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FACTORS INFLUENCING ADOPTION AND IMPLEMENTATION OF INTERVENTIONS AIMED AT PREVENTING ADOLESCENTS PREGNANCY AND CHILD MARRIAGE IN WEST AFRICA: A REVIEW OF WHAT WORKS AND WHAT DOES NOT

BY

AJIBOLA IDOWU (NIGERIA)

56th Master of Public Health/International Course in Health Development (MPH/ICHD):16TH September, 2019 – 4TH September, 2020

Royal Tropical Institute (KIT)/Vrije Universiteit, Amsterdam, The Netherlands

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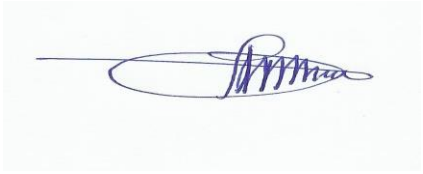
Being a Thesis submitted in partial fulfilment of the requirements for the award of Master of Public Health (MPH) degree.

DECLARATION

I, Ajibola Idowu, hereby declare that this project was carried out, written, and completed by me. This work is original, it has not been submitted for review or publication in any journal. Where other people's work has been used (either from a printed source, internet, or any other source) this has been carefully acknowledged and referenced in accordance with Department's requirements



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Ajibola Idowu

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Royal Tropical Institute (KIT)/Vrije Universiteit, Amsterdam

Organized by:

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LIST OF ACRONYMS

ACRONYM	MEANING
AP	Adolescent pregnancy
ARH	Adolescents Reproductive Health
ASRH	Adolescent Sexual and Reproductive Health
AYFHS	Adolescents and Youths Friendly Health Services
CM	Child Marriage
CSE	Comprehensive Sexuality Education
DHS	Demographic and Health Survey
FLHE	Family Life and HIV Education
GDP	Gross Domestic Product
GGE	General Government Expenditure
GHE	General Health Expenditure
HDI	Human Development Index
ICPD	International Conference on Population and Development
IEC	Information, Education and Communication
ICT	Information and Communication Technology
IR	Implementation Research
LGA	Local Government Area
NGO	Non-Governmental Organization
NPHDAYP	National Policy on Health and Development of Adolescents and Young People
NRHP	National Reproductive Health Policy
RCT	Randomized Controlled Trial
SDGs	Sustainable Development Goals
SHEP	School Health Education Programme
SRHR	Sexual and Reproductive Health and Right
SSA	Sub-Sahara Africa
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WA	West Africa
WHO	World Health Organization

GLOSSARIES

Adolescence: Period of transition between childhood and adulthood which often begins at puberty

Adolescents: People between age range of 10-19 years

Adolescent Pregnancy: This is also called Teenage Pregnancy and its pregnancy among girls which starts and ends before the age of 20 years

Adolescent mother: Those gave birth to babies when they were 10-19 years

Child Marriage: This is defined as a marriage of a girl or boy before the age of 18 and refers to both formal marriages and informal unions in which children under the age of 18 live with a partner as if married

Implementation Research: is the scientific inquiry into questions concerning programme implementation

A programme: Refers to multiple projects which are managed and delivered as a single package

Public Health Intervention: It is any effort or policy that attempts to improve physical, social or mental wellbeing of a population

Programme adoption: This describes the steps taken to involve and gain supports of relevant stakeholders and agencies for successful implementation of the programme.

Programme Implementation: This describes how the intervention has been appropriately delivered. It also explains the intervention agents' fidelity, loyalty, and commitment to the various constituents of an intervention's protocol. This includes cost and consistency of programme delivery as intended

Process Evaluation: Determines whether program activities have being carried out as intended and are producing the desired outputs. It involves routing data collection and analysis for management decisions throughout the life cycle of the programme

Programme effectiveness: This measures the degree to which the programme has produced its intended results.

Programme Impact: The degree to which a programme affects the quality of life of the general population, often measured by improvements in the targeted health indicators.

Youth: People who are 15-24 years of age

Young people: These are people aged 10-24 years old

Abstract

Background: Both Child Marriage (CM) and Adolescent Pregnancy (AP) remain major mutually re-enforcing public health issues in West Africa (WA), hosting most of the global adolescent brides and mothers. It is thus imperative to contextually explore how preventive interventions are implemented to address these problems.

Study objectives: This study assessed factors influencing CM and AP interventions' adoption-decisions, implementations, and effectiveness in WA with a special focus on Nigeria.

Methods: Relevant articles/evaluation reports were reviewed using appropriate search engines. Adapted RE-AIM model was used to analyze 18 articles that met the selection criteria.

Results: Factors influencing CM and AP programme adoption were lack of commitments to policy implementation, weak health systems, cultural/religious factors, and issues inherent in the interventions. Programme implementation was influenced by restrictive cultural practices, poor programme management, inadequate resources, and insufficient community mobilization. Overall, many of the programmes were effective but some had low impacts due to factors which influenced both programme Adoption and Implementation.

Discussion: The burden of CM and AP are still high in Nigeria. Yet, some interventions are ineffective due to low implementation fidelity, low programme-dose, and reach. However, many of the programmes reviewed deployed evidenced-based approaches and were relatively effective. Such interventions can be adopted, scaled up or replicated by future programme planners for greater impacts.

Conclusion/Recommendations: The findings suggest the need for stakeholders to collaborate in enhancing programme adoption and implementation to prevent CM and AP in West Africa. Nigeria can benefit by adapting and scaling up successful interventions from neighboring countries.

Key Words: Programme adoption, implementation, adolescents, pregnancy, child marriage, interventions, policy.

Word count: 250

CHAPTER ONE: INTRODUCTION AND BACKGROUND INFORMATION ON NIGERIA

1.1. INTRODUCTION

As a medical doctor and a public health physician working in Nigeria, a middle-income country, the field of Adolescent Sexual and Reproductive Health (ASRH) has been particularly fascinating to me due partly to the huge demographic importance, distinctiveness, and the heterogeneity of the adolescents globally. The world today has the highest percentage of adolescents and young people (aged 10-24 years) in history as they make up about 1.8 billion (27%) of the global population (1). Moreover, with a population of about 1.2 billion, adolescents aged 10-19 years constitute 16% of the world's population (2). Most of these adolescents are found in developing countries like Nigeria. Adolescents have huge potentials and are the shapers and leaders of the global future. Their poor sexual and reproductive health (SRH) status could have dire consequences on the socio-economic conditions of their respective countries (1). Despite their obvious demographic and socio-economic significance, adolescents in developing countries, particularly those in West Africa (WA) have not been receiving the much-deserved attention like their counterparts in the developed countries.

Interestingly, adolescence (period between 10-19 years of life) provides a window of opportunity for implementing a range of interventions to ensure favourable health outcomes (3). This period is often extended to cover youths (aged 15-24 years) to provide a better platform for advocacy in many countries (4). Since the 1994 International Conference on Population and Development (ICPD) (5), ASRH which was hitherto neglected has received tremendous attention especially in the developed countries with implementations of numerous evidence-based interventions and policies. Yet, in WA, ASRH is still being constantly challenged by the continued perpetration of some cultural practices such as forced early marriage of adolescent girls leading to high rate of adolescent pregnancy in the region. Both Child Marriage (CM) and Adolescent Pregnancy (AP) are of public health significance in WA because most of the global adolescent brides and mothers are found in this region (6). Therefore, it is important to understand how intervening measures are working to address them.

1.2. BACKGROUND INFORMATION ON NIGERIA AS A CASE STUDY OF WEST AFRICAN COUNTRIES

1.2.1. **Demography and Governance**: Nigeria is the most populous black nation in the world with an estimated population of 204,856,083 million people in 2019, based on a growth rate of 2.86% (7). Nigerians population pyramid shows a young population with 63.3% of the people being below 25 years of age and adolescents constituting about 22.5 % of the inhabitants (8) (Figure 1.1). Nigeria runs a federal system of government comprising of Federal, State and Local Government Areas (LGAs)-having 36 states,774 LGAs and Headquarters in Abuja. Also, there are over 250 ethnic groups, but the three main ethnicities include the Hausa-Fulani in the North, Yoruba in the Southwest, and Igbo in the South-South and South-eastern geopolitical zones. Similar to most WA countries, there are three predominant religions in Nigeria which include Islam (51.6%), Christianity (46.9%), and Traditional (1.5%) religions (9). The three main ethnic groups have distinct cultural norms and together with the diverse religions impact differently on ASRH status in Nigeria. For example, the cultural norms in mostly Islamic dominated Hausa-Fulani communities in northern Nigeria predominantly support CM and AP (10).

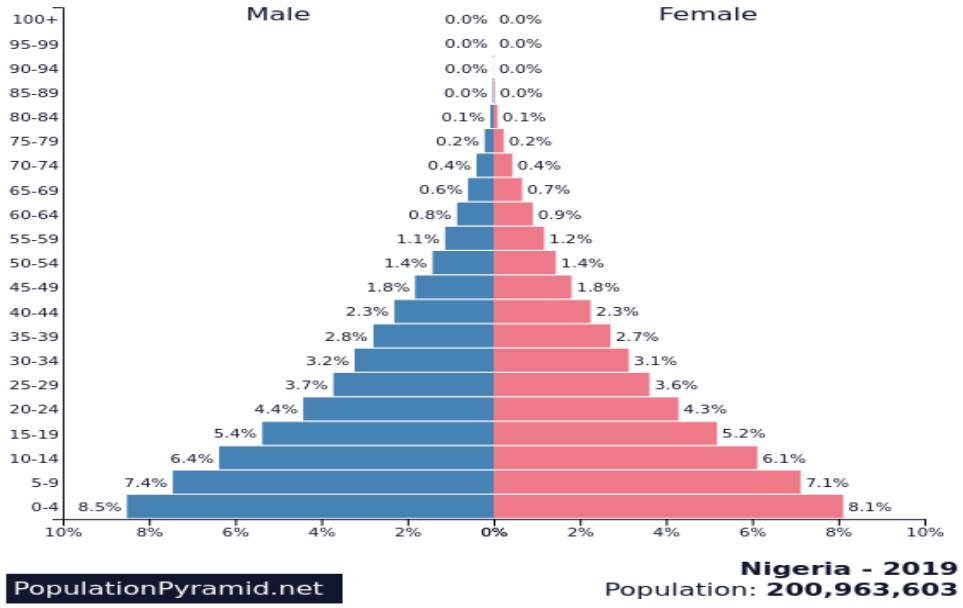

Figure 1.1 Population pyramid of Nigeria (2019). Source: PopulationPyramid.net

1.2.2.Socio-economic/Socio-cultural features: With a rebased nominal Gross Domestic Product (GDP) of $502 billion in 2013 (11), Nigeria has the largest economy in Africa. Yet, Nigeria ranked 158th out of 188 countries in Human Development Index (HDI) in 2018 (12). Thus, the poor economic situation in Nigeria has created social imbalances/inequity, making certain groups such as the adolescents and women to be disproportionately vulnerable to exploitation in the country. The reduced economic power in such women/girls often reinforces certain practices such as transactional and intergenerational sex which often lead to unwanted pregnancies and child marriage.

Regarding the educational system, Nigeria accounts for more than one-in-five out-of-school children anywhere in the world and only 67% eligible children are enrolled in primary education across the country as of 2018 (13). Girls are disproportionately affected in terms of school enrolment as only 41% of girls in the north-east and 47% in the northwest are currently receiving primary education (13). Generally, the literacy rate is 71% for males compared to 53% for females aged 15years and above (14). These rates are lower than Ghanaian Female/Male literacy rate of 74%/84% but much higher than that of Liberia (35%/52%) and Sierra Leone (35%/52%) respectively (14). Thus, there is obvious unequal access to education between males and females in the West African sub-region leading to uneven distribution of social opportunities and eventual reinforcement of the existing gender inequality to the detriment of the girl-child. Overall, Nigeria currently ranks 152 out of 188 countries on the gender-related development index (11).

About 20% of the Nigerian population are in the poorest Wealth Index Quintile (WIQ). The poorest Nigerians are found in the rural communities as well as in the North-western states (15). Correspondingly, these are the areas with the most rigid cultural norms and religious beliefs favouring the practices of CM and APs. They also have the most stringent patriarchal family system in which most social and SRH decision-making powers are vested in men. This is similar to the scenario in most WA countries such as Niger where about 70% of the poorest women aged 20-24 years and 80% of rural women were adolescent mothers (16).

1.2.3. **The Nigerian Health System**: For ease of coordination, the Nigerian health system is organized into primary, secondary, and tertiary levels of care which are interlinked by a two-way referral system. Asides the formal sector, alternative and traditional medical practices also exist in the country. About 38% of the healthcare facilities belong to the private sector about 70% of which offer primary healthcare services. Yet, ASRH information and services are still grossly not accessible to most adolescents in Nigeria (17).

