Title

Generating Political Priority for Adolescent Sexual and Reproductive Health in Kenya: Problem Definition, Priority Setting Processes, and Contraception

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Publication Date

2019

Peer reviewed|Thesis/dissertation

Generating Political Priority for Adolescent Sexual and Reproductive Health in Kenya: Problem Definition, Priority Setting Processes, and Contraception

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DISSERTATION
Submitted in partial satisfaction of the requirements for degree of
DOCTOR OF PHILOSOPHY

in

Global Health Sciences

in the

GRADUATE DIVISION
of the
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

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Dedication and Acknowledgments

We say in Swahili: Elimu ni Harambee! It takes a village to get a PhD. I would like to acknowledge my village without whom this work would not be possible. This work was made possible with the support, collaboration, and mentorship I received from the Institute of Global Health Sciences program and the Kenya Medical Research Institute. I would first like to acknowledge the support and guidance of my dissertation committee: Dr. Claire Brindis and Dr. George Rutherford (co-chairs); Dr. Elizabeth Bukusi, Dr. Justin White, and Dr. Eric Goosby and my qualifying committee: Dr. Laura Schmidt (chair), Dr. Kelly Knight, Dr. Claire Brindis, and Dr. George Rutherford. I would like to thank my colleagues from the Kenya Medical Research Institute and in particular those at the Kar Geno Research Policy Hub who work tirelessly every day to improve the lives of adolescents and young women and who stood with me during the PhD journey. Finally, last but not least, I graciously acknowledge my family, friends, and cheerleaders including the lead noisemaker, Rehema Zanyiwe Fede, my daughter. Asanteni sana

Epigraph

-African women in general need to know that it's OK for them to see the way they are as a strength, and to liberated from fear and from silence

Wangari Maathai, Nobel peace Laureate

Generating Political Priority for Adolescent Sexual and Reproductive Health in Kenya: Problem Definition, Priority Setting Processes, and Contraception

Maricianah Atieno Onono

Abstract

Background: In many parts of Sub-Saharan Africa, adolescent sexual and reproductive health is often of low political priority and there are often restrictive laws and policies that are in contradiction with international agreements and commitments.

Objectives: The main objectives of this dissertation research were 1) to apply the Public Arenas Model to appraise the environments, definitions, competition dynamics, principles of selection, and current actors involved in problem-solving and prioritizing adolescent pregnancy as a policy issue; 2) to qualitatively explore the generation, process, constraints, dilemmas, and institutionalization of political priority for adolescent sexual and reproductive health in Kenya, and 3) to compare pregnancy incidence among women using depo medroxy progesterone acetate levonorgesteral implants and intra uterine copper devices within a multicenter, open-label, randomized clinical trial.

Methods: The research used mixed research methodology. For Aim 1, We applied the Public Arenas Model to critically appraise the environments, definitions, competition dynamics, principles of selection, and current actors involved in problem-solving and prioritizing adolescent pregnancy as a policy issue. To achieve Aim 2, a postmodern, interpretive focused ethnographic approach was used. This included a critical review of the empirical and theoretical literature, existing national documents, and participant interviews. We used the Shiffman and Smith policy framework consisting of four categories—actor power, ideas, political contexts, and issue characteristics—to analyze

factors that have shaped political prioritization of adolescent sexual and reproductive health. We undertook semi-structured interviews with members of adolescent sexual and reproductive health networks at the national level and conducted thematic analysis of the interviews. For Aim 3, we analyzed data from the ECHO Trial, which assessed HIV incidence among 7829 women from 12 sites in Eswatini, Kenya, South Africa, and Zambia who were seeking effective contraception and consented to be randomized to DMPA-IM, a copper IUD, or an LNG implant. Cox proportional hazards regression adjusted for condom use was used to compare pregnancy incidence during both perfect use (defined as from initiation of method until first discontinuation for any reason). Additional analyses explored more typical use (i.e., until decline or change to a different contraceptive method).

Summary of Findings:

In Aim 1, we found existing definitions center around adolescent pregnancy as a "disease" that needs prevention and treatment, socially deviant behavior that requires individual agency, and a national social concern that drains public resources and therefore needs to be regulated. These conflicting definitions contributed to the rarity of the topic achieving traction within the political agenda and may result in conflicting solutions, such as lowering the legal age of consenting to sex, while limiting access to contraceptive information and services to minors.

In Aim 2, we found that the adolescent sexual and reproductive health community was diverse and united in adoption of international norms and policies, but lacked policy champions to provide strong leadership, and policy windows were often missed. Community members lacked consensus on a cohesive public positioning of the

problem. Moreover, the perception of adolescents as lacking political power made politicians reluctant to act on the existing data on the severity of adolescent SRH. There was also a lack of consensus on the nature of interventions to be implemented. The sectoral funding by donors and government treasury brought about tension within the different government ministries resulting in siloed approaches, lack of coordination, and overall inefficiency.

In Aim 3, 7710 women contributed to this analysis. Seventy pregnancies occurred during perfect use and 85 during more typical use. Perfect use pregnancy incidence rates were 0.61 per 100 woman-years for DMPA-IM (95% CI 0.36-0.96), 1.06 for copper IUD (95% CI 0.72-1.50), and 0.63 for LNG implants (95% CI 0.39-0.96); differences between methods were not statistically significant ($p>0.05$). Typical use incidence rates were generally similar, although slightly higher for copper IUD (1.11 per 100 woman-years, 95% CI 0.77-1.54).

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Chapter 1

Introduction

Introduction

Globally there is no health system, poor or wealthy, privately or publicly financed, that can afford to provide all possible services and treatments for all the people it serves [1]. The mismatch between demands and resources in health care creates a distributive justice dilemma in any society, as to how limited healthcare resources can be fairly allocated. Governments are faced with hard decisions on how to effectively balance the constraints of available resources, rising consumer expectations, and demographic changes against an often non-expanding supply source of the resources [2]. Despite best efforts, it is difficult to reconcile all competing interests, and trade-offs are inevitable. Every health system needs to set priorities regarding what it will provide in a manner that maximizes population health while at the same time addressing equity. However, inherently the process of priority setting is a political process and often the local politics trumps both scientific and economic evidence [3]; thus making *priority setting* perhaps today's most important health policy issue [4]. This dissertation explores priority setting for adolescent sexual and reproductive health (SRH) in sub-Saharan Africa. This introduction 1) defines priority setting and provides examples of the tools used by policy makers and ministry of health technocrats in sub-Saharan Africa, 2) reviews the current profile of reproductive health financing in sub-Saharan Africa, and 3) describes the state of adolescent SRH in sub-Saharan Africa, focusing on pregnancy and HIV/AIDS in this population

Priority Setting

Priority setting can be defined as the process in which decisions are made by the national leadership (politicians and policy-makers) regarding how resources should be

allocated among competing programs or individuals [2]. While the national leadership and in particular the ministry of health may seek technical advice from different stakeholders, the overall coordination and final decision making typically remains with the government. Unfortunately, the allocation of resources is more than just a simple supply and demand equation. The allocation of resources is also deeply influenced by population value choices, societal obligations and self-interest. A recent systematic review [5] summarized that regardless of the context, priority setting is often value-laden and political [6-9] and for good outcomes to be realized, it requires credible evidence, strong and legitimate institutions, and fair processes [10-12]. In many instances, and in particular, in the health-care domain, the priority-setting process is often “messy”, “ad hoc” and happens by chance [4]. In both developing and developed countries, sub-populations or issues which are not deemed to be “worthy” are often ignored/marginalized within the priority setting spaces. These range from the issue of sexually transmitted infections and pregnancy among adolescents[13] to the Opiod crisis in black communities in the United States of America [14].

The World Health Organization (WHO) asserts that the ultimate goals of priority setting are to maximize health, health distribution, and financial protection [15]. Extant literature provides a variety of technical methods that can be used to prioritise issues during priority setting [16]. These methods include: accountability for reasonableness, multicriteria, decision analysis, public budgeting and marginal analysis, multidisciplinary approach, business case approach, saved lives, investment case approach, balance sheet combined normative-empirical approach, public participation approach, mixes of qualitative and quantitative approaches, the local level diamond model among

others [16]. Regardless of the technical method selected, value judgements that incorporate the moral, rights and ethical issues of resource allocation in health care cannot be ignored. In public health care, there are two commonly used value based approaches to resource allocation; egalitarian and utilitarian [17]. Part of the conflict between whether to adopt a utilitarian or egalitarian approach in resource allocation hinges on the equity-efficiency trade-off, which reflects fundamental differences in priorities [18]. The utilitarian approach involves allocating resources to maximize the health of the community as a whole [19]. Unfortunately, this approach does not guarantee fairness and may propagate health inequalities as it is based on the framework that “greatest good is for the greatest number” [20]. Often the main beneficiaries are populations or diseases that have larger numbers or diseases which have obvious morbidity and mortality or plurality of interventions.

Minority populations such as adolescent girls, who traditionally are “invisible” by virtue of neither being children or adults nor having cohort specific data, often do not to benefit from this approach. The second approach is the egalitarian approach. The egalitarian approach involves allocating resources in a way in which each individual has a fair share of the health resources available [17]. In principal, the less advantaged or those deemed as having less socially worth should not be punished by limiting their access to health access. However, in reality, the definition of fair distribution is often contentious. In some instances, a difference principle is applied in which allocation of any intervention or resource is evaluated in the interest of the least advantaged and only when the least advantaged are equally badly off does the situation of the second least advantaged matter. As such, while this approach, tries to ensure that everyone

has a share of health resources, it also means that individuals may not receive the maximum level of healthcare resources that they actually need [21].

Despite the growing interest in priority setting in resource-limited settings, there is little consensus on the best way to carry it out. Different approaches have been proposed, ranging from guidelines, check-lists, and minimum packages to explicit criteria [22]. Kapiriri et al [23] classify relevant criteria as medical and non-medical. Medical criteria include cost-effectiveness of interventions, expected outcomes of treatment, costs of treatment, effectiveness of treatments, severity of conditions, quality of evidence on effectiveness, and urgency of need for care. Non-medical criteria include: age, gender, race, religion, social status, responsibilities, mental (or learning) capabilities, physical capabilities, area of residence, time on waiting list, political views, community's views, number of people benefiting from an intervention, genetic background, sexual orientation, and patient's lifestyle associated with the disease. Unfortunately, the majority of these criteria has been used mainly in developed countries and may have different utility in developing countries. The choice of whether to use one or several of these methods needs to be balanced against the background local context and its societal values. For instance, while the developed world is increasingly faced with an aging population, sub-Saharan Africa is experiencing a youth bulge. Admittedly, priority setting in these two diverse settings with such varying demographics cannot be the same. In addition, the priority-setting process in developing countries, such as those in sub-Saharan Africa, is doubly constrained by comparatively fewer resources available, cultural beliefs, and donor interference [24].

Reproductive Health Financing

Within the health sector in sub-Saharan Africa, priority setting for reproductive health is fraught with challenges. Many of the priority-setting tools and processes do not take into account the long term benefits of investing in SRH services [25]. In fact, there is increasing evidence that the traditional disease-ranking and cost-effectiveness priority-setting mechanisms that are used in most low-resource settings for the health sector do not sufficiently reflect the long term benefits of preventive interventions such as family planning [25].

In 2001, African Union countries pledged to allocate at least 15% of their annual budgets to the health sector (Abuja declaration) [26]. To date however, only one country has reached this target, 26 have increased their allocations, but have not reached 15%, nine countries have maintained their 2001 levels, and 11 countries have actually reduced budgetary allocations [26]. Within the health sector, many of the priority setting tools and processes do not take SRH into account, as such SRH is often underfunded [25].

Many countries in sub-Saharan Africa do not have systems to collect data on domestic and external funding available for SRH, actual expenditures, and the distribution of resources, as well as anticipated resources required in the future years to meet SRH needs [27]. In addition, the recent trend towards integrating services (e.g., health and education) and use of sector-wide approaches make it difficult to disaggregate funding allocation, utilization, and forecasting. Other challenges in building the necessary infrastructure for accurate and consistent collecting data on SRH financing in sub-Saharan Africa include: 1) political instability and social conflicts,

2) reluctance by government departments to provide data, 3) lack of technical expertise to disaggregate health financing data by types of activities, 4) multiplicity of persons involved in collecting data without a clear point person accountable for the collection and analyses of information, 5) lack of organization and documentation of statistical information on funding, 6) under-counting of public expenditures, and 7) lack of technical expertise to correctly measure of out-of-pocket SRH expenditures [27].

In 2015, the United Nations Population Fund (UNFPA)/Nederlands Interdisciplinair Demografisch Instituut (NIDI) Resource Flows Project, which tracks the progress achieved by developing countries in implementing reproductive health financial targets, estimated that nearly 20% of the SRH budget in Africa is funded by external donors [28]. Although African governments provide the bulk of the financing for SRH, out-of-pocket expenditures by individuals and households constitute 51% of this financing. Moreover, nearly 90% of the public domestic SRH funding is allocated to sexually transmitted infections (STI) or HIV-related activities [28]. In contrast, 65% of international donor funding for population health is allocated to primarily HIV activities, 23% for basic obstetrical services, 9% for family planning service delivery, and 3% for basic research, data and policy analysis. This funding allocation reflects a significant change in donor funding priorities since the late 1990's where 9%, 55%, 5% and 18% had been allocated for STI/HIV activities, basic obstetrical services, family planning services, and basic research, data and policy analysis, respectively [28] [27]. This change in funding can be attributed to preference for donors to fund HIV activities at the peak of the epidemic. There was also a deliberate underfunding of FP during the Bush

administration era in favour of Abstinence-Only programs which were detrimental to overall FP programs and in particular adolescents.

The Current State of Adolescent SRH in Sub-Saharan Africa

Adolescent Pregnancy

By 18 years of age, about 60% of adolescent girls and young women in sub-Saharan Africa have had their sexual debut [29, 30]. Many of these adolescents have not used contraceptives, have had multiple and/or older partners, and lack adequate knowledge for avoiding sexually transmitted infections and pregnancy [29-33]. Adolescents in sub-Saharan Africa contribute over 50% to the global proportion of 16 million births that occur among adolescents and account for about 16% of total fertility in sub-Saharan Africa [34-37]. Pregnant and teen mothers represent a vulnerable group that are faced with a multitude of social issues, including persistent poverty, school failure, child abuse and neglect, and health and mental health issues [38, 39]. Adolescent mothers are more susceptible to intimate partner violence, alcohol and drug abuse, and other risky sexual behaviors that both directly and indirectly increase their risk for AIDS/HIV [39, 40].

Adolescent girls are at higher risk of maternal mortality than older women. In fact, complications from pregnancy and childbirth are the leading cause of death among adolescent girls ages 15-19 years, worldwide [41, 42]. In addition, the adverse impact of poor newborn health due to adolescent pregnancies can have inter-generational and long-term effects leading to adulthood disease, HIV risk, and poor SRH outcomes [40, 43]. Due to their often interrupted education, adolescent mothers are less likely to complete the education necessary to qualify for well-paying jobs and more likely to have

a second birth within 24 months, which can further inhibit their ability to successfully finish school or keep a job. The losses in terms of potential productivity gains and income that these girls could have achieved, if they had been employed, has been estimated to be as high as 30% of the annual gross domestic product in countries such as Malawi (27%), Nigeria (26%), and Uganda (30%) [44]. If all adolescent girls completed secondary school and if adolescent mothers were employed, instead of becoming pregnant, the cumulative effect could add an estimated 3.4 billion U.S. dollars to Kenya's gross income every year, 13.9 billion U.S. dollars to Nigeria's, and 6.8 billion U.S. dollars to Ethiopia's income [44]. Yet, despite the economic potential for investing in adolescent access to SRH services, teenage pregnancy has not received adequate political attention in Africa.

Adolescent childbearing remains a confounding public policy topic in Africa that can only be understood in its particular historical and social cultural context. For some adolescents, pregnancy and childbirth are planned and wanted. Nearly 30% of girls in sub-Saharan Africa marry before they are 18 years old and 14% before they are 15 years old. Historical traditions of early child marriages have begun to decline with increasing globalization and related cultural shifts. The formal commitment by the African Union to end child marriages in its Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (2003), popularly known as 'Maputo Protocol', has also played a role as a catalyst [45]. However, there has also been an emergence of teenage pregnancies outside of marriage and formal unions. Teenagers becoming pregnant outside of marriage represent two intersecting factors: the postcolonial sexual revolution in Africa and the emergence of teenagers

as a distinct social group. Beginning in the late 1990's, the sexual revolution of the 1960s and 1970s in the West spread globally and impacted Africa. This sexual revolution was characterized by more sexual permissiveness and a dilution of previous cultural and colonial Christian puritanical attitudes [46].

