Family Planning in Burundi: Hegemonic Discourse, Reproductive Navigation and Embodied Experiences in a Fragile Context

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Abbreviations and Glossary

Arusha	Arusha Peace and Reconciliation Agreement for Burundi
BIF	Burundian Franc
CHW	Community Health Worker
CNTB	Commission nationale des terres et d'autres biens
DHS	Demographic and Health Survey
DRC	Democratic Republic of the Congo
FGD	Focus Group Discussion
FP	Family Planning
FP2020	Family Planning 2020
GBV	Gender-Based Violence
HIC	High Income Country
HIV	Human Immunodeficiency Virus
ICPD	International Conference on Population and Development
IDP	Internally Displaced Person
ISTEEBU	Institut de statistiques et d'études économiques du Burundi
ITAB	Institut technique agricole du Burundi Institut
IUD	Intra-Uterine Device
LIC	Low Income Country
MCPR	Modern Contraceptive Prevalence Rate
MDG	Millennium Development Goals
MIC	Middle Income Country
Minisanté	Ministère de la santé et de la lutte contre le SIDA
NGO	Non-Governmental Organisation
PBF	Performance-Based Financing
PNSR	Programme national de santé de la reproduction
SDG	Sustainable Development Goals
SE	Side effects (from contraceptives)
SOSUMO	Société sucrière du Moso
SRH	Sexual and Reproductive Health
SSPH+	Swiss School of Public Health PhD programme
SwissTPH	Swiss Tropical and Public Health Institute
TBA	Traditional Birth Attendant
UNFPA	United Nation
USD	United States Dollars
WHO	World Health Organisation

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SUMMARY

This thesis is about family planning in Burundi. The objective was to explore the reproductive preferences, strategies, practices and experiences of rural women and couples, in a fragile context. By that, I mean in a country characterised by a socio-political fragility, a very poor economic situation that is heavily reliant on the agricultural sector, a high population density and subsequent land pressure and conflicts, and strong gender inequalities.

We aimed at understanding family planning (FP) practices in Burundi from a community perspective, using quantitative and qualitative data that we collected in two rural sites between 2013 and 2016.

Using a political economy lense, we describe how a *reproductive governance* operated at different periods in Burundi, following political ambitions and needs about fertility and population size. Since the end of the internal conflict that devastated the country between 1993 and 2005, large efforts were concentrated on promoting family planning services and methods to address the growing challenge of population density and land pressure, with support from external actors. These policies and services, adopting strategies such as incentivising provision of modern contraception, are distant from the definitions of reproductive health and rights based on autonomous and free choice. We found that, despite the efforts of the government to diffuse a hegemonic discourse on 'overpopulation' causing poverty and land conflicts, utilisation of modern methods of contraception is increasing but low, at 23%. The discourse however has the role, we argue, to shift the debate away from failed governance by setting the responsibility of poverty and land conflicts on the 'uncontrolled' fertility of rural populations.

Using qualitative approaches, we describe how preferences and practices of family planning are not linear and that decision-making is not individualist but rather is contingent on complex social, economic and political dynamics. Most women expressed discursively a desire to space or limit their births and to align their family size to their land-dependant livelihoods capacity. We found that for many, contrary to the past or to neighbouring DRC

for example, children are no longer perceived as an asset, but rather as a liability in the context of poverty, uncertainty and land pressure. Despite these expressed preferences, echoing the hegemonic discourse, we have shown how *reproductive navigation* – from preferences to practices of FP – present different family planning subjectivities, and is shaped by multiple dynamic factors situated at different levels across the life-course, grounded in *sociality* and *corporeality.* Some women use modern methods of contraception to space or limit their births, but fear abandon from their husband. Some use natural methods taught in Church that are socially valued but constraining and access is limited. Others use nothing or rely on their bodily capacity for natural birth spacing, and would consider using FP methods only if 'they don't have the right body' for that.

Burundi is experiencing deep changes in social norms that are induced by fragility and poverty, and that call for social adaptations, including within the family organisation. We describe how these changes are mostly acting in disfavour of women who have to find strategies to maintain and protect their main resource: their body, in its productive function (working in the fields to sustain the household) and its reproductive function (providing lineage for the family, and subsequent social status). With no access to land, women are dependent on their father or husband for livelihoods and security.

In that overall frame, modern methods of contraception do not appear like a panacea to rural women, because of their frequent and unpredictable side effects. We have described how 'fear of side effects' refers to the observed adverse effects of hormonal contraceptives, mostly bleeding, which in these contexts of demanding agricultural work and widespread malnutrition are in fact problematic. As most women maintain their status and access to resources through their bodies, risking physical side effects by using modern methods was assessed perilous by many women. This partly explains the low utilisation of modern contraception.

I argue that typical policy recommendations and programme implementation strategies that focus primarily on educating and sensitising communities to reduce the barriers against utilisation of family planning is problematic in that they focus on modifying fertility behaviour and trends, in disconnection from people's needs and situations. Greater attention should be drawn on lived embodied experiences of women; local biologies and

social and bodily realities should be acknowledged, integrated and reconciled in health care provision.

Expanding reproductive rights and possibilities – by offering a wider choice of methods and improving access – would ameliorate acceptability and adequacy of family planning programmes. Above all, in contexts like Burundi, it is primarily by improving the socioeconomic situation of women and reducing inequalities, especially in their access to land so they do not have to rely solely on their productive and reproductive bodies as the only resources, that positive change in the demographic equation may settle in.

FORWARD

I decided to conduct a research on family planning in Burundi in 2013 because I was intrigued by the topic. I was then living in Burundi, working for a development aid agency supporting the public health authorities in the provision of primary healthcare services in the province of Ngozi, North of Burundi. I had been living between Ngozi and Bujumbura for over a year, and my contacts with rural populations happened through health promotion campaigns on the topics of hygiene and sanitation, malaria, and nutrition. My role was to technically and financially support local health agents in the design, implementation and evaluation of such campaigns in rural areas. My observations, aligning with the indicators monitored by the provincial health authorities, were that rural populations lived in extremely poor and unhealthy conditions. Many households did not have latrines, did not have mosquito nets, and struggled with food supply. Health promotion campaigns that were planned and implemented by the health authorities we supported aimed at changing the behaviour of populations on these topics, mostly based on a discourse of how households should organise. The campaigns used the administrative system in place that segments the territory and population by hills and sub-hills (the smallest administrative entity) with a sub-hill leader. For example, the province organised a hygiene and sanitation campaign in 2012 in the form of a contest of the best-behaved household. The provincial health promotion agent with his team organised the contest, asking sub-hill leaders to visit each household and give marks using an evaluation sheet that contained indicators on hygiene and sanitation (e.g. existence of a latrine, of clean water and soap in the kitchen). At the end, best households received a price, as well as the administrative unit leaders that had the best score for their area of responsibility: the sub-hill leader, the hill leader, and the district administrator. This particular campaign made me very uncomfortable. The philosophy of the support programme was based on the principles of subsidiarity and of non-substitution. In other words, local authorities were best placed to know how to implement strategies and projects, such as this campaign. My malaise was due to two things. First, I found the approach was both authoritative and intrusive, having the hierarchy in place inspect intimate spaces like latrines. Second, I disagreed with an approach that considered

individuals responsible for their current situation and behaviour, ignoring the socioeconomic structural factors that strongly modulate their situation.

In the summer of 2013, I was offered a researcher position within a bilateral aid funded programme that aimed at improving the sexual and reproductive health of young people, by 'providing a better future for young generations, reduce childbirth mortality among women through more effective family planning and alleviate poverty among families' (Cordaid, 2012). I took the opportunity, intrigued by the topic, and with the desire to explore rural realities in Burundi and understand people's everyday circumstances. After working with local health authorities, I was thrilled by the opportunity to change sides: from authorities to rural populations; and from funder to researcher. And I was intrigued – sceptical in fact – about a programme that aimed at inciting people to change their sexual and reproductive behaviour, especially in a context where rural populations struggled to cover their very basic needs. I was intrigued to see how, on the terrain of reproductive health, the interplay between the authorities 'injunction for behaviour change and the response from rural women and men takes shape and evolve. I was wondering how individuals and couples reacted to family planning messages that symbolically intrude their most intimate spaces. That's how the journey of this doctoral research started, for me.

1. INTRODUCTION

> *Despite being cloaked in the language of women's empowerment, population control continues to have a negative impact on women's health, contraceptive choice, and human rights.* (Hartmann, 2016: ix)

Family planning (FP) refers to people's rights to be informed about and to have access to voluntary methods for the regulation of fertility, that is, to determine freely the number and spacing of children in the family. FP thus refers to methods that are generally divided into two groups: modern, technological methods of contraception; and natural methods of fertility regulation[1]. FP also refers to services that are generally integrated into primary healthcare services, as in the case of Burundi, and where trained professionals provide information on the existing and available methods and support people making contraceptive choices, ensuring that modern methods are appropriate to individuals' health as there are medical contraindications. Last, FP refers to policies, strategies, programmes and initiatives at the national or global levels that define aims and targets to be implemented at the services level, to reach individuals and couples. As we retrace in this introduction, policies and practices to regulate fertility have a long history that shows strong links with power, governance, and moral frames. Retracing this history allows situating FP today, at the nexus between women's empowerment and freedom to choose and plan their reproductive health events, reproductive health messages for improved mother and child health, and demographic population control policies and targets.

Demography and fertility: from population control to family planning policies

Family planning methods have a long history, from utilisation of abstinence, withdrawal, abortion and other barrier methods that are found in many ancient societies. The modern era brought about a change whereby fertility control became a political stake 'involving

[1] Modern methods refer to the pill, injections, implants, intrauterine devices, permanent methods of tubal ligation and vasectomy, condoms and the emergency pill. Natural methods include lactational amenorrhea, standard days method, symptom-thermal method, calendar or rhythm method and withdrawal.

many actors with radically different scripts' (Hartmann, 2016: 89). In this section, we describe the evolution of family planning from population control policies to reproductive health and rights strategies.

Population control for economic development

Michel Foucault was interested in how knowledge is constructed politically and socially and how it contributes to shaping the living, for instance through disciplinary institutions like psychiatric asylums, prisons or the clinic. It is in this frame that he described how a discourse on 'populations' emerged in the eighteenth century within governing powers (nation states, colonial, local governments), that suggested a need to govern reproduction (and reproductive bodies) to control the size and quality of populations. He characterises how with the birth of Nation States that settled boundaries of territory, population became a political 'problem' to be thought in economic terms. Pressure of populations on systems of government and regulation from the eighteenth century marked by industrialisation in the North led to the development of political economy instruments, namely demography and epidemiology. Such instruments produced knowledge to orient the *biopolitics* (politics of the living) of populations, based on specific variables such as birth rates, life expectancy, fertility, disease prevalence. Foucault's concept of *governmentality* encompasses modern forms of management, discipline and government of populations through such production of knowledge and power. As he further develops, the governing of reproductive bodies is not coercive; it rather aims at normatively inducing 'a moral authority' and repertoires of desirable behaviour for individuals (Turner, 1997: xiv). Through 'practices of the self', individuals embody and enact morally valued, responsible and disciplined behaviour, which Foucault described as the process of *subjectivation*.

The illustration Foucault used to describe how the discourse on the 'population problem' and the subsequent governing of reproductive bodies emerged is Malthusianism. British clergyman turned economist Thomas Malthus (1766-1834) developed the theory of population growth in a context of industrialisation that made the 'problem of the poor' visible in urban centres. Their number and their poor health and living conditions was perceived as a barrier to the economic development of nations. Malthus developed his theory on the need to control demography – of the poor, working class especially – linking

preoccupations of economic development with those of population size, emphasising food supply and environmental capacity. Malthus' thesis constructed and established knowledge on how 'overpopulation' is causally detrimental to economic growth and development. His theory fecundated the political thinking of the next centuries and is still very much present today, despite the fact that his predictions – massive starving and environmental degradation – did not concretise or become a political theme until very recently. As a clergyman, Malthus was however opposed to birth control methods (mainly withdrawal, at the time) but in favour of behavioural methods such as abstinence and delay of marriage.

After World War I, demography and population occupied attention on the political scene in the Northern hemisphere, throughout the political spectrum. In fact, many political movements embraced the topic of human reproduction. Anarchists developed an individualist, libertarian current including sexual freedom, and promoting voluntary vasectomies to control births (see Serna, 2018). Feminists called for a freedom in reproductive choices and emancipation. Socialists pointed at the working classes that were slowed down in their mobilisation by their burden to support large families. Socialists and anarchists also highlighted that upper classes were controlling their fertility and the disequilibrium in population numbers was playing in disfavour of working classes as seen during the war were lower class children were sent as cannon fodder. Eugenicists developed their theory of the need to limit unhealthy children for the development of nations, that translated into forced sterilisations in many countries (see Lock and Nguyen, 2018b). In short, the general discourse in the North was fertility reduction and population control for economic development.

In the South, the discourse was not the same. For Northern powers (colonial and missionaries), reproduction was cast as a crucial site of debate and intervention in an attempt to control the issue of race (need of local manpower for resources extraction and exploitation) and sexuality (Africans portrayed as undisciplined and oversexualised) (Hunt, 1999; Thomas, 2003). Nancy Rose Hunt described how under the Belgian colonisation, the moral authority of the nuclear family created a new locus of socialisation in Burundi :

> 'Whereas men would be useful to the colony as producers, as a labor force, women would be important as reproducers, as mothers and wives ensuring the vitality and

> perpetuation of this labor force and the proper rearing of children. According to this colonial vision, a woman was not to have any cash-generating activities; this would have conflicted with her central role as the "base of evolution." She was to represent and radiate moral standards and behavior for men and children, through the "civilized" institution of the nuclear family' (Hunt, 1990: 451).