The persistent poor governance and lack of accountability has weaken the Nigerian health system (18,19). For instance, Government Health Expenditure (GHE) as percentage of General Government Expenditure (GGE) has consistently fallen below the benchmark (15%) set in Abuja, Nigeria in 2000 by African Health Ministers. Only 4.6% was spent in 2017 and this compares with 6.1% in Ghana, 4.2% in Liberia but lower than 7.9% in Sierra Leone for the same year (20). In Nigeria, not less than 70% of health expenditure comes from private out-of-pocket spending, which makes healthcare access to be largely catastrophic and prohibitive, especially for contraceptives and other Sexual and Reproductive Health and Rights (SRHR) services for vulnerable adolescents and women in the lower wealth quintiles (19).

1.2.4. Overview of SRH in Nigeria:

Pregnancy/childbirth is the leading cause (39.7%) of deaths among Nigerian adolescents (21). As in many WA countries, Nigerian children are still at risk of wide varieties of abuse and harmful traditional practices despite the promulgation of Child Right Act in 2003. Nigeria has the third highest numbers of women in the world (19.9 million women aged 15-49 years) that had gone through female genital mutilation (FGM) (13). In Ghana, 61% of the 830 women surveyed by Sakeah et al. (2018) reported having gone through FGM (22), while estimated 49.8% of Liberian women had undergone FGM (23). However, the prevalence of FGM is estimated at 89.6% (the highest in the world) among women aged 15-49 years old in Sierra Leone (24).

The contraceptive prevalence rate (mCPR) was estimated at 17% in the 2018 Nigeria DHS, lower than the 36.9% reported by Asiedu et al. (2020), for Ghanaian women, 30.6% in Liberia and 28.1% in Sierra Leone (25–27). This partly explains high occurrences of CM and AP in the region.

CHAPTER TWO: PROBLEM STATEMENT, STUDY JUSTIFICATION, RESEARCH QUESTIONS, STUDY AIM AND SPECIFIC OBJECTIVES, METHODOLOGY

2.1 Problem statement:

Globally, about 16 million adolescents give birth yearly and almost three-quarters of AP is recorded in developing countries (28). The World Health Organization (WHO) estimates that at least 10 million unintended pregnancies are recorded among girls aged 15-19 years in developing countries each year (3). It is also reported that about 12 million girls aged 15-19 years and about 777,000 girls younger than 15 years give birth each year in the developing countries (3). A 2018 UNICEF data shows that whereas the global adolescent birth rate was 44 birth/1000 livebirths, this figure stood at 115/1000 livebirths for West and Central Africa , making the region to have the highest adolescent birth rate globally (29). Notably, Central African Republic, Niger, Chad, Angola and Mali had adolescent birth rate which were above 178/1000 livebirths in 2018 (29).

Also, Guttmacher institute's report on four African countries shows AP rates ranging from 121 per 1,000 women aged 15–19 in Ethiopia to 187 per 1,000 in Burkina Faso. Yet, a systematic review of the Ethiopian DHS reports by Kassa et al. (2016) shows only a marginal decline in the proportion of adolescents who started childbearing from 16.3% (95% CI, 14.4, 18.3) in 2000 to 12.5% (95% CI, 10.6, 14.6) in 2016 (30). Meanwhile, it has been reported that most of the Adolescent Pregnancy (AP) in Sub-Sahara Africa (SSA) occur within marriage context, hence, Child Marriage (CM) could be described as a catalyst for the high AP occurrences in the region (31).

As illustrated in Table 2.1, girls in West and Central Africa have the highest risk of being married as adolescents as 1 in 4 of them are married before age of 18 years (32). Also, 6 out of 10 child brides worldwide are found in West and Central Africa as the region has the highest CM rate in the world (32). Niger Republic rank first among countries with the highest percentages of CM in the world. Not less than 28% of adolescents in the country are married before 15 years and 76% of them are married before age 18years (33). In Ghana, more than 1 in 5 girls marry before the age of 18 years (21%) and 5% are married before 15 years of age (34).

Table2.1: Absolute Numbers and percentages of married adolescents (aged 15-19 years) in selected UNFPA regions of the world

Regions	**Number of Currently Married Adolescent Girls**	**Percentage of Currently married adolescent girls**
Eastern Europe &Central Asia	3,183	12.0
Latin America& the Caribbean	3183	12.0
Arab State	1891	12.5
Asian &the pacific	24,357	15.2
Sub-Sahara Africa	10,238	23.6
West & Central Africa	6,060	28.0

Adapted from: UNFPA Database, 2013 (32)

With a population of over 200 million people, Nigeria is the largest country in WA with about 44% and 18% of her adolescents getting married by age 18 and 15 years respectively (6). Thus, Nigeria rank 11th among countries with high rates of child brides globally in 2019 (6). As depicted in Figure 2.1, there are regional variations in the prevalence of CM in Nigeria as about 78% of adolescent girls are estimated to have been married off by age 18 years in northern Nigeria in 2015 (35).

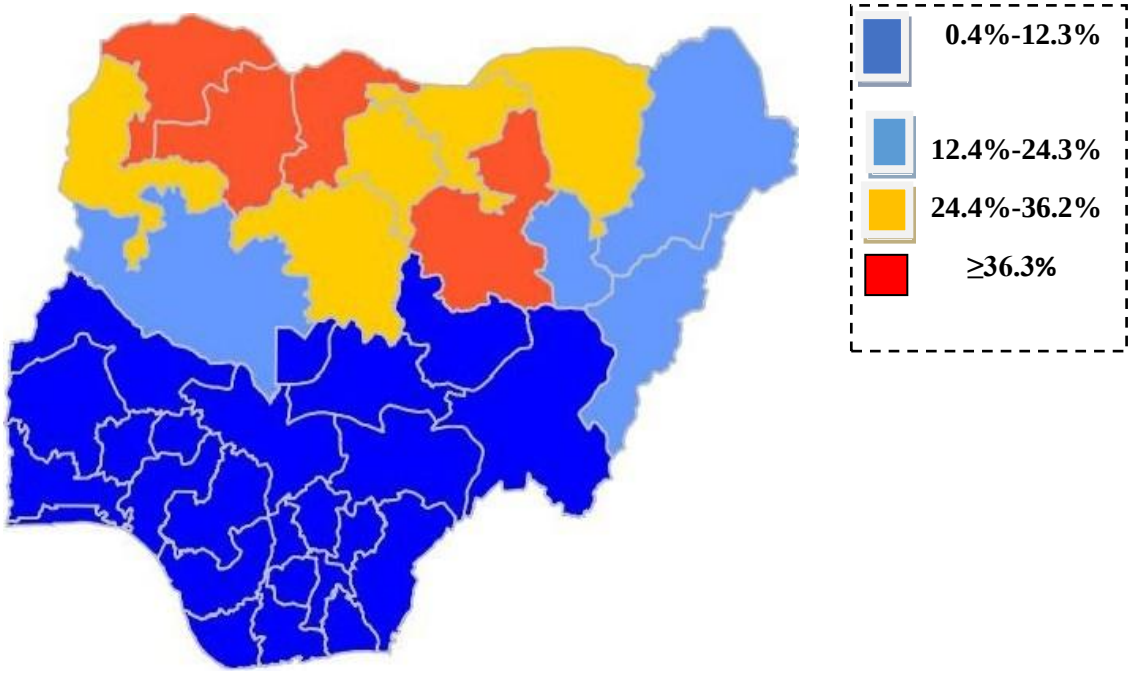

Figure 2.1: Map of Nigeria showing percentage distribution of women, aged 20-24years, who married before 15 years. Source: UNFPA Nigeria 2020 (36)

Consequently, the prevalence of AP has remained consistently high in WA. For instance, about 3 in 10 adolescents in Liberia and Sierra Leone are estimated to be pregnant before age 18years (37,38). In Ghana, about one-in-ten young girls aged 15-19 are estimated as adolescent mothers in the urban areas while double of these numbers have started childbearing in the rural communities (39).

The pattern of occurrence of AP in Nigeria is not too different from what obtains in other WA countries as AP trend has been persistently high in the country over the past three decades. Analysis of trend by the World Bank shows that the percentage of pregnant Nigerian adolescents has risen sharply from about 3% in 1986 to 27% in 1992, plateauing at 25% in 2004 and 26% in 2010 while the highest prevalence was 31.5% in 2016 (40). The low percentage (3%) reported as the proportion of pregnant adolescents in 1986 could have been due to the prevailing poor reporting system in Nigeria at that time compared to the subsequent years. On the contrary, the 2018 Nigeria Demographic and Health Survey (NDHS) shows a declining trend in the percentage of AP from 28% in 1990 to 16% in 2018

(21). The discrepancy in figure could have been due to how AP was measured. NDHS focused only on adolescents aged 15-19 years who were currently pregnant or had given births. Younger adolescents and those who might have aborted their pregnancies for one reason or the other might have not been adequately captured as they were in the World Bank Data. In Sierra Leone 31% of women aged 20-25 years gave birth to their first children before age 18 years (41). In Niger, about 70% of rural women give births before age 18 years (16).

Additionally, rural-urban, and regional variations have been apparent in the observed AP rates in Nigeria. For instance, about 28% of adolescents living in rural areas compared to 8% of their counterparts in urban areas were currently pregnant or had given births as reported by the 2018 NDHS.

Studies have reported the drivers of adolescent pregnancies in Africa and specifically in Nigeria. These factors include child marriages, culture and religious beliefs, gender norm and poor socio-economic supports for the adolescents (10,42). According to Mushwana et al. (2015), poor attitude of healthcare workers towards adolescents seeking ASRH services, inadequate knowledge of adolescents about sexuality and peer pressure were some of the contributory factors of high AP rate in South Africa (43). A study conducted in Ghana by Donkor and Lariba (2017) reported that lack of sex education and sex-knowledge from the youth made them more curious and vulnerable to AP (44). Habitu et al. (2017), reveals lack of contraceptive use, location of the adolescent (more in rural than urban areas) and parental family setting (more among adolescents from broken homes) as the main factors associated with AP occurrence in northern Ethiopia (45). Similarly Alabi et al. (2017), identified poverty, peer pressure and media influences as some of the main drivers of high AP rate in Nigeria (46).

In most WA countries, CM pushes many adolescent girls into early pregnancies. On the other hand, pregnant adolescents are forced into marriage due to attendant shame, stigma, societal rejection, and lack of parental care after such pregnancies. Hence, the two life events (that is CM and AP) are mutually reinforcing each other. In addition, the prevailing social norm particularly in the northern part of Nigeria, Sierra Leone and Niger expect young women to get pregnant as soon as they are married off by their parents to proof their fertility (10,16,47). Also, as a result of the predominant patriarchal family system, low literacy and poor socio-economic status, adolescent mothers in WA have a very weak contraceptive decision-making power (10,16). Thus, this category of women is mostly vulnerable to early and repeated pregnancies at short intervals thereby increasing their lifetime risk of maternal death.

Indeed, CM and AP violates the SRHR rights of girls (4). They deny girls the freedom from all forms of discrimination as enshrined in the Convention on Elimination of All Forms of Discrimination Against Women (CEDAW,1987) (48). Also, they both violate the goals of ICPD, the Beijing and Maputo Plans of Actions (49–51). Furthermore, realization of the 2016-2030 vision of the Global Strategy for Women's Children's and Adolescent's Health as well as the Sustainable Development Goal-3 may be elusive in WA with the continued occurrence of CM and AP (52).

Due to multitude of social problems associated with AP, most are unsafely terminated particularly in countries with strict anti-abortion laws like most WA countries. A quarter of the estimated 22,000 abortion-related deaths which occur yearly are seen among African adolescents aged 15–19 years (53). Also, a Guttmacher report on four African countries shows that abortion rate among pregnant adolescents ranged from 11/1,000 adolescents in

Ethiopia to 38/1,000 adolescents in Kenya (54). In 2017, about 53% all pregnancies in Ghana were unintended and about 23% of them were aborted (55).

High unsafe abortion rates could partly explain the high maternal mortality and morbidity rates in the developing countries since unsafe abortions increases the risk of dying from haemorrhage, preeclampsia, and sepsis. Contextually, it is estimated that Nigerian adolescents contribute 12.4% of the 556 maternal deaths per 100,000 livebirths in 2018 and that 39.7% of all deaths in women aged 15-19 years were pregnancy and delivery-related (21). In Niger, maternal mortality accounts for 35% of all deaths occurring among women aged 15 to 19 (16).

Asides abortion and its complications, the psycho-social problems of adolescent pregnancy are enormous. They often suffer stigmatization from peers and the community, parental rejection, are likely to drop out of school and to engage in low paying jobs thereby perpetuating the cycle of poverty among women (42,56). Babies of adolescent mothers are equally at higher risk of having low birth weights, severe neonatal problems and deaths (57).

Unintended pregnancies can be prevented by safe-sexual practices using contraception. However, modern contraceptive uptake among youths has remained low as in most WA countries. In 2013, the modern contraceptive prevalence rate (mCPR) among Nigerian adolescents was 16% compared to 27% and 30.7% of the Ghanaians and Liberian adolescents respectively (58,59). Adolescent contraceptive use is much higher in southern Nigeria than in the northern Nigeria where CM and AP are mostly cherished and contraception widely rejected due to cultural and religious reasons (10,60).