Adolescents in sub-Saharan Africa additionally experience more obstacles than adults in obtaining contraceptives because of restrictive laws and policies [47, 48]. There are often conservative practices regarding adolescents' access to contraceptive services including: 1) requirement of parental or spousal consent, 2) restrictions based on age, 3) restrictions based on marital status, 4) excess provider discretion in influencing choice of and access to different contraceptives, 5) lack of comprehensive sexuality education, 6) lack of adolescent-friendly family planning services, and 7) lack of community support for youth-friendly, nonjudgmental family planning services [49-51]. The persistent contradictions in knowledge of the burden of adolescent pregnancy to the health sector and national development and the inadequate political prioritization of this issue suggests that new approaches to understanding the problem of teenage pregnancy and developing viable policy-focused solutions are needed.

Adolescents and HIV

Throughout sub-Saharan Africa, adolescent girls and young women between the age of 15-24 years are at extremely high risk of acquiring HIV infection. In east and southern Africa, adolescent girls and young women account for 80% of all new HIV infections [52, 53]. It is estimated that approximately 7,000 adolescent girls and young women are infected every week in sub-Saharan Africa [52, 53]. In Kenya, for example,

adolescent girls are almost three times as likely to be living with HIV than men of the same age (3% and 1.1% respectively) [54].

As a policy to counter these challenges, increasing evidence points to the importance of greater investment in adolescent SRH in order to ensure that the Sustainable Development Goals (SDGs)[1] 1-5 and 10 are reached by 2030 [55, 56]. These investments will ensure that adolescents become healthy, empowered, and productive adults that contribute to the strengthening of society [56, 57]. Globally, where adolescent girls and young women have been given the tools and the incentives to adopt safe behaviours, there is evidence of improved adolescent SRH. Extant literature points to known combination interventions [58] such as educating young people about SRH and teaching them skills in negotiation, conflict resolution, critical thinking, decision making, and communication [33, 59]. This education improves their self-confidence and ability to make informed choices, such as postponing sex until they are mature enough to protect themselves from HIV, other STIs, and unwanted pregnancies. The provision of youth-friendly services that offer treatment for STIs and access to condoms, pre-exposure prophylaxis (PrEP), and an expanded mix of contraceptive methods can help young people become responsible for their own SRH [31, 58, 60]. In addition, greater involvement of young persons in the design and implementation of these youth friendly services leads to greater acceptability of the interventions [31]. Furthermore, supporting adolescent girls and young women to remain in school helps protect them against HIV infection, delays sexual debut, and reduces early and unintended pregnancy [61]. Parents, extended families, communities, schools, and peers are critical in guiding and

[1] The 17SDGs: 1:No poverty, 2: Zero Hunger, 3: Good Health and Well-being, 4: Quality

supporting adolescent girls and young women to make safe choices about their health and wellbeing [62]. Studies show that consistent, positive emotional connections with caring adults and/or peers help young people feel safe and secure and allow them to develop the resiliency needed to manage challenges throughout their lives.

Despite this knowledge, adolescent girls and young women have often been left out of combination prevention interventions [58, 63-65]. In addition, these programs also fail to leverage innovations and technologies that youth have already incorporated into their own lives such as the social media, online or cellular-based chat groups, and mobile phones [31]. Moreover, even when provided, many of the interventions have been fragmented and are not designed specifically for or by adolescents themselves. Improving service delivery to adolescents can be done within existing health care systems by employing some modifications [66] such as: 1) conducting community outreach to identify adolescents, provide SRH information and link them to services; 2) ensuring the widespread availability of an expanded mix of contraceptive methods, including long acting reversible contraceptives (LARCs); and 3) training lay and mid-level health care workers to provide comprehensive reproductive health services (such as HIV, STIs, provision of contraception, gender based violence screening and management, cervical cancer prevention services) in an integrated manner (same provider, under one roof). Thus, there is an urgent need to prioritize comprehensive prevention strategies that combine proven biomedical and socio-behavioral interventions, which will prevent HIV infection, STIs, and unintended pregnancy for adolescents.

Rights of Adolescents

The rights of adolescents to survive, grow, and develop are promoted in international legal documents. These documents include the 2013 published guidelines and 2016 General Comment on the right of children and adolescents to enjoy the highest attainable standard of health by the Committee on the Rights of the Child (CRC) [67]. The General Comment of 2016, in particular, highlights individual countries' obligations to recognize the special health and development needs and rights of adolescents and young people [67]. Other legal instruments include the Convention on the Elimination of Discrimination Against Women (CEDAW) [68] and the Maputo protocol that dictated health and adequate health care for women and girls [69]. In addition, the document, *Global Accelerated Action for the Health of Adolescents (AA-HA!): Guidance to support country implementation,* was produced by WHO in 2017 to assist governments "in deciding what they plan to do and how they plan to do it as they respond to the health needs of adolescents in their countries" [41].

In 2003, the African Union declared SRH a continental emergency. As described earlier, they developed the Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa (2003), popularly known as 'Maputo Protocol'[45, 70]. The Maputo Protocol is a women's rights legal instrument that expands and guarantees extensive rights for African women and girls and includes progressive provisions on: 1) harmful traditional practices (e.g., "child marriage" and female genital mutilation; FGM), 2) reproductive health and rights, 3) roles in political processes, 4) economic empowerment, and 5) ending violence against women. In 2005, the protocol further adopted the continental policy framework on SRH rights including

those of adolescents. This protocol recognizes that African leaders have a civic obligation to respond to the SRH rights of women and girls and requires individual governments to put into place policies, legislation, advocacy, resource mobilization, and budgets, as well as the responsibility to monitor the implementation of the plan on an annual basis. Specifically, governments were to: 1) increase resource allocation to the health sector up to 15% of gross domestic product in line with the Abuja recommendation of the 2001 Summit of Heads of State and Government, 2) increase women's participation in national and economic development, and 3) improve SRH commodity security by including SRH commodities in the Essential Drug Lists. The Continental Policy Framework on Sexual and Reproductive Health and Rights was adopted by the African Ministers of Health in October, 2005 and endorsed by the Summit of the African Heads of State and Government in January 2006 [45, 70].

Programmatic data show that, despite the adoption of international and regional norms such as the Maputo protocol, inequities in service provision and access to SRH care still exist in most of the African countries, and adolescent girls and young women appear to be systematically disadvantaged. The persistent contradictions in knowledge of the burden of adverse adolescent SRH and the inadequate priority-setting processes and political prioritization of the issue, suggest that new approaches to understanding the problem of adolescent SRH are required. The development and maintenance of an issue on the public agenda is a topic that has been the center of discussions for many political scientists. Theorists have claimed that the topics that make it to the public agenda are not always neither the largest in magnitude nor the deepest in gravity nor severity [71]. For example, while

women comprise more than half of the population of Africa and bear the brunt of adverse SRH outcomes, prior to 2003 the African Union charter on human rights contained only one article specifically referring to women and girls in all its 68 articles. Furthermore, this single article combined the rights of women and girls with the rights of other vulnerable groups, such as the disabled, children, and the elderly. The first research paper in this dissertation explores how the problem of adolescent SRH (with specific reference to teenage pregnancy) has been defined and why it is yet to be a priority issue on the public agenda for governments in sub-Saharan Africa.

Political priority refers to the degree to which political leaders consider an issue to be worthy of sustained attention and to back that attention with the provision of financial, human, and technical resources commensurate with the severity of the problem. Even though policy makers may recognize the existence, severity, and repercussions of poor adolescent SRH, many policy makers are often distracted with a myriad of competing issues and have limited resources to deal with them alongside other conflicting political priorities. The second paper in this dissertation utilizes a focused ethnographic approach to understand how adolescent SRH policies get onto the public agenda and receive consideration from decision makers, who set the policy agenda, I define how the lack of political support affects the achievement of adolescent SRH, and how support for adolescent SRH policy can be generated and sustained [72].

Lastly, effective family planning methods are at the heart of the response to sexual reproductive health. Unfortunately, nearly 30% of the 74 million unintended pregnancies that occur in the developing world each year occur among women using

some type of contraceptive method (traditional or modern). These unintended pregnancies can be due to incorrect or inconsistent use of contraception, as well as the result of method failure. There is a paucity of prospective data and almost no data from randomized controlled trials that pragmatically quantify contraceptive failure in women in sub-Saharan Africa who are using modern contraceptive methods. Prior estimates of the contraceptive failure rates are derived from demographic health survey data and among women who were assumed to have received the contraceptive method of their choice (self-selected). The third paper in this dissertation compares pregnancy incidence among a large cohort of women using depo medroxy progesterone acetate (DMPA), levonorgesteral (LNG) implants, and intrauterine copper devices (IUD) from four African countries: Eswatini, Kenya, South Africa, and Zambia. While the African governments with or without donor assistance cannot meet all demands for SRH, data on pregnancy rates among contraceptive users, particularly young women, are important for informing governments regarding which contraceptive methods they should invest in and for informing service-delivery strategies to enable women to achieve their reproductive health goals.

Summary

The overall thrust of my dissertation was to contribute to the literature on priority setting processes and generation of political will for adolescent SRH in sub-Saharan Africa. The decision to evaluate this important topical issue through a broad lens straddling the socio-cultural, political and biomedical aspect of adolescent SRH was deliberate. I believe that results from these three papers provide insight into why the problem of adolescent sexual and reproductive health is yet to be a priority issue on the public agenda for sub-Saharan Africa. My expectation is that the papers presented here will help to trigger a structured public discourse on policy formulation and resource allocation for adolescent SRH. This dissertation, therefore, is an important contribution to all adolescent SRH stakeholders in sub-Saharan Africa as they pursue the dual goals of universal health care by 2030 and reaping the demographic dividend.

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Chapter 2

Political Prioritization and Adolescent Pregnancy in Kenya

Political Prioritization and the Competing Definitions of Adolescent Pregnancy in Kenya:

An Application of the Public Arenas Model

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Abstract

Approximately one in every five adolescent girls in Kenya has either had a live birth or is pregnant with her first child. There is an urgent need to understand the language and symbols used to represent adolescent pregnancy, if the current trend in adolescent pregnancy is to be reversed. We apply the Public Arenas Model to appraise the environments, definitions, competition dynamics, principles of selection and current actors involved in problem-solving and prioritizing adolescent pregnancy as a policy issue. Adolescent pregnancy is value laden and cuts across national, community, household and individual boundaries. Existing definitions center around adolescent pregnancy as a “disease” that needs prevention and treatment, socially deviant behaviour that requires individual agency, and a national social concern that drains public resources and therefore needs to be regulated. These conflicting definitions

contribute to the rarity of the topic achieving traction within the political agenda and may result in conflicting solutions, such as lowering the legal age of consenting to sex, while limiting access to contraceptive information and services to minors. Agreement on the definition of a societal problem is an important precursor to a social issue's political prioritization and priority setting. This paper provides a timely theoretical approach to draw attention to the different competing and often problematic definitions of the nature of the problem of adolescent pregnancy in Kenya. Adolescent health stakeholders need to be familiar with these challenges and deliberately adapt their social problem claims for better policy and action.

Keywords

Problem definition, Public Arenas Model, Adolescent pregnancy, pregnancy prevention, Sub-Saharan Africa, Pregnancy

Funding support

University of California, San Francisco, Institute for Global Health Sciences

Kenya Medical Research Institute

Introduction

The health and well-being of adolescents in Sub-Saharan Africa (SSA) is of critical importance to the future of Africa and the achievement of the 2030 Sustainable Development Goals. In SSA, adolescents (10-19 years) make up 23% of the region's population [1]. When given the right policies and investments, this ever-expanding youth bulge represents an opportunity to reap a demographic dividend, accelerate economic growth and reduce poverty [2]. Unfortunately, this benefit may not be reaped if one in five adolescent girls are pregnant and unable to complete their education and acquire the necessary skills required for gainful economic activity [3-6]. Thus, the demographic dividend can only occur if SSA countries improve the legal and policy environments to empower and enable adolescents, and in particular girls, to attain the highest standard of health and, in particular, sexual and reproductive health (SRH) [7]. Without committed political leadership, progress in improving adolescent SRH in SSA cannot be achieved.

Problem definition is an important precursor to political prioritization and agenda setting, that is, the process that determines which issues political actors pay serious attention to at any given time [8]. Within this process , unless a difficulty is converted into a stated problem, it remains embedded in the realm of nature, accident and fate [8]. Moreover, the complexity of the problem and the potential consequences of divergent interpretations are highly pertinent to adolescent pregnancy, given that adolescent sexuality cuts across national, community, household and individual boundaries. Ultimately, the problem definition that comes to dominate public discourse has profound implications for future solutions in terms of policy formulation and resource allocation. It

is, therefore, imperative that we explore and understand the language and symbols that are used to represent adolescent pregnancy if we are to reverse its current trends.

The development and maintenance of an issue on the public agenda is a topic that has been the centre of discussions for many political scientists. Often the topics that make it to the public agenda are neither the largest in magnitude nor the most grave [9]. For example, while women comprise more than half of the population of Africa and bear the brunt of adverse SRH outcomes, prior to 2003, the African Union Charter on Human Rights had only one of its 68 articles that specifically referred to women and girls [10]. Furthermore, this single article combined the rights of women and girls with the rights of other vulnerable groups, such as the disabled, children and the elderly [10, 11]. In 2011, the World Health Organization released guidelines on preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries, and while many scholars' funding agencies and national governments adopted the guidelines and were optimistic about the future of the adolescent girl [12, 13], adolescent pregnancy has remained a pernicious problem. The Public Arenas Model, developed by Hilgartner and Bosk(1988) is a theory that attempts to explain why and how certain social problems are able to rise to prominence compared to others and why some later lose their place on the public agenda, while others persist [9]. The main assumption of this theory is that public attention is a scarce resource, which is allocated through competition in public arenas [9].

In this paper, we apply the six elements of the Public Arenas Model [9]: 1) the public arenas where the issue of adolescent sexuality and pregnancy is discussed; 2) the carrying capacity of the arenas; 3) the dynamics of competition; 4) the principles of

selection; 5) communities of operatives; and 6) feedback mechanisms (see Table 2.1). We apply the model predominantly to Kenya where adolescents aged 10-19 years constitute 24% of the population, 18% of girls between 15-19 years have begun childbearing or already have a child, and 13,000 teenage girls drop out of school every year due to pregnancy [14].

Table 2.1
Elements of the Public Arena Model

Element	Definition
Institutional/public arena	The environment where social problems compete for attention and grow or diminish.
Carrying capacity	The number of social problems that can be entertained within any particular arena. Each arena has finite resources and has both individual "selfish" and altruistic goals.
Dynamics of competition	Issues compete against each other and also within their own definitions.
Principles of selection	Institutional, political and cultural factors that influence the probability of survival of competing problem formulations. These include a) competition for prime space, b) dramatization of the issue, c) cultural pre-occupations and mythic themes in the society, d) prevailing political biases, e) carrying capacity of the different arenas and f) institutional rhythms, such as election cycles.
Communities of operatives	The networks of persons or organisations that promote and attempt to control particular problems.
Feedback mechanisms	The patterns of interactions among the communities of operatives as they crisscross through the different arenas.

Defining Adolescent Pregnancy Using the Public Arenas Model

The Public Arenas and Competing Definitions

The environment where social problems compete for attention and grow or diminish is known as the public arena [9]. Within Kenya, the main arenas where adolescent pregnancy is discussed and defined are the health sector, the executive and legislative branches of government, religious and cultural groups and non-governmental and civil society organizations. Because there are many different players, within each of these arenas adolescent pregnancy is constructed differently. For example, *the health arena* defines adolescent pregnancy from a biomedical perspective as a disease that requires prevention, treatment and monitoring. Within this arena, adolescent pregnancy is undesirable, unplanned or unwanted and is associated with major social problems, including persistent poverty, school failure, child abuse and neglect, health issues and mental health issues [15, 16] including higher risk of maternal mortality [17]. This perspective, therefore, emboldens the health arena's claim for programmes and research to prevent and manage adolescent pregnancy. Such programmes focus on increasing an individual's unfettered access to contraceptive information and expanded mix of contraceptive choices [18-26].

In contrast, *the political arena*, that is, the executive and legislative branches of government, defines adolescent pregnancy as a national social concern that requires resources to curb the drain of resources. A common narrative is that adolescent mothers are less likely to complete the education necessary to qualify for a well-paying job [12, 13], and, if all adolescent girls completed secondary school and were employed, instead of having a child, the cumulative effect could add 3.4 billion U.S. dollars to

Kenya's gross income every year [27]. Unfortunately, this definition avoids the upstream social structural factors, such as poverty, increased urbanization or non-enforcement of school re-entry programmes after pregnancy, and results in misplaced corrective actions that include restrictive laws that criminalize sex or conservative laws that that do not allow contraception for adolescents, for fears that contraception use leads to promiscuity [7, 28]. Kenya, for example, has recently proposed to cut the age of consensual sex from 18 to 16, but does not permit this age group to access information and use contraception or sexually transmitted infection prevention services [29].

