting the health and wellbeing of adolescent girls and could substantially contribute to maternal and child morbidity and mortality. As women suffer these ailments and some sadly lose their lives rather prematurely through pregnancy as a result of restrictions on sexual and reproductive health and right and safe abortion care which might be required exclusively by women could suggest the need to prioritize Human Right Based Approach (HRBA) to sexual and reproductive health issues in West Africa. This unfortunate situation seems to infringe on their right to health and ripples to hinder their full participation and could expose them to Gender Based Violence (GBV). Sexual reproductive health and rights services for adolescents should be scaled up across the sub-region to help accelerate the attainment of Sustainable Development Goal 3. Women's right to exclusive services like safe abortion care should be regarded as safe scientific intervention to promote health and well-being and therefore religion and culture should not be used to discourage the provision and accessibility of such services

5.2 RECOMMENDATIONS

The following suggestions are made based on the findings and the conclusions presented. For further studies, the effects of adolescent pregnancy in people with disability and Non-Communicable Diseases (NCDs) should be investigated. Adolescents who are victims of pandemics like Covid-19, HIV, Ebola and Tuberculosis should also be studied to understand how pregnancy differently impact their health.

Further insight on current trends of child abuse and adolescent pregnancy-related factors in West Africa could be gained through research.

The health impact of adolescent pregnancy on babies of adolescent mothers can also be explored.

As has been revealed through this study, pregnancy adversely impacts girls' health in particular at a younger age, especially if not planned and hence prevention of adolescent pregnancy should be high on the agenda of various stakeholders.

Implementation of programs and policies regarding access and use of contraception, sexual and reproductive health services as well as abortion care services should be encouraged by state and non-state actors and embraced by practitioners jeering towards the continuous advancement of adolescent health and crucially the health of pregnant adolescent girls.

The Maputo Protocol on the Rights of Women in Africa should be given the much needed attention to its operationalization to uphold women's right and ensure increased access to sexual reproductive health and rights of women in particular adolescents.

Policy-makers in the sub region should contribute to the formulation and implementation of liberal abortion regimes to expand access to safe abortion care services.

Traditional leaders, Christian and Islamic leaders should be engaged to help make sexual and reproductive health services more acceptable in the West African Sub region.

Sensitization on obstetric fistulas through a public health outreach campaigns to create awareness of the general public on this debilitating out of childbirth.

Adolescent mother friendly ANC services could be set up to attend to the ANC needs of adolescents during pregnancy, this might help reduce the shaming and blaming and could boost early and regular ANC attendance by expectant adolescent mothers.

The high rate of school drop out in association with adolescent pregnancy is unacceptable and conscious efforts must be made to enrol and retain the girl child in school.

The issue of growing levels of youth unemployment in the sub region needs immediate and urgent attention to assist in channelling their youthful exuberance into productive ventures.

Cash transfer interventions is recommended for some financial security for unemployed and poor adolescents to support and help provide for the cost of ANC attendance and could be beneficial contribution to getting nutrient rich diet at this critical stage. Monetary assistance after delivery could be pivotal to their return to school.

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