In response to the high AP rates, many interventions have been designed within African countries (28). In Nigeria, the National Policy on the Health and Development of Adolescents and Young People (NPHDAYP) was formulated in 1995 and revised in 2007 to provide a legal framework for the implementation of youth-friendly reproductive health interventions in the country (61). Similar document has been developed in Ghana (62). Subsequently, frantic effort was made to integrate comprehensive sexuality education (CSE) in the national school curriculum for children in Nigeria. Like most African countries, Nigeria participated in launching the African Union Campaign to End Child Marriage in 2016 (63). Similarly, Nigeria was a signatory to the African Charter on the Rights and Welfare of the Child including article 21 which specifically prohibits CM (63).

Consequently, there have been several donor-driven interventions in some African countries to prevent high rates of CM and AP in the region. These include Berhane in Ethiopia, Zomba in Malawi and Stepping stone in South Africa (28). In Nigeria, they include Champion for Change (C4C), Girls-Hub, Learning-Plus, Targeted States High-Impact Project (TSHIP) in Sokoto and Bauchi and others. However, the reasons why these programmes have not been effective in reducing CM and AP, particularly in Nigeria need review.

2.2. Study justification: Despite the multiple national and international efforts, the rates of CM and AP are still remarkably high in WA. Could this be because ineffective interventions continue to receive attentions or the effective ones are being implemented in ineffective ways as observed by Chandra-Mouli et al. in 2015 ? (64). Could it also be that programme-dosages are insufficient to produce lasting effects? It thus becomes imperative to contextually understand how programmes on CM and AP have been adopted and implemented, to gain insights on why they have had little impacts on the health of Nigerian adolescents.

Implementation research (IR) has proven to be very robust in providing scientific evidences on programmatic effectiveness, in answering whether or not programmes are worth the

resources and whether or not they can be scaled-up or replicated (65). IR has been useful in optimising services by translating research findings into common practices (65). This type of research regarding interventions on CM and AP in Nigeria is rare.

Glasgow et al. (2019), has demonstrated that programme-impacts could be influenced by its adoption-process, implementation-fidelity, programme-reach, effectiveness and maintenance (66). Similarly, Kok et al. (2014), shows that there are factors inherent in the interventions which could affect their performances (67). In the same vein, a systematic review by Bulthus et al. (2019), identified factors such as political will and organizational structure to be influencing scaling-up of public health interventions in developing countries (68). However, it is currently not clear how these factors are influencing CM and AP prevention programme successes or otherwise in WA. In addition, comprehensive reviews of adoption/implementation of CM and AP interventions are in rarity in the sub-region. Thus, there is currently a gap in knowledge on what works and what does not regarding CM and AP preventive interventions in Nigeria.

This review particularly focused on programme adoption-process and implementation. This is because these two elements are intricately linked together, are often affected by overlapping factors and are both important determinants of programme effectiveness/impact on targeted outcomes (62-65). Thus, factors influencing both adoption and implementation of programmes were contextually analysed. Presently, there is paucity of literature on these factors in many West African countries and specifically in Nigeria.

Although the interest of the author is in contributing to reduction in CM and AP specifically in Nigeria, the review is extended to cover the entire Anglophone West African countries (including Ghana, Liberia, Sierra Leone and The Gambia) in order to bring best practices in other countries to support the prevention efforts in Nigeria. Also, extension of the review to other countries is based on the fact that the Nigerian situation is contextually not too different from its neighbouring West African countries and therefore what works in Ghana or Liberia for instance will most likely produce similar effects in Nigeria.

2.3. Research Questions: The question to be answered by this research is;

- What factors influence adoption and implementation of programmes aimed at preventing CM and AP in WA? Are they effective to inform CM and AP programming in Nigeria?

2.4.1. Study aim: To assess factors influencing adoption-decisions and implementation behaviour of CM and AP interventions through critical reviews of process and effect evaluation reports in Anglophone WA with the view of making policy recommendations to the Nigerian Ministry of Health and its development partners.

2.4.2. Specific objectives: The specific objectives of this study are;

1. To contextually analyse the factors influencing the adoption decision-making process of interventions aimed at preventing CM and AP in Anglophone WA;
2. To critically assess factors influencing implementation (Reach, Completeness, Fidelity, Adaptation and dosage) of programmes targeting reduction of CM and AP in Anglophone WA;
3. To describe what works in preventing CM and AP in Anglophone WA;
4. To make policy recommendations on CM and AP interventions to the Nigerian Ministry of Health and its development partners.

2.5. Methodology

2.5.1. Study method: This was a literature review involving analysis of existing publications and desk reviews of process and effect evaluation reports on factors influencing the adoption-decisions, and implementation of interventions aimed at preventing CM and AP in WA. The overall effectiveness of the reviewed interventions was also appraised.

2.5.2. Search strategies: Through VU online library and using search engines such as Google scholars, articles were retrieved from online databases including PubMed, Cochrane Reviews, PLOS ONE, The Lancet, and Research Gate (Table 2.2). Meta-analysis reports, systematic reviews, reviewed articles, original researches as well as published process/evaluation reports of organizations were analysed. Inclusion criteria used were (1) CM or AP programme evaluation articles published in peer-reviewed scientific journals, (2) Programme evaluation articles that were published on SRHR of young people (aged 10-24years) in Anglophone WA countries, (3) CM or AP programme evaluation reports from different agencies working to reduce both CM and AP in WA, (4) articles published on factors influencing programme adoption or implementation.

Articles published more than 10 years ago (except those found to be extremely relevant to study objectives like the Esere study and those establishing theories) or those not in English language were excluded from the review for accuracy of information. Snow balling technique was employed in searching for more relevant articles. This was done by locating relevant literature which cited an already identified article for a review. Key words and synonyms (such as programme adoption, implementation, fidelity, adolescent pregnancy, and child marriage) were used in searching for literature while Boolean Operators such as 'AND' and 'OR' were used to combine two or more key words.

Table 2.2: Data Sources and Search Terms on Specific Objectives

Data sources/acquisition	**Objectives 1&2**	**Objective 3**
Search engine/online databases Google scholar, PubMed, Cochrane, Reviews, The Lancet **Organizational websites;** WHO, UNICEF, UNFPA, Guttmacher Institute, Nigerian Ministry of Health, National (Nigerian) Bureau of Statistics	Programme adoption, adoption-decisions, programme implementation, implementation fidelity, implementation dosage, implementation factors, implementation barriers, programme adoption factors, adoption/implementation frameworks Adolescents, adolescent pregnancy, child marriage, adolescent reproductive health, interventions, reproductive health policy, adolescent reproductive health policy, programme, programme evaluation reports, Sexuality education, comprehensive sexuality education, adolescent sexual health interventions, Adolescent pregnancy prevention, young people access to services, adolescent contraception, West Africa, Ghana, Nigeria, Sierra Leone, Liberia, The Gambia	Effectiveness, impacts, programme effects, adolescent pregnancy, child marriage, West Africa, Ghana, Nigeria, Sierra Leone, Liberia, The Gambia

The Nigerians' DHS and National Bureau of Statistics were used as nationally representative data. Manuscripts were selected in three stages. Stage one involved selecting articles with relevant titles. The second stage involved selection of articles whose abstract contents were deemed relevant to study objectives. At the last stage, full contents of manuscripts with relevant abstract were read and entered into the database. Fifty CM and AP intervention studies were identified in WA, but 18 of them were considered worthy of review based on the strengths of the methodologies used in conducting the interventions, their outcome measures, availability and completeness of relevant information on the interventions.

2.5.3. Description of the analytic framework: The analysis of the evaluation reports in this research was guided by the RE-AIM (Reach, Effectiveness Adoption, Implementation and Maintenance) model by Glasgow et al. (69). The framework (Figure 2.2) was adapted and used to analyse three (Adoption, Implementation and Effectiveness) of the 5 implementation-stages of each programme in answering objectives 1,2&3 in this study. RE-AIM-model has been remarkable in describing interventions from the planning stage through implementation and from evaluation to the reporting stage (70).

RE-AIM was originally designed to help evaluate interventions and public health programmes but has evolved overtime and found application in planning, reporting, and reviewing interventions. In most recent times, it has been found useful in evaluating policies and community-based interventions (71).

In the RE-AIM model, **R**each explains the measures put in place in an intervention by the programmers to reach the target population. It is also used to measure the absolute number, proportion or representativeness of the people who participated in a programme. **E**ffectiveness explains the effects (both positive and negative) of a programme on desired health outcomes of people. This includes quality of life and socio-economic characteristics of the target population. **A**doption describes the steps taken to involve and gain supports of relevant stakeholders and agencies for successful implementation of the programme. **I**mplementation describes how the intervention has been appropriately delivered. It also explains the intervention agents' fidelity, loyalty, and commitment to the various constituents of an intervention's protocol. **M**aintenance describes the inbuilt sustainability plan of an interventions and the degree to which it has been institutionalised (70,72). However, this study focused on programme-**A**doption, **I**mplementation and **E**ffectiveness.

For a more robust analysis, the RE-AIM model was adapted/modified to clearly display programme-implementation elements which was not originally captured but has been described in other studies (73). Also, factors which had been reported to influence programme-adoption (and some programme-implementation elements) by similar theories in IR (PRISM model and Diffusion of Innovation Theory) were considered in adapting the model (74–77) .

Indeed, there are other frameworks being used in IR including the PRECEDE-PROCEED Model and Dynamic Sustainability Framework (78). The RE-AIM framework was used in this study for its clarity and ease of adaptation.

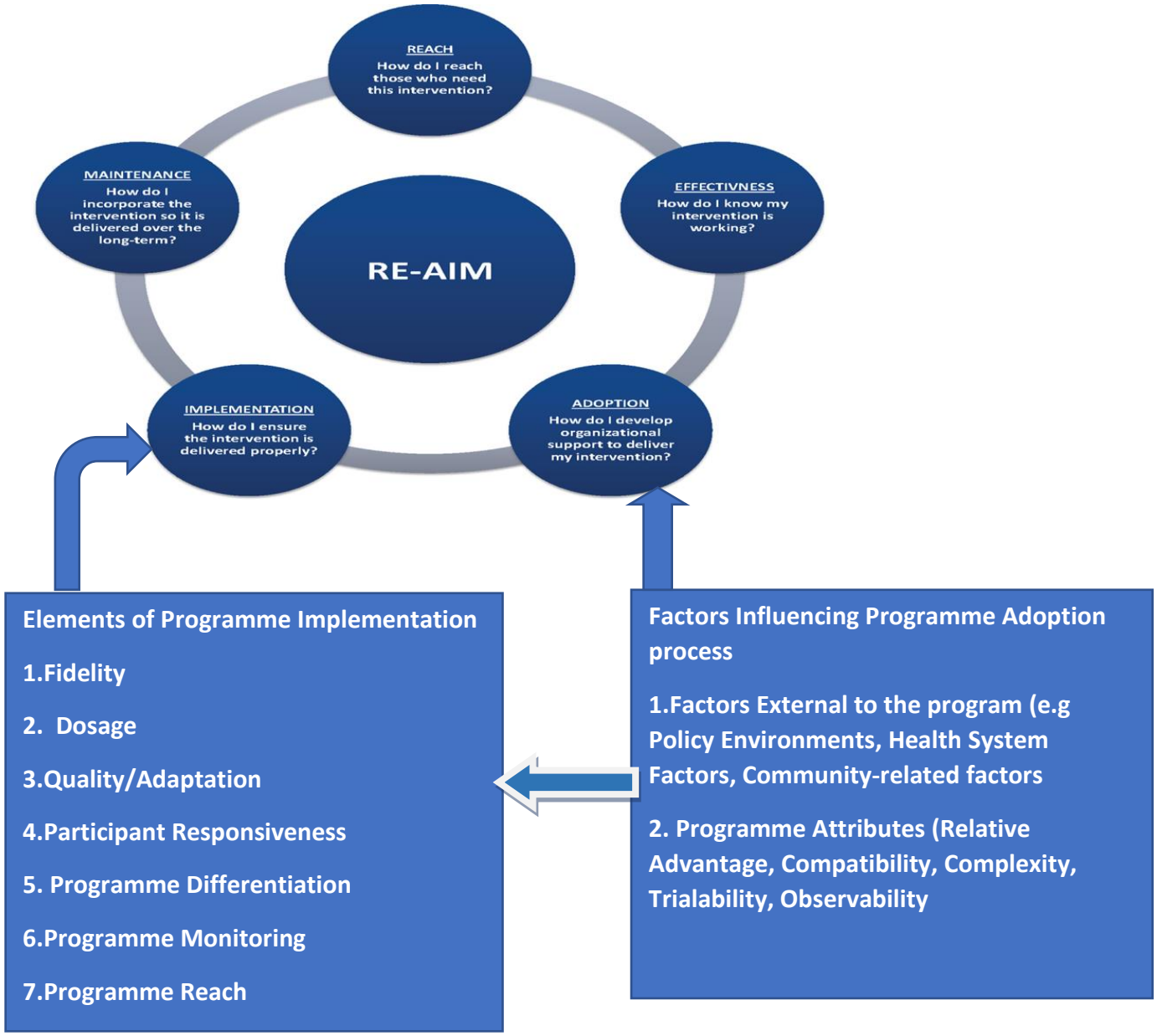

Figure 2.2. The Adapted RE-AIM Model (79)

CHAPTER THREE: RESULTS

The Adapted RE-AIM model was used in analysing the evaluation reports/articles in this study. The model helped to understand the different aspects of programme to be focused on to achieve the first three specific objectives of this research. Guided by the model, the results were organised in accordance with study objectives, after a brief description of the evaluation studies. Thus, the results included sections on factors influencing adoption and implementation as well as a section on effectiveness of CM and AP interventions in WA.