The *religious and cultural arena* defines adolescent pregnancy as an antisocial tendency or a problem of weak morals or agency. However, this definition does not hold when motherhood happens. Some cultures such as the Turkana or the Maasai in Kenya will accept pregnancy as long as the girl is married [30], and other Kenyan cultures see adolescent pregnancy as a form of rational adaptation in which girls choose to become pregnant because they believe that a pregnancy will lead to marriage [31]. Within this context, some adolescent pregnancies are not problematic even if outlawed by the constitution. In fact, 23% of Kenyan girls are married before their 18th birthday, and 4% are married before the age of 15. Invariably, these cultures have higher adolescent pregnancy rates (~40%) when compared to the national average (18%) [14, 30].

Within the non-governmental and civil society organizations, adolescent pregnancy is defined as an unrealized basic human right, unequal prospects, excessive gender inequality and systematic disempowerment of adolescent girls. For a solution, there is a preoccupation with ensuring that adolescent girls have greater control over

their reproductive lives, are sufficiently mentored and that future pregnancies are avoided.

Carrying Capacity of Public Arenas

Each public arena has a different carrying capacity, that is, limited resources that restrict the number of social problems that it can handle over a period of time (see Table 2.2).

Table 2.2
Carrying Capacities and Resource Constraints of Different Arena and Operatives

Unit of Analysis	Resource Constraints
Public Arena	
Donor Agencies	Total budget, other programs being supported, time, local or global cost of action
Parliamentary Health Committees	Time, number of staff, budget, political cost of action
Civil Society Organizations/ Non-profits/ other Non-Governmental Organizations	Time, number of staff (paid and volunteer), budget, political cost of action
Operatives	
Politicians	Time (personal and within electoral cycle), number of staff, budget, political cost of action, media slots (paid and free)
Reporters	Time, budget, energy, political and social capital with editors
Academicians/Researchers	Time, free media slots, social and political capital, funding, capacity to communicate
Legal Organizations	Time, free media slots, social and political capital, funding, capacity to communicate
Members of the Public	Money, time, surplus compassion, social costs, other problems

This means that the different social problems must compete both to enter into and remain visible in an arena. The amount of carrying capacity that a particular arena has is socially constructed [32]. At any given point, arenas are juggling several issues within the public sphere. Each arena also struggles with resource management and how to maintain relevance. The theoretical notion of a carrying capacity does not allow for increased space or surplus compassion. It is a zero-sum game. When the visibility of one issue increases, that of another issue decreases. However, this is a not a static equilibrium, with both visible and less visible issues continuing to compete to maintain or regain their societally prioritised problem status.

Globally, there is no health system, poor or wealthy, privately or publicly financed, that can afford to provide all possible health services for the people it serves [33]. The health arena, therefore, has to balance a finite budget, a limited number of skilled health care workers, the availability of contraceptive commodities, and competency in the counselling for and provision of contraception. Moreover, there are many other diseases that also require public attention and resource allocation, such as HIV, the emergence of non-communicable diseases, and epidemic-prone diseases, such as Ebola virus infection [34].

Non-governmental and civil society organizations have constraints in the number of staff that they can allocate to focus on adolescent pregnancy, the levels of funding available that can be leveraged, the amount of time that can be allocated, as well as the pernicious issue of the political cost of their sustained action on this matter and how this bodes with their existence both at local and global level. For example while there are no federal funds supporting abortion in Africa, the recent “global gag rule” by the United

States placed a restriction on funding and how it can be spent and can lead to non-governmental organizations shutting down and further reducing access to contraceptives [35, 36]. Furthermore, the reduction in funding to the United Nations Population Fund by the U.S. government means that contraceptive commodity security will be further jeopardized.

Within the political arena, there is often a limited amount of time available during parliamentary sessions to debate issues, and the political costs and social capital of certain decisions may be perceived as carrying additional "political" costs. Moreover, the regular election cycles keep elected government officials in a perpetual state of preoccupation with staying in office and maintaining power, and, consequently, they have minimal surplus compassion for issues that do not have "celebrity status" in the community or for populations that are unlikely to swing the vote in their favour at the next election. For example, in 2017, the political campaign for the Kenyan presidency and the resultant political instability dominated the public arena; consequently, a concurrent doctors' and nurses' strike that paralysed the public health sector was completely marginalised over a 120-day period and barely mentioned in the mainstream media.

Principles of Selection and Dynamics of Competition

The principles of selecting an issue are the factors that influence the probability of its survival (see Table 2.1). There are two levels of competition. First, there is competition to define an issue as being "worthy" of societal attention. Secondly, issues (and their advocates) themselves compete against others in order to achieve prominence, attain valuable resources and be (and remain) on the agenda. For example,

a national mobile phone-based survey, identified the top problems people wanted to have discussed in Kenya in 2019 as: corruption, the high cost of living, unemployment, poor leadership, poverty, hunger, tribalism, poor infrastructure, terrorism and crime [37]. Despite the apparent magnitude, urgency and impact on the aforementioned list of problems, poor health and lack of access to quality health services (including SRH) have not been acknowledged nor deemed high enough to be on the discussion table.

The size of the carrying capacity within the arenas determines the amount of competition faced by advocates and different issues. Arenas with small carrying capacities, such as the political arena, have more intense competition. Each problem, therefore, needs to be able to be dramatic and demonstrate novelty in order to capture an audience. Novelty involves the use of symbols to dramatize problems. This is particularly important for problems that can be normalized such as adolescent pregnancy within the context of child marriage. In Kenya, one member of parliament offered parents of adolescent girls up to nine cows to prevent adolescent pregnancies by keeping them in school and delaying child marriage [38]. This kind of framing is novel because: 1) it acknowledges that there is a problem with adolescent pregnancy; 2) it includes ideas of causal, political and moral responsibility; and 3) it proposes an intervention to address the problem [9].

Cultural preoccupations and political biases can also de-dramatize the burden of adolescent pregnancies and normalize it. As described earlier, while adolescent pregnancy outside marriage is frowned upon, adolescent pregnancy in and of itself is accepted [39]. These cultural preoccupations, which are often enforced by religious beliefs, keep adolescent pregnancy at the margins of the public arena, falling into an

area of implied acceptance, rather than attempting more controversial solutions, such as access to contraceptive services, which become symbolic of sexual activity that is perceived to be condoned.

Lastly, political interests can affect the very emergence of adolescent pregnancy as a social problem. In many cases, adolescents (10-19 years) are considered to be dependents [40, 41]; and until they reach the age of 18, have little power and influence insofar as their ability to vote and participate in the political process and to contribute to the economy. In this regard, many adolescent issues in many SSA countries are in a state of “politically enforced neglect” with politicians and policymakers focusing on groups and problems that earn them the most political mileage, such as investing in infrastructure. An alternative definition is, therefore, required to increase the status of adolescent girls. In the 2015 visit to Kenya, President Barack Obama equated a disinvestment in adolescent girls and young women to a football team playing with only half their players [42]. Given that football is well loved in Africa, it was a relatable imagery that helped start a discussion on inclusivity.

Communities of Operatives and Feedback Mechanisms

The community of operatives refers to the groups and individuals from different sectors of society that publicly present potential problems and whose channels of communications crisscross different arenas. These operatives come from different arenas and invariably have different goals and varying degrees of perceived power. Table 2.2 lists the different communities and the resources they need. Operatives are usually very familiar with the principles of selection and are able to frame their issue in politically correct rhetoric. For example, the framing of the Ebola crisis in West Africa as

a security issue, rather than an isolated health issue, created more traction and an injection of funds. Interactions and feedback within the community of operatives help frame and reframe social issues and can determine how long an issue remains in the public arena. Single definitions may not get much traction. For example, defining adolescent pregnancy only as an individual moral issue may explain why adolescent pregnancy remains on the periphery, since then the solution is one of individual agency on which the state perceives that they can have little influence. On the other hand, defining problems multidimensionally necessitates responses on many diverse fronts, ideally simultaneously, to leverage catalytic action. For example, increasing access to high-quality healthcare, improving educational opportunities for girls, and implementing changes in laws regarding eligibility of teenagers to receive low or no cost, confidential healthcare can be overwhelming for any government to tackle, especially those with resource constraints and given the stigma and controversy associated with adolescent sexuality.

Discussion

It is unlikely that a single arena or a non-collaborative community of operatives can increase the public concern and policy importance of adolescent pregnancy. Communities of operatives that span different spheres from the grassroots to the national level and have different relationships with policymakers will bring different definitions and conceptions, as well as alternative solutions, to the issue of adolescent pregnancy in the policy arena. This constellation of influence and knowledge provides a better understanding of the structure and dynamics of the public and policymakers,

which is necessary for defining adolescent pregnancy in a manner that leads to its prioritization.

It is critical that communities of operatives (stakeholders) are familiar with the selection principles of public arenas and deliberately adapt their social problem claims to fit their target audience. Stakeholders should employ novel symbols to frame the importance of prioritizing adolescent pregnancy. For example, framing adolescent pregnancy as a deterrent to national development can tap into the issue of achieving the demographic dividend, which is a key focus of the African Union [43]. A definition of adolescent pregnancy that cuts across different arenas and leverages already existing dominant and concurrent social problems will likely have more traction. For example, there has been a recent focus (both technical and funding related) on adolescents who are at risk of or have HIV [44]. Given that HIV and pregnancy are both acquired through sexual intercourse, it is possible that adolescent pregnancy may gain traction by combining forces with the issue of HIV among adolescents and presenting a comprehensive construct of adolescent SRH [45]. Lastly, operatives can combine adolescent pregnancy with access to contraceptives and frame the issue as a foundational element not just for reproductive health, but also for social and economic equality [7, 43, 46]. Thus, universal access to contraceptives (including to adolescents) can build momentum toward a demographic transition, which in turn can accelerate economic gains that benefits the society at large [27].

Conclusion

Priority setting for health interventions is one of the most challenging and complex issues faced by health policy decision-makers all over world [47, 48]. How adolescent pregnancy is defined has a powerful influence on public officials and helps shape policy design and the selection of acceptable interventions. Moreover, it is imperative that particularities of each public arena and the actors involved in each of the arenas be analysed and leveraged. The Public Arenas Model provides a lens through which to examine how adolescent pregnancy is both defined and potentially can be redefined. The model however, is limited in that it does not provide insight into whether a well-designed adolescent SRH policy will be well implemented enough to halt and reverse the current adverse trends in adolescent pregnancy in SSA. Nevertheless, we believe that the public arenas model approach provides a systematic and integrated way for different adolescent's stakeholders to think through and develop shared understandings of the problem. This systematic and shared understanding can help initiate, organise, potentially redefine and sustain adolescent pregnancy as a problem that requires political priority and resource allocation.

Acknowledgements

The authors acknowledge Professor Ruth Malone (UCSF School of Nursing), and the Director General of KEMRI.

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Chapter 3

Challenges to Adolescent Sexual and Reproductive Health in Kenya

Challenges to Generating Political Prioritization for Adolescent Sexual and Reproductive Health in Kenya: A Qualitative Study

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Abstract

Background

Despite the high burden of adverse adolescent sexual and reproductive health (SRH) outcomes, it has remained a low political priority in Kenya. We examined factors that have shaped the lack of current political prioritization of adolescent SRH service provision.

Methods

We used the Shiffman and Smith policy framework consisting of four categories-actor power, ideas, political contexts, and issue characteristics-to analyze factors that have shaped political prioritization of adolescent SRH. We undertook semi-structured interviews with members of adolescent SRH networks at the national level and conducted thematic analysis of the interviews.

Findings

Several factors hinder the attainment of political priority for adolescent SRH in Kenya. On actor power, the adolescent SRH community was diverse and united in adoption of international norms and policies, but lacked policy champions to provide strong leadership, and policy windows were often missed. Regarding ideas, community members lacked consensus on a cohesive public positioning of the problem. On issue characteristics, the perception of adolescents as lacking political power made politicians reluctant to act on the existing data on the severity of adolescent SRH. There was also a lack of consensus on the nature of interventions to be implemented. Pertaining to political contexts, sectorial funding by donors and government treasury brought about tension within the different government ministries resulting in siloed approaches, lack of coordination and overall inefficiency. However, the SRH community has several strengths that augur well for future political support. These include the diverse multi-sectoral background of its members, commitment to improving adolescent SRH, and the potential to link with other health priorities such as maternal health and HIV/AIDS.

Conclusion

In order to increase political attention to adolescent SRH in Kenya, there is an urgent need for policy actors to: 1) create a more cohesive community of advocates across sectors, 2) develop a clearer public positioning of adolescent SRH, 3) agree on a set of precise approaches that will resonate with the political system, and 4) identify and nurture policy entrepreneurs to facilitate the coupling of adolescent SRH with potential solutions when windows of opportunity arise.

Introduction

There is an increased focus on adolescent sexual reproductive health (SRH) in the global health agenda [1, 2]. Several global calls including the Every Woman Every Child Global Strategy for Women's, Children's, and Adolescents' Health (2016-2030) [3] and the 2030 Agenda for Sustainable Development [4] emphasized the need to focus on adolescents. Many African states recognize the pivotal role of addressing adolescent SRH not just in achieving the Sustainable Development Goals (SDGs) in 2030, but also in reaping the demographic dividend [5]. Unfortunately, these global and regional norms and instruments are often overlooked and there is often inadequate policy orientation and political prioritization to meet adolescent SRH at the individual country level in sub-Saharan Africa. Political priority is present when: 1) national political leaders publicly and privately express continued concern for an issue, 2) the government legislates policies that offer widely accepted strategies to address the problem, and 3) the government apportions and releases public budgets proportionate with the problem's severity [6].

Priority setting for health interventions is one of the most challenging and complex issues faced by health policy decision-makers all over the world [7, 8]. Priority setting is defined as the process by which decisions are made on how health care resources should be allocated among competing programs or individuals [9]. A recent systematic review [10] found that regardless of the context, priority setting is often value-laden and political [11-14] and requires credible evidence, strong and legitimate institutions, and fair processes [15-17]. In many instances, particularly in developing countries, the priority setting process is often "messy," "ad hoc," and happens by

chance [18]. In resource-limited settings such as sub-Saharan Africa, priority setting on domestic issues is often further complicated by: 1) financial constraints that create an increasing gap between available resources and demand for health services; 2) lack of sufficient and dependable data and information systems to substantiate investments in health care compared to alternative investments such as infrastructure; 3) multiple international players who provide financial and technical assistance but also have their priorities; and 4) implementation obstacles, such as political instability, conflicting political priorities, social inequalities, and inadequately developed government institutions and civil societies [7, 19, 20].

While the importance of priority setting in public health is not in question, there is a dearth of qualitative inquiry on how it is operationalized within the context of adolescent SRH and in sub-Saharan Africa. This paper qualitatively examines which factors have facilitated or hindered political prioritization of adolescent SRH in Kenya. The conceptual model that guides this policy analysis is drawn primarily from the Shiffman and Smith framework [6], which consists of four categories: the power of actors involved, the ideas they use to portray the issue, the nature of the political contexts in which they operate, and the characteristics of the issue itself [6].

Materials and Methods

Description of Study Design

We employed an interpretive focused ethnographic approach [21-23]. Ethnography seeks to develop an in-depth understanding of how people or societies make sense of their lived experience within their sociocultural environments [24]. Ethnographic methodology was well suited to this study because it allows for

exploration and understanding of both the process and outcome of adolescent SRH policy making through complete observation, reconstruction, and analysis in a real-world context. Our reporting is in line with the consolidated criteria for reporting qualitative research (COREQ) guidelines [25].

Study Setting

The study took place in Kenya. Kenya has shown leadership in the area of adolescent SRH by adopting favorable international and regional policies and legal frameworks that promote adolescent SRH. These include the Maputo protocol, the 2010 Constitution of Kenya, National Youth Policy (2007), and the National Adolescent Sexual and Reproductive Health Policy (2015). However, adolescents in this country continue to be burdened by negative SRH outcomes. At the national level, 103 out of every 1000 births are to 15-to-19-year-old girls, which represents 37% of the national total fertility rate[26]. Data from the National AIDS Control Council show that adolescents between the ages of 15-24 years have 46% of all new infections in Kenya and represent about 17.7% of persons living with HIV and 11% of all HIV-related deaths in Kenya.

Theoretical Underpinning: Shiffman and Smith Framework

Although the Shiffman and Smith framework was originally focused on priority setting at the global health level, it has grown to be applicable in explaining the political prioritization processes in numerous national and subnational settings. In particular, this model has been used in mapping priority setting processes for health in low-resource setting countries across Asia, Latin America, and sub-Saharan Africa, which demonstrates its transferability to the study of health policy in resource-constrained

settings such as Kenya [27, 28]. Table 3.1 outlines in details the main components of the framework as outlined by Shiffman and Smith [6].