In the North as in the Global South, the discourse on demography and fertility responds to preoccupations of the acquisition of resources. Women's reproductive bodies are objects of acquisition accounted for in political economy.

The invention of biomedical technology for birth control

In 1951, Margaret Sanger, a nurse activist engaged on the topic of women's rights and emancipation, convinced the rich heir Katharine McCormick to fund Gregory Pincus' research on human reproduction. This alliance led to the invention of the contraceptive pill that was commercialised in 1960 under the name of Enovid, after controversial clinical trials conducted in Port Rico, Haiti, Mexico and Los Angeles.

The new biomedical technology brought about radical societal transformations, as it provided women with the ability to control their bodies and fertility. It emerged in a context of multiple and interconnected ideological heritage, and was accepted and taken up differently across contexts. In the North, shaken by youth and women emancipation and human rights movements, the pill was received as a long-awaited innovation that supported the sexual liberation and filled an existing demand (Thomé, 2016). The pill, and subsequent other methods developed, gave women (and men) access to a sexuality freed from a fear of unwanted pregnancy. Additionally, women gained control over their reproduction, inversing roles as until then men were largely responsible through withdrawal and abstinence (Kimport, 2018; Thomé, 2016). For the feminist anthropologist Françoise Héritier, the responsibility shift is fundamental in changing gender roles: 'If fertility is the central place of male domination, it follows that by taking control over their own fertility women escape the very place of domination. This is the lever for a major change for all humankind' (Héritier, 1999: 48, our own translation). For other scholars, the changes are rather symbolic. The feminisation of contraception enables women to better control their fertility, but also implies a full reproductive responsibility that is enacted through the ingestion, injection or

insertion of technological methods (hormones, copper, etc.) which long-term effects are unknown (Bajos and Ferrand, 2005). Further, the innovation implied a medicalisation of fertility regulation, whereby women are dependent on health providers to access medical contraception, for prescription and/or administration (Hardon and Moyer, 2014). Autonomy is indeed hampered : 'The contraceptive counselling visit is increasingly recognized as a site of the discursive production of normative ideas about reproduction, suggesting that clinicians themselves may contribute to the assignment of responsibility for contraceptive labour to women (i.e. the feminization of contraception)'(Kimport, 2018: 44).

Developed as methods for individual control of fertility, contraceptives were however framed by a political economy of population control – managed by health services and guided by policies and strategies – where power dynamics are manifest. For example, in Switzerland, Barbey retraces the context in which family planning services emerged, highlighting how such services were institutionalised to control and counter the sexual liberation movement politically feared (Barbey, 2012).

Discourse of 'overpopulation' in the Global South

The invention of hormonal contraception is concomitant with the independence and decolonisation movements in the South. The independence of former colonies shifts their relationship with the former occupants through the emergence of development aid and international cooperation, piloted globally by the Organisation of the United Nations and mostly targeting economic development rather than human development (Rist, 2001). With the decolonisation movement, preoccupations of the (unequal) distribution of and access to resources shifted, and in parallel, the discourse on demography and fertility. High fertility rates and population growth in the former colonies were quickly portrayed and perceived as problematic. Two publications marked the emergence of a neo-Malthusian (neo because it now supported the utilisation of birth control methods) discourse on 'overpopulation' in the Global South: *The Population Bomb* by Stanford University Professor Paul Ehrlich published in 1968 and *The Limits to Growth* commanded by the Club of Rome in 1973. These publications developed catastrophic predictions about population growth in the South, framing it as the main barrier to economic development, thus again legitimising population control policies and interventions.

In such discourse, the complexities of population change, and its relationship with resources and development were completely ignored. In fact, while the 1920s European eugenicist discourse supporting a political agenda for the unequal distribution of resources to privilege the wealthy and isolate (sterilise) the poor was banished, the opposite discourse – a better distribution of resources as a means to bring population change – was seldom voiced or heard (Hartmann, 2016; Ferguson, 2015). To use Ferguson's metaphor, the 'overpopulation' discourse acted as an anti-politics machine, as if FP interventions sufficed to change demographic trends, in a vacuum of other economic, political and social factors (Ferguson, 1994). At the 1974 International Conference on Population and Development (ICPD) in Bucharest, the topic of North-South economic inequality was raised by low-income countries who, in reaction to the incitation to set targets for population growth control, argued that 'development is the best contraceptive', and not the other way around (Shiffman and Quissell, 2012).

The new development institutions – such as the United Nations Population Fund (UNFPA) – provided Southern governments (starting in the 1950s in Asia and later in the 1990s in Africa) with population control policies and strategies, allowing a favourable response to the conditions established in the loans from the International Monetary Fund and the World Bank (Gautier, 2002). The success of the neomalthusian movement can be measured by the increase in the number of countries that adopted antinatalist policies, from 5 in the 1950s to 85 in 1999 (Gautier, 2002). In the 1980s, the neomalthusian dogma was weakened by empirical evidence that the causal association between demographic growth and economic development was incorrect. In parallel, feminist movements gained momentum and voice in denouncing population control policies that baffled women's rights and autonomy to make informed decisions about their reproduction.

The ICPD conference in Cairo

The 1994 International Conference on Population and Development held in Cairo marks a turning point, at least rhetorically, with regards to population control. The second feminist wave rooted in the 1960's had organised more globally through a powerful transnational movement, assembling Southern and Northern women's health groups that shared the same goal of women's empowerment to control their own fertility and sexuality, calling for

maximum choice and minimum health problems (Hardon, 2006). In fact, the concerns with rapid population growth had driven the development of new biomedical reproductive technologies, more efficacious and that would boost compliance, notably long-acting reversible contraceptives (LARC). Criticisms of these new methods, and of the governance of reproductive bodies by States that produced further gender inequalities and vulnerabilities such as in the examples of India and China and their growing sex-ratio disequilibrium and consequences were growing. Women's health advocates' call for reproductive rights and choices was heard, and the ICPD radically changed the global population policy framework, where population control was no longer central and fertility reduction targets were abandoned, at least rhetorically. As Gautier critically discusses, neo-Malthusians having lost their rationale for population control turned to two other movements that could sustain their goal to limit fertility: ecology and feminism. Fight against maternal mortality or against the unmet need for family planning became the new legitimacy and rhetoric for population control (Gautier, 2002; Hartmann, 2016).

With the ICPD emerged the concept of Sexual and Reproductive health (SRH) that encompasses health services broader than FP. SRH groups the topics of family planning, maternal and infant health, sexually transmitted infections (including HIV) and cervical cancer, gender-based violence, abortion and post-abortion care, education and counselling. FP was reframed as a diversified contraceptive offer, informed choices and safe counselling. SRH services target men and women of all ages and marital status. Reproductive health was defined as:

> *A state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the rights of men and women to be informed and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for the regulation of fertility which are not against the law, and the right of access to appropriate health care services that will enable women to go safely through pregnancy and childbirth and provide couples*

with the best chance of having a healthy infant. [ICPD Program of Action, paragraph 7.2 (United Nations, 1994)]

The ICPD also benefitted from the broader change brought by feminist movements that shifted the approach from women's health to gender health, where gender-dynamics in the private and public spheres are the central focus to explore and understand, to fight inequalities. In this frame, 'women should no longer be considered as merely passive 'targets' of demographic policies in which they do not have a say with regards to their implementation, but as 'decision-makers' of their reproductive lives (Adjamagbo and Locoh, 2015: 104). Within an interactional perspective, the role of men in reproductive matters was also put on the agenda and discussed, translating into 'male involvement' strategies for instance.

Family planning today: discourse and trends

This introduction of how FP emerged in a complexity of different contexts and ideologies sets the ground to explain how FP today continues to carry multiple facets.

In the aftermath of the 1994 ICPD, FP was framed as an individual right to control one's body, one's sexuality and one's reproductive preferences. Yet, FP is also policies and health services that aim at improving mother and child health. And, FP remains simultaneously a broader political economy instrument to control fertility and population size through incentives, State- and globally-established targets such as modern contraceptive prevalence rates or unmet need for contraception (Bendix and Schultz, 2018; Hendrixson, 2018). This holds especially true for low-income countries where fertility rates are higher. Hendrixson and Hartman describe how contemporary demographic trends that are portrayed as threats – population growth and the youth bulge in LIC – and burdens – ageing populations in HIC – serve the purpose to 'depoliticize inequalities in wealth and power, and naturalize social and political conflicts' (Hendrixson and Hartmann, 2019: 250). Responding to these threats, modern contraception is promoted as a simple, technical solution: 'Family planning programmes provide a win-win solution; the welfare of individual women and children is improved, and the national economy and environment benefit' (Ezeh et al., 2012: 145). Contraception is often promoted as a liberating and empowering product to women, while the strategies used for their promotion are not always respectful of their free and informed

decisions (Adjamagbo and Locoh, 2015: 102). Additionally, there is a remarkable shortcut in the assumption that by using modern contraceptives, women empower themselves, as if they lived in a vacuum of gender dynamics and social structures that influence choices and behaviour (Adjamagbo and Locoh, 2015).

In 2000, family planning was integrated into the Millennium Development Goal (MDG) 5, with the target to achieve, by 2015, universal access to reproductive health. Four indicators were monitored: unmet need for FP; contraceptive prevalence; antenatal care coverage; and births attended by skilled health personnel. Unmet need for contraception is an indicator calculated from demographic surveys to reveal the discrepancy between women's fertility preferences and contraceptive use. It does not reflect a reality for individuals, but is used as a public health indicator to drive the rational for increased investment in FP programmes and to evaluate progress of national FP programmes. (Bradley and Casterline, 2014).

In the Sustainable Development Goals (SDG) established for the period 2015-2030, family planning appears in two goals:

Table 1 : FP related SDGs, targets and indicators

Goal	Target	Proposed indicator
3.7	By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes.	• Total fertility rate • Contraceptive prevalence rate • Met demand for family planning
5.6	Ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the ICPD and the Beijing Platform for Action and the outcome documents of their review conferences	• Contraceptive prevalence rate • Percentage of girls and women aged 15-49 years who have undergone female genital mutilation / cutting • Met demand for family planning

The ‘unmet need’ indicator was modified into ‘met demand for FP’ in the SDGs, and is restricted to women of reproductive age who are married or in a union on the assumption that ‘cultural norms and/or lack of sex education may prohibit sexually active adolescents from exercising their right to reproductive health services’ (Sustainable Development Solutions Network, 2019). However, the unmet need indicator remains largely used in FP policies and programming.

A shortfall of the unmet need indicator is the assumed linearity between reproductive intentions and contraceptive behaviour. Scholars raised criticisms of the concept, highlighting the misuse and misunderstandings of this public health indicator. Bradley and Casterline retrace the history and rationale of this indicator, stressing that ‘estimates of unmet need represent the proportion of women who want to practice contraception but are prevented from doing so by inadequate access to supplies and services’ (Bradley and Casterline, 2014: 1). Agadjanian discusses how the concept has been wrongly used, by extension, assuming a linear process between reproductive intentions and contraceptive behaviour. The empirical evidence of this matching exercise has in fact been inconclusive (Agadjanian, 2005). In short, family planning programme are deployed to fill the gap of the unmet need for contraception of populations, and the indicator refers to gaps in the supply side, not the demand side. Demand-side barriers should not be pulled from this indicator, as is often done (Bendix and Schultz, 2018).

Following the 2012 Summit on Family Planning held in London, the Family Planning 2020 (FP2020) initiative was launched as a global partnership between governments, national and international organisations, multilateral agencies and the private sector. FP2020 defines its commitment as a partnership of ‘the global community of leaders, experts, advocates, and implementers who are working together to address the most challenging barriers to expanding access to contraceptives’ (FP2020, 2018). FP2020 has a long list of core indicators used to measure progress globally and within countries: additional users; modern contraceptive prevalence rate (MCPR); unmet need; demand satisfied; unintended pregnancies; unintended pregnancies averted; unsafe abortions averted; maternal deaths averted; method mix (i.e. the offer of varied contraceptive methods); stock-outs; method availability; domestic government FP expenditures; couple-year protection; method information index; FP counselling; FP decision making; adolescent birth rate; discontinuation

and method switching. Governments, like Burundi, who adhere to the initiative set their own targets and indicators, as we develop in Paper 1: Reproductive Governance.

Local views and practices: how does fertility change in reality?

Research on reproduction in public health and demography is often conducted quantitatively measuring reproductive intentions of individuals – measured by desired fertility and desired timing of future births, combined in an 'unmet need' indicator – and is used to predict contraceptive demand (Ezeh et al., 2012; Bongaarts and Hardee, 2017; Casterline and El-Zeini, 2014; Sedgh and Hussain, 2014). Research conducted in social sciences on fertility and reproduction using mostly qualitative methods such as ethnography, has however shown that reproductive intentions are not good predictors of reproductive behaviour, and that the sought linear association between reproductive intentions and practices is in fact mediated by a set of interplaying factors around diverse social actors. Social scientists working on fertility and reproduction have built on the work on political economy developed in the postmodern turn of the 1990s and have applied it to reproduction (Ginsburg and Rapp, 1991; Greenhalgh, 1990) and reproductive bodies (Scheper-Hughes and Lock, 1987). Such approach suggests focusing on contextualizing reproductive navigation into power dynamics situated in history and economics, in gender and culture, in social norms. We describe the work of a few scholars who have guided our understanding of reproductive matters in Sub-Saharan Africa.