3.1. **Description of the evaluation reports presented in this section**

The 18 interventions reviewed in this study and how they were evaluated are summarised in Table 3.1 (Appendix I). Three of the programme reviewed employed quasi-experimental method (80–82). This design was used because random assignments were not practicable based on programme reports. Using this design, treatment and control groups were not compared so it is difficult to remove the effects of related programmes (confounders) while assessing impacts of the interventions. However, the Girls Empowerment Programme (GEP3) recognized this limitation and consequently applied the Propensity Score Matching method and the Difference-in-Difference estimator as well as mixed methods of data collection to be able to reliably establish programme effects. How this limitation was surmounted was not clearly explained by the UK Department for International Development funded Youth Reproductive Health programme (DFID-YRHP) in Sierra Leone. However, the sampling procedure (proportionate sampling) was satisfactorily conducted and the sample size was large enough to guarantee external validity of the results.

Randomized Controlled Trial (RCT) was employed by three evaluation studies (83–86),while other studies used Cross-sectional design which is less rigorous and less expensive to conduct compared to other designs but also weak in providing scientific evidence on programme impacts. The school-based RCT study by Rokicki et al., was restricted to classes where home economic subject was being taught on the assumption that most of the students in such classes were girls (83). However, this could have reduced participants representativeness and generalizability of findings from the study. The Esere study was conducted among only 24 students in a single secondary school (86). The low sample size could have reduced the precision and external validity of the study (86). In Ozler et al., standard formula for estimating sample size was used and a stratified sampling method used to recruit 1,176 eligible participants from 84 Liberian communities (84). Thus, the study could be described as having strong external validity. Farzaneh et al., used qualitative approach for data collection but the reports was on multiple programmes from different NGOs and could not make any conclusive remark on the effects of individual interventions in Liberia (85).

Five studies employed quantitative method of data collection (83,84,87–89), another five used qualitative approach (81,85,86,90,91) while the rest utilized mixed methods. Even though quantitative studies are important in estimating numerical impacts of interventions, qualitative studies are better for exploration of the socio-cultural factors which might have been responsible for programmatic successes or otherwise.

Cluster sampling method was used to recruit eligible respondents in interventions which used either quasi-experimental or RCT designs. In those studies, the sampling frame was made up of the clusters rather than individuals, thus removing the need for a sample size calculation. The power of such studies would have been appropriate to detect statistical differences if

there was any. However, multi-stage sampling method was used by three of the interventions (81,89,92) and sample sizes were calculated using standard formulas. Multi-stage sampling method safes resources especially if a study is to cover expansive and heterogeneous population and it is scientifically rigorous enough to produce results which can be trusted. Meanwhile, three of the studies used secondary data/desk review for analysis so there was no need for sampling or sample size calculations but the findings from such analysis can be affected by factors inherent in the data collection processes (41,87,90).

Many of the programmes applied more than one intervention approaches but majority focused on building life-skills of either in-school or out-of-school adolescents or both. Better Life Option (BLO) in Nigeria (93) used educational empowerment strategy by re-enrolling secondary school graduates in formal and informal schools, while GEP3 used incentives to ensure primary school enrolments in some states in Northern Nigeria (80). Vocational training was the main approach in four of the reports (81,85,93,94), while economic empowerments through cash transfer was used by five interventions (80,81,84,85,93). Rokicky et al. (2017), employed text-messaging (digital) approach (83). Voucher system was used by Farzaneh and Onyemocho although Onyemocho equally used micro-credit system (85,92). Mentoring was used by Adolescent 360 (A360) programme (94), Ozler (84) and DFID-YRHP while community empowerment through cash transfer to parents of participating adolescents and/or community gatekeepers was used by DFID-YRHP, Onyemocho and BLO (81,92,93).

Most of the interventions had more than one outcome measures. Only DFID-funded ASRH programme (41) had prevention of adolescent pregnancy as primary outcome measure, the rest aimed at preventing CM and AP by achieving different primary results. None of the reports primarily targeted CM reduction. In three of the reports, increased contraceptive uptake among young people was the primary outcome (83,86,89,94). Perry et al.,(2017) as well as Youth Harvest Foundation Ghana (YHFG), aimed at changing contraceptive knowledge and behaviour (82,88). Yet, GEP3, BLO, and DFID-YRHP empowered parents/caregivers of adolescents and/or community-gatekeepers respectively (80,81,93). GEP3 (80) also aimed at improving school enrolment rate in two states of Nigeria while the BLO (93) aimed at re-enrolling drop-out adolescents into formal or vocational schools in Akwa-Ibom Nigeria. Other programmes improved access to reproductive health information and services.

3.2. Factors influencing Programme Adoption:

3.2.1. Factors external to the programme: In the adapted RE-AIM model (Figure 2.2), certain contextual/external factors influence programme adoption. They include, policy environment, health system factors, programme-attributes, as well as the community-related factors.

3.2.1.1 The Policy environment: According to Bulthuis et al.(2020), scaling-up of public health interventions depends on the degree to which it aligns with existing policies and guidelines (68). Similarly, studies have shown that programme-adoption depends on the existing legal-frameworks in a country (95,96). Since 1994 ICPD conference, several policies have been developed to provide national guidance and create favourable legal environments for adoption of adolescent health interventions in many WA countries (58). In some countries, this has led to establishment of national programmes for reduction of CM and AP such as the Family Life and HIV Education (FLHE) programme in Nigeria. It was a

Comprehensive Sexuality Education (CSE) by the ministry of health (MoH), working in partnership with the ministry of education (MoE) (97).

In Sierra Leone, the National Reproductive, Maternal, Neonatal, Child and Adolescent Health Policy has also been formulated to regulate SRHR activities in the country. In Nigeria and Ghana, the first National Reproductive Health Policies (NRHP) were formulated in 1995 and 1996 respectively, and they had been revised a couple of time since the first drafts. In Nigeria, the latest version is the 2016 NRHP (98). Some of its adolescent-related objectives were to increase access to reproductive health information and services for adolescents, reduce rate of unwanted pregnancy and unsafe abortion as well as to increase access/uptake of modern contraception to all sexually active individuals.

In Ghana and Nigeria, separate policies have also been developed to specifically address the reproductive health needs of the adolescents (62). However, there is no separate adolescent reproductive health policy in Sierra Leone and The Gambia as ARH concerns are only captured in the NRHP (99). In line with the objectives of the NRHP, the NPHDAYP in Nigeria was developed in 1995. The policy was last revised in 2007and two of its specific objectives were to increase access of young people to quality youth friendly-health services (YFHS) and to promote meaningful participation of young people and the community in youth issues (100).

Specifically, strategic plans to prevent adolescent pregnancy have been developed in Ghana (101) and Sierra Leone (102) but no such document was found for Liberia and The Gambia. For Nigeria, the National Adolescent Pregnancy Strategy (2013-2015) is contained in the 2011-2015 National Youth Sexual and Reproductive Health Strategy which was developed in recognition of the increasing problems related to adolescents' sexuality and pregnancies (103).

All the Anglophone WA countries reviewed had launched the African Union Campaign to end child marriage. Hence, the 2016-2021 National strategy to end Child Marriage in Nigeria was formulated (35). Some of its specific objectives were to build intersectoral mechanisms to end CM, promote relevant policies and programmes, increase access of the girl-child to education, and to change the negative socio-cultural norms which aid CM.

3.2.1.2. Health system factors: Programme adoption-decision process is influenced by the state of the health systems in WA. Studies had demonstrated weak health systems in the WA sub-region which was worsened by the Ebola outbreaks and prolonged civil unrests in countries such as Sierra Leone, Liberia and The Gambia as well as poor health governance and accountability especially in Nigeria (19,104). Government spending as a percentage of current health expenditure have been persistently lower than the 15% benchmark of the Abuja declaration in these countries. According to 2016 World Bank Data, the percentage was 6.07 for Ghana, 4.6 for Nigeria, 4.2 for Liberia and 7.91 for Sierra Leone (20). Thus, the health concerns of the adolescents who are generally considered as a healthy population in the society is of little priority when budgeting for health despite the existing policies (105).

Lack of human and material resource to sustain the programmes also affects CM and AP programme adoption-decisions in WA. For example, a study pointed out that most health facilities in Nigeria lack reliable supply-chain for contraceptive commodities and the staff with requisite skills to render AYFHS particularly in rural Nigeria (106). Additionally, the DFID-ASRH programme in Sierra Leone could not achieve some of its objectives due to the

initial paucity of personnel with requisite skills for service delivery (especially in IUCD and Norplant insertions) as well as out-of-stock of essential commodities like contraceptives (41)

3.2.1.3. Community related factor: As revealed by most of the programmes reviewed, CM and AP interventions are largely viewed as alien to the WA culture although the narrative is gradually changing. In Nigeria, more adolescents in the southern part of the country are now using contraceptives to delay pregnancies so they can focus on career development. Yet, contraceptive use among adolescents in rural and northern Nigeria still faces stigmatization as adoption of most AYFHS are viewed as approval of sexual promiscuity for young people (10).

According to the Nigerian Child Right Act, the legal age to give marital consent is 18 years but the Islamic law in northern Nigeria authorizes marriage to younger girls once they have attained puberty (107). Similarly, the customary law in Sierra Leone allows marriage to younger adolescent girls below 18 years despite the national laws setting the minimum age at 18 years (58). Among the countries reviewed, only Ghana has unequivocal laws that clearly prohibit marriages below the age of 18 years for both men and women (58). Nigerian adolescents still requires parental consents before they can access reversible long-acting contraceptives in the country (94). According to walker et al. (2013), lack of political will to enforce laws on CM, due to cultural reasons is one of the main factors militating against successful CM programme adoption in WA (91).

Many of the interventions reviewed employed active community participation strategies to have some levels of successes. Through Community Communication, advocacy and outreach activities, the DFID- AYHP in Sierra Leone actively involved the community in its programming. The Girl Empower programme in Liberia organized eight monthly sessions with 759 parents so they can get acquainted with the CSE curriculum used in teaching their children in school and for the purpose of sexuality information reinforcements at home (84).

The BLO programme in Nigeria (93) trained and empowered several community leaders, school teachers, and heads of community-based organizations (CBOs) in four LGAs where the intervention took place. The A360 programme worked with community leaders, older women, and religious leaders to be successful. Vocational training was the main approach in four of the reports (81,85,93,94). Other strategies used to navigate the effects of community-related factors and facilitate programme adoption included giving of incentives, using the voucher and cash transfer systems (to the adolescents or their caregivers) since CM and AP practices is equally linked to poor socio-economic status of the people.

3.2.2. Programme Attributes

3.2.2.1.The perceived comparative advantage of the programme. Generally, CSE has proven to be an advantageous evidence-based and cost-effective intervention to build life skills of young people and prevent SRH problems such as CM and AP (108,109). For this reason, CSE was launched in Liberia in 2018 and introduced into the school curricular (110) while Sierra Leone is taking practical steps towards CSE adoption (111). In Ghana, the School Health Education Programme (SHEP) (112), was established in 2003 but it has a much limited sexuality topics compared to the Nigerian FLHE programme. In Nigeria, CSE was launched in 2003 and later transformed to FLHE with the contents modified to facilitate adoption. Interestingly, an evaluation study by Huaynoca and Chandra-Mouli (2014) on impact of the Nigerian FLHE shows that the programme was largely successful at achieving

national scale-up because it responded to the urgent needs of the country to reduce HIV transmission and AP (113).

Similarly, the DFID-YRHP and DFID-ASRH (41,81) interventions in Sierra Leone were adopted by the government because both helped in addressing high rates of adolescent pregnancy, school drop-out and youth unemployment which were major social problems in the country.

3.2.2.2.How compatible the innovation is with the values and experiences of the potential adopters. In many WA countries, CM and AP interventions still clash with existing cultural norms hence, programme adoption is often difficult as they are perceived as ways of encouraging pre-marital sex (10). For instance, Kofi et al. (2017), reports that sexuality education is still limited in scope even though it has been incorporated into school curriculum in Ghana due to a clash of some sexuality education topics with the cultural/religious values of many Ghanaians (112)

The GEP3 programme aimed at improving girl child enrolment into basic education in two states within Nigeria by giving conditional cash transfers to female caregivers of young girls and incentives to girls already or willing to enroll in schools. The programme was largely adopted and successful because it was compatible with the educational plans of both states (80). Also, the school-based sexuality education intervention by Yakubu et al. (2019) in Ghana was adopted because it was compatible with the national adolescent pregnancy prevention strategic plan of the country (101).

Evaluation reports of A360 programme shows that the intervention met several myths, misconception and stigma associated with adolescent's contraception (94). The programme had to devise ways of circumventing the contraceptive restrictive norms to be successful. In southern Nigeria, contraceptive services were tied to aspirations of the adolescents whereas in Northern states, the health of both mother and her child was used as a hook to open up contraceptive discussions among husbands of adolescent girls (94).