Table 3.1
Shiffman and Smith Framework

	Description	Factors Shaping Political Priority
Actor Power	The strength of the individuals and organizations concerned with the issue	1. Policy community cohesion 2. Leadership 3. Guiding institutions 4. Civil society mobilization
Ideas	The ways in which those involved with the issue understand and portray it	1. Internal frame 2. External frame
Political Contexts	The environments in which actors operate	1. Policy windows 2. Global governance structure
Issue Characteristics	Features of the problem	1. Credible indicators: 2. Severity (the size of the burden relative to other problems) 3. Effective interventions

Recruitment

We used purposive sampling to identify participants. Eligibility criteria included state and non-state policy actors in Kenya who are involved in the adolescent SRH policymaking process. A list of potential participants was developed and prioritized according to the various relevancies: job position that was previously or currently held, expected expertise and knowledge that they possess regarding SRH, and by names that were repeatedly identified as being critical people to interview. We excluded officials from the sub-national governments since within Kenya's devolved health system; policymaking is a national function. The lead researcher and a representative from the Ministry of Health's Division of Reproductive and Maternal Health identified potential participants. Participants were then contacted via telephone, given a brief

overview of the study, and asked if they were willing to participate. Subsequently, interviewees were also asked to suggest other potential participants who had contributed or influenced the adolescent SRH making processes.

Our ethnographic methodology precluded *a priori* sample size estimation; however, for planning, we estimated that we would need to conduct in-depth interviews with approximately 15-20 individuals before reaching a data saturation point. Emphasis was placed on ensuring that there were equal numbers across a range of state and non-state actors. Recruitment continued until saturation was reached.

Data Collection

The ethnographic approach allows for utilization of a wide range of data collection and analytical methods [29]. In adopting this approach, we undertook the following activities: 1) reflective field notes, 2) primary qualitative data using semi-structured interviews, and 3) memoranda to keep track of any emerging theoretical insights throughout the data collection process. Interviews were conducted in English, lasted approximately 90 minutes, and were digitally recorded and transcribed. The in-depth interview guide used in the study included questions on 1) the current priority for adolescent SRH in the health agenda of Kenya, 2) how adolescent SRH fit in with the key health priorities for Kenya, 3) who is responsible for setting major national health policy and who holds significant influence over these decisions, 4) what sources within Kenya, if any, provided pressure on policy makers to increase resource allocation for adolescent SRH, and 5) how adolescent SRH should be framed to political leaders in order to generate political support.

Data Management and Analysis

All interviews were conducted in a private location at the participant's discretion by a trained and experienced qualitative researcher. Interview transcripts were transcribed by a professional transcriber prior to analysis. The interview transcripts were read and reread carefully to identify emerging codes and categories. In keeping with an ethnographic approach; data collection and analysis occurred concurrently and in an iterative manner. The data were analyzed using a theory-informed thematic analytical approach [30] using Dedoose qualitative software. Transcripts were coded paragraph by paragraph by two researchers. Consistency of coding between the two researchers was established by initially coding the same transcripts and through frequent discussion between coders until consistency was fully established. Emerging codes were clustered into themes guided by both the core concepts emerging out of the data [31] as well as literature, background reading, researchers' experience and values, and field notes from the reflective practice and memoranda. We employed a constant comparative approach and explored the relationships between the discussion of sensitive data and contextual situation [32]. An effort was made to ensure that the emergent codes and themes remained close to both the data and relevant literature. Finally, throughout data collection and analysis, we practiced reflexivity by continually examining our own biases, preferences, and theoretical perspectives and how those factors played a role in our understanding and interpretation of the processes and data we were analyzing [24].

Ethical Considerations and Protection of Human Subjects

The research was reviewed and approved by the Scientific and Ethics Review Unit (SERU Study 3738) at the Kenya Medical Research Institute (KEMRI) and the

Committee for Human Research of the University of California, San Francisco (UCSF). All participants provided written informed consent prior to the interview being conducted. The digital audio recording of the in-depth interviews was not initiated until after the informed consent process was complete, the participant had agreed to the recording, and any initial introductions that might include identifying information had been completed. Participants were not reimbursed for participating in the study.

Results

A total of 14 participants participated in this study (see Table 3.2 for institutional characteristics). The interviews took place between February 2019 and April 2019. The themes were clustered around the Shiffman and Smith framework domains. Below we highlight through rich narratives, the barriers and facilitators of generating political priority for adolescent SRH. Quotes were selected because they were typical across many persons interviewed.

Table 3.2
Institutional Affiliations of Subjects

No.	Name	ID	Type of Actor
1.	Ministry of Health: Family planning program officer	Female	Government
2.	Ministry of Health: Family planning program manager	Male	Government
3.	United Nations Population Fund	Male	International Development NGO
4.	Population Council	Male	International NGO
5.	Sexual Reproductive Health and Rights Alliance	Male	Civil Society Organization
6.	Kenya Medical Training College, Nairobi	Female	Government
7.	PATH international	Female	International NGO
8.	Inter Religious Council of Kenya	Male	Civil Society Organization
9.	Ministry of Youth	Female	Government
10.	National Council for Population and Development	Male	Government-State Corporation
11.	National AIDS and STI Control Program	Female	Government (Ministry of Health)
12.	JHPIEGO	Female	International NGO
13.	Youth Counselor	Female	Youth representative
14.	National Organization of Peer Educators	Male	Civil Society Organization

Actor Power

Actors influence the policy making process through their knowledge, experiences, beliefs and power [33]. Within Kenya, there is an extensive multi-sectoral network of actors ranging from local and national levels of government, non-governmental and civil society groups, as well as journalists, researchers and policy analysts. These actors are organized into several technical working groups and often chaired by Ministry of Health program managers. Within these technical working groups, the actors leverage their knowledge, experiences, beliefs, and power to adapt the international and regional norms and guidelines regarding adolescent SRH to Kenya. (ID1, ID2, ID3, ID4, ID6, ID7, ID10, and ID12)

> There is a working group of family planning, another technical working group for adolescent sexual and reproductive health, another national working group for prevention of mother to child transmission [of HIV], a national working group for nutrition, a national working group for gender…These national working groups are comprised of up to 20-30-member stakeholders from different organizations. Some of the members are donors-USAID and the like, which is very strategic. Others are government line ministries that have an interest in that area and then civil society itself. All of us work. That is one of the places where we are able to influence policy. They [ministry of health] bring actors in that sector to bring their joint wisdom to the table and agree on what are the key priorities and what is it that we need to do for Kenya. (ID7)

However, as is often ubiquitous in the policy-making space, differential power existed. There was a perception that the domestication of international norms and guidelines for adolescent SRH was a donor-driven issue and did not reflect the actual priority of adolescent SRH. From the perspective of power theories, resources are an obvious source of dispositional power that the actors' use during their interactions with government to influence what issue deserves funding and political attention [33, 34]. (ID10, ID2, ID3, ID11, ID8)

> The agenda is donor driven in that it is the donor who says that I have money for this component, so they will fund the component [that] their governments are supporting. If the government of America thinks that sexual reproductive health for young people is a priority, then they will come and say we have a basket here to support this. So it is not a need that is identified by the Kenyan youth, but it is a need that is identified by the donor. (Faith-based organization; ID8)

The ability of domestic actors to influence political commitment mainly hinges on the degree of cohesion within the policy community [17, 18]. Respondents noted that despite agreement on adolescent SRH being a priority topic within the different technical working groups, different partners dictated what specific aspects of adolescent SRH were fundable. This tension resulted in fragmented, often conflicting, multi-sectoral approaches that paralyzed the execution of the very policies they championed. (ID5, ID12, ID4, ID10*)*

> You know different donors and partners have different priorities, so you will get a donor who wants to support some programs, but they will support specific programs, for example, be it on women empowerment; some partners want to support areas of adolescent health, and they will tell you they want to support in this particular area, but if you go to other areas they will not support it. For example, the U.S. is always very specific on the areas they want to support and if you don't go their way, then you lose the funding; so particular partners will support particular areas of health program priorities. (ID10)

Globally, policy communities have been more effective where they have had policy champions or entrepreneurs to push for their agenda [17]. However, given the lack of cohesion within the adolescent networks and the contentious nature of the adolescent SRH, none of the respondents identified a policy champion of adolescent SRH.

Ideas: Framing the Problem

Frames are ideational lenses through which policy communities define problems and their potential solutions. A good frame is one that: 1) portrays the severity of the problem, 2) presents the problem as one which can be solved if attention is given, 3) demonstrates the adversity of non-intervention, and 4) is concerned with equality and

the realization of human rights. Fundamentally, adolescent SRH policy community members in Kenya hold conflicting views concerning what age range comprises being an adolescent. Recent literature has highlighted this problem as well [35]. The United Nations has defined an adolescent as being between 10-19 years old. Invariably, the 10-year-old is still viewed as a child, while the 19-year-old as a young adult [35]. In addition, adolescents are a heterogeneous group whose needs differ by age, whether they are in school, living with parents, are married or have children of their own. Respondents highlighted that this issue had hamstrung the effectiveness of the policy community. (ID2, ID5, ID11, ID3, ID6)

> Sometimes we have the challenges when it comes to the definition of who is a young person, who is an adolescent? That definition is bringing a lot of problems in this country where even among the stakeholders and policymakers, it is not easy for them to agree on the classification of who is an adolescent? Who is a young person? (ID5)

Inherent in defining the adolescent as a child is that they should not be engaging in sex [36, 37]. While many acknowledged the magnitude of teenage pregnancy, early marriage, female genital mutilation, and HIV, some members felt that the issue regarding pregnancy was one of individual self-agency and not an issue that required political attention (ID1, ID2, ID3, ID5, ID6, ID8, IDI0*,* ID11)

> It is a tricky question. I think the first thing is that these are adolescents; people don't believe that…like let us now say teenage pregnancy, as an adolescent, why in the first, should you be getting pregnant? People would be thinking that you have now started investing more in life [sex] then the adolescents will think it is normal. That is why you are finding various groups do not want the issue of comprehensive sexual education in the school because it is like we are encouraging it; it is like a normal thing. So, I think that both culturally and religiously, there is that feeling that if you invest more then, they will now know that it is their right. (IDI0)

Respondents bemoaned the fact that political leaders primarily focused and financed other health issues, such as HIV, malaria, and maternal and child mortality, which have

political and emotional appeal that adolescent pregnancy does not have yet. (ID1, ID3, ID4, ID5, ID6, ID8, ID11)

> Those areas [infectious diseases] are well resourced because of the challenge of how infectious diseases affect everyone in the community. When it comes to SRH, they will only affect that small cohort, although now, because of the realization that HIV is common and highly prevalent within this group, they are trying to do something about it. But because of the perception of it as being 'your own problem,' it is not seen as the problem of the whole society, you are left with your teenage pregnancy. But when it comes to infection, then everybody cares about it. (ID4)

The challenge in arriving at an acceptable framing can be attributed to the multi-sectoral nature of adolescence. The adolescent in general, cuts across national, community, household, and individual boundaries. While this produces a large network of collaborators, on the downside, it generates difficulties in consensus and definitions of problems and an external position that can generate political support. Members of the adolescent SRH community expressed challenges in framing the issue in a way that did not alienate one or more stakeholder groups. (ID1, ID3, ID4, ID5, ID7, ID8, ID9)

> When you frame it [adolescent SRH] in the context of population, politicians are not interested. They want numbers; they want people to have many children, which is completely contrary. The current formula for funding for counties is population-based. So it has actually worked against us. So, we are learning that may be the way to frame it — is to talk about healthy timing and spacing of pregnancy. You want to frame it in a manner that doesn't create the impression of you controlling numbers. You want to talk about unintended pregnancy so that the church doesn't have a problem with you. It is not just the politicians; the faith-based groups also have a problem with the way you frame it. So you want to frame it in non-threatening language, but you still get the message across. You want to talk about waiting to get pregnant, in Turkana, that is what they say; the groups that work there. They say that they do not talk about family planning because young people are not planning families; they definitely do not want to have children at that age, and they just want to live their lives and have fun and do all the things that young people do. Having a family is not one of the things they are planning. So the word family planning in relation to young people is a misnomer. So you can talk of contraception, you can talk of healthy timing and spacing of pregnancy, or you can talk of waiting to get pregnant. (ID 7)

The inability to advance a cohesive public positioning of a problem often translates into disagreements over which priority interventions are acceptable [6, 38]. Generally, in order to achieve political support for any policy, there must be a coupling of a well-defined problem with a proposal of a solution that is perceived as technically feasible, compatible with policymaker's values, reasonable in cost, and appealing to the public [38, 39]. (ID1, ID3, ID4, ID7, ID9, ID12)

> Generally, the community recognizes the burden, or the challenge caused by some of the issues in terms of adolescent sexual reproductive health. However, some of the interventions are not generally accepted at the community level. They recognize the challenge, but when you try to introduce this, then they say, 'We are against this.' There is an outcry about teenage pregnancy, for example. The community will say that teenage pregnancy is high, but they will not generally accept access to information and services (comprehensive sexual education in the school) to favour the young people. (ID3)

Issue Characteristics

Several issue characteristics add complexity to the political prioritization of adolescent SRH. First, is social construction: how political stakeholders view a target population in terms of its ability to exercise political will through voting and generating wealth to support these efforts. Schneider and Ingram, posit that the design, selection, and implementation of a public policy aimed at addressing a social issue can be linked to the social construction of the target population of that policy [40]. In Kenya, the age one can get an identity card, get a job and also vote is 18 years. Adolescents, who are below the age of 18 are seen as dependents and not wielding any political power that can benefit politicians and public officers and as such their issues are marginalized and are often not heard or represented in agenda setting fora. (ID3, ID5, ID6)

> The youth may not command a strong hearing politically up there. High offices are mainly the old people. The youth may not have a say because they do not have the capacity to demand for their rights. They are busy building a career. They are still in school so that time to really lobby to advocate for their rights is not there and the person with the power to make decisions are the older people. (ID6)

Indicators and data play an essential role in determining priorities [6]. Until recently, sex and age disaggregated program data were often not available in national and sub-national information systems for the adolescent cohort [41]. One respondent noted that the challenge with getting adolescent-specific data was because adolescent SRH outcomes could fit into many different and sometimes concurrent categories.

> Adolescents are crosscutting. You find adolescents who are living with HIV, you find adolescents who are pregnant, and you find adolescents who are married. You find them across different categories… it is crosscutting. (ID7)

Respondents noted that data were available at both national and subnational levels. Predominant adolescent SRH indicators of interest included: 1) HIV incidence and prevalence, 2) maternal mortality, 3) condom use, and 4) education attainment. However, there were three main issues: 1) data were of questionable quality, 2) there was a lack of capacity or willingness to use data for decision making, and lastly, 3) the incidence and prevalence of various adolescent SRH outcomes were not perceived to be severe enough. (ID3, ID4, ID6, ID7, ID8, ID12, ID14)

> I think the data is available, but the extent to which we actually analyse the data and use it for decision making; I don't think we have mastered that skill yet as a country because data is entered within computer systems; it might not be accurate as well because we have a limited capacity in the people who handle that data and a lot more needs to be done to increase supportive supervision. But, even when we have that data, we don't use it to decide on the priority needs for the areas. (ID12)

With regards to interventions, nearly all respondents mentioned that youth-friendly services were the solution, and, indeed, a national guideline on how to provide youth-

friendly services was in development. The Ministry of Youth noted that it had set up youth-friendly centers. However, respondents noted that youth were not involved in the design, that no local evidence had been considered, that the intervention had not been optimized for adolescents, and that programs needed to be designed with users in mind. (ID1, ID4, ID6, ID13, ID14)

> If I were a pregnant teenager, I would probably queue in the antenatal clinic with other mothers. I wouldn't go to the youth-friendly centre where they will see I am a mother and so forth. So how do we take care of this service model for various cohorts or various needs? I think that is where the challenge lies. And the reason is failure to optimize the services for young people, is actually because resources are not there. People have not been able to invest much more in that. Two, we have jumped into the bandwagon of the youth-friendly services and run with it without understanding other ways we can improve on it and make it work better.... I guess what I am trying to suggest is that there are ways we can improve the service delivery, but it is not cut and paste. (ID4)

> When you interview the young people, they say that they want their own youth-friendly services. Currently, the youth-friendly services are only at 10%. That is what they prefer, but again, when you do further research, some of them want the services integrated. (ID1)

Political Contexts

The political environment in which the adolescent SRH advocates operate was not conducive to sustained prioritization of adolescent SRH. The 5-year electoral cycle meant that the political environment was continually changing and adolescent SRH kept falling in and out of favor depending on the incumbent's political party. Most politicians were guided by their own cultural or religious beliefs and the desire to remain in power and thus avoided the controversies clouding adolescent SRH. (ID5, ID6, ID7, ID8, ID9)