To assert the non-linear association between reproductive intentions and outcomes, Jennifer Johnson-Hanks used survey data across different countries to show how the association between intentions and outcomes differs by country, hinting that the association is itself a social product anchored in contextualised cultural repertoires (Johnson-Hanks, 2007). Based on her ethnographic research conducted in Cameroun, she further argues that 'under the conditions of uncertainty applicable in contemporary Africa, effective social action is not based on the fulfilment of prior intentions but on a judicious opportunism' (Johnson-Hanks, 2005: 363) that she further nails as 'vital conjunctures'. Women and men are social actors who, in a context of uncertainty, seize opportunities and chances, including concerning reproduction, that induce a puzzling meander between

reproductive preferences and outcomes. Victor Agadjanian has shown how reproductive behaviours in urban Mozambique are framed by considerable ambiguities and ambivalence that are 'rooted in uncertainties about individual and family economic prospects and about the increasingly contested social norms and cultural values' (Agadjanian, 2005: 639). Andrea Cornwall highlighted how narratives of reproductive strategies of Nigerian women resemble in fact more reproductive tactics, whereby individuals and couples 'adapt to changing circumstances, tempering plans with contingencies and finding ways to manage life's uncertainties' (Cornwall, 2007: 230).

These scholars have described in depth how multiple interplaying factors situated in context including uncertainty, complexity and contingency influence the navigation from reproductive preferences to practices.

A model of reproductive navigation

Drawing on the precious work of anthropologists described above, Erica van der Sijpt proposes a model of reproductive navigation (2014). Van der Sijpt conducted her doctoral research in Cameroun on experiences with and decisions on interrupted fertility (miscarriages, stillbirths, induced abortions, infertility or child death) (van der Sijpt, 2011). Grounded in extensive ethnographic research, she explored the individual – social interplay that frames reproductive navigation, showing how reproductive behaviour is socially situated. Individual reproductive options and decisions are influenced by one's position within the wider kinship, as well as by the wider kinship's position within the community. They are also influenced by the relationship to the (potential) father of the child to be born, and his significant others and their position within the community. Further, she adds, reproductive options and decisions are informed by individuals' past reproductive trajectory and the social status derived from it. In short, 'reproductive decision-making is thus a socially contingent affair, embedded in different forms of sociality and power relationships. […] The outcomes of reproductive happenings are not the predictable result of individual deliberation and design but the contingent result of the involvement of social others and of the ways in which women constantly reconfigure their choices in relation to these others.' (2014: 287)

Finally, she adds the dimension of *the material body* into her reproductive navigation framework. The unpredictability of bodies – over time and between women – with regards to reproductive events and mishaps was a central element Cameroonian women had to manage when considering their options, strategies and choices. Social projects of women around reproduction had to constantly be assessed and redefined in relation to their unpredictable bodies. Van der Sijpt stresses that 'it is only when we acknowledge this interplay of the social, the individual and the body that we can come to fully understand reproductive decision-making in people's daily lives' (2014: 288). Her theory and framework grounded in ethnographic work on interrupted fertility in Cameroon is essential and useful to explore other aspects related to reproductive behaviour, for instance fertility control and family planning.

This thesis draws on the work of Erica Van der Sijpt and her heritage, grounded in social sciences approaches and aims at highlighting the joint influences of *sociality* and *corporeality* on fertility aspirations and actions in rural Burundi, using the reproductive navigation framework. The importance of corporeality – not expected at the onset of this research – is a finding that adds to the framework for understanding reproductive intentions and practices by providing more descriptions on bodily matters in other processes of fertility and reproduction.

2. RESEARCH AIM AND OBJECTIVES

This dissertation aims to explore reproductive preferences, strategies, practices and experiences in rural Burundi. More specifically, we aimed at understanding people's *situated* perceptions, practices and experiences of family planning, that is, in a *local* context of political fragility and socioeconomic uncertainty and a *global* context of hegemonic discourse and interventions to reduce fertility in high-density countries.

In order to achieve this overall research aim, we set specific objectives at different levels.

At the individual level, we explored preferences, strategies, practices and experiences around reproduction:

- Determinants of utilisation of FP methods (natural and modern), explored quantitatively and qualitatively, including access to FP methods and services in rural areas
- Reproductive agency of rural women (control, negotiation capacities and coping strategies)
- Role of reproductive health events and FP practices over time

At the community level, we aimed to understand social norms around reproduction, including changes in and deviations from the norms:

- Gender roles in human and social reproduction, and across generations;
- Perceptions of family planning in general: natural and modern methods; birth spacing and limiting, abortion;
- Perceptions of FP services: accessibility, acceptability, quality, equity.

At the national and international levels, we aimed to build an overview of the FP discourse, policies and strategies over time, including the commitment of the Burundian government to global initiatives.

When feasible, we aimed to situate and compare our findings from Burundi in relation to neighbouring Rwanda and South Kivu province of the Democratic Republic of the Congo (DRC) where research on SRH were conducted in parallel in the frame of the Dutch programme, thus applying a comparative approach.

3. THEORETICAL FRAMEWORK

We should bear in mind that our epistemology is but one among many systems of knowledge regarding the relations held to obtain among mind, body, culture, nature, and society. (Scheper-Hughes and Lock, 1987: 11)

Medicine's current self-reflection is predominantly epidemiological in character. Epidemiology brings together disparate entities too, but its method of accounting isolates each so-called variable from all the others and is incapable of articulating links and tensions between them. At this point ethnographic recounting is a more promising technique: it can produce rich stories of lived bodies in which medicine figures as a part of daily life. But smooth narratives that seek to bring coherence will miss the point. If the tragic aspects of living-in-tension and intervening-for-the-best are to be described, jagged story-lines are needed. And they should be told by a variety of narrators whose voices may be drawn together and/or clash. For this is where patients come in again: aware, not just self-aware, but equally able to tell stories about medicine and the effects of its interventions. The overall aim of a multi-voiced form of investigative story telling need not necessarily be to come to a conclusion. Its strength might very well be in the way it opens questions up. (Mol and Law, 2004: 58-59)

Epistemology, theory and concepts

This thesis draws on different research disciplines and subsequently methodological approaches to disentangle FP policies, discourses and practices in Burundi. We use epidemiology to quantify and identify determinants and trends. We further rely on medical anthropology to explore locally constructed perceptions of bodily biologies and agency, and power dynamics. Finally, we draw on political economy (of reproduction) to grasp globally constructed discourses and goals, designed programmes, and broader development dynamics and rationales.

We use a traditional approach in epidemiology to quantify the prevalence and distribution of public health indicators established for FP, such as SRH knowledge, utilisation of

contraceptives and adolescent pregnancy (Paper 2: Adolescent Pregnancy). Quantitative survey data allow quantifying the number of adolescent pregnancies and utilisation of contraception, as well as identifying factors associated with these outcomes (socio-demographics, education, SRH knowledge and social values and religious beliefs). These potentially explanatory factors were selected, based on the existing literature on the topic. Results from this cross-sectional survey was however limited to the available (collected) factors, and limited the interpretation (no directionality in association can be established).

The major part of this thesis follows a medical anthropology approach to explore locally constructed and expressed perceptions of bodily experiences around fertility and reproduction (Paper 3: Reproductive Life Course; Paper 4: The Body is Difficult; and Paper 5: Contraceptive Side Effects). Life histories with a focus on reproductive events collected through interviews repeated over a three-year period and community observations allowed the inductive construction of categories related to fertility and reproduction (fears, hopes, beliefs, expectations, benefits, meanings, etc.) and their embeddedness in local biologies (meaning of blood flow) and local power dynamics (gender and generational relations at the individual, family or community levels).

Looking at the local social arrangements within which reproductive experiences are situated indeed call for an interest on the inherently power dynamics. Belonging to anthropology, political economy (of reproduction) allowed linking local practices, experiences and discourse to the broader historical, economic and cultural context, namely the forms in which international and national actors influence local communities in the field of reproduction. Drawing on the work of Greenhalgh (1990) and Piché & Poirier (1995), we follow the approach of considering power dynamics at micro, meso and macro levels (Paper 1: Reproductive Governance).

By adopting a socio-constructivist approach, our aim is to apply a critical epistemology of concepts and categories around FP, such as ‘demand for contraception’ in mainstream epidemiological discourse, or ‘fear of contraceptives side effects’ in local discourses. In other words, we are interested in understanding how these concepts were constructed as representations of reality, and how they are being used in context (situated construction of meaning). This thesis mobilises several theoretical concepts belonging to social sciences that

we used to approach our topic and field and to analyse and interpret our data that we developed in the different papers, and that we briefly develop here.

Biopower and governmentality

Michel Foucault has developed the concept of *governmentality* – defined as the techniques for governing human conduct based mainly on political economy knowledge and security apparatus (Foucault, 2004: 111) – to describe how with the birth of Nation-States that settled boundaries of territory, population became a political 'problem' to be thought in economic terms. According to Foucault, demography and epidemiology – as political economy instruments – produce knowledge to orient the *biopolitics* (politics of the living) of populations, based on specific variables such as birth rates, life expectancy, fertility, disease prevalence. In this frame, human reproduction is an object that the political needs to govern, a 'bio-political space *par excellence*' (Rabinow and Rose, 2006: 208). The governing of reproductive bodies is however not coercive; it rather aims at normatively inducing 'a moral authority over individuals by explaining individual 'problems' and providing solutions for them' (Turner, 1997: xiv). As products of power, health policies and services such as FP produce discourse and knowledge that influence and conduct the conduct of individuals by establishing normative and desirable behaviour. Through 'practices of the self', individuals embody and enact morally valued, responsible and disciplined behaviour, which Foucault described as the process of *subjectivation* (Hayter, 2003). By moving his interest from governmentality to practices and disciplines of the self, Foucault further explored the micro-powers at local level that, in response to the hegemonic discourse, generate adherence or resistance to engage with the desirable disciplined behaviour.

In Paper 1, we use the concept of governmentality to explore the interplay between the rationality of a government to govern its population (by developing FP policies and deploying FP services) and the one of self-government of reproductive bodies by individuals and couples (deciding on and practicing FP).

Life-course approach

Life-course epidemiology was developed in reaction to health envisioned as a state (e.g. WHO definition of health), leaving little room for the dynamic dimensions of health and the ability to adapt and to self-manage health states over the life-course. The idea is that over

the life-course, individuals (and communities) cumulate experiences that positively and/or negatively influence exposure to risks and adverse events. In other words, 'the combination of physiological and social resources that individuals can count on is expected to influence their ability to adapt, with responses ranging between vulnerability and resilience' (Burton-Jeangros et al., 2015: 2). Life-course epidemiology attempts to integrate biological and social risk processes.

We draw from the life-course approach in Paper 3 to analyse how sexual and reproductive realities evolve over the different life stages of rural men and women in Burundi. Accessing FP services and trying-out modern contraception (with known and feared side-effects) for young women, certainly is a very different experience compared to older married, multiparous women. Experiencing reproductive mishaps (stillbirth for example) has an influence on biological and social representations of pregnancy and delivery. Further, the life-course perspective is essential to understand the concept of embodiment, that is fundamental in this dissertation, whereby life-course events unfold over time 'with each step being partially dependent on what has happened before and partially shaped by existing conditions, which are integrated into the nature of the individual who faces (and reacts to) succeeding events' (Davey Smith, 2006: xxix).

Embodiment and the materiality of the body

Papers 4 and 5 draw on embodiment theory, and feminist theory around bodily materiality to understand preferences, practices and experiences of family planning.

Nancy Krieger defines embodiment as 'a concept referring to how we literally incorporate, biologically, the material and social world in which we live, from conception to death; a corollary is that no aspect of our biology can be understood absent knowledge of history and individual and societal ways of living.' (Krieger, 2001: 672)

The concept of embodiment appeared in the social and human sciences in the 1980's, through the wider post-modern turn that saw the body reappear in social theory through the work of Mary Douglas, Thomas Csordas, Margaret Lock and Michel Foucault among others. The body had 'disappeared' in the dualist construction of the Western World (and its modern epistemology) opposing body/mind, nature/culture (or nature/nurture),

emotion/reason, women/men, and reproduction/production in the industrialised world. Feminist theories have largely contributed to bringing the materiality of body back to analyse social order and social (inter)actions, as we develop below. The body was (re)integrated in social theory as a lived body, a bodily being-in-the-world, 'simultaneously a physical and symbolic artefact, as both naturally and culturally produced, and as securely anchored in a particular historical moment' (Scheper-Hughes and Lock, 1987: 7). Embodiment is a way of describing the enlived bodily experiences shaped by historical, social and political environments.

Embodiment is described as central to the sociological enterprise: 'the grounding of social theory should be rooted in the contingencies and predicaments of human embodiment, and the links this provides to broader issues of social order and transgression, structure and action, agency and identity' (Williams and Bendelow, 1999: 8). Embodiment is also central to epidemiology, as described by Krieger: 'In the case of epidemiology, the discipline specific challenge is to grapple with the implications of 'embodiment' for developing and testing apt hypotheses about why and how historically contingent, spatial, temporal, and multilevel processes become embodied and generate population patterns of health, disease, and wellbeing, including social inequalities in health' (2005: 350-351). She further suggests to use the concept of embodiment in epidemiology, to understand 'how we, like any living organism, literally incorporate, biologically, the world in which we live, including our societal and ecological circumstances'(2005: 351).