3.2.2.3.Complexity of the programme: Most of the programmes reviewed in this study were not ambiguous or complex in their approaches even though CM and AP interventions still clash with existing cultural norms in most WA countries. For example, Huaynoca and Chandra-Mouli demonstrated that one of the success factors of the FLHE programme was the clarity of its objectives and procedures (113).

3.2.2.4.Trialability of the programme: Approaches used in many of the interventions reviewed in this study have been experimented and found to be appropriate in preventing CM and APs thereby facilitating their adoption by programme implementers. For instance, the Girl Empower intervention in Liberia applied life skill curriculum, mentorship and giving of incentives as the key strategies of achieving its objectives (84). Also, Rokicky et al.(83), used text messaging strategy among Ghanaian youths which has been tried and found to be effective in producing desired outcomes. However, the A360 approach of tying contraceptive use to aspirations of adolescents tend to have little evidence of trialability culminating in slow programme adoption by the Nigerian government and some NGOs (94).

3.2.2.5.Observability of the programmes: This is the extent to which the innovation provides tangible results: Many of the programmes reviewed in this study had demonstrable impacts which can inform scaling-up and strategy adoption by other NGOs and the Nigerian governments. This is discussed in detail in the section on effectiveness of the programmes.

3.3. Factors influencing implementation

Implementation consists of all the core components of a programme when it is delivered (73). The core components are implementation fidelity, programme dosage, programme quality, programme monitoring, programme adaptation, programme reach, programme differentiation and participant responsiveness (73).

3.3.1 Implementation Fidelity

This means the adherence, compliance, integrity, and loyalty to the initial programme protocol. It was influenced by the following;

3.3.1.1.Existing Cultural/ Religious norms: Restrictive cultural/religious norms were strong CM and AP programme fidelity barriers in WA. For instance, Kofi et al. (2017) reported that CSE topics being taught in Ghanaian schools are not comprehensive enough when gauged with international CSE guidelines and standards. The study revealed that only 8% of Ghanaian students reported learning about all of the topics that constitute CSE (112). There is a major focus on abstinence and, in some cases, a fear-based or negative perspective on sexuality was taught. Topics such as negotiation skill, how to use and get contraception, body autonomy, gender and marriage, gender-based violence and gender equality-were not included in the core curriculum of SHEP in Ghana.

The DFID-YHP in Sierra Leone was only successful by building a strong long-term links with intervention communities, and by investing in advocacy to reduce the effects of cultural norms on programme fidelity. Nwokocha et al. (2015), revealed that implementation fidelity of the Nigerian FLHE programme was influenced by cultural and religious factors (90). In comparison to Lagos state in South-Western part, none of the five themes of FLHE (Human development, Personal Skill, HIV infection, Relationships as well as Society and Culture) had been implemented as at 2015 (13 years after the start of the programme) in any of the schools in Sokoto State, Northwest Nigeria. This was because some of the topics were considered too sensitives for discussions among adolescents for cultural and religious reasons (90).

3.3.1.2.Quality of the networks/relationships between programmes and the host community: For example, the synergistic and symbiotic relationship between relevant stakeholders was reported by Huaynoca and Chandra-Mouli as one of the key-success factors for scaling-up and by inference, the adoption of FLHE programme in Nigeria. Reputable NGOs including Action Health Incorporated (AHI) and Girls Power Initiative were hired to draft FLHE-curriculum while the Nigerian Teachers Training Institute was mandated to provide training to teachers on the drafted CSE curriculum (113). However, loyalty to the core objectives of the programme was challenged by the lack of staff with requisites skills to teach sexuality topics in many schools of the federation. Fear and shyness of available staff to talk on sexuality maters among students was also a major challenge (113). The YHFG in Ghana programme has been in existence in Ghana since 2007 and has built a strong connection with host communities through establishment of clubs where youths can access SRH information and services (82).

3.3.1.3. Programme management/coordination: According to Walker Ann (2013), some of the barriers to successful programme implementation against child marriage in WA include lack of coordination, lack of integration into existing programmes, weak budgetary allocation and lack of supports from governments (91). The FHLE evaluation by Udegbe et al., (2015)

revealed that half of the states evaluated did not have advocacy programme for FLHE while some Nigerian schools did not have FLHE curriculum. Additionally, most states did not have budget-line for FLHE (87). There were no qualified teachers to teach all the CSE themes in many schools and many of the CSE topics were dispersed on other subjects with varied times of commencing CSE teachings in most of the schools (90). Evaluation of AYFHS in Nigeria by Osanyin et al. (2013), revealed that coordination and funding were grossly inadequate in most states. About 25% of staff working in the youth centres did not have any form of training on YFHS (114).

Also, due to insufficient number of competent youths aged 15-24 years, the 2019 mid-term review of the A360 programme revealed that older persons (above 25 years) were recruited as mentors instead of the initially planned youths. There was a delay also in getting the government to buy-in. Thus, the programme was not loyal to its initial protocol in trying to fulfil its core goal which was to collaborate and forge meaningful partnerships with young people in the design and implementation of the programme (94).

3.3.1.4.Intervention-design/structural factors: In the study of Kok and colleagues (2015), there are intervention-design/structural factors which can affect public health programmes implementation (67). As such, CM and AP programme implementation fidelity was influenced by the management structure of the implementing organizations. The DFID-ASRH programme in Sierra Leone ascribed success to effective organizational management (41) but the A360 programme reported too lengthy communication lines and too much pressure (for results) from donor organization on programme implementers as a major challenge. The GEP3 selection process was not well-coordinated to choose the most vulnerable caregivers of adolescents in northern Nigeria to be empowered towards enhancement of school enrolments (80).

Also, CSE is not currently being taught as a separate examinable subject in any of the schools in Nigeria. Despite wide-scale acceptability in most schools, CSE topics are rather integrated with other subjects such as Biology, Social Studies, or Integrated Sciences in Nigeria. Using this integration-approach, certain important topics/concepts in CSE would have been lost in many schools and implementation fidelity of the programme severely compromised.

3.3.2 The programme dosage

This can be measured by assessing programme duration and intensity. While many of the programme reviewed lasted 3 years, some lasted for short durations. The YHFG programme in Ghana has been operational since 2007 (82) but the educational intervention duration was 90-minutes in Perry et al., and effect assessment was done after 90 minutes (88). The duration of the study by Yakubu et al. was 4 weeks, 12 weeks in Rokicky et al., 32 weeks in Ozler et al., and 8 weeks in Esere study. The programmes were neither scaled-up nor expanded to cover more young people. Hence, their dosages could be said to be low to produce lasting effects as none of the components of these programmes were repeated after expiration of their lifespans. Low programme dosages were mainly caused by inadequate resources such as limited funds and manpower for programme implementation (83,86,88).

3.3.3 Programme Quality/Adaptation

Quality here indicates how well the different parts of the programme have been conducted while adaptation reflects the changes made to the initial programme before it can be implemented. These two elements were mainly influenced by the negative socio-cultural factors and existing unbalanced gender relations in most WA countries. For instance, sexuality education was initially named as CSE in Nigeria. Topics such as masturbation

which has been shown to have some level of protection against unwanted pregnancies and STIs (115), were initially incorporated. As a result, CSE met huge cultural and religious resistance in Nigeria. This aspect and some others relating to Lesbian, Gay, Bisexual, Transgender and Intersex (LGBTI) had to be expunged and the name changed to FLHE before it can be acceptable for implementation in the country. In the FHLE curriculum for junior secondary schools for Nigeria, the term 'sexual abuse' was renamed as 'body abuse', 'use of condom' was avoided but 'abstinence' was mainly emphasised (97). In the Ghanaian SHEP programme, terms like 'sexual pleasure' and LGBTI were also not included in the curriculum.

3.3.4 Participant responsiveness

This is the degree to which the intervention arouses the interest or attracts the attention of participants. It can be measured by the level of awareness of target group about the programme. This was mainly determined by the quality of advocacy and community mobilization activities carried out by the respective programmes. However, most of the interventions reviewed arose the interest of the intended adolescent population. The DFID-ASRH programme was well received in Tokolili Districts of Sierra Leone and all the intervention communities indicated interests to sustain the programme after expiration. The evaluation by Nwokocha et al. and Kofi et al. shows that CSE were well accepted to students in Nigeria and Ghana. Focused group discussions with students in the schools visited also shows that many students were aware and interested in sexuality education in both countries (90,112). Yakubu et al., which also carried out educational intervention in Ghanaian schools show positive responses from the adolescents (89). The A360 reports shows a significant rise (49%-70%) in mCPR among adolescents in northern Nigeria. However, the health education intervention by Esere study (2008), saw many eligible adolescents not willing to be a part of 8-weekly participatory sexuality classes because they found the exercise inconvenient to them.

3.3.5 Program differentiation

Measuring how programme theory and practice is different from other programmes (i.e uniqueness of the programme). This was mainly influenced by programme theory of change and the expertise of the staff involved in programme implementation. The report by Rokicky et al.,(2017) was on text-messaging programme which was unique and quite different in approach from other programmes reviewed because reproductive health messages were sent and feedbacks received through mobile devices of Ghanaian adolescents (83). The theory of change was that the wide acceptability of mobile telecommunication can be leveraged to provide sensitive and professionally regulated reproductive health information to the young population. In this era of social-media, most adolescents own cell-phones, hence the text-messaging system was an easy way to reach and educate them on reproductive health matters with minimal physical contacts, thereby encouraging their openness in divulging sensitive information.

3.3.6 Programme Monitoring

This describes the monitoring of control/comparison conditions of the programmes. Rokicky et al.,(2017), Ozler et al.(2020), and Farzaneh (2013) utilized RCT design (83–85). In these studies, there were experimental and control groups which allowed comparisons to easily assess programme impacts. Some other programmes without control groups were monitored using the before and after surveys but the monitoring system was weak in some programmes.

3.3.7 Programme Reach

This measures programme scope and participation rates. Also refers to the rate of involvement and representativeness of programme participants. This was influenced by the level of involvements of relevant stakeholders (such as adolescents) in planning and implementation of programmes. Some interventions were adequately implemented, and large proportion of the target population were reached by the programmes. For instance, 6,360 adolescents in Tonkolili communities in Sierra Leone benefitted from the DFID-ASRH programme because of the strong community linkage created (41). Also, about 1,440 youths enrolled in the BLO programme and 84 % of them completed the program (969 girls and 241 boys). This was achieved through a strong community networks built by the programme implementers (93).

Young people were involved in drafting the curriculum used for mentorship in the A360 programme. They also helped in data collection and analysis and their roles were changed within the programme based on their capabilities (94). Overall, about 14,000 Nigerian adolescents became contraceptive users through the intervention, using mentoring approach. The DFID-YRHP project empowered young people in Sierra Leone to be able to participate in national level policy meetings such that their SRH needs are adequately captured during policy formulations. Not less than 35 youths (25 males; 10 females) were sponsored to be parts of policy review activities on the National Youth Policy which equally covered the SRH needs of young people (81).

In YHFG, only Ghanaian adolescents who can pay 1.5 Ghanaian Cedis (0.5 Euros) could participate in the programme, precluding the financially vulnerable adolescents from accessing SRH services through the intervention (82).

Like in other WA countries, most adolescents in rural areas are yet to be effectively covered with reproductive health services in Nigeria. An assessment on barriers to healthcare service coverage of the Nigerian adolescents was conducted in 2019 by the Federal Ministry of Health in collaboration with the WHO African Regional Office (116). The results showed that AYHS were largely not accessible, affordable, and acceptable to rural Nigerian young people and utilization was generally low. This was because the services were too far from most rural adolescents, rendered in non-confidential/unappealing environments and by healthcare workers who were largely judgmental in rendering services (116).

3.4. Effectiveness of CM&AP interventions

In this section, successful/less successful interventions and factors associated with programme outcomes were examined. See Table 3.2 (Appendix II) for a summary of these interventions.

The A360 programme achieved a 70% and 45% increase in contraceptive usage among adolescents in northern and southern Nigeria respectively, due to active youth involvement in programming and linkage of contraception usage to youth's aspirations among other factors (94). Also, in BLO programme, 600 graduates were re-enrolled in formal or vocational schools (51% of new secondary school graduates). This success was largely due to the use of incentives to encourage schooling, strong community mobilization strategy and strong networking with relevant CBOs (93).

The DFID-YRHP in Sierra Leone achieved a 46.7% reduction in the percentage of AP in interventional schools as condom use at last sex increased from 22% to 86.9% but only increased to 63.9% in the control schools. The strength of the programme was youth involvement and empowerment as well as a robust relationship with implementing communities and governments (81).

The benefits of ICT was adequately utilized by Rokicki et al, to achieve 86% reduction in pregnancy rate among Ghanaian adolescents who participated in the programme but confidentiality of ASRH information shared with youth may have been compromised as some of them without cellphones were told to use their parents' phones (83).