> Another problem that we have as a country is whereby I'm Governor Rose; I would say this is the direction we are taking as a country; this is our CIDP [County Integrated Development Plan], and we've agreed this is the direction we are taking. Governor Florence comes in and feels like those projections you've made and all that are Rose's and now we are going to use mine, so there is no continuity, there is no buying of what had been initially planned as much as the

> community had adopted it, and maybe, there was even community participation, but now you have to fresh community participation forums. (ID9)

Partly as a result of this 5-yearly electoral cycle there were very few policy windows that opened in which policy prioritization for adolescent SRH could occur. A recent surge in pregnant teenagers sitting for their primary school examinations was a potential policy window but, in the absence of policy champions and data, the opportunity was missed. (ID2, ID4, ID9, ID11, ID12)

> For instance, it was just the other day, we were talking about pregnancies; alarmed that so many girls are giving birth during the [National] exams and all that…In November/December last year, everyone was talking about adolescent pregnancies, and we would even ask who made the girls pregnant; some would say the boda-boda [motorcycle taxi drivers] people are responsible, some would say they are the older men, some would say they are the teachers and term it as transactional sex. But from there, what happened? Nothing. We are waiting for another November/December, which is just less than six months away, to start again crying…That girl who gave birth at that time again she will be either pregnant or is already pregnant. She will get pregnant this April. (ID9*)*

Despite numerous guidelines and published road maps, there was no political commitment or reliable mechanism to earmark funds for adolescent SRH and to account for it. (ID3, ID5, ID6, ID7, ID10)

> Resource allocation is hard. From the programs, we will collect data through the DHIS [District Health Information System] even through the facilities. Then, it goes to the headquarters' Ministry of Health but for it to be funded through the treasury. The money [from treasury] will not come [be allocated] because malaria was high in Kilifi or Homa Bay; that now you will get more funding because of that, no. They do not use data so that they can give finances. They just allocate, general allocation for the roads, for the schools, for the health sector, for agriculture; it is all lumped together. (ID1)

Moreover, even though adolescent SRH had been incorporated into nearly all line ministries including labour, agriculture and education, some ministries lacked the know-how of how to implement or enforce some of the recommendations unless they were

clearly aligned with the primary scope of the particular minister's office. (ID1, ID3, ID4, ID7, ID9, ID12)

> I am in the youth sector. Were it not for my own interest in matters of health, I would not know so much. For example, the Ministry of Education, Ministry of Agriculture both have ways on how they can integrate [adolescent SRH] into their programs that are targeting youth. Then, let us look at the gender sector-they have people, but what is their level of understanding? …How do they [Ministry of Health] build the capacity of other sectors to understand, especially those who have a direct link or correlation with adolescent SRH and build their capacity to better understand matters of adolescent SRH and so they work together? You can go to the agriculture ministry and start telling them to integrate adolescent SRH only for them to ask you what it means. How do you mix sex issues with agriculture? There are some people who are not interested in all that-they only know of animal husbandry or plant husbandry, if there is anything like that. The other things, they have no interest about, and yet you have to integrate them and indirectly these are human resources, aren't they? (ID12)

Ultimately, the lack of cohesion among the network of adolescent stakeholders, their differential powers coupled with the absence of a clear public framing of the problem, lack of nuanced and credible adolescent metrics and the lack of policy (individual and institutional) champions, manifested in having multiple editions and revisions of guidelines and policies on paper, but for which there was no tangible implementation. (ID2, IDI7, ID11, ID12*)*

> Kenya is one country that has guidelines and policies for everything: adolescent health, family planning, HIV/AIDS, prevention of mother to child transmission. It is not the lack of documentation, meaning that we have sat and thought about it more than once. In many cases, when you look at the documents in the ministry of health libraries, you will find that it is onto the third version of the document. We are onto our second adolescent sexual and reproductive health guidelines and the second version of adolescent sexual and reproductive health policy. So, it means that people have thought about it. Even when you look at vision 2030, when you look at the government pillars, health is one of them… So, I do not think it is the lack of people talking, thinking, planning, and documenting. (IDI7)

Discussion

An analysis of actor power, ideas and framing, issue characteristics, and political contexts reveals that the level of political priority for adolescent SRH in Kenya remains low. The adolescent SRH actors use two main approaches to influence the national political systems: promotion of norms and inducements using financial and technical assistance [6, 42]. This collective action has resulted in the integration of adolescent SRH into national policy documents and guidelines across different sectors, such as education, youth, health, and agriculture. However, the presence of normative guidance in the form of national policy documents and guidelines has not always promoted political priority nor deliberate action that advances a shared agenda [43]. Within the life cycle model of how norms advance through a system to become an established priority, it is possible for some norms to be internalized and taken for granted to the extent that they are no longer discussed as an issue [44]. This appears to be the case in Kenya, in which adolescent SRH guidelines are into their second and third editions, with no notable prioritization or advancement of the proposed agenda reflected in previous editions of the guidelines.

Specific to actor power, there were many different actors from diverse sectors involved in deliberations regarding what is necessary in the field. In general, diverse, heterogeneous networks, such as those seen in the fields of tuberculosis and tobacco, are beneficial in enhancing the collective understanding of a problem, its solutions and its prioritization [45, 46]. However, this diversity can also hamper cohesion and agreement on what are the main priorities [47]. In this study, beyond the collective acknowledgment that adolescent SRH was a problem, there was no coherence in what

was to be funded, supported with technical resources, or prioritized. Dominant actors supported only programs and projects that fit their agendas and vision, rather than considering the actual needs of the country. Unchecked, this imbalance in decision-making power, often leads to a vicious cycle of duplication, competition, and siloing of services, which weakens the health infrastructure [48]. This, in turn, undermines the prioritization of adolescent SRH by the public and by politicians.

There were important divisions within the policy community in framing adolescent SRH as a problem. Generating consensus on the internal and external framing of a problem and its solutions is critical in generating political support and governance [49]. Internal framing has to do with how the community of adolescent SRH policy actors defines the problem, while external framing refers to how this network portrays the problem to an external audience [6]. Existing framings centre on adolescent SRH as a health issue that needs prevention and treatment, a private issue that requires individual agency, or an economic concern that drains public resources. One challenge in arriving at a cohesive framing is whether adolescents are children or young adults. Crafting a policy requires nuance that takes into account these potential differences given that what a stakeholder might advocate for a 10year old is not necessarily the same as for a 19-year-old. At the political level, politicians, who are often risk-averse, may be hesitant to engage with controversial issues when there are other problems with safer and popular solutions. In Kenya, this controversy has resulted in adolescent issues being integrated in maternal and child health issue. Unfortunately, this integration makes it easy for actors to “pass the buck” to other external actors and assume that they will handle the problem [50]. Throughout the 1990’s, this similar lack of clarity in framing

and back-passing contributed to the neglect of newborn survival as a priority issue as it was traditionally sandwiched into maternal and child health agendas. Ultimately newborn survival was able to gain priority when stakeholders agreed to disentangle the newborn from the child and the mother as a distinct group and when stakeholders with interests beyond the health field started to engage with the issue [51].

To realize the SRH wellbeing of adolescents and to protect their human rights, countries need to adopt holistic interventions that address adolescents' fully lived realities, rather than one-dimensional approaches or a trickle down interventions that appear to be reactive rather than proactive, such as providing free maternal health care after girls are already pregnant. In the interviews, several actors mentioned that it was anticipated that the benefits of improving, for example, skilled attendance at birth and contraceptive access would trickle down to improve the delivery outcomes among adolescents, instead of primary prevention of the pregnancy in the first place. Adolescent SRH can learn from the maternal health networks, which emerged from near issue neglect in the years before 2000 to a heightened transformative political priority and resource commitments in the early 2000s with the advent of the millennium development goals (MDGs). Policy scholars posit that maternal health, unlike other aspects of women's health, was able to gain political priority in part because after many years of disagreement they finally agreed on a singular objective with a defined set of feasible solutions (i.e., to reduce maternal mortality by three quarters from 1990 levels by 2015) and a set of solutions that included access to emergency obstetric care and skilled attendance at birth [52]. Adolescent SRH on the other hand was only partially operationalized in the MDG by the indicator "adolescent birth rate" which tells an

incomplete story [52]. Going forward, we posit that embedding adolescent specific SRH metrics into popular international norms such as the sustainable development goals (SDGs) can trigger action and innovation towards improving adolescent SRH in Kenya. We suggest use of metrics that politicians can understand, metrics that not only measure health outcomes but also economic costs, such as cost of mortality averted or morbidity or the losses made, and how cost-effective the interventions can be.

The nature of the affected target group, coupled with the lack of credible indicators, data on its severity, and effective interventions, can significantly hamper the prioritization of an issue. To start with, a major deterrent to political attention to adolescent SRH is related to the social construction of the population. Political prioritization is more likely to emerge when the population affected wields political power (ability to vote), generates sympathy, such as children, or can mobilize itself, such as persons living with HIV and AIDS. Political prioritization may also be more likely if the problem causes high morbidity and mortality or social disruption, such as maternal health. Unfortunately for adolescent SRH, until recently in many African countries there was a paucity of data and specific indicators on the sexual and reproductive behaviors of adolescents, the health and economic consequences of those behaviors, service and information needs, and effective interventions. Neonatal mortality is a good example of an issue which was neglected up to early 2000s, in part because existing vital registration systems in developing countries under-reported neonatal deaths, and it was perceived that expensive high-class interventions were necessary to ameliorate the situation. It was only when the World Health Organization released the first global estimates indicating that more than 5 million neonates had died in 1995 that priority for

neonatal mortality begun to emerge [51]. Presently, there is a considerable movement to disaggregate data for adolescents by age, sex, national and sub-national levels. Kenyan actors boasted of collecting a broad range of data. This data could be critical for incentivizing actors from different sectors to form stronger collaborations and better quantification of the scope and severity of adolescent SRH. However, for political attention to be gained, there must be a coupling of the adolescent SRH problem with well-defined, feasible, cost-effective, and acceptable solutions. In re-positioning neonatal mortality, actors had to frame it as a high-burden problem with low-technology community solutions [51]. As one respondent mentioned, within a multi-cultural and heavily religious context in countries such as Kenya, a simple cut and paste of interventions from other regions will not have traction with the political class that is trying to please the electorate and stay in power.

Even though policy makers may recognize the existence, severity, and repercussions of poor adolescent SRH outcomes, many policy makers are often distracted by a myriad of issues and have limited resources to deal with them alongside other conflicting political priorities. In 2015, the United Nations Population Fund (UNFPA) estimated that nearly 20% of the SRH budget in Africa was donor funded [53]. While donor funding has indeed catalyzed the recognition of adolescent SRH as a problem, the fact that it is predominantly from international organizations delegitimizes the importance of prioritizing it in Kenya [47]. Additionally, some of the external funding is sectoral in nature and hampers collaboration. The government of Kenya has integrated youth into nearly all its ministries. While this is in line with international norms, it has brought about tension within the different ministries resulting in non-

performance or duplication of efforts and overall inefficiency. These challenges have also been seen within the early childhood development networks, which often cut across the Ministry of Education, the Ministry of Health, the Ministry of Gender, and the Ministry of Social Welfare [49]. The downside is that, although formally there is a plurality of line ministries concerned with adolescent SRH, no institutional leader, who can champion the adolescent SRH agenda across a wide variety of ministries, has emerged.

The study limitations deserve mention. One limitation of the study is that we used purposive sampling, and study participants also helped to identify other potential participants. We acknowledge that in giving the study participants this “gatekeeping role” we might have shaped the type of participants enrolled into the study, for example, by selecting potential participants who were better known. To mitigate this, we limited the role of enrolled participants in identifying only those participants who met the eligibility criteria regardless of their relationship and engagement with them. In addition, Interviews were conducted mainly with national level staff; therefore, sub-national variations in political prioritization in the devolved counties are not represented. Lastly, the Shiffman and Smith framework does not address the problem of non-implementation of the policy once it has been legislated; however, it does provide the opportunity to highlight areas that can be used to raise the profile of a condition to an actionable problem.

Conclusion

Despite a surge in interest in adolescent SRH by the global community, nations such as Kenya are still failing to translate this issue into consistent political prioritization. In order for adolescent SRH to gain traction within the national political system, there is an urgent need for policy actors to use their technical and financial resources to create a more cohesive community of advocates across sectors and to develop a clear problem definition of adolescent SRH and a public positioning of the matter. This might require a compromise in the public positioning as well as range of proposed solutions to ensure that they are both palatable to the political system and thus increase tractability of adolescent SRH. There is also a need to identify and nurture individuals and national institutions that are able to act as policy entrepreneurs to facilitate the coupling of the problem of adolescent SRH with potential solutions when windows of opportunity arise. Lastly, non-governmental donors can increase their legitimacy as actors in the adolescent SRH space by creatively sharing their authority and control of resources with national governments.

Acknowledgements

We thank the respondents who participated in this study. We acknowledge the Director General of KEMRI

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Chapter 4

Comparison of Pregnancy Incidence among African Women in Kenya

Comparison of Pregnancy Incidence among African women in a Randomized Trial of Intramuscular Depot Medroxyprogesterone Acetate (DMPA-IM), a Copper Intrauterine Device (IUDs), or an Levonorgestrel (LNG) Implant for Contraception

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Abstract

Background: Sub-Saharan Africa is affected disproportionately by high rates of unintended pregnancy. Contraceptive method failure is one contributor to unintended pregnancy. Few data are available that compare pregnancy rates among different contraceptive methods for women in Africa.

Methods: We analyzed data from the ECHO Trial, which assessed HIV incidence among 7829 women from 12 sites in Eswatini, Kenya, South Africa, and Zambia who were seeking effective contraception and consented to be randomized to intramuscular depot medroxyprogesterone acetate (DMPA-IM), a copper intrauterine device (copper IUD), or an levonorgestrel (LNG) implant. Cox proportional hazards regression adjusted for condom use during last vaginal sex was used to compare pregnancy incidence during both perfect use (defined as from initiation of method until first discontinuation for any reason); additional analyses explored more typical use (i.e., until decline or change to a different contraceptive method).

Results: 7710 women contributed to this analysis. 70 pregnancies occurred during perfect use and 85 during typical use. Perfect use pregnancy incidence rates were 0.61 per 100 woman-years (wy) for DMPA-IM (95% CI 0.36-0.96), 1.06 for copper IUD (95%

CI 0.72-1.50), and 0.63 for LNG implants (95% CI 0.39-0.96), with 12-month cumulative probabilities of 0.62% (95% CI 0.37-1.03), 1.09% (95% CI 0.73-1.64), and 0.64% (95% CI 0.39-1.04), respectively. Typical use incidence rates were generally similar, although slightly higher for copper IUD (1.11 per 100 wy, 95% CI 0.77-1.54).

Conclusions: In this randomized trial of three different contraceptives among African women, perfect use of all contraceptive methods resulted in comparably low pregnancy rates. Our findings provide strong justification to improve access to a range of contraceptive options including LNG implants and copper IUDs for African women.

Introduction

Approximately 40% of the pregnancies that occur annually are unintended [1-3], making unintended pregnancy an issue of global public health importance [4, 5]. Sub-Saharan Africa (SSA) is disproportionately affected by unintended pregnancy [6, 7], accounting for 39% of women reporting unintended pregnancies [1-3, 8]. Unintended pregnancy has substantial effects on maternal and new-born health [9-11], completion of education [12, 13] and overall negative socioeconomic impacts on women and communities [10, 14, 15]. While many unintended pregnancies are due to lack of access to effective contraception, incorrect or inconsistent use, as well as method failure, are also important contributors [16-18].

Contraceptive failure rates may vary by body mass index, weight, age, education, socioeconomic status, contraceptive intention, residence and marital status [16, 19-23]. Highly effective long acting reversible contraceptives that are not dependent on regular client or provider action– such as implants and intrauterine devices (IUDs) - generally have low, but not zero, rates of contraceptive failure [18, 24-28]. In contrast, methods that require user action, such as intramuscular injectable depot medroxyprogesterone acetate (DMPA-IM), while having very low failure rates in perfect use, have higher failure rates with typical use [29]. Data from Africa on contraceptive effectiveness, conducted through prospective and rigorously conducted studies, are lacking [7, 30, 31], particularly for IUDs [32]. Good quality data from Africa are necessary for the framing of contraceptive counseling messages and informing service delivery strategies to enable women to make informed choices and achieve their reproductive health goals.

We conducted a large, multi-country randomized trial of three different long-acting reversible contraceptive methods – DMPA-IM, a copper IUD, and a levonorgestrel (LNG) implant, with a primary objective of determining whether the incidence of HIV infection differed by contraceptive method. A secondary objective of the trial was to compare pregnancy incidence among the randomized contraceptive methods.