Thus, the body has a history, is a cultural phenomenon and a biological entity at the same time, and is an experiencing agent over the life course (Csordas, 1990: 1). As an embodied experience, reproduction is at the same time a biological phenomenon (pregnancy and delivery, or inversely fertility control for pregnancy avoidance) and a social phenomenon (attaining adulthood, raising the next generation, contributing to the patrilineal system, gaining social status). Feminist scholars have focused on the problematic conceptualisation of the body as binary: the biological body on one side used to distinguish female from male through chromosomes, hormones or reproductive system; and the social body on the other side as the expression of social organisation between men and women through socially constructed gender identities, roles and relations. In the debate, they came to discuss the (pre-social) *materiality of the body.* Some scholars like Judith Butler suggest that the body

should be apprehended as a support that does not have a pre-social materiality, but on the contrary that is the full product of cultural, biological and political inscriptions. These inscriptions generate not only the social classifications of men and women, but also the biological categories of 'natural sex'. She thus questions the discourse on a biological, pre-social and politically neutral sexed body that is only shaped and attributed a gender through socialisation (Butler, 2007). According to this conception, we should be primarily interested by the *externality* of the body, that is the socio-environmental elements that shape it, and not by its *internality* that only reflects the result of the *embodiment* of the social, the environmental and the political. Other scholars like Donna Haraway or Elisabeth Grosz suggest that the materiality of the body should be apprehended in its double movement: we should look into how individuals are shaped by their biological bodies; and at the same time we should consider how individuals shape their social environments and processes through their bodies (Kuhlmann and Babitsch, 2002). Looking into the different conceptualisations of the body and its materiality, Ellen Kuhlmann and Birgit Babitsch ask the following question: through the constructivist approach – that allows deconstructing the body – what is indeed left of the biological body? In other words, how can we apprehend health and illness within the materiality of the body? Thus, they stress the need to bring corporeality back into the debate to advance on gender health research, avoiding by all means biological reductionisms.

In this dissertation, we discuss the materiality of the body through the narratives of our research participants who experienced physical side-effects using modern contraceptives (Paper 5: Contraceptive Side Effects), and who discussed their perceived bodily capacity for natural birth-spacing and the regularity of their menstrual cycles necessary to use traditional methods (Paper 4: The Body is Difficult).

4. STUDY SETTING

La terre avait bougé sous nos pieds, imperceptiblement. C'est ce qu'elle faisait tous les jours dans ce pays, dans ce coin du monde. On vivait sur l'axe du grand rift, à l'endroit même où l'Afrique se fracture. Les hommes de cette région étaient pareils à cette terre. Sous le calme apparent, derrière la façade des sourires et des grands discours d'optimisme, des forces souterraines, obscures, travaillaient en continu, fomentant des projets de violences et de destruction qui revenaient par périodes successives comme des vents mauvais : 1965, 1972, 1988. Un spectre lugubre s'invitait à intervalle régulier pour rappeler aux hommes que la paix n'est qu'un court intervalle entre deux guerres. Cette lave venimeuse, ce flot épais de sang était de nouveau prêt à remonter à la surface. Nous ne le savions pas encore, mais l'heure du brasier venait de sonner, la nuit allait lâcher sa horde de hyènes et de lycaons.

Gaël Faye, Petit pays (novel on his childhood in Burundi in the 1990's)

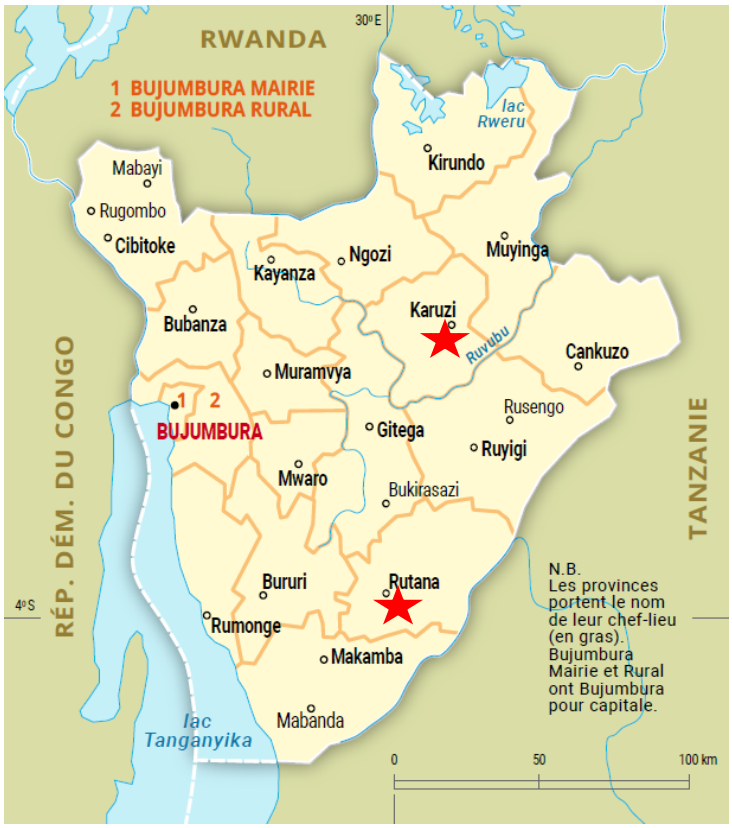
Study sites

This research took place in Burundi, in the provinces of Rutana (Rutana centre and Butare) and Karuzi (Karuzi centre and Nyabikere). Karuzi is a province in the centre of Burundi, reachable by road from Bujumbura via Gitega in 3.5 hours. The surface was 1,457km^2 for a population of 426,126 (299 hab/km^2) in 2008 (ISTEEBU, 2016). Karuzi province was strongly hit during the war. The Hutu rebellion that surged after the assassination of their first elected president resulted in the massacre of many Tutsis in the province that only stopped when the army arrived several days later[2]. Tutsis grouped into an IDP in the provincial centre (Karusi) that grew into a large neighbourhood. Most people living in the camp today – many widows and reconstituted households – reach their fields on their former living hills during the day for agricultural work, and return at night, for security. The vast majority of the population lives on subsistence farming, and sell some of their extra crops at the marketplace. The marketplace in Karusi consisted of individuals selling small amounts of products, such as tomatoes, manioc, linga-linga leaves and eggs. Few development projects had taken place in this 'isolated' province, relative to other provinces. Karusi centre had a population of 10,000 inhabitants in 2008 (much larger today). Karusi is the administrative provincial centre, and is situated a few kilometres away from Buhiga, a larger town that had

[2] On origins of the ethnic groups found in Burundi, see Footnote 13.

a slightly larger economic activity. Karusi hosts the Institut Technique Agricole du Burundi (ITAB) – Agricultural Technique Institute of Burundi that drags students from all over the country. Our second fieldwork site in Karusi was Nyabikere, a small town situated a one-hour drive on dirt roads South of Karusi centre. The town has a market, a school and a health centre that attracts the population from the town and neighbouring hills.

Image 1 : Map of Burundi



Source: Encyclopædia Universalis, www.universalis-edu.com/atlas/afrique/burundi/#AT003303

Rutana is a province in the South of Burundi bordering Tanzania. It is reachable by road from Bujumbura in 3 hours. The surface was 1,959km^2 for a population of 322,081 (170 hab/km^2) in 2008 (ISTEEBU, 2016). Rutana province provided slightly better temporary economic opportunities as it is neighbouring Tanzania and it hosts the national sugar factory. Men sought seasonal work in Tanzania, called *gupasaga*, and returned with cash and/or cattle (mostly goats). The *Société sucrière du Moso* (SoSuMo), a sugar company East of Rutana centre also attracted workers. There were more development projects in Rutana, observable by the amount of NGO signs and banners in Rutana's centre, the offer of hotels

and the presence of Ministries' representatives and foreigners. Rutana centre has a population of 55,000 inhabitants. Its market was much larger than Karuzi's. Our second fieldwork site in Rutana was Butare, a very small centre situated a half-an-hour drive on the main road South of Rutana centre. Butare is not a town, but a centre in the sense that it hosts a primary school, a secondary school and a health centre, that together attract the population from neighbouring hills.

Both provincial centres have a large Catholic Church and parish, as well as numerous different smaller protestant churches and mosques. According to the recent DHS, 57% of Burundians self-report as Catholics, 34% as Protestant (branch unspecified), 3% as Muslim and 3% as Adventists (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017).

Socio-political organisation

Burundi was organised as a kingdom until 1966. Members of the royal family, together with political and military elites, were administrating populations living on agriculture and cattle spread throughout the country. Large-family organisation model prevailed whereby families were geographically isolated into *rugos* – i.e. a fence enclosing family member huts and animals surrounded by their land – spread over the numerous hills. There were no villages in Burundi, and most *rugos* lived self-sufficiently, while contributing to the kingdom. Individual mobility was scarce. Through the authoritarian patrilineal system, children and women worked as domestic dependants. The country was spared from slave-trade, the few attempts to penetrate the hills of Burundi and Rwanda by the Arab traders from the East coast of Africa were pushed back. Colonisation however arrived with Germans (1890-1914) and then Belgians (1914-1961) administrating the country jointly with Rwanda (colony of Ruanda-Urundi), in parallel to the monarchy. Christian missionaries – Roman Catholics and Protestants – arrived during the German colonisation, and the Catholic Church strongly established when the Belgians inherited the country, establishing and funding schools and hospitals.

During colonisation, the social strata established by the monarchy were essentialised into

ethnic groups following the anthropological categorisation movement of the period[3]. Burundi became independent in 1962 but the fight for power led to successive political assassinations and popular revolts, notably in 1965, 1972, 1988 that led to massive killings in the population but also in the political and military elites that were based on ethnic lines. In 1966, after a coup, the country became a Republic, but the discourse on ethnic division continued, mostly carried and continued by a Tutsi elite, privileged and educated through the colonial system: 'the political game to find scapegoats or ideal-types, from colonisation to independence, has set the trap for an internal racism that has closed on the whole population'. (Chrétien, 1999: 163). From 1966 to 1993 the country was ruled by military regimes, all composed of Tutsi officers coming from the same commune in Bururi province. In 1972, a Hutu rebellion organised in Tanzania surged in the South-West of Burundi. The reaction from the army was immediate and national, and over two months, between 80,000 and 200,000[4] Hutus were massacred all over the country, and the target was specifically set on the educated and politically positioned. No trial nor treatment of the past ever covered this period in history, leaving populations traumatised and ethnic tensions vivid. 'The official amnesia advocated by the government could, in the eyes of the parents of the victims, only heighten the sense of humiliation, encourage a return to violence and ultimately cultivate a spirit of revenge' (Thibon, 1994, cited in Courtois, 2016: 12, our translation).

In 1993, the first democratic elections were organised and, to the surprise of the Tutsi elite, they were won by a Hutu-led political party, bringing great hopes to a Hutu population that was until now systematically excluded from economic, social and political institutions. But five months later, civil war broke out as the new president was assassinated by the army, triggering massive violence and killings between ethnic groups, in the North, East and the Centre of the country. In the next decade, the conflict – locally called *la Crise* – continued under a military regime trying to tame the organised Hutu rebellion, and caused, in addition

[3] The work of researchers to historically document and deconstruct the making of ethnic identities and roles, especially during colonisation, allows grasping the origins and manifestations of the ethnic and political division between Tutsi and Hutu groups (the Twa minority are so ostracised that often not politicised). See also Footnote 13.

[4] Estimations differ because of the lack of trial or treatment of the past process.

to deaths and injuries, major internal and external population displacements[5] and massive land grabbing (ICG, 2003; van Leeuwen, 2010).

Post-war context

The 2000 Arusha Peace Agreements led to elections in 2005 that put a former Hutu rebel in power who had large popular support, Pierre Nkurunziza. Despite the apparent political stabilization from 2005, government institutions have not managed so far to ensure developments to strengthen the peace process. Hopes for political and socioeconomic stability suffered as the political exercise predominantly consisted of securing power and dealing with political opponents and civil society activists. As described by Lidewyde Berckmoes, surges in tensions and violence have been ongoing, especially in relation to rebel activities (around the 2010 elections) and rumours about the formation of new rebel groups. The government underwent a deep restructuring of the army and police forces, integrating the former Hutu rebels into these institutions, largely composed of Tutsi agents. In parallel, the youth militia of the political party in power – the *Imbonerakure* (those who see far) – has been growing in size and influence, bringing strong tensions and fear in rural and urban areas.

Overall, Burundi's democratic shift has remained partial. The political system remains subordinated to an authoritarian conception of power, inherited from the Monarchy and from the decades of military dictatorship. 'While the principles of negotiation are not absent from society's social and political management practices, the transfer of power to voters is a major shift in perception that has not yet accomplished the reversal of accountability: it is still the people who owe something to their elected elites and not the other way around'(Courtois, 2016: 17). This is important with regards to FP policies: the government discourse is (perceived by many as) an injunction.

[5] Major population displacement (mostly Hutus) already occurred in 1972, caused by the surge of ethnic violence.

The crisis recently resurrected around the 2015 elections as the president clung on power beyond the two presidency terms constitutionally allowed (see also section A fragile terrain in Methods).

Economic livelihoods in rural areas

More than 90% of the population live in rural areas and ensures livelihoods from their own agricultural products (République du Burundi, 2011b). Activities of rural households to generate income are based (and dependant) on own production, such as banana wine sold in the front of the house, or extra crops sold in the marketplace. Daily jobs, mostly executed by men, contribute to generating cash to cover expenses, and take the form of working on neighbour's fields or in plantations during harvest season, including in Tanzania, or being hired on construction sites. The main food crops grown are manioc (accounting for over 50% of total dietary energy supply), beans, sweet potatoes, and bananas. Livestock, mostly goats and cows, represent the principal form of capital accumulation for farmers. (Bundervoet, 2010)

In the post-war period, socioeconomic reconstruction was largely delegated to international development and humanitarian actors. The socioeconomic situation has been degrading especially in rural areas. Increasing inflation limits the capacity for rural households to purchase seeds and crops and the necessary fertilisers for the tired overexploited land. In addition, climate disturbance experienced in these regions such as deregulated rain seasons and massive rainfalls have caused damage to the hill-shaped topography, aggravated by continuous deforestation.