Similarly, the Y-ACCESS programme in Nigeria recorded overall pregnancy reduction rate of 38.4% from the 48.2% baseline figure through youth capacity building, reduction of financial barrier to SRH and effective advocacy activities (92). Using effective cash transfer mechanism, the overall impacts of GEP3 on school enrollments was 29.4% in Niger and 32.37% in Sokoto states of Nigeria, respectively (80). Additionally, the DFID-ASRH programme in Sierra Leone attained a 30% reduction in AP rate by focused on addressing negative cultural norms regarding CM and AP in the intervention communities (41).

In 2015, the YHFG recorded only marginal increase in Ghanaian adolescents SRHR knowledge (from mean knowledge score of 13.47 to 14.64 after 2 years of implementation). Even though, the programme used a standard CSE curriculum and has high dose (more than 10 years in operation), it only accommodated participants who have financial capacities to enroll. Financially vulnerable adolescents who should have benefited were exempted from the programme (82). The evaluation also used purposive sampling method and the sample size was not calculated using standard formula. This could mean lack of representativeness of study participants and the external validity of the findings may have been compromised. Yakubu et al. (2019), used CSE-intervention to increase ASRH knowledge of Ghanaian adolescents and reduced sexual activities among them. Yet, the dosage of the programme which lasted 1 month was too low to produce lasting effects.

Meanwhile, some interventions could be described as having minimal impacts even though programme objectives were achieved. They were either affected by low intervention dosage and reach or had too short programme durations and small sample sizes to guarantee the external generalizability of their findings (86,88,89). Specifically, some of these interventions and even some with sufficient programme reach were negatively affected by the complex/ambiguous policy environments regarding ASRH issues such as contraception and legal age at marriage, insufficient advocacy efforts to ensure community participation in programmes, poor programme designs/methodology as well as inadequate number of qualified personnel for service delivery.

CHAPTER FOUR: DISCUSSIONS

The objectives of this study were to review the factors influencing adoption-decisions and implementation of CM and AP preventive interventions in Anglophone WA with a special focus on Nigeria. It was also to review effectiveness of CM and AP interventions and make recommendations to Nigeria using the lessons learnt from the respective reviewed programmes. The adapted RE-AIM model was helpful in critical analysis of the available evaluation reports and in the logical arrangement of research findings. The model is recommended for use to other Implementation Researchers because of its simplicity. The strength of this study is its ability to critically review reports from multiple countries to provide a more robust evidence to inform practices in Nigeria.

4.1.Factors influencing programme adoption-process

The key factors influencing programme-adoption in the current study were inadequate policy implementation, weak health system, programme-and community-related problems. Since the 1994 ICPD conference, several policies have been formulated in WA to provide legal frameworks for implementation of State-led and NGO-related CM and AP interventions in the region. However, the current study shows that even though having policies in place gives legal framework for operationalization of programmes, it does not indicate that interventions will be well-adopted and effectively implemented to produce the expected national outcomes. This is in keeping with findings from similar studies on this subject. For instance, a systematic review by Nkhoma et al. (2020) as well as Huaynoca and Chandra-Mouli (2014), revealed that the presence of strong policies has not led to corresponding reduction in CM and AP especially in LMIC (117). Also, impacts of policies alone in reducing CM and AP had been reported to be limited in Latin America and the Caribbean by PAHO in 2017 (118). Most often, policies are formulated but the political will and resources for implementation are lacking in most WA countries. Operating dual policies with conflicting statements on certain adolescent issues is another problem. In Nigeria for instance, there is conflicting age at marital consents as the Nigerian Child Right Act prohibits CM, but the northern customary law allows marriage to young adolescents.

The perennial low budgetary allocation to health from the Ministries of Finance (MoF),poor governance and accountability system, insufficient manpower to deliver services (such as school teachers and health-workers) and unreliable supply-chain especially for contraceptives, made the WA health system and relevant agencies not to be pliable for adopting new CM and APs programmes. For instance, the DFID-ARH programme in Sierra Leone failed in achieving some of its objectives because the personnel were not adequately trained and essential commodity supply-chain was weak (41). This result is consistent with findings from the 2019 WHO African reports where weak health system was reported as a major barrier to access of the Nigerian adolescents to SRH services (116). Thus, it is imperative to have good knowledge of existing resources in the health and other related sectors while designing CM and AP interventions.

In the current study, CM and AP programme adoption-decision was also influenced by comparative advantages of the programme, its complexity, trialability, compatibility and extent to which it produced tangible results. Several studies have reported the significance of these factors at influencing adoption-decisions in implementation research (119–121). These factors must be taken cognizance of while designing CM and AP interventions for maximum impacts.

Cultural norm and religion were strong determinant of adoption-decisions and implementation in all the interventions reviewed in the current study. Socio-cultural factors were reported by Ahinkorah et al. (2019) as important hindrances of adolescents to reproductive information and services in Ghana and by inference CM and AP programme adoption (39). CM and AP are deeply rooted in culture in most rural and northern Nigerian communities. Like in many WA countries CM lingers in Nigerian communities to cement family ties, ease poverty, and prevent the shame associated with having a girl who becomes pregnant out-of- wedlock in the family (122,123). Most young girls are therefore forced into early marriages and pregnancies due to societal pressures both on the parents and on the adolescents (124). Also, the predominant patriarchal family system in most communities gives married adolescent-girls reduced negotiation power regarding sex and contraception to delay second and subsequent pregnancies (117). Parent-child discussions about sexuality is a rare practice (almost a taboo) in most rural and northern Nigerian homes (10). This is not too different from what obtains in most other WA countries although a qualitative study by Krugu et al.(2016), reveals that adolescent Ghanaian girls do talk about sexuality with their mothers (125). Thus, it is a herculean task to change this age-long tradition of CM orchestrating APs in Nigeria and most WA countries. Consequently, most of the programmes reviewed in this research devised means of circumventing existing cultural norms rather than addressing them. Yet, not addressing the restrictive cultural norm which is an enabling factor to CM and AP continued practices could affect impacts and sustainability of the interventions in WA. However, FLHE in Nigeria was able to navigate this hurdle and became adopted nationally despite cultural and religion barriers. Also, the DFID-AYHP in Sierra Leone built a strong link with implementing communities to be able to understand and work-through the restrictive cultural norms (81) .

4.2.Factors influencing programme implementation

The current study demonstrates that different elements of programme implementation were affected by specific factors. For instance, programme fidelity was influenced by culture-related factors, programme-community relationships, programme management/coordination qualities. The impacts of culture/religion cannot be over emphasised in determining CM and AP programme fidelity particularly in WA where people tend to maintain strong cultural ties despite the fact that some of the cultures are known to be inimical to their health status. For instance, not all the internationally standardized components of CSE could be instituted with FLHE implementation in Nigeria for cultural/religious reasons. Much more, CSE has been resisted in some countries such as Ghana for cultural/religious reasons. Also, community participation has been reported as being critical in ensuring programme fidelity and sustainability in previous studies (126,127). Similarly, the finding that programme fidelity is influenced by the quality of programme coordination/management is in consonance with reports from a previous study by Kok et al. (2015), which shows that certain intervention-design factors are responsible for programme performances in LMIC (67).

Programme-dosage was largely determined by availability of needed resources by the respective programmes while programme-adaptation/quality was mainly influenced by the existing cultural/gender norms. These are not unexpected findings as programme intensity is causally related to the amount of resources available for its implementation and programme adaptability will expectedly be made based on the degree of cultural/religious resistance it confronted in the implementing communities. In the current study, programme-responsiveness was mainly associated with the degree of community mobilization through advocacy activities while programme-reach was affected by the levels of involvements of relevant stakeholders (such as adolescents) in planning and implementation of programmes.

In the DFID-YRH programme in Sierra Leone, youths were really involved in programming. Ex-programme beneficiaries were sponsored to participate in reproductive health policy decision-making process, and they became positive role models to their juniors. Meanwhile, Nkwake et al. (2013) opined that programmes which involve primary beneficiaries are more likely to produce desired outcomes (127). Although impacts of advocacy activities have been reported as being indirect on programme implementation successes (128), yet it is an important strategy in creating awareness and in gaining supports for programmes.

It is evident from the current study that it was difficult for some of the interventions to be loyal to their protocols due to different implementation barriers faced. Components of some of the programmes were poorly differentiated from others but some made certain adaptations to be culturally acceptable. Additionally, the dosages of some of the interventions (83,86,88) reviewed were too low to produce lasting effects even-though their strategies were evidenced-based. Also, due to limited resources, many of the interventions reviewed had low programme-reach as they were only operational in few communities and involving limited number of beneficiaries. Many, especially male adolescents were left out in some of the interventions. In fact, the GEP3 programme eventually discovered that the most vulnerable adolescents were not covered with the financial incentives given to parents of adolescents in the programme. This led to some level of non-satisfaction among the uncovered but financially vulnerable parents. Such programmatic deficiencies could affect effectiveness. Meanwhile, Chandra-Mouli (2015) revealed that only programmes implemented with greater intensity or for longer duration (dosage) can be effective in reducing CM and AP (64). Most of the youth centres and AYHS in Nigeria were poorly organized and poorly utilized without effective coverages as revealed by the survey conducted by Osanyin (114).

4.3. Programme effectiveness

Majority of the programme in this study had demonstrable impacts but (82,86,88,89) were negatively affected by the barriers to adoption-decisions and implementation, making them to have minimal effects. Some of the interventions reviewed in the current study employed educational empowerment approach (promotion of school enrolment) to preventing CM and AP. This finding agrees with results from previous studies. Enrolling and maintaining girls in schools have been proven to be potent in delaying the age at first pregnancies and marriages in previous studies (113,117). Schooling for adolescents exposes them to CSE which has been documented as a potent strategy in preventing CM and APs. Through CSE, adolescents are provided with relevant information to build life-skills and abilities to make informed decisions on if, when and who to marry. They are also empowered to decide if, and when to be pregnant (4,129,130). For instance, the CSE-based intervention by Yakubu et al.(2019), was effective in reducing sexual activities and in promoting safe-sex among Ghanaian adolescents (89). The study thus made a recommendation for incorporation of CSE in the Ghanaian school curricular, a process which is currently facing severe cultural/religious inhibitions.

Community-empowerment through cash-transfers was used by some of the interventions reviewed in the current study as implementation strategy. This has been reported in similar studies to be a highly effective strategy as poverty often is a major risk factor for continued practices of CM and AP in WA (15,90). Hence, some interventions used cash-transfer system to adolescent-girls caregivers and/or to the adolescents who are schooling, or willing to enrol in schools or vocational trainings (80,81,93). Moreover, voucher system and micro-credit system were used to improve financial access of the Nigerian adolescents to ASRH in Onyemocho et al. (92). Some also empowered the community-gatekeepers (41,93). Studies have proven the efficacy of economic-empowerment in eliminating CM and AP as practices

are more prevalent among families in the lowest wealth-quintiles (131,132). Yet, the YHFG demanded for payment of fees before Ghanaian adolescents can access SRHR services from their programme (82). This strategy could have limited youth participation in the programme, widening the existing financial inequality gap between the rich and the vulnerable adolescents in Ghana and may explain the low programme impacts recorded in the report. The fact that the programme also used foreign volunteers with little understanding of the existing culture as tutors for the adolescents could have also reduced its effects.

Additionally, some of the interventions reviewed in this study targeted improvement in contraceptive uptakes among the adolescents as an approach of reducing CM and AP in WA (41,94). This is in keeping with the WHO advocacy for increased contraceptive coverage as one of the key strategies to reduce AP and CM since most pregnant adolescents force themselves into marriages out of frustrations, for financial supports and to avoid associated stigma (133). The use of contraception as an approach to preventing CM and AP is also in line with the FP2020 agenda of the United Nations to ensure that vulnerable groups such as adolescents have access to contraception of their choices by 2020 (134).
Abstinence rather than safe-sex practice was emphasized by some reviewed programmes as a strategy to reduce AP in WA (89,90,112). A 2017 review by Guttmacher Institute shows that abstinence- emphasizing interventions are ineffective and even harmful to the adolescents (135) .

Only one programme (89) use text-messaging as an approach to reach the young population on reproductive health matters. In this digital age, ICT has become part of daily adolescent lives as different social media platforms such as WhatsApp, Facebook, Instagram, blogs, Tweeter, and many others- have become the main platforms of sharing information. CM and AP programme designers can take advantage of these social media platforms as they have wider reach and afford the opportunities to discuss even some sensitive sexuality education topics which cannot be easily discussed in the classrooms. However, such interventions should be accompanied with appropriate efforts at addressing the cultural barriers to make it acceptable to parents and community gatekeepers as well as for sustainability.

4.4. Study limitations: This research may not be totally free from publication bias as only studies published in English language were reviewed. Some West African studies published in other languages such as French might have been especially useful for a more robust analysis in this study but were excluded. Also, it is possible that only evaluation studies with interesting findings were published by the respective organization. Another strong limitation is paucity of country-specific CM and AP programme evaluation reports especially in The Gambia and Nigeria. This could have affected the external validity of this study. However, the researcher included studies from other Anglophone West African countries to strengthen the internal validity thereby improving the generalizability of the findings from this study.