Methods

We conducted a secondary analysis of data from the Evidence for Contraceptive Options and HIV Outcomes (ECHO) Trial, a large multicenter, open-label, randomized clinical trial comparing HIV incidence among women randomized to DMPA-IM, a copper IUD, and an LNG implant. Detailed methods of the trial have been described previously [33]. Briefly, between December 2015 and September 2017, 7829 sexually active women aged 16-35 years from four countries (Eswatini, Kenya, South Africa, and Zambia), who desired effective contraception and consented to be randomized to any of the three trial contraceptive methods were enrolled. We used variable block randomization, stratified by site to assign women in a 1:1:1 ratio to receive either DMPA-IM (150 mg/1 mL, Depo Provera, Pfizer, provided every 13 weeks at the site), copper IUD (Optima TCu380A, Injeflex), or LNG implant (Jadelle, Bayer). Women were followed up every three months for a maximum of 18 months. The ethics committees of each site provided scientific and ethical approval for the study. Informed consent was obtained prior to commencement of all study procedures.

Contraceptive methods were provided on-site. At each visit, data on current contraceptive use and any change since the previous visit were collected, and if a participant had discontinued her randomized method, the date and reason for discontinuation was recorded. At enrollment, and at the final study visit, pregnancy was assessed using a urine pregnancy test; at intervening visits, urine pregnancy testing was done as needed, based on clinical judgment (e.g. missed/late period or other signs) or participant request. For confirmed pregnancies, an estimated date of fertilization (EDF) was computed as the first day of last menstrual period (LMP) plus 14 days or when available, ultrasound date minus gestational age, plus 14 days, with specific guidelines for when priority is given to the ultrasound estimated EDF if both LMP and ultrasound are available. Per a standard algorithm (see Figure 4.1), computed EDFs with no ultrasound or LMP available, in close proximity to randomized method discontinuation, or with missing or unknown data on randomized method use, were further reviewed and either confirmed or reassigned by a Pregnancy Endpoints Review Subcommittee. For some pregnancies, the EDF was estimated to have occurred prior to the trial enrollment visit, reflecting early pregnancy not detected by the urine pregnancy test done at the enrolment visit.

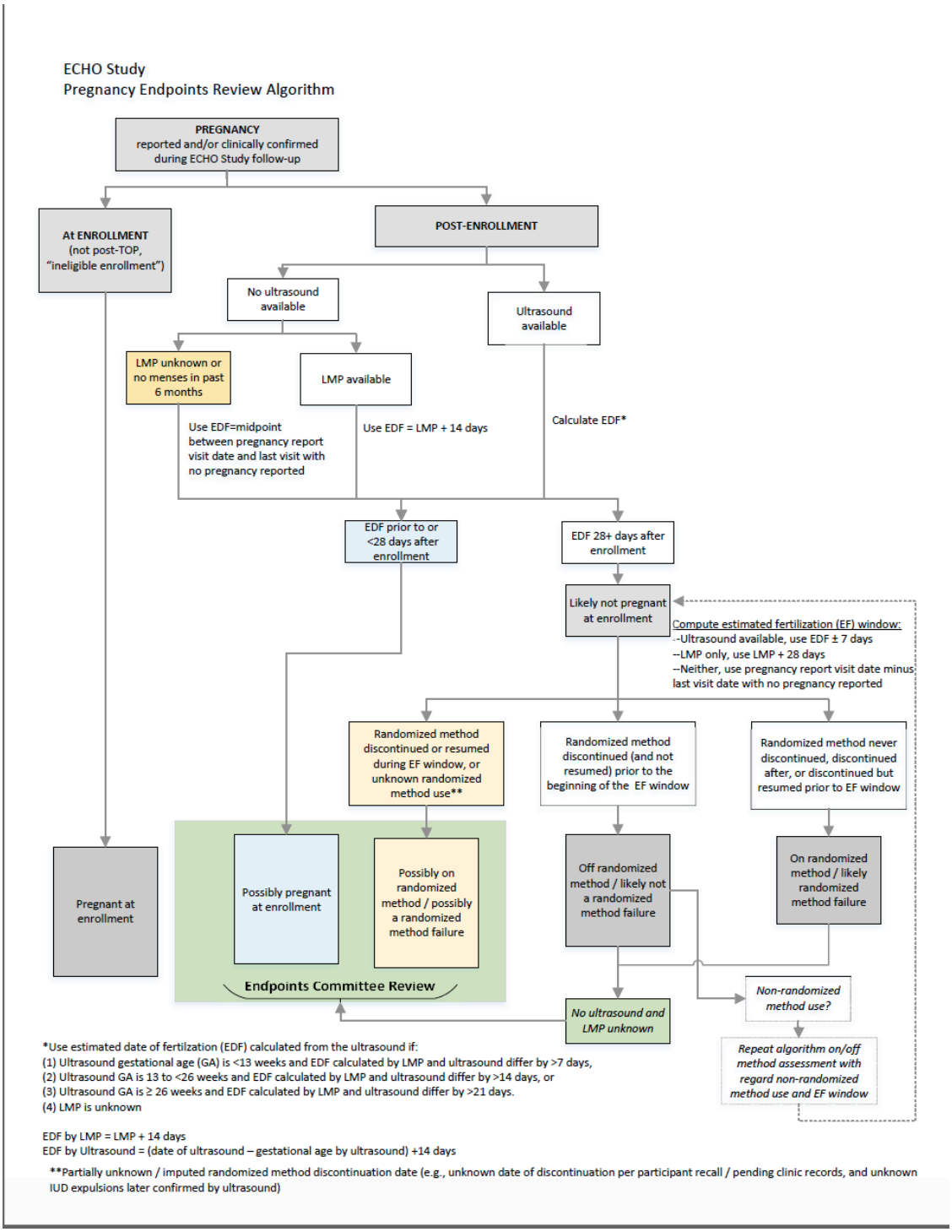


Figure 4.1. Pregnancy endpoint review algorithm.

Statistical Analysis

The objective of this analysis was to compare pregnancy incidence among those randomized and using DMPA-IM, a copper IUD, and an LNG implant within a multicenter, open-label, randomized clinical trial. The primary outcome was incident pregnancy and the primary exposure was use of contraceptive method, including only women who received their randomized method. Results of intention-to-treat analyses of contraceptive method versus incident pregnancy were included in the primary trial findings [33]; however, the majority of pregnancies occurred among women who were no longer using their randomized method. Thus, the present analysis focuses on pregnancies occurring among women who were randomized, initiated, and were continuing their assigned method. No formal power calculations for pregnancy were done, as pregnancy was a secondary trial endpoint.

Two approaches were undertaken: a perfect use and a typical use approach. For perfect use, all follow-up time was included from the date of first randomized method initiation until first discontinuation of the randomized method, first pregnancy (first estimated date of fertilization occurring after randomized method initiation), or until the final study visit. For women assigned DMPA-IM, if more than 17 weeks had passed since the previous injection, they were determined to have discontinued their randomized method. For women in the copper IUD group, randomized method discontinuation was the first date of IUD expulsion or removal, regardless of whether a new device was inserted. For the LNG implant group, first discontinuation was the date of first implant removal, unless re-inserted the same day. For all three groups, if another contraceptive method was initiated the randomized method was considered to have

been discontinued. For typical use, follow-up time was similar to that for perfect use, except follow-up time off method due to temporary clinician-initiated holds, late DMPA injections, missing implant rods (unless known to have been removed), IUD expulsions (if reinserted within 28 days), and ever use of a method even if not received at enrolment at was included as time on method.

Sensitivity analysis was done for perfect use analysis. Members of the Contraceptive Committee conducted an unblinded review of 47 pregnancies classified as 'on method' in the perfect use analysis for which additional notes were available from the Contraceptive Reports received for each method discontinuation during the study. Two committee members made independent determinations of "very likely", "likely", "unlikely", or "very unlikely" pregnant while on randomized method and then reached consensus on discrepant decisions. Determinations of "unlikely" or "very unlikely" became pregnant while on randomized method were re-classified as non-events and censored one week prior to the estimated date of fertilization. When there was a lack of consensus, a third member of the Contraceptive Committee reviewed and acted as a tiebreaker.

Descriptive statistics were used to summarize participant characteristics at enrollment. The number of incident pregnancies, women-years at risk of pregnancy, crude pregnancy rates and exact 95% confidence intervals (CIs) for pregnancy rates were calculated based on a Poisson distributional assumption, overall and within pre-specified subgroups, for each randomized arm. The estimated cumulative probability of pregnancy was summarized using Kaplan-Meier methods, with 95% CIs based on the complementary log-log transformation. A Cox proportional hazards regression model

with a three-way class variable for randomized group, incorporating the baseline covariates (if significantly different between groups at p<0.1) and stratified by site, was used to assess differences in pregnancy incidence between the randomized groups: DMPA-IM vs. copper IUD, DMPA-IM vs. LNG implant, and copper IUD vs. LNG implant. Standard errors for the parameter estimates from the Cox model were used to calculate Z-scores against the null hypothesis of HR=1.0 and calculate corresponding two-sided p-values; all tests were two-sided at the 0.05 significance level. Analyses were performed using SAS, version 9.4.

Results

Study Participants

A total of 7829 women were randomized and followed, of whom 7710 ever received their randomized method and were not determined to be pregnant at the time of randomization: 2593 in the DMPA-IM group, 2525 copper IUD, and 2592 LNG implant (see Figure 4.2).

Baseline demographics and behavioral data were similar across randomization groups (see Table 4.1). The median age was 23 years with a range of 16-35. Majority of participants were single and never married (79.9%, n=6160), not living with a partner (69.7%, n=5373), had some or complete secondary education (74.3%, n=5728), owned a mobile phone (93.1%, n=7176), had a BMI <=30kg/m2 (74.1%, n=5715), and had 1-2 living children (66.2%, n=5106). About half of the women did not use a condom during the last vaginal sex (48.3%, n=3721) and about half had ever used DMPA-IM (51%, n=3933), while 0.8% (58) had previously used an IUD and 6.4% (494) an implant. The

prevalence of sexually transmitted infections was high, with 18.1% (1399) having Chlamydia trachomatis and 4.7% (361) having Neisseria gonorrhoeae.

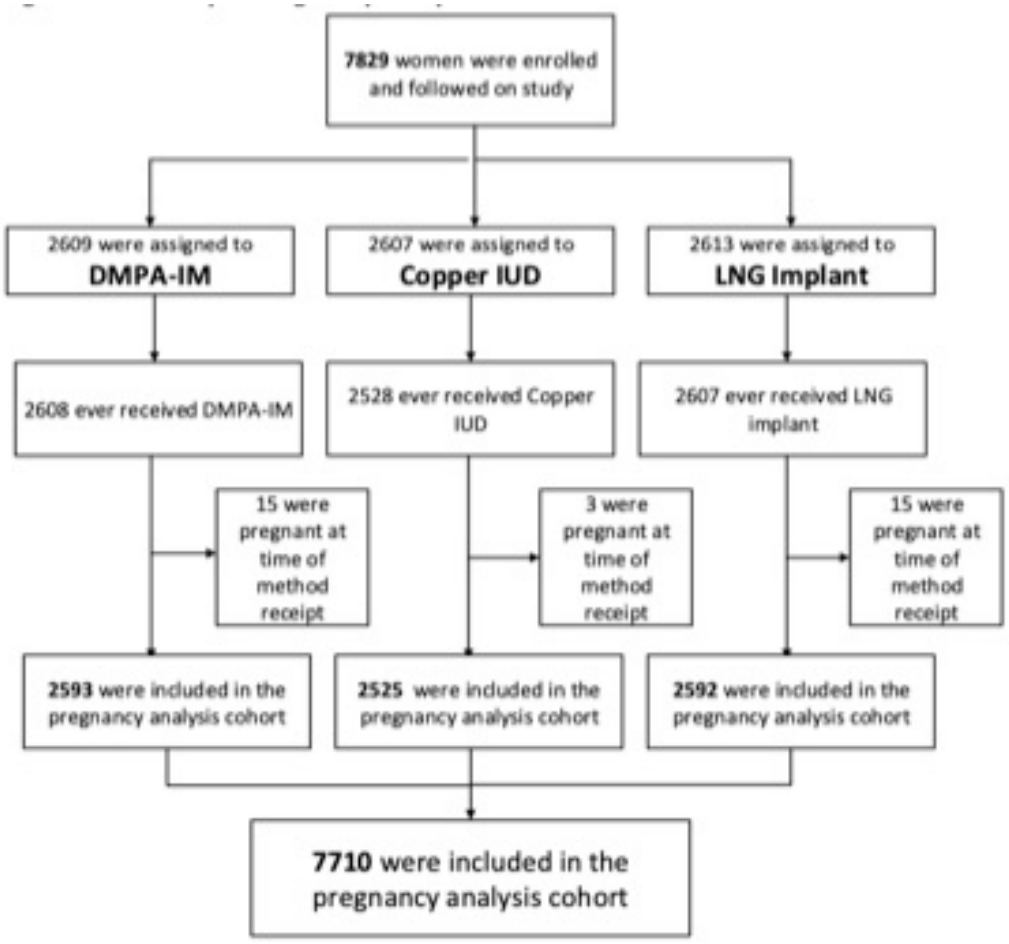


Figure 4.2. Summary of pregnancy analysis cohort.

Table 4.1

Demographic Characteristics by Randomized Arm

		DMPA-IM (N enrolled=2593)	Copper IUD (N enrolled=2525)	LNG Implant (N enrolled=2592)	All (N enrolled=7710)
Characteristic	Category				
Age group (years)	16-17	17 (0.7%)	26 (1.0%)	21 (0.8%)	64 (0.8%)
	18-20	692 (26.7%)	656 (26.0%)	676 (26.1%)	2024 (26.3%)
	21-24	947 (36.5%)	882 (34.9%)	947 (36.5%)	2776 (36.0%)
	25-30	715 (27.6%)	737 (29.2%)	732 (28.2%)	2184 (28.3%)
	31-35	222 (8.6%)	224 (8.9%)	216 (8.3%)	662 (8.6%)
Age (years)	Median (IQR)	23 (20, 26)	23 (20, 26)	23 (20, 26)	23 (20, 26)
Marital status	Never married	2074 (80.0%)	2018 (79.9%)	2068 (79.8%)	6160 (79.9%)
	Married	499 (19.2%)	495 (19.6%)	499 (19.3%)	1493 (19.4%)
	Previously Married	20 (0.8%)	12 (0.5%)	25 (1.0%)	57 (0.7%)
Lives with partner	Yes	759 (29.3%)	760 (30.1%)	755 (29.1%)	2274 (29.5%)
	No	1815 (70.0%)	1746 (69.1%)	1812 (69.9%)	5373 (69.7%)
	N/A, no partner	19 (0.7%)	19 (0.8%)	25 (1.0%)	63 (0.8%)
Education (highest level)	No schooling	16 (0.6%)	12 (0.5%)	21 (0.8%)	49 (0.6%)
	Primary school, some or complete	215 (8.3%)	244 (9.7%)	257 (9.9%)	716 (9.3%)
	Secondary school, some or complete	1956 (75.4%)	1866 (73.9%)	1906 (73.5%)	5728 (74.3%)
	Post-secondary school	406 (15.7%)	403 (16.0%)	408 (15.7%)	1217 (15.8%)
Owns a mobile phone	Yes	2420 (93.3%)	2359 (93.4%)	2397 (92.5%)	7176 (93.1%)
Earns an income of her own	Yes	563 (21.7%)	557 (22.1%)	561 (21.6%)	1681 (21.8%)
BMI (kg/m2)	<=30	1942 (74.9%)	1883 (74.6%)	1890 (72.9%)	5715 (74.1%)
	>30	645 (24.9%)	641 (25.4%)	696 (26.9%)	1982 (25.7%)

		DMPA-IM (N enrolled=2593)	Copper IUD (N enrolled=2525)	LNG Implant (N enrolled=2592)	All (N enrolled=7710)
Characteristic	Category				
Ever contraceptive use*	IUD	18 (0.7%)	20 (0.8%)	20 (0.8%)	58 (0.8%)
	Implant	164 (6.3%)	167 (6.6%)	163 (6.3%)	494 (6.4%)
	DMPA	1288 (49.7%)	1313 (52.0%)	1332 (51.4%)	3933 (51.0%)
	Other hormonal method**	837 (32.3%)	819 (32.4%)	818 (31.6%)	2474 (32.1%)
	Other nonhormonal method**	1505 (58.0%)	1464 (58.0%)	1496 (57.7%)	4465 (57.9%)
	Other method	28 (1.1%)	19 (0.8%)	30 (1.2%)	77 (1.0%)
Number of living children	0	590 (22.8%)	532 (21.1%)	551 (21.3%)	1673 (21.7%)
	1-2	1700 (65.6%)	1673 (66.3%)	1733 (66.9%)	5106 (66.2%)
	>=3	303 (11.7%)	320 (12.7%)	308 (11.9%)	931 (12.1%)
Condom use with last vaginal sex	No	1222 (47.1%)	1240 (49.1%)	1259 (48.6%)	3721 (48.3%)
	Yes	1281 (49.4%)	1192 (47.2%)	1244 (48.0%)	3717 (48.2%)
	Partner, no sex	83 (3.2%)	86 (3.4%)	81 (3.1%)	250 (3.2%)
	No partner	5 (0.2%)	7 (0.3%)	8 (0.3%)	20 (0.3%)
C. trachomatis	Negative	2133 (82.3%)	2055 (81.4%)	2110 (81.4%)	6298 (81.7%)
	Positive	452 (17.4%)	469 (18.6%)	478 (18.4%)	1399 (18.1%)
	Not done	1 (0.0%)	0 (0.0%)	1 (0.0%)	2 (0.0%)
N. gonorrhoeae	Negative	2471 (95.3%)	2404 (95.2%)	2462 (95.0%)	7337 (95.2%)
	Positive	115 (4.4%)	120 (4.8%)	126 (4.9%)	361 (4.7%)
	Not done	0 (0.0%)	0 (0.0%)	1 (0.0%)	1 (0.0%)

*More than one contraceptive method may be reported.
**Other hormonal method includes NET-EN, oral contraceptives, patch, and intravaginal ring. Other non-hormonal method includes male/female condoms, diaphragm/sponge, other barrier method, spermicide alone, natural methods such as withdrawal or rhythm method and tubal ligation, hysterectomy or other surgical sterilization.