Land conflict

The successive outbreaks of violence since independence and *la Crise* (1993-2005) caused, in addition to hundreds of thousands of deaths, important movements of population within the country and outside its borders. The end of the crisis and the new political leadership has allowed the return of IDPs and refugees from both 1972 and 1993 migration waves who attempt to claim back their land, in the meantime occupied and exploited by other households over generations. Following the requirements from the Arusha Peace Agreements, a set of land administration reforms were put on the political agenda. Reforms included 'land titling projects, creation of provincial land administration offices and the

establishment of special commissions for refugee land to improve service provision, decrease land-related conflicts, improve female land ownership and allow title-holders the benefits of land-related credit' (Serwat, 2019: 6). The decentralisation process is taking place, technically and financially supported by external donors such as the Swiss Development and Cooperation Office in some provinces, leaving other provinces with no support. In 2006, the National Commission on Land and other Goods (CNTB) was put in place. This new institution however controversially added fuel to the existing ethnic tensions, as its partiality was questioned and publicly criticised (Purdeková, 2017). Claims from returnees aggravated the already difficult situation of land scarcity and inappropriate land laws.

Scholars have shown how locally, different regulatory regimes coexist (Kohlhagen, 2012; Serwat, 2019). Most land conflicts, as any other conflict in fact, are often first submitted to the local customary justice instances, the *bashingantahe* councils[6]. With the new government and the change of elite and power-dynamics, official politico-administrative structures were replaced to the smallest administrative division of rural society, the 'hillside' (*la sous-colline*). Hillside heads also tend to play a role in conflict management, in parallel to *bashingantahe*. What is observed is that conflicts brought to the official justice authorities often see their decisions not respected, and overall many conflicts are solved locally through violence (Keenan, 2015). Dominik Kohlagen describes how the coexistence of these conflict-resolution mechanisms is comparable to a situation of *anomie sociale*: 'Violence, fear and lack of rules: tensions over land in Burundi are very close to what Emile Durkheim termed anomie, referring to the breakdown of social values and socially accepted norms (Durkheim 1897). Many land conflicts today cannot be solved because people do not agree on a common normative repertoire.' (Kohlhagen, 2012: 2)

Destructured social fabric

La Crise, together with the previous violence surges, has also affected the social fabric,

[6] Bashingantahe was a pre-colonial institution that ensured sociopolitical order and conflict resolution that still exists today but "shares" its role with formal justice institutions. Bashingantahe are customary "notables" elected by the community for their exemplary behavior and wisdom. They form councils at the administrative level of hills (or quartier in cities). While formally reserved to men, women are now slowly included.

especially perceptible through the low interpersonal trust and the disorder in family structures. In 2009, Peter Uvin observed that:

> 'Household conflicts are one of the most serious problems faced by many Burundians, especially women and children. The stunning outside pressures Burundians have been subjected to – the ravages of war, the insecurities of banditry and theft, the grinding pressure of misery, the land scarcity and the fear for tomorrow – often get mediated into deep and long-lasting intra-household conflicts, pitting husbands against wives, brothers against sisters, children of one marriage against children of another. These conflicts are very painful and debilitating: they take up enormous energy, and create fear and pain in the lives of people who are already under considerable stress.' (Uvin, 2009: 27)

Scholars have described how the civil war, land pressure and chronic poverty have affected the Burundian social fabric at households and community levels (Courtois, 2016; Uvin, 2009; Sommers and Uvin, 2011; Mercier et al., 2015; Berckmoes and White, 2014; Bundervoet, 2010). Sommers (2013), Sommers and Uvin (2011), Berckmoes (2015) and Berckmoes and White (2014) conducted research in Burundi on youth and violence, exploring how young people – mainly men – were involved in and affected by the conflict. They described how young men who are no longer receiving land from their fathers because of scarcity have to find other opportunities to make a living, *trouver la vie*. Achieving secondary school is a common aim, being however aware that chances to find employment is not based on expertise, competencies and experiences, but rather on social relations with the economic and political elite.

Demographer Anne-Claire Courtois studied the phenomenon of female-headed households in Burundi and documented how a destructuration of both family and household institutions has taken place, leading to an incapacity to reproduce the cultural system, especially around the family:

> 'During these years of war, families from both ethnic groups were separated and were forced to hide, to flee, or to participate into the conflict. Subsequently, throughout this period, social codes were broken, such as the fact that families were

> forced to sleep all together in very small spaces, sharing the private sphere with family members who should have been excluded. It is the entire family or households structures that were dismantled / broken down. It was the same in the displacement or refugee camps who saw new hierarchies coming in competition with old models.' (Courtois, 2016: 185, translation by us)

Courtois describes how land pressure also affected norms, such as the organisation of households into male-headed *rugos* that guaranteed social cohesion within the larger family around its lands. She explains the growing existence of female-headed households as developments compelled by the incapacity to reproduce social norms, rather than new forms of social arrangements driven by female empowerment. She in fact describes in length how women heading households struggle to ensure livelihoods and are subject to disapprobation from the community, and to violence (Courtois, 2016).

Sommers (2013) and Uvin (2009) describe a context of pervasive violence, in the domestic sphere (men against women, and parents against children) and in the public sphere (teachers against children). During fieldwork, I witnessed a scene in the street in Rutana, where a female police officer was roughly beating school children aged five or six with a wood stick. People walking by where ticking their tongues in sign of disapproval, but walked their way.

Gender power dynamics

In 2005, several initiatives were adopted that aimed at improving women's situation in Burundi. The Constitution, following Arusha's decision, included quotas to increase the participation of women to 30% in government and the national assembly. Announced as an electoral promise, free education for both boys and girls was introduced in 2005. This led to a massive increase of needs in the education sector (schools, teachers) that were not covered, and subsequently to a serious decrease in quality of education. During fieldwork, school was offered part-time: pupils were enrolled either in the morning or the afternoon sessions, and the number of children per class was very high.

To this day, there is little evidence that these measures have brought improvements in the position of women in society. The organisation CARE in Burundi conducted a survey in 2017

on ‘Norms and practices impeding gender equality in Burundian society’ (CARE Burundi, 2017). The survey described a larger rate of school abandon in girls compared to boys at the primary level, mainly explained by poverty: ‘because it is culturally not well regarded for boys to do household chore, the girls are the ones who are compelled to stop schooling to help their mothers at home and at the farms’ (2017: 6). Another reason for female school dropout was pregnancy, which was attributed to poverty as well.

The survey described a gendered division of labour and assets. Farms generally belong to men and women exploit them as domestic workers. Revenues from the farm, considered as the main household income, are managed and controlled by the man, as head of household. This gendered organisation was qualified as economic violence exerted ‘through the deprivation of the victims from accessing or using household assets, the crops harvested from the farms on which the women were the sole workers, the controlling of their access to health care, employment, and their exclusion from decision making on household expenditures’ (2017: 7). Female survey participants additionally deplored that often, household assets are wasted on alcohol and prostitution.

Existing survey on gender-based violence (GBV) in Burundi show very high prevalence, of 20 to 35% for women (Dijkman et al., 2014; Manca and Baldini, 2013). These surveys show that the levels of violence have not decreased since the end of the civil war, but that perpetrators are not uniformed men but mostly male family members. In fact, the status may have changed because men in uniform or armed during the conflict have been demobilised and are now husbands, neighbours, civilians. An explanation given to the remaining elevated violence and its normalisation in the post-conflict period is the absence of transitional justice, or reinsertion programmes for ex-combatants including psychosocial support (Dijkman et al., 2014).

Peter Uvin included one chapter of his book *Life after Violence* on ‘Changing gender expectations in Burundi’, co-authored with Kim Howe (2009: 123-144). The authors asked participants about masculine and feminine ideals, and discussed the situation of young men and women. They report that young men fail to reach normative adulthood because of their lack of access to land and/or cash to engage into marriage, and that this situation produces profound personal frustration and shame. A temporary solution is to engage into informal

marriages – *gucikiza*, marriage without a ceremony – that are increasingly more accepted by the community. Yet, as the authors highlight, this practice put women at risk: 'while the normalisation of informal marriage contributes to social stability, the cost of it is largely borne by women. Indeed, such arrangements put her at risk – if she is thrown out or if he leaves, she is left without legal recourse and often with children, and not welcomed back by her parents.' (Uvin, 2009: 128) Looking at strategies of young women, it is in marriage that women seek and secure passage to adulthood, and in the meantime or alternatively through sexuality that women access financial livelihoods. Young unmarried women and widows receive cash or gifts in exchange of sex with wealthier men, often merchants or soldiers. These practices are less accepted by the community, as they transgress two taboos: women having multiple partners; and women earning money. The Burundian femininity ideal-type is characterised by values of submissive attitude and shyness (Seckinelgin et al., 2011: 61); obedience, moral behaviour, politeness and respectfulness (Uvin, 2009: 135); and public voicelessness (Courtois, 2016: 203-206). Burundian normalised masculinity is built on a glorification of militarism, oppression and violence through the figures of men as royal warriors, as soldiers, as rebels (Daley, 2007: 107-134), and more recently as young militiamen like *Imbonerakure*.

Feminist scholars have explored how the legal and customary institutions, even when reformed, maintain, and even increase, gender inequalities in Burundi. Burundi has no national land code, and in the absence of such code customary laws prevent women to access (register for) and inherit land. In 2004, a government legislation on women's inheritance laws was submitted to the National Assembly. In 2011, the process was abruptly stopped by the President, based on the argument that such reform would rekindle ethnic conflicts. Another argument brandished was that the lobbyists were urban female elites influenced by international actors and not representing the whole population (Saiget, 2016).

Increasing land tenure in rural areas permitted by the decentralisation of land administration proved unsuccessful in improving women's access to land. Serwat describes how, to title land, women face a number of obstacles, including access to financial means to purchase land, registering land in their own name and interfamily disputes on succession (2019: 29). Decentralised registration process creates opportunities for more powerful actors to improve their own situation with regards to land tenure at the expense of those

with less power, such as women. She highlights how the coexistence of regulatory regimes further excludes women: 'Formal-legal court rulings based on neocustomary[7] norms stifle female land rights, as well as the large number of cases resolved by the bashingantahe' (2019: 29). Serwat describes variations in the patterns of contestation over inheritance and land disputes, contingent on intra-household gender-power dynamics and external interventions 'which may change incentives and subsequent behaviour patterns' (2019: 7).

The Health System

The civil war has left the health system very weak and heavily relying on humanitarian and development aid. The system is organised through primary care facilities – public and private (mostly faith-based) – where nurses are found, district and regional hospitals where physicians are found. As shown in *Table 2*, the number of health personnel (physicians or nurses) per population is drastically below the WHO-set thresholds to ensure universal care coverage (set at 3.4 per 1000 in the 2010 World Health Report). Following his 2005 election promise, President Nkurunziza introduced free health care for women around pregnancy (antenatal care, deliveries and postnatal care services) and for children under five years old. His initiative was largely funded by external donor through a performance-based financing (PBF) scheme.

The PBF system was introduced under the strong impulse of external donors in 2006 in pilot provinces, and it became a national strategy in 2010 for all public health services (Falisse et al., 2012). A study published in 2010 (Soeters et al, cited in Witter et al., 2012) reported that in Burundi, PBF incentive payments made 60% of the total facility income. The scheme showed positive results with regards to institutional deliveries as seen in *Table 2*, coverage of bed nets for malaria prevention and vaccination rates of pregnant women. For all other indicators including modern FP (there were 23 output indicators in total), no significant positive influence of PBF were found.

[7] Neocustomary designate customary laws reshaped through the colonial process. More explicitly the influence of the patriarchal models of gender relations, creating a society based on a hierarchy of race, ethnicity and gender (Daley, 2007: 27).

Table 2 : Selected health and social indicators for Burundi

Indicator	Figure	Year
Total population in millions	10.5	2016
Population median age	17.6	2013
Poverty headcount ratio at $1.25 a day (PPP), (%)	81.3	2006
Life expectancy at birth (years), male	58.5	2016
Life expectancy at birth (years), female	61.8	2016
Children aged <5 stunted (low height for age) (%)	55.9	2016
Births attended by skilled health personnel (%)	85.1	2017
Physicians density (per 10,000 population)	0.5	2016
Nursing personnel density (per 10,000 population)	6.8	2016
Maternal mortality ratio (per 100,000 live births)	548	2017
Under-five mortality rate (per 1,000 live births), both sexes	58.5	2018

Source: WHO Global Health Observatory (WHO, 2019)

The weak health system is further burdened by the very poor health conditions of the Burundian population. Shown in *Table 2*, under 5 chronic malnutrition hits more than half of the children, life expectancy is very low, and the maternal mortality ratio and under-five mortality rate are also among the lowest in the world.

Family Planning in Burundi

As further described in Paper 1: Reproductive Governance, the history of fertility in the Great Lakes region shows important fluctuations contingent on specific changing historical and demographic contexts, including colonial occupation and Catholic missionaries' implementation. Between 1950 and 1975 the population doubled, triggering land issues and the rise of the 'overpopulation' discourse.

Demographic and Health Surveys (DHS) were conducted in 1987, 2010 and 2016/17. *Table 3* presents data related to FP collected in these three national surveys. As shown, the total fertility rate has been slowly decreasing, and utilisation of modern methods by women in union has been increasing to 23%. The ideal number of children, as declared by participants, has been decreasing, to reaching about four children in women.