CHAPTER FIVE: CONCLUSSION AND RECOMMENDATIONS/IMPLICATION FOR NIGERIA

5.1. Conclusion: In all, 18 evaluation reports met the criteria set for review and were analysed in this study. Diverse strategies/approaches were used by the programmes including school based CSE interventions, community/caregivers/adolescent empowerments, and digital health. In some interventions reviewed, study methodologies such as the epidemiological designs used, sample size calculation procedures and sampling methods were not rigorous enough to ensure reliability of study results and inform recommendation for possible replication of their strategies. Future CM and AP programmes in Nigeria should endeavour to employ sound epidemiologic methods during programme implementation-phase to enhance generalisabilities of study findings.

Glaringly, there are many policies supporting interventions on CM and AP in most WA countries, implementations were however hampered by lack of political will in making needed resources and supports available. Also, policy implementation was affected with some ambiguity in policy statements on certain issues such as legal age at marriage and the need for parental consents regarding contraceptives use by the adolescents. Going forward, these policy issues need to be tackled and a strong political commitment injected to ensure adequate implementation of relevant policies in Nigeria pursuant to international treaties signed. Additionally, the apparent poor governance and lack of accountability leading to weak health system needs to be addressed to ensure better CM and AP intervention adoption in Nigeria.

Future programmers should endeavour to critically analyse their interventions and make them suitable for adoption in poor-resource settings like Nigeria to prevent some of the programme-intrinsic factors which could mitigate against programme-adoption. It was identified in the current study that one of the reviewed interventions used approach which was complex for the adolescents to grapple with and too complex to either be adopted by government or replicated by other NGOs. Another study required payments from the adolescents before participation. Such programmatic shortcomings should be avoided by future interventions in Nigeria. Only interventions with clear comparative advantages over the existing ones and those that will improve financial access to ASRH services should be invested in by relevant agencies.

The restrictive culture/religions factors which were some of the strongest barriers to programme adoption-process as well as to implementation fidelity and programme adaptation/quality- must be well understood and actively addressed head long rather than circumvented in future interventions.

As shown in the current study, loyalty of each intervention to its stated protocols was equally influenced by the programme-management quality, indicating a need for effective programme-coordination for greater effectiveness. Additionally, appropriate financial and other resources are needed to have sufficient programme-dosages which is one of the prerequisites for programme-effectiveness.

Besides, future programmes should make frantic efforts at involving host communities and the primary beneficiaries (the adolescents) in planning and implementations of programmes. This requires deliberate efforts at community-mobilization through effective advocacy activities. This is because many of the programmes reviewed in the current study did not

apply practical strategies to ensure community-participation, supports and ownerships thereby reducing programme-effects.

Some of the interventions reviewed were effective but many had low-dose, low-reach and were therefore not loyal to their initial protocols due to many barriers identified in this study. However, approaches used by the effective programmes in this study can be scaled-up or replicated in Nigeria to address CM and AP in the country. Also, funding agencies should work with relevant stakeholders in Nigeria to ensure that programmes are implemented with sufficient programme-reach in the future.

5.2. Recommendations: The following are recommendations based on key findings from this study;

To the Nigerian governments

1. Working with the Ministry of Information and the National Orientation Agency, the MoH needs to embark on intensive advocacy activities to religious/community leaders, and law makers to highlight the socio-economic and health implications of CM and AP in Nigeria. This should be accompanied by a well-structured campaign programme involving the use of appropriate media platforms. Relevant Information, Education and Communication (IEC) materials should be printed in local languages for better understanding of the messages being passed across. Doing this will ensure effective community-mobilization towards ensuring community-participation/ownerships of CM and AP interventions.
2. To eliminate policy-barriers to CM and AP programme adoption and implementation identified in the current study, there is urgent need to revise the 2007 National Adolescents Reproductive Health Policy by the MoH in line with current realities. The policy should allow adolescents to have unhindered access to age-appropriate ASRH-services, especially contraception, without stigma and discrimination. The aspect requesting parental consents for uptake of long acting reversible contraceptives should be reviewed. Digital health should be emphasised as one of the key strategies to deliver SRH information to the adolescents.
   The Ministry of Justice should work with relevant agencies and institutions to enforce the Nigerian Child Right Act which prohibits CM. There is also a need to constitute a national taskforce by the MoE which will ensure scaling-up and effective monitoring/evaluation of FLHE curriculum in Nigerian schools so that the programme will remain loyal to its stated protocol. Safe sex rather than abstinence should be emphasized.
3. There is need for overall strengthening of the Nigeran health system to make it more responsive to AP interventions. This should involve increasing the budgetary allocation to health, increasing the number of health personnel with requisite trainings to provide AYFHS particularly in the rural areas and ensuring a dependable supply-chains of certain commodities such as contraceptives. Yet, the strengthened MoH cannot address the problem of CM and AP alone. There is a need to establish a meaningful collaboration with the Federal Ministry of Women Affairs and Social Development as well as Ministry of Youth and Sport whose policies also have adolescent contents.
4. The MoE should work with relevant stakeholders to ensure that all Nigerian girls have access to basic education which has been proven to be an effective strategy to eliminating CM and AP in this study. Also, the Federal Ministry of Women Affairs and Social Development should work with relevant stakeholders to ensure that the 2016 National Strategy to end Child Marriage by 2030 is loyal to all its stated

objectives and implemented with appropriate dosage to have sufficient programme-reach and elicit the needed responses from the Nigerian adolescents for maximum impacts.

To the Research Institutions;

The author wanted to limit this review to Nigeria but the lack of published work from implementing agencies and researchers forced me to look beyond Nigeria. There is need for more researches regarding CM and AP preventive programmes in Nigeria. Unlike the current study, which is only a review, future researches should rather be primary studies, making information for similar future reviews possible.

To the NGOs who are implementing CM and AP programmes (National and International);

1. As was done by A360 and the DFID-YRHP, strategies to practically engage the host communities and the adolescents in planning and implementation of programmes should be well outlined in the programme protocols. Certain portion of the programme resources should be dedicated to community-mobilization to encourage community-ownerships and produce greater programme-effects. Also, CM and AP programme planners should ensure strong programme coordination/management and ensure that interventions are carried out using sound theories and robust methodologies so that programme-impacts can be easily established, and counterfactual interactions of other programmes easily eliminated. School-based interventions should incorporate community-mobilization for enhanced programme-reach and effectiveness. Strategies that may worsen existing financing inequality in accessing ASRH services as employed by YHFG, should be avoided by programmers.
2. Human-right groups should be more active in holding the Nigerian governments accountable to the international treaties and agreement signed on CM and AP reduction.

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APPENDIX I

Table 3.3: Summary of Evaluation Reports on CM and AP prevention interventions in West Africa

S/N	AUTHOR/ PROGRAMME	PROGRAMME SETTING	EVALUATION STUDY TYPE	EVALUATION STUDY DESIGN	PROGRAMME DURATION	PROGRAMME APPROACHES	PROGRAMME AIM	PARTICIPANTS CHARACTERISTICS	MEASURED OUTCOME
1	A360 (by A360 consortium), 2018(94)	9 states in Nigeria Plus, Federal Capital Territory	Mixed method	Cross-sectional before-and-after study with comparison group	3-Years	Life-skill + Vocational training	To increase voluntary modern contraceptive use among girls aged 15–19 years	Married adolescents in northern Nigeria Unmarried adolescents in southern Nigeria	Modern Contraceptive Prevalence Rate
2	Onyemocho et al. (Y-ACCESS), 2016 (92)	4 LGAs each in 4 Northern Nigerian States.	Mixed method	Cross-sectional	3years	Incentives, Vouchers, Micro-credits for youth groups	To increase access to reproductive health information and ASRH services	In-and out- of-School youths aged 15-24years	Self-reporting access to ASRH-services, Reproductive health knowledge and attitude, Pregnancy rate.
3	Better Life Option (BLO), 2011 (93)	4LGAs of Akwa Ibom State,Nigeria	Mixed methods	Cross-sectional	3years	Life-skill + Vocational Training CCT	To ensure that out-of-school young people are re-enrolled into formal education in Akwa Ibom State	Out-of-school adolescents	Formal secondary education re-enrolment rate
4	Esere MO, 2008 (86)	Ilorin, Kwara state, Nigeria	Qualitative method	Interventional Design	8weeks	Life-skill education	To determine whether Sex Education	24 school-going adolescents (13-19years) with high-	Condom use during sexual activities and

							Intervention Programme would reduce at-risk sexual behaviours of school-going adolescents.	risk sexual behaviour in Ilorin	practices of other risky sexual behaviour
5	Nwokocha et al. 2013 (87)	3 states in each of the six geo-political zones in Nigerian	Qualitative method	Cross-sectional	Multi-year	Life-skill	To assess the scope, delivery, and challenges of FLHE implementation	Nigerian Adolescents	Access to Comprehensive Sexuality Educatior
6	UNICEF Girls Empowerment Programme (GEP3project),2017 (80)	Niger and Sokoto States, Nigeria	Mixed method	Quasi-experimental	Multi-year	Cash transfer, Incentives	To increase girls' enrolment and attendance rates in basic schools	School aged children and early adolescents	School enrolment Rate, Improvement in economic situation of familie of selected girls
7	Yakubu et al. 2019 (89)	Ghana	Quantitative	Clustered Randomized Controlled Trial	1month	Weekly CSE as intervention	To assess impacts of an educational intervention on SRH knowledge& sexual abstinence	363 in-school adolescents (13-19year old)	Contraceptive knowledge& Sexual abstinence
8	Rokicky et al. 2017 (83)	Ghana	Quantitative	Clustered Randomized Controlled Trial	12weeks	Interactive text-messaging (SMART QUIZ, SMART	To improve reproductive health knowledge and delay	756 adolescents in 34 secondary schools	Improved contraceptive knowledge& Delayed youth pregnancies

						ANSWER) One-way text-messaging	pregnancies among youths		
9	Ozler et al. Girls Empower (GE) and Girls Empower plus (GE+), 2020 (84)	Liberia	Quantitative	Cluster-randomized controlled trial	32 weeks for girls 8months for parents/caregivers	Life skill curriculum, Mentoring, Cash transfer.	To empower young girls with the skills to make life and reproductive health decisions	13-14year rural adolescents	Improved SRH knowledge and services utilization
10	Farzaneh, 2013 (85)	Liberia	Qualitative	Randomized Controlled trial	Multi-year	Life skills, Livelihood training Cash transfer to girls and their caregivers	To empower girls to make informed SRH decisions	10-24year old girls	School enrolment Rate, ASRH access
11	DFID-Funded ASRH programme, 2016 (41)	Tankolili District, Sierra Leone	Mixed method	Cross-sectional	3years	Life-skill education Community conversation Outreach programmes	To improve reproductive health knowledge and access to ASRH services	In-school and out-of-school adolescents	Improved reproductive health knowledge. Reduction in Adolescent pregnancy rate
12	Walker et al. 2013 (91)	West Africa	Qualitative Desk review& In-depth Interview	Cross-sectional	Not applicable	Not applicable	To review the burden of and interventions on child marriage in west Africa	Adolescent aged 10-19years	Prevalence of Child marriage

13	Osanyin, 2013(NOTYL Consulting services) (114)	Evaluation of YFHS in Nigeria	Mixed method	Cross-sectional	Multi-year	Youth friendly Health services	To assess the availability, adequacy, and suitability of existing Youth Centers to meet the needs and requirements of young people in Nigeria in a sustainable manner.	Young people aged 10-24years	Increased access to SRH services
14	Perry et al. 2017(88)	Rural Ghana	Quantitative	Cross-sectional	The sex education sessions lasted 30-minute for groups of 6-10 adolescents and caretakers but post-test evaluation was done within 90 minutes same day	Life-skill education	To improve knowledge on Long Acting Contraception	Both married and unmarried adolescents	Change in Contraceptive knowledge and behaviour
15	DFID-funded Youth Reproductive Health Programme, 2012 (81)	Sierra Leone	Mixed Method	Quasi-Experimental	5years	SRH-Education Life-Skill, Youth Empowerment and Community Empowerment	To improve access to Reproductive health services	Both married and unmarried young people	Increased reproductive health knowledge and service utilization

16	Ugbede et al. 2015 (136)	Evaluation of FLHE in Nigeria	Quantitative	Cross-sectional	Multi-year	CSE	To improve access to sexuality education (An assessment report of FLHE)	In-school Adolescents in all Nigerian states &the FCT	Improved reproductive health knowledge and sexuality behaviour
17	Kofi et al. 2017 (112)	Evaluation of School Health Education policies (SHEP) in Ghana	Qualitative	Cross-sectional	Multi-year	CSE	To assess implementation of Sexuality Education Programme	In-school adolescents	Improved reproductive health knowledge and sexuality behaviour
18	Geugten et al., 2015, Youth Harvest Foundation Ghana (YHFG) (82)	Bolgatonga Municipality, Northern Ghana	Quantitative	Quasi-Experimental	Multi-year, from 2007	Sexuality Education	To promote SRHR among adolescents	In-school adolescents and adolescents in vocational training schools	SRHR knowledge & Attitude

APPENDIX II

Table 3.4:Summary of CM and AP prevention intervention outcomes in West Africa and their success/failure factors