Follow-up and contraceptive method continuation. Overall, of the 7710 women included in the present analysis, 7608 (98·7%) initiated their randomized method at enrolment. Of the remaining 102 who initially did not receive their randomized method, zero had been assigned DMPA-IM (0%), 98 copper IUD, and four LNG implant; the main reasons for not receiving randomized method were difficult or postponed insertions of IUD or implant. The median number of days from randomization to actual receipt of method was six days for both copper IUD (interquartile range: IQR 2-12), and LNG Implant (IQR 2-13). Participants contributed a total of 9249 woman-years of follow-up to the perfect use analysis, and 9853 woman-years to the typical use analysis.

One-fifth (n=1523) of the women discontinued perfect use of their randomized method prior to the scheduled exit visit: 669 (25.8%) in the DMPA-IM group, 568 (22.5%) copper IUD, and 2863 (11.0%) LNG implant. The median time to first perfect method use discontinuation was 215 days (IQR 119-364). About a tenth (n=844) discontinued typical use of their randomized method: 183 (7.1%) DMPA-IM, 379 (15.0%) copper IUD, and 286 (11.0%) LNG implants. The median time to first typical use discontinuation was 259 days (IQR 129-381).

Pregnancy incidence by randomized arm. A total of 70 incident pregnancies were observed during perfect use: 18 among women assigned DMPA-IM, 31 copper IUD, and 21 LNG implant (Table 4.2). Overall pregnancy incidence during perfect use was 0.76 per 100 woman-years (95% CI 0.59-0.96): 0.61 per 100 woman-years (wy) for DMPA-IM (95% CI 0.36-0.96), 1.06 for copper IUD (95% CI 0.72-1.50), and 0.63 for LNG implants (95% CI 0.39-0.96). Adjusted hazard ratios for pregnancy during perfect use were: 0.56 (95% CI 0·32-1·01, p=0·053) for DMPA-IM compared with copper IUD,

0.93 (95% CI 0·50-1·75, p=0·83) for DMPA-IM compared with LNG implant, and 1·65 (95% CI 0·95-2.88, p=0·08) for copper IUD compared with LNG implant.

Eighty-five pregnancies were observed during typical use: (29 among women assigned DMPA-IM, 35 copper IUD group, and 21 LNG implant). Typical use pregnancy incidence rates were 0.86 per 100 woman-years (95% CI 0.69-1.07): 0.87 per 100 wy for DMPA-IM (95% CI 0.58-1.25), 1.11 for copper IUD (95% CI 0.77-1.54), and 0.63 for LNG implant (95% CI 0.39-0.96). In typical use analysis, copper IUD was associated with statistically significant higher risk of pregnancy compared to LNG implant (aHR 1.74 95% CI 1.01-2.99). The other comparisons did not reach statistical significance: 0.80 (95% CI 0.49-1·31, p=0·37) for DMPA-IM compared with copper IUD, and 1.39 (95% CI 0·80-2.45, p=0·25) for DMPA-IM compared with LNG implant (see Table 4.2).

Sensitivity analysis (unblinded review). Fifty-six pregnancies were classified as incident during perfect use. Overall perfect use pregnancy incidence rates were 0.61 per 100 woman-years (95% CI 0.46-0.79); 0.50 per 100 wy for DMPA-IM (95% CI 0.28-0.83), 0.79 for copper IUD (95% CI 0.50-1.18), and 0.54 for LNG implant (95% CI 0.32-0.85). Adjusted hazard ratios for pregnancy during perfect use were: 0.63 (95% CI 0·33-1·21, p=0·17) for DMPA-IM compared with copper IUD, 0.91 (95% CI 0·46-1·81, p=0·79) for DMPA-IM compared with LNG implant, and 1·44 (95% CI 0·78-2.68, p=0·24) for copper IUD compared with LNG implant (see Table 4.3).

Table 4.2

Statistical Comparisons of Pregnancy Incidence by Randomized Group

		Perfect use	Typical use
Copper IUD vs LNG Implant	aHR* (95% CI)**	1·65 (0·95, 2.88)	1·74 (1.01, 2.99)
	p-value	0·075	0·044
DMPA-IM vs LNG Implant	aHR* (95% CI)**	0.93 (0·50, 1·75)	1·39 (0·80, 2.45)
	p-value	0·827	0·246
DMPA-IM vs Copper IUD	aHR* (95% CI)**	0.56 (0·32, 1·01)	0.80 (0·49, 1·31)
	p-value	0·053	0·375
LNG Implant	N	2592	2592
	N events	21	21
	Rate (95% CI)*	0.63 (0.39, 0.96)	0.63 (0.39, 0.96)
Copper IUD	N	2525	2525
	N events	31	35
	Rate (95% CI)*	1.06 (0.72, 1.50)	1.11 (0.77, 1.54)
DMPA-IM	N	2593	2593
	N events	18	29
	Rate (95% CI)*	0.61 (0.36,0.96)	0.87 (0.58, 1.25)

* Adjusted for no condom use with last vaginal sex, which was the only baseline co-cofactor assessed found to be associated with time to pregnancy at p<0.1. Individual Cox PH model results for this co-factor for Perfect use, HR: 1.73, 95% CI (1.06, 2.83), Typical use, HR: 1.72, 95% CI (1.10, 2.67)

**Exact 95% confidence interval for incidence rate computed using the Poisson distribution.

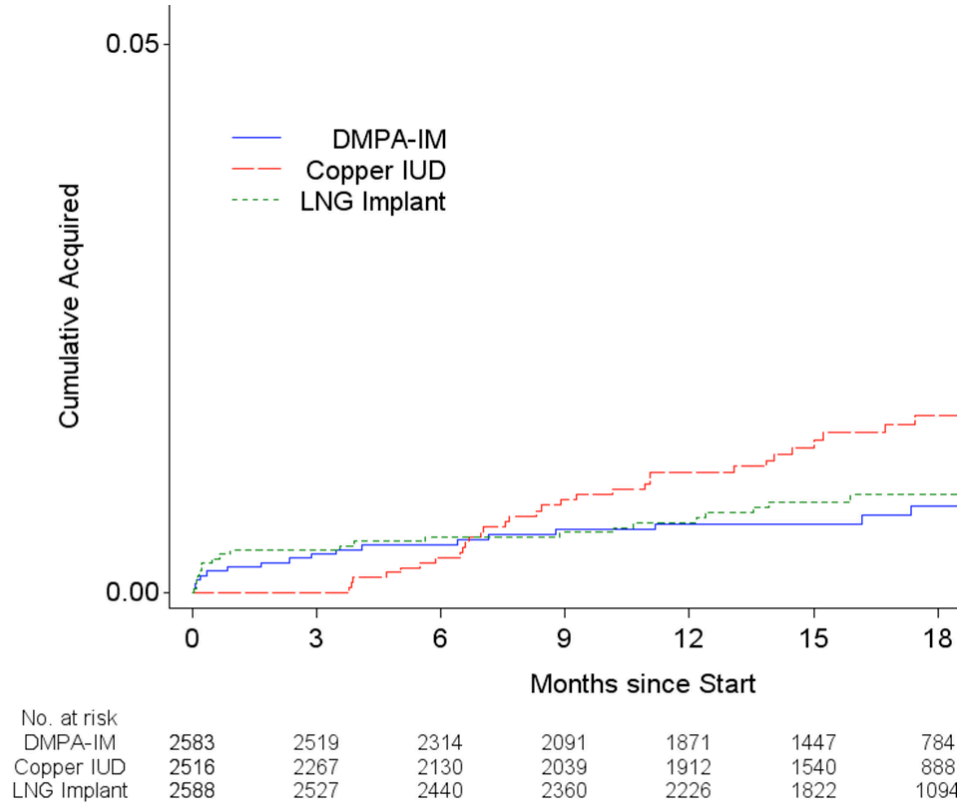
Table 4.3

Sensitivity Analysis (unblinded review): Statistical Comparisons of Pregnancy Incidence by Randomized Group

		Perfect use
Copper IUD vs LNG Implant	aHR* (95% CI)**	1·44 (0·78, 2.68)
	p-value	0·245
DMPA-IM vs LNG Implant	aHR* (95% CI)**	0.91 (0·46, 1·81)
	p-value	0·793
DMPA-IM vs Copper IUD	aHR* (95% CI)**	0.63 (0·33, 1·21)
	p-value	0·167
LNG Implant	N	2592
	N events	18
	Rate (95% CI)**	0.54 (0.32, 0.85)
Copper IUD	N	2525
	N events	23
	Rate (95% CI)**	0.79 (0.50, 1.18)
DMPA-IM	N	2593
	N events	15
	Rate (95% CI)**	0.50 (0.28,0.83)

*Adjusted for no condom use with last vaginal sex, which was the only baseline co-cofactor assessed found to be associated with time to pregnancy at p<0.1. Individual Cox PH model results for this co-factor for Perfect use, HR: 1.58, 95% CI (0.92, 2.72).
**Exact 95% confidence interval for incidence rate computed using the Poisson distribution.

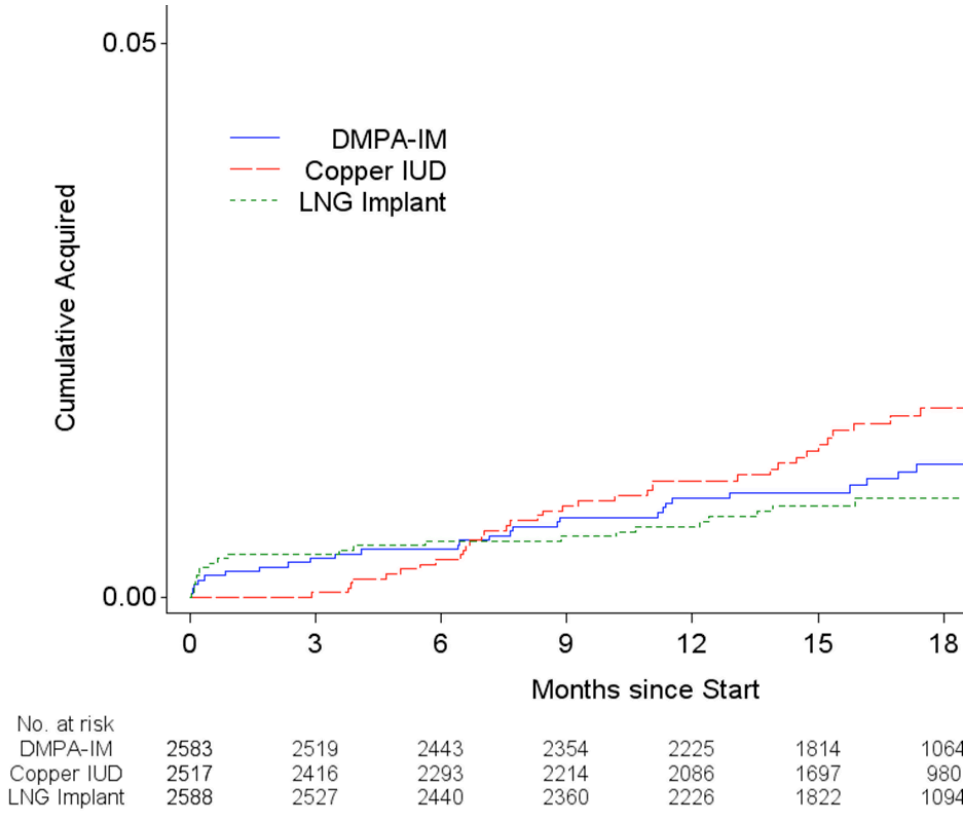
Cumulative pregnancy at six and 12 months. The cumulative probability of pregnancy at six months and 12 months was low and similar in both perfect and typical use (see Figures 4.3 and 4.4).



Time	Arm	Pregnancies (n)	Remaining at risk (n)	Cumulative Probability of Pregnancy (%)	95% CI*
6 months	DMPA-IM	11	2314	0.43	0.24-0.78
	Copper IUD	7	2130	0.32	0.15-0.67
	LNG Implant	13	2440	0.51	0.29-0.87
12 months	DMPA-IM	15	1871	0.62	0.37-1.03
	Copper IUD	23	1912	1.09	0.73-1.64
	LNG Implant	16	2226	0.64	0.39-1.04

Figure 4.3. Perfect Use-Pregnancy Cumulative Incidence (5% Scale)

*95% confidence interval for cumulative probability computed from point wise confidence intervals for the survival function (Kaplan-Meier estimates).



		Typical Use			
Time	Arm	Pregnancies (n)	Remaining at risk (n)	Cumulative Probability of Pregnancy (%)	95% CI*
6 months	DMPA-IM	11	2443	0.43	0.24-0.78
	Copper IUD	8	2293	0.34	0.17-0.68
	LNG Implant	13	2440	0.51	0.29-0.87
12 months	DMPA-IM	22	2225	0.90	0.59-1.36
	Copper IUD	24	2086	1.05	0.71-1.57
	LNG Implant	16	2226	0.64	0.39-1.04

Figure 4.4. Typical Use-Pregnancy Cumulative Incidence (5% Scale)

*95% confidence interval for cumulative probability computed from point wise confidence intervals for the survival function (Kaplan-Meier estimates).

Discussion

In this analysis of African women who were randomized to DMPA-IM, a Copper IUD, or an LNG implant, pregnancy incidence was low, in all three groups and with both perfect and more typical use. Women using Copper IUD had somewhat higher pregnancy rates than those using LNG implants and DMPA-IM. The DMPA-IM pregnancy incidence with typical use was much lower than has been reported in routine settings.

Our 18 month estimates of pregnancy incidence during perfect use were comparable to those found in other international studies over a similar period up to 24 months 0.61 vs. 2.0-6.6 at 24 months per 100 episodes of use for DMPA, 1.06 vs. 0.9 to 4.4 100 episodes of use at copper IUD and 0.63 vs. 0.2-2.1 per 100 episodes of use for Jadelle [19, 26]. Similarly, the overall pregnancy incidence of typical use of the methods was similar to that previously reported in national surveys of women aged 15-49 years: DMPA-IM 0.87 vs. 1.7 (95%CI 0.6-2.4), copper IUD 1.11 vs. 1.4 (95%CI 0.0-2.4) and LNG implants 0.63 vs. 0.6 (95%CI 0.0-2.4). Of note is that our estimate of pregnancy incidence during perfect and typical use was similar in all methods. For DMPA-IM, this similarity might have arisen due to how we defined the typical use of DMPA-IM as well as the rigorous manner in which participants were followed every three months in order to collect primary endpoint data for the parent trial. For long acting reversible contraceptives (LARC) such as implants and copper IUD, typical use rates aren't conventionally separated from perfect use, as they generally aren't user dependent [29]. However, in this case, the 'typical use' analysis adds value as it shows us what pregnancy rates might be in a program, where even LARC methods might be

temporarily stopped (for whatever reason) and where an aggressive follow up strategy can improve outcomes for shorter acting methods as demonstrated by the similar typical and perfect use pregnancy incidences for DMPA.