Table 3 : DHS indicators related to fertility and reproduction, trends

DHS indicator	Year		
	1987	2010	2016
Fertility rate			
Total fertility rate	6.9	6.4	5.5
Adolescent pregnancy rate	n/a	10.0%	8.0%
Utilisation of FP methods			
Women* currently using a method			
% currently using a modern method	1.2%	17.7%	22.9%
% currently using periodic abstinence method	4.8%	1.9%	2.3%
% currently using withdrawal	0.7%	2.3%	3.2%
% using nothing	91.3%	78.1%	71.5%
Reproductive preferences			
Fertility rate desired	5.8	4.5	3.6
Ideal number of children			
men	n/a	4.0	3.7
women	5.3	4.2	3.9
Knowledge about reproduction			
Knowing at least 1 modern method, in women	58.0%	97.0%	97.2%
Knowledge about fertility period, in women			
middle of the cycle	17.8%	18.1%	21.3%
after the period	18.6%	30.3%	39.6%
don't know	57.6%	30.2%	10.5%
Knowledge about fertility period, in women using periodic abstinence			
middle of the cycle	35.3%	39.7%	27.4%
after the period	30.4%	38.9%	55.1%
don't know	27.9%	9.0%	1.2%

*aged 15-49, in union

Knowledge and utilisation of natural methods of FP are very low. Knowledge about fertility period in women using periodic abstinence methods is low: only 27% of the women identified the middle of the cycle as the fertile period. In 2016, the 39.6% of all women identified the fertile period as being situated after the period, and 55.1% of women using periodic abstinence. Yannick Jaffré in West Africa also observed this: a local conception of fertility window that is situated just after the period was explained by the fact that the uterus that has opened to let the blood flow takes some days to close, period during which women can conceive (Jaffré, 2012).

Family Planning: providing modern contraception in health facilities

During the time and in the areas where this research was conducted, FP services were incentivised through the PBF scheme, mostly funded by external donors such as the Dutch Ministry of Foreign Affairs. FP services were incentivised in primary care facilities and hospitals. Health facilities reported the number of women under a modern method who were provided with a contraceptive method over the month and received per pill or injection 5,000 BIF (circa 2.8 USD in 2014), per implant or IUD 14,000 BIF (7.8 USD), and per vasectomy or tubal ligation hospitals received 60,000 BIF (33.6 USD) (République du Burundi, 2014).

In our research sites, a Dutch NGO was active supporting the national system strengthening its drug chain management in ensuring the availability of contraceptives in health facilities. According to monitoring reports of the NGO, contraceptives were available in health facilities, and shortages were rare.

In places where health facilities were faith-based (mostly Catholic), the strategy of the PNSR supported by external donors was to establish nearby dispensaries providing modern methods. Of the 735 primary health care facilities in Burundi, 14% are faith-based and have a convention with the *Minisanté* to implement the minimum activities package (République du Burundi, 2011a). They run as public clinics, except for FP services where they only promote and provide education and counselling for natural, non-technological methods.

Traditional medicine exists in Burundi, and with regards to FP it was used to treat infertility or to abort (Ventevogel et al., 2018; Falisse et al., 2018). Stories of abortion performed by

traditional healers were told during interviews, but often with a lot of reserve and discretion (see Paper 2: Adolescent Pregnancy).

Feminist work in the field of reproduction has drawn attention to the ways in which women's reproductive bodies have been regulated by the male-dominated medical profession, resulting in women losing lay knowledge and control over their own bodies (Ettore and Kingdon, 2012). Such phenomenon took place in recent decades in Burundi. Traditional birth attendants (TBA), especially in rural areas, were the key actors in reproductive health. The introduction of PBF however, which included an indicator to increase institutional deliveries in 2006, has led to the disappearance of TBAs (Cowley, 2009). Thus, medicalisation of reproductive health and concomitant loss of lay knowledge and control over reproductive bodies appeared rather late in Burundi.

Low but increasing utilisation of modern contraception

In 1995, the FP coordination programme (former PNSR) conducted a cohort study to understand the discontinuation observed in FP services (CPPF, 1997). The study showed that new users of contraception (recruited for the cohort) were mostly married (96%), with no formal education (46%) or only primary level (40%), and were mostly farmers (73%). The majority of new users had 1 to 3 living children (63%) or 4 to 6 living children (29%). The most used contraceptive method was the injection (Noristérat) (80%); implants were not available then. The study revealed that 12 months later, less than 60% of the new users had continued using a modern method. Half of the abandon were explained by side effects, namely bleeding, amenorrhea, abdominal pain, nausea and loss of appetite, headaches and vertigo, and weight changes. Interestingly, the second reason given for abandoning a method was 'the unfavourable socio-political situation'. This item was not developed in the study report, but it was not linked to the functioning of the health system (belonging to another category), and it most likely referred to the socioeconomic and political uncertainty caused by the ongoing *Crise*.

The study was conducted again by the PNSR in 2014. A similar rate of discontinuation of modern methods was found (38%). The first reason evoked by women who had discontinued was the wish to have another child (39%), followed by side effects experienced

(30%), the absence of the partner (7%), and getting pregnant despite utilisation (6%) (Programme National de Santé de la Reproduction, 2014: 29).

As we develop in Paper 5: Contraceptive Side Effects, the issue of side effects was still very present during our research time.

5. METHODS

To reach our aim to explore reproductive preferences, practices and experiences in rural Burundi, we applied a research design combining epidemiological and social sciences approaches, and subsequently mixed-methods. We described utilisation of modern contraception using cross-sectional quantitative data collected by means of community survey. In parallel, we explored reproductive perceptions, events and meanings via in-depth qualitative interviews and observations over time. *Figure 1* describes the mixed-methods applied for this thesis.

In 2014, we conducted a cross-sectional community survey to collect data on utilisation of FP methods, prevalence of unwanted pregnancies and adolescent pregnancies, and on potential factors associated with these outcomes at the individual, the proximal (family, peers, communities) and the structural (socioeconomic context) levels.

Followed qualitative fieldwork in four purposively selected research sites and over a period of two years, where we used different data collection methods to explore situated preferences, decision-making, agency and practices of FP of rural individuals that we followed over time in order to encompass social situation changes and reproductive events.

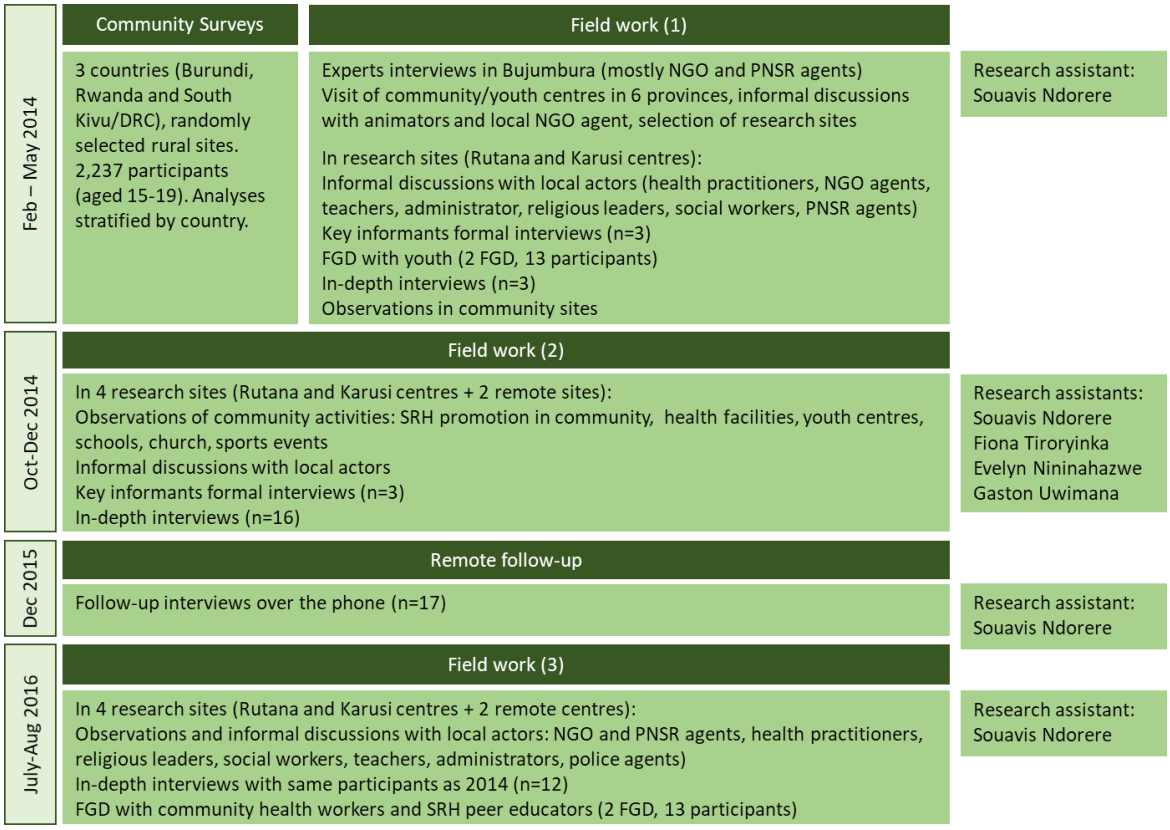
Due to the volatile political situation (see section: A fragile terrain), qualitative fieldwork did not take place over 2015 as initially planned, and was limited in 2016. We remotely followed-up participants via telephone calls when feasible (half of the participants did not own a telephone). The endline survey that was originally planned for 2016 had to be cancelled, due to the political situation.

Comparative study with Eastern DRC and Rwanda

This research was conducted in the frame of a broader SRH programme implemented in Burundi, Rwanda and the South Kivu province of the DRC. The Swiss Tropical and Public Health Institute (SwissTPH) had the mandate to execute the programme monitoring and evaluation, and operational research. It included implementers' and health systems' routine

data for monitoring of activities, before-after cross-sectional surveys to measure the impact of the intervention on SRH knowledge and behaviour, and qualitative studies to inform on programme acceptability, barriers and enablers of utilisation of contraception, among others. In parallel, another doctoral research was conducted in the neighbouring South Kivu province in the DRC by Mari Dumbaugh, from the SwissTPH, on the same topic of reproductive health (Dumbaugh, 2017).

Figure 1 : Study design and methods



Exploring utilisation of modern contraception (including condoms) and its determinants was performed using survey data from all three geographical areas, allowing the pooling of data (to gain statistical power) and comparison across settings. Results are presented in Paper 2: Adolescent Pregnancy.

The parallel qualitative study of Mari Dumbaugh lead to discussions on methodological and thematic aspects taking place all along this research, on site or in Basel. Being both doctoral students at SwissTPH supervised by Sonja Merten, many exchanges took place where our

findings and interpretations were compared and debated in trio. This led into the joint analysis of a theme commonly found in both studies – the problem of side effects of modern contraception – and a joint publication, Paper 5: Contraceptive Side Effects .

Community baseline survey

Baseline community surveys were conducted in the population of young people aged 15 to 24 years old in Burundi, Rwanda and the South Kivu province of the DRC[8]. Together with our team at SwissTPH in Basel and Bujumbura, I participated in the study design, instruments development, data collection, and analysis of descriptive data in Burundi. Results of the surveys were presented in reports (Swiss TPH, 2014a; Swiss TPH, 2014c; Swiss TPH, 2014b) and used as baseline data for the intervention evaluation. I used the survey data to further analyse utilisation of contraception, prevalence of unwanted pregnancies and adolescent pregnancies, looking into factors associated with these outcomes at the individual, the proximal (family, peers, communities) and the structural (socioeconomic context) levels. Analyses were limited to adolescents (15-19 years old) as we assessed that the age group 15-24 years was too wide and heterogeneous in terms of social status and realities in relation to SRH. We excluded the age group 20-24 because utilisation of modern contraception was low in this group and mixed short-acting methods and condoms, and because it mixed married and single young people. Limiting to adolescents (15-19) allowed exploring utilisation of modern contraception (mostly condoms) in this younger, mostly unmarried population. Analyses were stratified by country, allowing exploring country-specific differences. Details on study participants, sampling, data collection and data analyses are described in Paper 2: Adolescent Pregnancy.

Qualitative study

Study sites selection

For the qualitative research, a purposive sampling was drawn. First, I visited the six provinces where the intervention programme took place, looking at the existence and

[8] The age range of participants was defined by the intervention, as the target population.

activity of community/youth centres, the presence of NGOs promoting SRH, and security situation. I aimed to select two sites in different provinces, one located in the centre of the country representing the 'inner Burundi' and one bordering Tanzania based on the assumption of increased economic and cultural influences. Based on my visit to all provinces and together with the programme agents locally, we selected Karusi and Rutana provinces. Within each province, I applied the same site selection strategy: I started with the main fieldwork activities in the provincial towns 'Karusi centre' and 'Rutana centre' during fieldwork 1 (*Figure 1*); and during fieldwork 2, I recruited additional participants in a distant, more remote location (Nyabikere in Karusi province and Butare in Rutana province). During fieldwork 3 I did not recruit additional participants, and focused on participants' follow-up.

Participants

Key informants

Informal interviews with key informants such as government health administrators at national and local levels, health facility staff, CHWs, traditional birth attendant, community leaders, religious leaders, teachers and local NGO workers were conducted all along the research. At the formative stage of research, these interviews and discussions enabled a better understanding of the sociocultural landscape and local views and opinions around family planning discourse and services. In the next stages, I consulted key informants for interpretation of results by discussing meanings and situations. I also used local informants to discuss and assess my positionality in the field, trying to get information on how I was perceived in the community, as well as my research assistants (see Positionality and reflexivity).