S/N	Programme	Programme aim	Programme duration	Outcome/Impacts	Success/failure factors
1	A360 (by A360 Consortium) (94)	To increase voluntary modern contraceptive use among girls aged 15–19 years	3years	A 70% and 45% increase in contraceptive usage among adolescents in Northern and southern Nigeria	**Adoption-related factors** 1.Youth involvement in drafting of the curriculum, data collection and analysis 2.Linking contraception to girls' aspiration 3.Vocational training as entry point **Implementation factors** 1.Training of service provider on adolescent friendly health services 2. Good organizational management of the A360 consortium with the ability to learn and make appropriate adaptation as programme progresses **Failure factors**: 1.Complex policy environments e.g requirement of parental consent for use of long acting reversible contraceptives (LARCs) by adolescents 2. Health system limitations 3. Myths and misconception regarding contraception
2	Onyemocho (Y-ACCESS)(92)	To increase access to reproductive health information and ASRH services	3-years	1.About 73% had self-reported access to ASRH at the end-line 2. Knowledge and attitude to ASRH improved by 12.2%	**Adoption-related factors** 1. Organization of peer outreach and advocacy activities 2. Use of voucher system and microcredits to remove financial barriers to access **Implementation factors** 1.Provision of youth centers in strategic places

				3.Overall pregnancy reduction of 38.4% from 48.2% baseline figure. 4. 233 youths (boys &girls) benefited from the voucher scheme	2.Capacity building of individual youths and youth groups through vocational trainings Most of the objectives were achieved but the programme could not meet the target set for the number of community gatekeepers to be reached for programme supports and sustainability. **Failure factor**: Insufficient advocacy efforts.
3	Better Life Option (BLO), 2013 (93)	To ensure that out-of-school young people are re-enrolled in formal education in Akwa Ibom State.	3-years	About 600 secondary school graduates were re-enrolled in formal or vocational schools (35% of the total programme participants and 51% of new graduates)	**Adoption-related factors** 1. Gave scholarships to adolescents to participate in the programme and to remove financial barriers to girl-child education. 2.Strong partnerships with Community-Based Organizations (CBOs) 3.Community mobilization through outreach activities and giving of incentives to community leaders **Implementation factor** 1.Used community-based holistic approach in programme implementation. 2. Used local NGOs as implementers. 3. Routine data collections to assess knowledge of the participants. Also monitoring of the recruited teachers to be sure that teachings were in accordance with the standard curriculum of the programme.
4	Esere MO (4)	To determine whether Sex	8 weeks	1.The difference existed between the	1.The programme combined active learning (e.g. work in small groups and games), IEC materials on

		Education Intervention Programme would reduce at-risk sexual behaviours of school-going adolescents.		Risky sexual behaviour scores of participants who were exposed to the treatment package and those in the control group (F=95.93; df 1/20, p<.05). 2.The degree of the difference in score was not clearly explained	sexual health, and skill development, primarily through role playing. 2.The intervention only involved 24 participants in just one secondary school, so the programme reach was small. 3.No advocacy efforts to elicit community participation and subsequent improved student participation in the programme.
5	Nwokocha et al. 2013(87)	To assess the scope, delivery, and challenges of FLHE implementation	Multi-years	CSE has been incorporated in the school curricular in all the geo-political zones of Nigeria	1.Legislation through partnership between the Federal MoE , MoH other relevant stakeholder to ensure incorporation of CSE into the national school curricular. 2.Multi-sectoral collaboration in implementation of the CSE curriculum 3.Effective Social mobilization
6	UNICEF GEP3 project 2017(80)	To increase girls' enrolment and attendance rates in basic schools	Multi-year	1.Overrall impact on school enrollments was 29.4% in Niger and 32.37% in Sokoto states 2. A 12.8% improvement on household financial status	**Adoption-related factor** 1.Used strong community engagements and cash transfers to parents/caregiver of adolescents for community mobilization **Implementation factor** 1. Incentives to adolescents who enrolled and continued in schools. 2. Incentives to parents of adolescents whose daughters were enrolled or willing to be enrolled in schools

					Failure factor: Ineffective procedure in selecting the most vulnerable girls in the community as many adolescents from the poorest homes were not captured in the programme
7	Yakubu et al.2019 (89)	To assess impacts of an educational intervention on SRH Knowledge and sexual abstinence	1month	1.At baseline, the mean Knowledge score was 58.17 and 62.28 for control and intervention group respectively but three months after the intervention, the mean knowledge score was 60.49 and 87.58 for control and intervention group respectively 2. Mean core of sexual abstinence at baseline was 71.35 and 74.89 for control and intervention group, respectively. At endpoint, sexual abstinence mean score was 84.42 and 92.42 respectively	**Adoption-related factors** 1.Although no community mobilization activities took place, the intervention received ethical approval from Ghana Health Services Ethic Review Committee. Permission was also granted by heads of participating schools, parents as well as the Northern Regional Education Directorate-Ghana. **Implementation factors** 1.The programme used RCT, a robust sampling method (2-stage cluster sampling) and a CSE curriculum on 185 students but the intensity/duration was too short to produce a real difference as there was a corresponding increase in knowledge in the control group as well. Hence, the improvement in knowledge in the two groups could have been due to effects of other programmes (confounder). 2. However, each weekly session comprised of lessons on susceptibility and severity of adolescent pregnancy, personal and community values, female reproductive system, contraceptives, and decision-making. The use of the word 'severity of adolescent pregnancy' could imply that the programme used fear-based approach during sexuality education sessions.

				for control and intervention groups	**Failure factors**: The intervention suffered from low programme reach because it had small sample size. It also emphasized abstinence from sex rather than safe sex practice
8	Rokicki et al. 2017 (83)	To improve reproductive health knowledge and delay pregnancies among youths	12-weeks	1.From the baseline of 26%, contraceptive knowledge increased by 11% in the unidirectional and 25% in interactive text-messaging interventions 2.Self-reported pregnancy rate was lowered by 86% in both unidirectional and interactive text-messaging interventions	**Adoption-related factors** 1.Youth involvements in the design of the curriculum used in the programme through extensive focus group discussions before the launch of the intervention. The curriculum was assessed and ratified by the Health Promotion unit of Ghanaian Health Services Ministry. **Implementation factors** 1.Use of ICT to convey sexuality education and to assess reproductive health knowledge and practice 2.Use of incentive (airtime) for good performances in the assessment quizzes (US$ 0.38 per correct responses). 3. Outgoing as well as incoming messages from participants were well-logged and monitored using a computerized system. 4. After the 3-month follow-up, participants in both intervention and control arms were offered a 30- to 45-minute lecture about reproductive health by a nurse **Failure factor:** 1.Reduce confidentiality of information sent or received by adolescents as some of them without cellphones were told to use the phones belonging

					to their parents. 2. No community mobilization efforts to gain support for the programme 3. Only girls offering home economic subject were recruited into the study
9	Ozler et al. Girls Empower (GE) and Girls Empower plus (GE+), 2020 (84)	To empower young girls with the skills to make life and reproductive health decisions such as contraception	32weeks	The programs caused statistically significant improvements in SRH knowledge and practice with an Intention to Treat (ITT) effects of 0.22 standard deviation for the GE intervention and 0.372 for the GE+ intervention ($p<0.02$)	**Adoption-related strategies** 1.Created caregiver discussion groups among parents of the adolescents. They were meeting once every month. The CSE curriculum used in teaching adolescents in schools was explained to parents in their different discussion sessions to gain their supports for the programme, and also so that parents can reinforce information given to adolescents in school at home. 2. Use of life skills curriculum which was understood and facilitated by local female mentors **Implementation strategies** 1. Giving of individual savings start-up for the girls as a form of financial empowerment (For the GE+ programme) 2. Incentives for caregivers of adolescents who enroll in the programme 3. Capacity building for local health and psychosocial service providers **Failure factors:** 1.The programme did not have a systematic strategy to engage with community structures to address negative gender norms in most communities

					2. Inadequate numbers of HCWs for service delivery
10	Farzaneh N (2013) (85)	To empower girls to make informed SRH decisions	Multi-years	Impacts not quantified because the report was on six pilot projects by different NGOs. Authors stated that the effects cannot be easily attributed to one project	Not applicable
11	DFID-Funded ASRH programme, Sierra Leone, 2011 (41)	To improve reproductive health knowledge and access to ASRH services	3-years	1.The % of sexually active adolescent girls from target schools and villages who reported using a modern family planning method increased from 14% at the baseline to 98.8% at the end line. 2.Adolescent pregnancy rate dropped from 33.2% at baseline to 30.7% at end line.	**Adoption-related factors** 1. Inclusion of community stakeholders in programme planning and implementation 2.Established strong network with other CBOs **Implementation factors** 1. Fostered strong link with the community through community dialogue to understand and address restrictive cultural norms 2.Used integrated approach in service delivery 3.Use of competent manpower for programme delivery 4. Organizational abilities to learn and adapt as programme proceeds **Failure factors** 1. The project cycle of three months in each community was however too short, limiting opportunities for sustainable impact. 2. Also, programme could not achieve some of its objectives due to delay by the government to sign

					MoU and to agree to train healthcare workers. Also, by attrition of HCWs and constant out-of-stock of essential commodities.
12	Walker et al. (2013) (12)	To review the burden of and interventions on child marriage in west Africa	Not applicable	Multiple interventions in different countries were reviewed in the report but no specific focus on impacts of any of the programme	Not applicable
13	Osanyin, 2013(NOTYL Consulting services) (114)	To assess the availability, adequacy, and suitability of existing Youth Centres to meet the needs and requirements of young people in Nigeria in a sustainable manner.	Multi-years	Not applicable since it was not a report on specific intervention	Not Applicable
14	Perry et al. 2017(88)	To improve knowledge on Long Acting Contraception	The sex education sessions lasted 30-minute for groups of 6-10 adolescents and caretakers but	The percent of participants with correct LARC knowledge improved 8% to 63% ($p<0.001$)	1.The study conducted only one session of educational intervention on 110 adolescents aged 13-19years. 2.Purposive sampling method was used to recruit study participants 3.It has low dose, intensity, and low programme Reach

			post-test evaluation was done within 90 minutes same day.		
15	DFID-YRHP, Sierra Leone, 2012 (81)	Improve access to Reproductive health services	5-years	Condom use at last sex increased from 22% to 86.9%. ASRH services utilization increased from 35% at baseline to 97% at end-line	**Adoption-related factors.** 1.Advocacy visits to governments to make them buy-in and to support formulations of youth friendly health policies 2. Establishment of strong community link to address cultural norms which may negatively affect programme success 3. Youth involvement in decision-making, planning and implementation of programmes 4. Helping ex-programme beneficiaries to gain jobs and supporting them to actively participate in youth policy reviews and debates to ensure the interests of youths are adequately captured. These youths act as positive role models to junior ones. **Implementation factors** 1.Used peer-to-peer behavioural change model for programme implementation. 2. Empowerment of in-school and out-of-school adolescents through vocational trainings and giving of incentives 3.Creation of youth centers on campuses which were equipped with library sections and ICT facilities **Failure factors:**

					The campus youth information centers were ill-equipped to effectively meet programme targets due to scarcity of financial resource.
16	Udegbe et al. 2015 (136)	To improve access to sexuality education (An assessment report of FLHE)	Multi-year	Proportion of school implementing FLHE curricular ranged from 13-100% in each state with Adamawa State having implementation rate of 13% and Lagos having 100% This variation was determined by several factors but mainly by lack of political will of from state governments as many of them like Adamawa in northern parts were late implementers with no clear-cut budget lines CSE	1.Legislation through the partnership between the Federal MoE and MoH 2.Multi-sectoral collaboration in implementation of the CSE curriculum 3.Effective Social mobilization efforts
17	Kofi et al., 2017 (112)	To assess implementation of Sexuality Education Programme	Multi-year	Three-fourth of in-school adolescent exposed to sexuality education	1.Legislation through the partnership between the Federal MoE and MoH 2.Multi-sectoral collaboration in implementation of the SCE curriculum 3.Effective Social mobilization

					Failure Factors 1.Lack of comprehensiveness of sexuality education topics as adoption of CSE in Ghana is faced with severe cultural/religious resistance. CSE is currently being taught in the School Health Education Programme curriculum unlike Nigeria where there is separate CSE (FLHE) curriculum.
18	Geugten et al., 2015, Youth Harvest Foundation Ghana (YHFG) (82)	To promote SRHR among adolescents	Multi-year, since 2007	Only marginal but statistically significant increase in SRHR mean knowledge score from 13.47 baseline to 14.64 end line (p=0.018) There was positive change in SRHR behaviour (not quantitatively measured)	**Adoption-related factors** 1.A strong linkage to the implementing communities with establishments of YHFG clubs. **Implementation factors** 1.Use of standard CSE curriculum with practical demonstrations on issues such as proper condom use **Failure factors** 1.Requirement of adolescent to pay 1.5 Ghanaian Cedis (0.3Euros) before they can join the YHFG club and utilize its facilities. 2. Foreign volunteers who may not fully understand Ghanaian culture participated in teaching the participants 3. Inconsistent class attendants by participants