Women using Copper IUDs had somewhat higher pregnancy rates than those using DMPA IM and LNG implants. In an intention-to-treat analysis of this same cohort, both DMPA and LNG implants were more effective than copper IUDs [33]. However, the pregnancy rates of Copper IUD in this study seem to be consistent with a 2016 analysis of contraceptive failure rates in developing countries, which showed that IUD pregnancy rates in developing countries are higher than commonly used rates from U.S. studies. This may be due to a combination of factors, including providers' limited experiences with IUD insertion and the fact that it is often not possible to diagnose partial or complete expulsion on time, as many are asymptomatic or unnoticed. Despite having being introduced early in Africa, the provision of IUDs by health providers and utilization by women has been hampered by negative product image as well as provider and community level barriers [34-36]. Very few providers have the training to insert IUDs, and even fewer place enough IUDs to maintain their skills [34, 35]. Moreover, the community is fraught with myths and misconceptions regarding IUDs, and in addition, vaginal practices such as douching, which are prevalent in study areas, may contribute to complete and partial expulsions of the IUD [34]. The finding that Copper IUD had higher pregnancy rates than DMPA IM in typical use is unexpected but one which can be explained by the rigorous efforts to ensure participants come for three monthly visits for the primary trial which inadvertently minimized typical use pregnancy rates for DMPA

while leaving the IUD rates unaffected. In real life, DMPA users are less likely to stick to reinjection schedule than in study setting where they were actively reminded.

The cumulative incidence curves for Copper IUD in this study show a different trajectory from those of DMPA IM and LNG implant. There is an initial three-month lag phase during which pregnancy incidence is relatively lower and then a gradual increase in the cumulative pregnancies. Unlike DMPA IM and LNG implant, once inserted Copper IUD is immediately active in pregnancy prevention and also confers emergency contraceptive benefits if the woman had unprotected sex five days prior to IUD insertion, which might explain the initial three-month low pregnancy incidence seen in this study. The subsequent increase in cumulative pregnancies likely represents partial and complete expulsions. In line with existing standard of care, we did not regularly ascertain placement of the copper IUD beyond the Month 1 visit, and it is plausible that over time the IUDs were misplaced or partially expelled. This plausibility implies that even though one of the benefits of LARC is the elimination of the need to see health care providers regularly, there is a need for scheduled contact with providers. While these scheduled visits may not impact contraceptive continuation or correct use [37], the scheduled visits would provide health care workers and women the opportunity to not only ascertain IUD placement but also provide other services such as STI diagnosis and management, HIV testing, and cervical cancer screening. Nevertheless, the overall pregnancy incidence was similar with what has been observed in other population-based studies [38].

Contraceptive continuation in this cohort was high. Even though women were randomized, nearly seven out of every 10 women continued to use their randomized

method at the end of the first year. First, this high contraceptive continuation highlights that women who receive good counseling and management of side effects are able to remain on contraception for long periods. Previous studies have highlighted the most common reasons for method switching and discontinuation to be side effects, myths, contraceptive failure, or the service environment, including service quality and availability of a sufficient choice of methods [39]. Secondly, this finding demonstrates the willingness of African women to explore methods with which they may not be familiar. At baseline less than 1% of the women had ever used an IUD, and only 8% had used an implant. This finding should provide impetus to the development side of family planning and spur innovation to increase the variety of methods available to women particularly in Africa. There is strong evidence that when women are provided with an expanded method mix, they are more likely to take up family planning methods [40, 41]. In fact, it is estimated that for every additional increase in method available, the modern contraceptive prevalence rate increases by seven to eight percentage points [40]. In countries such as Ethiopia where contraceptive method mix has expanded to make LARCs more accessible, modern contraceptive prevalence is much higher than countries such as Nigeria and the Democratic Republic of Congo where these methods are less available [41, 42]. This finding therefore is important to policy makers and programmers to urgently consider expansion of existing methods available to women.

Our study had several strengths including that data were collected within a high-quality clinical trial in which retention of participants was high. To the best of our knowledge, this is the first trial to randomly assign women to different contraceptive methods and follow them up to observe pregnancy incidence. There is novelty in this

approach as it minimizes the observational and subjective biases that commonly affect studies in which women self-select methods. However, the study was not without limitations. The intense follow-up of participants not to miss their study visits for the parent study might have inflated the effectiveness of typical use of DMPA-IM. As such, the typical use findings of DMPA should be interpreted with caution in settings where there is no pro-active follow-up or reminders for women using DMPA-IM. We enrolled women who not only desired effective contraception but also motivated enough to be and remain on the assigned randomized method. Moreover, our providers were trained and competency assessed on a regular basis. These two factors mean that our findings might not be generalizable or transportable to areas where women might desire effective contraception, but providers lack the skills and competency, or to women who are not as motivated in their need for contraception.

Conclusion

In this study of African women, we find that both perfect and typical use of all contraceptive methods resulted in low pregnancy rates, which seem to be consistent with analysis of contraceptive failure rates in developing countries. Although we found that women using copper IUD had somewhat higher pregnancy rates than those using LNG implants and DMPA, our findings still provide strong justification to improve access to a range of contraceptive options including LNG implants and copper IUDs for African women. Our data on pregnancy rates among contraceptive users are important for informing governments and program managers regarding which contraceptive methods to invest in service delivery strategies to enable women to achieve their reproductive health goals**.** The higher pregnancy rates with copper IUD

starting from six months suggest that it is worth considering instituting a six-month post-IUD insertion follow-up visit for ascertainment of copper IUD placement. Future research can focus on innovative ways of determining correct fundal placement of copper IUDs especially in regions where routine radiology may not be available or feasible. Studies can also learn from the intensive retention strategies used in this study to increase contraceptive continuation among users of shorter acting reversible methods such as DMPA-IM.

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Chapter 5

Conclusion

Conclusion

This dissertation reiterates that adolescent sexual and reproductive health (SRH) is a confounding public policy topic in Africa best understood in its particular historical and social-cultural context. It first uses the public arenas theory to explore how the problem of adolescent SRH is defined. Subsequently, using a focused ethnographic approach, it explores the challenges of generating political prioritization for adolescent SRH in Kenya. Lastly, given the centrality of contraception in SRH, the dissertation compares pregnancy incidence among a large cohort of women using depo-medroxy-progesterone-acetate (DMPA), levonorgestrel (LNG) implants and copper intrauterine devices (IUD) from four African countries: Eswatini, Kenya, South Africa, and Zambia. From the research findings in the dissertation, we can do the following: 1) draw implications for policy design and the selection of interventions, 2) understand key focus areas in adolescent SRH policymaking, 3) suggest what governments can do in the future, and directions for future research.

Implications

A) How adolescent pregnancy is defined has a powerful influence on public officials and helps shape policy design and the selection of acceptable interventions.

The inability to arrive at a common definition of adolescent SRH is manifested at the policy level by a lack of political prioritization of the problem and an absence of suitable interventions at the implementation level. The lack of a common definition also pre-empts the large number of stakeholders (actors) from different sectors (arenas) and hinders their cohesiveness within the adolescent SRH network. As demonstrated in the

first paper, it is imperative that the particularities of each public arena and the actors involved in each of the arenas be analyzed and leveraged. The Public Arenas Model provides a lens through which to examine how adolescent pregnancy is defined and how it can be reframed. The model, however, is limited in its ability to give insight as to whether a well-designed adolescent SRH policy will be implemented with fidelity. Nevertheless, we believe that the Public Arenas Model approach provides a systematic and integrated way for different adolescent stakeholders to think through and develop shared understandings of the problem. This systematic and shared understanding can help initiate, organize, potentially redefine, and sustain visibility of adolescent pregnancy as a problem that requires political priority and resource allocation.

B) Translation of policy norms and guidelines into practice: The presence of normative guidance in the form of national policy documents and guidelines does not always promote political priority or deliberate actions that advance a shared agenda

Despite a surge in interest in adolescent SRH by the global community and adoption of international and regional normative guidelines, nations such as Kenya are still failing to translate this issue into consistent political prioritization. In order for adolescent SRH to gain traction within the national political system, there is an urgent need for policy actors to use their technical and financial resources to create a more cohesive community of advocates across sectors and to develop a clear problem definition of adolescent SRH and a public positioning of the matter. This might require a compromise in the public positioning of the issue, as well as a range of proposed solutions to ensure that they are palatable to the political system and increase the

tractability of adolescent SRH. There is also a need to identify and nurture individuals and national institutions that can act as policy entrepreneurs to facilitate the coupling of the problem of adolescent SRH with potential solutions when windows of opportunity arise.

C) Access to contraceptives is a foundational element not just for RH, but for social and economic equality [1, 2],[3].

Adolescent pregnancy, and by extension, any unintended pregnancy limits the opportunities that women would otherwise have for education, civic participation, and economic advancement [3]. Moreover, for every $1 spent on contraceptive services, there is a corresponding $2.22 reduction in the cost of pregnancy-related care [2]. As such, scaling up contraceptive services, in the long term, can result in significant returns on investments in countries in sub-Saharan Africa. Specifically by accelerating fertility declines, scale up of contraception access can facilitate a shift in the age structure of the population towards a favorable ratio of working population to dependent children, and thus spurring on the economic development of nations through demographic dividends [4, 5]. The third paper demonstrates that women (16-35 years) participating in the ECHO trial were seeking effective contraception, willing to be randomized to any method, and showed high continuation rates. In this cohort of African women, we found that both perfect and typical use of all contraceptive methods resulted in low pregnancy rates. Although we found that women using copper IUDs had somewhat higher pregnancy rates than those using LNG implants and DMPA, our findings still provide strong justification to improve access to a range of contraceptive options, including LNG implants and copper IUDs, for African women. These data on pregnancy rates among

contraceptive users are essential for informing governments and program managers about which contraceptive methods to invest in and inform service delivery strategies to help enable women to achieve their reproductive health goals by having available a range of effective, client-centered methods**.** The higher pregnancy rates with copper IUDs starting from six months may be due to newly trained providers not being able to consistently ensure correct fundal placement of the copper IUD, thus increasing the risk of expulsion. It is therefore worth considering instituting a six-month post-IUD insertion follow-up visit to ascertain copper IUD placement. Future research can focus on innovative ways of determining the correct fundal placement of copper IUDs, especially in regions where routine radiology may not be available or feasible. Studies can also learn from the intensive retention strategies used in this study to increase contraceptive continuation among users of shorter-acting reversible methods such as DMPA. Lastly, adolescents in this study were under-represented; there is therefore a need for mixed methods research to document contraceptive preferences, acceptance, uptake rates, patterns of continuation and discontinuation as well adverse event profiles.

Suggested Key Priority Areas in Adolescent SRH Policymaking

A) Placing adolescent at the heart of SRH policymaking and programs

The design, management, and delivery of adolescent SRH services must be shaped by and be responsive to the needs of adolescents. All adolescents need to be aware of their right to information and services regarding SRH and their responsibility to protect their own health. This information can be entrenched within formal school curriculum. At the policy level, enforcing the principle of “no decisions for adolescents without adolescents” as a legal standard can ensure that wherever adolescent SRH

matters are discussed, adolescents are present. By involving adolescents in the design, delivery, and monitoring of SRH services, adolescent SRH policies and programs are likely to be more productive and sustainable. Giving adolescents a more significant stake in adolescent SRH programs will foster a greater sense of trust, co-ownership, and joint accountability.

B) Acknowledging the political and social-cultural nature of adolescents and adolescent sexuality

Given the value-laden nature of adolescence and adolescent SRH, countries must define their region-specific adolescent SRH problem and set their own priorities. Each country faces its own challenges and unique socio-cultural context and requires tailored solutions to improve adolescent SRH program performance. However, the need for regional contextualization and local evidence should be hinged on broader global normative guidance in order for adolescent SRH to gain traction as a recognized problem needing urgent action by the global community. Further progress will depend on a firm commitment from country governments to adolescent SRH backed up by real action. As pointed out in the second paper – the need for common problem framing (both internal and external) and adolescent policy champions cannot be overstated. Lastly, stakeholders (actors) at all levels (public arenas) need to commit to supporting adolescent SRH programs and mobilizing support for adolescent SRH as a core component of primary health care. Stakeholders and international partners can support countries by continuing to advocate for adolescent SRH and by coordinating technical and financial support based on country needs.

C) Need to build more cohesive multi-sectoral collaborations between stakeholders to maximize impact

The adolescent SRH community can only be successful if it improves its own coordination and alignment of internal and external frames and priorities. It is only in enhancing its cohesiveness that it can avoid duplication, conflicts, or blame shifting. To achieve increased cohesiveness, there may be need (or opportunities) to establish new models of collaboration. For example, the public sector can recognize the core role that the private sector and civil society organizations play in advocating, funding, and providing adolescent SRH services. On the flip side, development partners can seek new ways to work with the ministry of health in a manner that increases their legitimacy, shares power while still enforcing accountability of resources provided.

D) Using data, evidence, and research

Identifying and providing adolescent SRH information and services should be an evidence-based practice. Policymaking needs to be supported by impartial evidence and national and sub-national level program data. It is also crucial that this evidence is region-specific, so regional barriers influencing provision and uptake of adolescent SRH services can be identified and addressed. Collecting data disaggregated by different sub-national regions, such as counties in Kenya, can help identify those areas that are not being adequately served. Accurate and timely data are also critical for tracking progress, triggering innovation to improve performance, and enhanced monitoring and evaluation of adolescent SRH programs. Adolescent SRH programs, which include robust monitoring and evaluation systems, are fundamental to the effective and practical improvement of adolescent SRH outcomes.

Policy Options: What Can Governments Do?

In light of these findings, there are several things that can governments can do. One policy solution is ring-fencing or protecting contraceptive budget allocations (government and donor funding) so that they are not diverted to other priorities that arise. This can allow governments to scale up access to universal SRH services and especially contraceptive services as envisaged by the SDGs and the African continental framework for SRH. They can do this by improving contraceptive commodity security and reducing inequalities in access by avoiding overconcentration of contraceptive services in urban areas.

Governments can also address adolescent pregnancy by making gender equality a legal principle. No matter the level of resources that governments have at their disposal, they can work towards the progressive realization of gender equality in resource allocation across all sectors. They can start by implementing gender-budgeting exercises within the public budget processes. For example, ensuring gender equality in access to education can result in generous redistributive effects on adolescents and communities [6]. Access to quality education among adolescent girls can increase future planning and aspirations for adolescent girls to enter the formal workforce, upward mobility in the labor market, increasing earning potential, and ultimately increasing the productivity and economic growth of nations [7-9]. One potential downfall of such a policy is that without adequate social protection, adolescent girls, and those at particularly high risk of an unintended or mistimed pregnancy, such as those in poor rural areas, may still not be able to access services, such as education and access to

timely health care, due to other externalities, such as cost of uniforms and time to travel to schools or lack of sanitary facilities at the schools [8, 9].

Given that governments have other competing priorities, governments can work towards improving the aforementioned six health system blocks and build up a health system resilience dividend that can benefit adolescents and the future economic well-being of their countries. Individually, governments can do the following:

a) Optimize intersectoral collaborations with programs outside the health sector (e.g., youth, gender, and education programs for school-based interventions) for mutual benefit. The second paper highlighted the often siloed and duplicated ministerial programs within the same government.
b) Enhance leadership, governance, management, and accountability structures, which create an enabling environment to coordinate, finance, and attain adolescent SRH outcomes. Particularly for funding, governments can work to integrate and enforce funding for adolescent SRH information and services within the broader health budgeting and financing processes. Further, with regard to other donors or development partners, governments will need to create independent accountability structures that ensure that partners/stakeholders do not renege on their commitments.
c) Invest in and enable a skilled health workforce that is not only able to provide adolescent friendly SRH services, but that can also build bridges to other non-medical sectors such as sports, agriculture, business, education, etc. This holistic approach ensures that the majority of needs of the adolescent can be responded

to as well as positioning the health system as an essential entry point to shaping adolescent lives and futures.

d) Improve health information systems to collect national and sub-national age and sex-disaggregated data on a broad range of adolescent health issues. These health information systems should have the ability to communicate across different systems of care and should be versatile enough to allow for end-users to be able to access and analyze the data to make data-informed decisions, for example, concentrating limited resources in high need areas, or ascertaining which adolescents may need reproductive health, as well as mental health or other services.

e) Strengthen national supply chain and logistics systems to ensure access to a wide range of contraceptive method options for adolescents and young women. This might include providing methods in non-traditional settings, such as cyber cafés, schools, and entertainment centers.

Summary: A Call for Future Research

It is my hope that the research presented sheds insight into the steps that are necessary to help generate the political will necessary to improve adolescent SRH in sub-Saharan Africa. However, there is need to accelerate research and innovation addressing how to improve political prioritization not only to improve the SRH of adolescents, but also as a priority human rights and social justice issue. Key research areas of focus could include how to strengthen in-country's mechanisms to frame adolescent SRH as a priority equity issue, allocate financial resources and incentives for SRH service provision, and strengthen intersectoral collaborations and linkages across

stakeholders. At the stakeholder level, there is an urgent need to conduct participatory socio-behavioral research to inform the design and context-specific interventions for adolescent SRH. Subsequently, implementation research (coupled with acceptability studies) can be conducted to generate evidence based on the most effective strategies for delivering adolescent SRH services to adolescents. Lastly, given the paucity of readily accessible adolescent-centered data, additional implementation research on data systems is needed to develop innovative digital solutions and on how to exploit these digital technologies to improve adolescent program management and monitoring.

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