In-depth interviews participants

Participants for in-depth interviews were recruited from these four locations using different sampling strategies. First, I purposively recruited participants I met during observation of community activities (in youth centres, in schools, in Church) for formal in-depth interviews. I aimed to recruit participants from varied social profiles: young unmarried sexually active men and women; single mothers; married men and women of various ages; men and women cohabitating not legally married; educated and less educated participants. I also aimed to recruit participants using modern methods of contraception, using natural

methods, and not using any methods. I complemented the sampling through a random recruitment of participants in health facilities. In all four research sites, the head nurse of the primary health care facility provided a spare room or space within the facility compound. The head nurse or vaccination nurse would then send the group of women waiting at the vaccination services (for their new-borns) to us, research assistant and I, allowing us to present our research aims and inform them on their potential participation. Women who were interested in participating were invited to either leave their phone number to set an appointment for an interview, or to come back to us after the vaccination.

Before starting interviews, we presented the research more in details, provided them with an information sheet (in Kirundi) containing our contact information, explained that we ensured confidentiality and anonymous treatment of their data, and finally asked for signed consent (Appendix 1 : Consent form (French and Kirundi)).

Last, we recruited additional participants to complement our purposive sampling strategy by asking our informants to find participants with specific characteristics that we wanted to explore more in-depth, such as single mothers.

Participants were not always available for interviews because they were busy with other tasks, and often they were not spontaneously interested in engaging in individual interviews. Starting informal discussions in the health facilities before or after vaccination proved efficacious in gaining some interest in interacting on the topic of FP, which could be pursued later on in formal in-depth interviews. Following participants over the study period was challenging, as most participants did not own a mobile phone. Participants often left the number of a neighbour, a family member, or the community health worker whom we called upon return to the field, and most often the participant would call us back within a day or two. Four participants were ‘lost to follow-up’: we lost track of one; one set two appointments but did not come; one announced he was too busy; and one single mother did not wish to meet (we found out she had a second ‘illegitimate’ child in the meantime, my research assistant interpreting that she was ashamed to meet us).

Focus-group discussion participants

For Focus-Group Discussions (FGD), we used different strategies to recruit participants. For the two FDG conducted during fieldwork1 with young people, we recruited participants via the youth centre animator in Karusi. For one group we asked him to invite a group (6-7 persons) of in-school young people who attended the youth centre (minimum 16 years old, for consent reasons). For the other group, we asked the same animator who was also an instructor for karate in the youth centre to recruit from the group of young men practicing karate. Participants of the FGD during fieldwork3 were recruited via the head nurses from Rutana centre and Butare health facilities, inviting their community health workers. All participants were informed orally about our research via the recruiters, and before staring the FGD, we presented the research more in details, provided them with the information sheet (in Kirundi), confidentiality information, and finally asked for signed consent.

Research assistants

Research assistants were recruited and contracted to support the conduct of the qualitative study. I first recruited Souavis Ndorere, a 31 years old single woman with a degree in community development and who had experience in assisting qualitative research (with Lydwide Berckmoes, from the University of Amsterdam). I re-trained her on interviewing techniques, and on the topic of SRH. At the beginning of the second fieldwork, she was no longer available as she had a job opportunity, so I rapidly recruited another assistant who also had worked for another qualitative research and been trained (Anselm Crombach, from the University of Constanz). After a week of fieldwork, I decided not to continue with her because, as her experience of working in rural areas was limited, she struggled in understanding local rural expressions and meanings. I then recruited a fieldworker that had collected data for the community survey, but had not been trained in qualitative interviewing. I trained her on the spot, but after two interviews, I decided to recruit Gaston Uwimana, a friend of Souavis Ndorere whom I knew, who was not trained in interviewing but who had experience of working in rural Burundi (as a scout and forum-theatre actor) and excellent interpersonal skills. I trained him on interviewing techniques and SRH. For the last fieldwork in 2016, Souavis Ndorere was again available to assist with research. We stayed in constant contact after fieldwork, and I discussed with her regularly on findings and reporting.

Data collection

Key informants

Most interviews and discussions with key informants were informal and transcribed into my fieldwork journal on side or at the end of the day. Some interviews with informants were formalised (n=7) and recorded (n=6), notably with participants who were not likely to be met again.

Table 4 : Key informants participating in the study

Formal key informants (age, sex)	**Informal key informants (sex)**
Communal secretary (38, m)	Health authority provincial agent (m)
Catholic Abbot (45, m)	Health providers – Karusi (m, m)
Catholic Priest (n/a, m)	Health provider – Rutana (m)
Anglican Priest (60, m)	Teacher – Karusi (f)
Anglican Priest (42, m)	Youth centre animators – Karusi (m, f)
Traditional birth attendant (52, f)	Youth centre animator – Rutana (m)
PNSR provincial agent (n/a, m)	NGO agent Rutana (f)
	NGO agent Karusi (m)
	NGO agents Bujumbura (m, f)

In-depth interviews participants

In-depth interviews were conducted with participants individually in quiet places ensuring confidentiality. Interviews were conducted in the health facilities or in locations chosen by participants. Interviews were recorded upon consent of participants. We followed a semi-structured interview format, starting by asking participants to explain their biography from birth to the moment of the interview. We then complemented the biographies by asking questions around SRH crucial phases or topics such as sexuality education, menarche, first sexual experiences, marriage, firth pregnancy, menopause, etc. In the follow-up interviews, we asked about general events occurring in the time interval since the last interview. We further explored key reproductive events discussed previously drawing on preliminary findings from previous fieldwork. We discussed aspects related to the socioeconomic context of participants and their households (livelihoods, proximity and influence of kin, adaptations to the economic crisis in the households, etc.). We prompted participants on discussing their views on the discourse promoted in health facilities and the community, and the one of the Catholic Church or their own religious affiliation leadership.

In total, we interviewed 16 persons for this research, and most were interviewed twice over the period. *Table 5* presents the participants by characteristics of social status (single or married / cohabitating with their partner), gender, age and utilisation of FP method.

Table 5 : Study participants (in-depth interviews)

Married/ cohabitating	Single	FP method
D (28, male) E (30, female) F (32, female) D (25, male) M (22, female) S (24, female)		**modern methods past/present users**
D (34, female) C (35, female) D (27, female) B (18, female)	K (24, female)	**Active natural methods users**
J (37, female) M (24, female)	G (24, male) O (24, female) E (23, female)	**'no methods' users**

I conducted all interviews with the essential support of a research assistant who translated from French into Kirundi and back. Interviews lasted from 45-90 minutes and participants were always given the opportunity to ask questions during or at the end of the interview. I transcribed the interviews on the same day, asking the research assistant to re-translate the exact conversation based on the recording, and taking the time to discuss the content and meanings with the research assistant. Discussions were written down into notes and memos in my journal.

Focus-group discussion participants

The two FGDs conducted in the first fieldwork aimed at collecting data on SRH knowledge, places to get information and resources (condoms or contraception for example), opinions and views on sexuality, and on FP methods. I led the FGD and the research assistant translated my questions from French into Kirundi and answers back into French, she or he also moderated the conversation, ensuring that each participant had space to express her or himself. The two first FGDs (fieldwork 1) were recorded, transcribed and discussed with my research assistant on the days following the FGD. As recording and transcribing proved very

time-consuming, the next FGDs (fieldwork 3) were not recorded, instead I took notes during the discussion, and we complemented them upon finishing the FGD. In total, 6 FGD were conducted with a total of 40 participants, mostly men with age ranging from 16 to 44 (*Table 6*).

Table 6 : Focus-Group Discussion participants

Focus group discussions	N	Age range	Proportion men
Karusi men karateka	6	20-32	100%
Karusi in-school youth	7	16-19	83%
Rutana CHW	5	29-44	100%
Rutana PE out-of-school	8	16-25	50%
Karusi PE in-school	6	18-27	67%
Karusi PE out-of-school	8	21-37	63%

Observations

During fieldwork, I kept a journal describing my daily activities and observations from specific activities such as community and youth centre SRH sensitisation sessions, FP services in health facilities, church services, and informal discussions with informants and research assistants. Additionally, I regularly inscribed memos from discussions and preliminary analyses into my journal. Finally, I took note of my personal thoughts and feelings on how the research was taking place and evolving (see section Positionality and reflexivity).

This research is embedded in a constructivist paradigm, thus acknowledging that the discourse and narratives are influenced by the interactions between the researchers (the research assistant and I) and the participants, as well as by their social, cultural and structural contexts. The personal reflexions inscribed in my journal helped situating the narratives into the (perceived) interaction dynamics, for example reflecting on the influence of having a male or a female assistant. I then used this information during analyses to situate the narratives. The longitudinal approach that allowed interviewing participants several times over the years, fostered trust in the relationships and possibility to clarify topics, and additionally enabled reflecting on the interactions' influences as different research assistants participated in the interviews.

Phone recall over 2015

I had to cancel fieldwork planned in 2015 due to the *Coup d'État* that occurred in the Spring. I mandated my main research assistant (S.Ndorere, SN) to call the participants with the number they had provided (their own or of an acquaintance). The objective of the call was to get in touch, announce that I would not be back as scheduled but postponing fieldwork until the situation stabilised, and to get general news from participants. I prepared a 'greetings sheet' for each participant for SN to follow, including specific questions about their health, their children and partner, and the harvest seasons in 2015 and subsequent household situation. SN took note of the conversations and sent them via email. This information was then used during fieldwork in 2016, to follow-up with in-depth discussions.

Data analysis

Data analysis was rooted in the principles and processes of constructivist grounded theory, following its inductive and cyclic process between data collection and analysis (Charmaz 2014). Grounded theory methods consist of a systematic approach to data collection and analysis, with the aim to study how participants express and explain their experiences and actions, to understand the subjective and social meanings that are expressed and that guide actions and problem-solving practices (Charmaz, 2006). In other terms, grounded theory aims at studying how actions and processes are put into language and constructed, in our case, with regards to reproductive events, situating them in interactions with other actors and the wider ecosystem around participants (Clarke, 2005). We used sensitising concepts (Bowen, 2006) to guide data collection and analysis, namely the agency-structure interplay allowing situation of experiences and narratives into context (Frohlich et al., 2001), and embodiment (see Chapter Theoretical Framework).

Analyses of data started during the first fieldwork through memo writing during observations, interviews and discussions. Upon return to Basel, inductive analyses of in-depth interview transcripts were performed using Atlas.ti© software. I started with reading and re-reading all transcripts to familiarise with the data and to identify rich interviews. I then started initial coding of the rich transcripts line-by-line, looking for words, actions and processes, and using participants' words to generate codes as often as possible. Each new transcript was coded and compared to previously analysed interviews, allowing the

refinement of existing codes and development of new ones. Through this iterative process, initial codes were collapsed into a smaller list of focused codes. I drafted memos to keep track of the construction of focused codes and their grouping into broader categories, and included elements of comparison such as the specific influence of participants' social situation and context. Identified categories were reviewed and discussed in group (with Sonja Merten (SM) and sometimes Mari Dumbaugh). Upon return to the field for further data collection, these categories were further explored in subsequent interviews with the same participants, as well as new purposively recruited participants.

Data from observations, informal interviews and FGD were read (from my journal), and I drafted memos on contextual elements, social norms and perceptions, and circulating stories related to sexual and reproductive health. These contextual memos were mostly used to support embedding narratives into the context.

Upon termination of data collection in 2016, all transcripts were fully analysed using focused coding. I wrote memos for each narrative on their socio-economic situation to facilitate situational analysis of perceptions and actions, the social and subjective meanings and constructed explanation on reproductive navigation. Finally, I proceeded to theoretical coding by systematically comparing and relating focus codes to each other, looking for power, purpose, processes and patterns across narratives, allowing the development of core elements for the theoretical model (grounded theory). The core elements were reviewed and discussed with SM and refined into the core components of this dissertation, namely: hegemonic discourse and personal positioning within the discourse; reproductive preferences and practices contingent on the social situation of participants along the reproductive life-course; the material body expressed through the recurrent initial codes related to bodily matters; and the discourse and lived realities of side-effects caused by modern contraception.

Each core element were further developed using the memos and the literature, iteratively going back to the data to ground findings into narratives, and are presented in the chapters/papers of this dissertation. Names used in this dissertation are pseudonyms.

Ethics formalities

Ethical approval for this research was sought in the frame of the broader SRH programme evaluation activities of Swiss TPH. It was granted by the Ethical Commission of North-West and Central Switzerland on 31 October 2013. In Burundi, it was granted by the Burundi National Ethics Committee on 14 January 2014, and statistical visa was granted by the Ministry of Finances and Economic Development Planning (Visa No.VS201402CNIS) on 4 March 2014. The DRC research protocol received ethical approval in December 2013 as well as authorisation from the Provincial Inspecting Doctor (Médecin Inspecteur Provincial du Sud-Kivu) for data collection. In Rwanda, the research protocol received ethical approval in March 2014 from the Rwanda National Ethics Commission (RNEC) and statistical approval from the National Institute of Statistics Rwanda the 22nd April 2014. Authorization to access health facilities was granted by the Ministry of Health. Authorization to access boarding schools was granted by the Ministry of Education.

Authorisations for qualitative research activities were sought for each fieldtrip from national and provincial authorities in Burundi, through *Ordres de mission* (Terms of reference) signed by the SRH programme implementer (Cordaid) office head in Bujumbura.

Methodological considerations & limitations

A fragile terrain

Conducting fieldwork throughout the research period was complicated because of the volatile political situation and its socioeconomic consequences. In 2015, presidential elections were organised and President Nkurunziza (in power since 2005) announced he would run for a third term, despite the limitation to two terms allowed by the constitution. This announcement stirred unrest in the capital city and the rest of the country, where opponents demonstrated in the streets for weeks facing brutal police reaction. Mid-May a failed Coup d'État further sank the country in a political and economic crisis. As a result of the election crisis, international donors withdrew some of their support. Assaults against civil society activists and sometimes foreigners were observed, especially in the capital city where they are concentrated.

Qualitative fieldwork planned in 2015 had to be postponed, as well as the endline survey initially planned end of 2015. Security was assessed sufficient for research work in 2016, but we decided not to conduct the endline survey. Recruiting a team of (young) surveyors to interview young people in remote areas in a very volatile and politicised context – where young people were recurrent targets of intimidations and violence – appeared risky, and we thus opted for a cancellation of the survey.

We thus had to communicate actively and thoroughly with our interlocutors on the objectives of our research, stressing its apolitical nature. In 2016, all movements from one site to the next had to be communicated to authorities, where we presented our *ordres de mission* signed by Cordaid and including the research ethics approval. Research assistants were often not at ease with these procedures, as many questions were asked during these administrative visits. For example, in one province, while officially announcing our presence to the governor, the later asked me if I had heard of the *imbonerakure* (the militia of young political activists supporting the party in power). I replied I had, and he continued declaring that he could ensure our security as long as we behaved well and remained below the radar of these militias. The message was well understood as being addressed to me and to my research assistant, an instructed young person from Bujumbura.

In Karusi province, where we stayed for longer periods and accommodated in the same pension, I established a network of acquaintances that allowed getting information on the political situation, as well as on my perceived status in the community and the one of my research assistants. The network included persons from different political orientation and social position – such as a chief police officer, a trader, a teacher and the head nurse of the health facility – who 'coached' me on topics not to be discussed and people to avoid.

The economic crisis following the 2015 political turmoil further hampered the extreme poverty of participants. Many households had very poor harvest seasons, as they failed to find cash to buy crop seeds, land fertilisers or to hire land. I decided to compensate the time participants dedicated to the interviews, and after consulting my research assistant on a commodity that is used and necessary to all rural households, we decided to buy soap and to give soap bars to participants at the end of the interview. The soap could be used or sold by the participants.

Positionality and reflexivity

As Jean-Pierre Olivier de Sardan stresses, entering the field is a crucial moment that influences the quality of the research conducted. It is a duty of researchers to raise their awareness and understand the field insertion and embeddedness biases, and to explicit strategies to mitigate such biases (2008: 94).

We entered the field through the channel of Cordaid's local partners implementing the Next Generation programme. In Karusi, we were in contact with CPAJ (*Collectif pour la promotion des associations des jeunes*) who introduced us to the community and youth centre where their activities were taking place. We were also associated with the other local NGO, CEPBu (*Communauté des églises de Pentecôte au Burundi*) in charge of the healthcare side, who introduced us to the head nurse of the health centre. The rest of our insertion took place by walking around in the marketplace, to church and through the town, discussing with shopkeepers or with nuns (in Italian!), attending football games and school events (related, or not related to the Next Generation project). Very soon, we became acquainted with a local teacher who was the cousin of a friend from Bujumbura. She was a precious informant as she had no links with either association we were introduced by, allowing a critical perspective on their activities, and supporting us in recruiting participants and discussing findings (mostly contextual). We stayed in a small pension – El Manar – where we regularly met 'personalities' from the town: a chief police offer; the medical doctor from the provincial hospital; an older man perceived as psychologically ill but very friendly and popular; the head of a national NGO; the owner of the hotel, a business man from Bujumbura. Soon during the first fieldwork, I noticed that people we met knew about us, where we stayed, and more or less what topic we were interested in. This was not unusual, I had experienced the same phenomenon in the Norther town where I worked previously. The security situation imposed the need to reside in hotels in provincial centres, to be indoors after dawn (6pm), and in 2016 to register and announce all movements to the provincial authorities. Research challenges also raised as the relations between the government and foreign actors became tenser[9]. Security situation and requirements led to establishing relationships with authorities that may have affected the way we were

[9] Foreign actors were suspected of supporting the political opposition and civil society, especially after the 2015 failed Coup.

perceived in the field. In parallel however, other relationships and acquaintances established with key informants (many were known as non-members of the political party in place), with research participants living in the displacement camp in Karusi, and with other guests of the provincial towns hotels (mostly NGO staff from Bujumbura) may have counter-balanced or blurred the lines of our image in the community.

In Rutana, we entered through the same channel of local NGOs that established links with the youth centre and the health centre. We spent less time in Rutana, and did not stay in the same place overnight for each stay, limiting the integration and meeting of local acquaintances. In the other two research sites, the remote centres, it is through the head nurse that we were introduced to the place.

During fieldwork, I always travelled with a research assistant and a driver. In 2016. security issues implied that the driver stayed with us during field stays of 5 to 10 days, however not participating in observations or interviews. Between stays, we descended to Bujumbura for breaks of 2-3 days. The driver proved to be a good informant on how we were perceived by the local population, as many people came to him to ask about us. We also regularly debriefed and discussed contextual topics in the car transiting from Bujumbura to research sites (circa 3 hours drive), often with additional people that took the opportunity of a ride to the capital, or the next town. All these informal discussions allowed understanding the reasoning, the logics, the meanings, the emic categories and representations locally.

During interviews with participants, I adopted some strategies to reduce the social distance. First, I greeted the participants and introduced myself in Kirundi. I also left a lot of space to the research assistant to conduct the usual small talk before engaging in the interview. During the interview, I tried giving personal examples when appropriate. For example, when discussing menarche and explanations received on their meaning and consequences, I explained how it had happened for me. Often, the assistant (when female) also explained her experience, further inviting the participant to discuss her story, and comparing our experiences of a common phenomenon. I also openly explained my reproductive navigation, when asked. The rationale was that if the distance between our social positions was so wide, discussing common bodily matters would somehow reduce it a bit.

My social position was very hazy to participants. I am a 38 years old woman, unmarried and nulliparous, educated. Individuals we met very often thought I was a health professional, and often asked health questions. I however realised that people asked questions not assuming a health-informed response, but rather a response from an educated person. Research assistants were in fact asked the same questions, as they equally embodied the educated position. Only very few participants asked for benefits in terms of money or favours. Many knew about my acquaintances in town, at least my links to the head nurses, but no advantages were asked from this, which often surprised me. Perhaps my embodied position of a European white woman, potentially health professional (which I am not) led to an overexpression of questions regarding contraceptive methods, specifically on side effects. In fact, many participants asked us what we thought of these stories of side effects. My research assistants and I adopted an alternative discourse to the one of most health providers (who often dismissed these issues as misconceptions and rumours). Our answer to their questions was constant: there are side effects, but they do not occur systematically; one has to find the right method that fits one's needs (protection from pregnancy) and safety, and the balance can only be tried out empirically; and above all choices should be made upon informed and autonomous decision. We always orally referred participants to health professionals for further information on contraceptives.

Adopting a longitudinal approach and making the effort to find our participants (it was often complex because participants did not have mobile phones) enabled building a relationship with participants, and decreasing the distance and potential wariness attributed to our social position.

In terms of positionality, not expressed during interviews but marking the conduct of my research, I can disclose here that I did not have a clear position on what I thought of modern methods of contraception, and on the best solution I envisioned for rural Burundian women. Through my own reproductive navigation, I experienced side effects with contraceptives, I went through reproductive mishaps, I felt frustration from being responsible for birth control in relationships, I had doubts and concerns about long-term effects of hormonal methods. At the same time, I used modern methods to avoid pregnancy. Through this research, writing Paper 5 precisely, I became aware of the balancing exercise that I have been unconsciously making, weighting efficacy and safety.

Similarly, writing Paper 4, discussions with close friends on endometriosis, unknown effects and undesirable effects of hormonal methods and inversely of the natural flow of menstrual cycles came back to my mind, and the answer 'it depends on the body' came strikingly transposable. I am strongly in disfavour of incentivising FP methods, because of the pernicious effects that information and counselling are neglected to increase uptake. But I never expressed it during interviews with participants.

The phase of data analysis, interpretation and drafting the papers happened in parallel to a new professional activity dedicated to the topic of gender and medicine. Through my work, I became acquainted with feminist theory, and more precisely with the debate on the 'materiality of the body' that had been excluded in (post)constructivist approaches of gender. These influences have certainly oriented my focus, analysis and interpretation of data, as discussed in Paper 4.

Limitations

This research encountered a number of limitations that we tried to mitigate as much as possible, but that need eluding. As Olivier de Sardan suggests in his book on qualitative rigour, 'all inquiries are not equal, all data are not equally valid, all descriptive statements do not have the same veracity, all social logics are not understood with the same finesse, and the plausibility of interpretative assertions likewise varies depending on the quality of the empirical references on which they repose. It is precisely for such reasons that a policy of fieldwork is required' (2008: 104).

The main limitation is the lack of observations of the daily lives and living environments of participants. The security situation and the low interpersonal trust made such observations impossible. I evaluated that topic from the beginning, knowing from my previous working experience in the North that entering someone's home was sensible, and Burundian colleagues advised me not to go into people's homes. In fact, only one participant invited me to visit his home and meet his wife. The other participants would very often transmit the greetings from their husbands/wifes, but never invited me to their home. Even my friend an informant in Karusi was not at ease with this topic: I once dropped a relative of hers at the door, and she invited me in but was obviously uncomfortable. The reasons evoked about this issue were the fear that if neighbours saw a white person enter their house, they would

assume that their household has received some advantages and would ask for their share. This is to be linked with the general low interpersonal trust that we encountered, in rural areas as much as urban centres, to our surprise. Stories of crops or money stolen in households, in the market were very frequent, and often people suspected their own neighbours. Not being able to observe daily living environments restricted us from contextualising their narratives, better understanding the households' configuration and organisation, and power-dynamics within the household. These aspects were only collected through the narratives of participants. The longitudinal approach mitigated this limitation to an extended, as it allowed catching specific events such as a reproductive event, an illness episode, a harvest season from which we could expand and discuss how the event was internally managed, sketching some insights on decision-making processes and power-dynamics.

The security situation also required our stay in pensions in provincial towns, limiting our embedding into the study sites. In Karusi we managed to get a better overview of the town's activities and people's whereabouts, by attending Church mass, playing sports with young people, attending community health activities, even dancing at the town's party. In the three other sites, our presence and observations were scarcer.

Language was a limitation to the qualitative part of this research. My command of Kirundi is limited to greetings and small talk, and locally in rural areas the command of French is limited to administrative staff and civil servants like health staff. It thus necessitated working with research assistants that translated interactions and interviews. We mitigated that limitation by retranslating the interviews during transcription usually on the same day, enabling discussion and explanation of language and expressions used, which in Kirundi often takes the form of metaphors. Some interview sections were listened to again with Burundian friends in Switzerland who helped me better understand meanings and expressions used in important coded sections. My interpretations were often discussed and tested with these two friends, whom are both very familiar with the context of Karusi.

Finally, we were restricted in our capacity to discuss the hegemonic discourse on FP and the related views and perceptions of participants, as the topic was politically too sensitive. Similarly, the economic situation of the household and land pressure was discussed in

relation to the wider economic and political context. When at times, during interviews the discussion drifted towards politically sensitive statements, my research assistant would quickly warn me and suggest not to continue on that track. For example, one single female participant asked us about the rumours on young girls being recruited for work abroad who ended up working in prostitution. I had heard about it on the radio, but before I could answer, my research assistant warned me not to respond, as the topic was politically loaded.

Similarly, we did not enter any discussion on ethnic aspects, for obvious reasons. The topic was never brought up in discussions with participants. I discussed the ethnic question with my friends, research assistants and other colleagues (e.g. driver), but never used these information to situate, nuance my relations, interpretations or meanings, as this topic was very polarised depending on the ethnic belonging of the person.

6. PAPER 1: REPRODUCTIVE GOVERNANCE

Reproductive governance in a fragile and population-dense context: family planning policies, discourses, and practices in Burundi

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Abstract

This article describes the reproductive governance deployed in Burundi, which promotes fertility control through uptake of modern contraceptives as a solution to the economic hardship and land pressure of individuals and communities. Using a qualitative approach, we explore how women and couples in rural Burundi set their preferences, choices and practices of family planning, and how they relate with the government discourse. We describe how reproductive practices are complex and modulated by social and material factors and power dynamics. We argue that the current hegemonic discourse—largely supported by external donors—adopts a depoliticised and technocratic approach to family planning that aligns with neoliberal development frameworks, leaving existing power dynamics and resources distribution issues unexamined and unaddressed. By situating reproductive navigation in context, we show how medicalisation of reproduction is not fully enacted, and partly resisted by women and other actors.

Keywords: Family planning · Burundi · Contraceptives · Demography · Reproductive health · Governance

Introduction

Since the 1994 International Conference on Population and Development (ICPD) held in Cairo, family planning (FP) has been promoted and supported by international institutions as a core development topic embedded in sexual and reproductive health (SRH). By ensuring women and couples universal access to SRH services including FP information and services that are to provide quality, accessible, affordable and safe modern contraceptives, two sustainable development goals (SDG) are targeted: ensuring healthy lives and promoting well-being for all at all ages (SDG3); and achieving gender equality and empowering all women and girls (SDC5). FP services for autonomous and empowering choices of women and couples are however implemented in settings that are not void of socioeconomic and political context. Scholars have indeed described how reproductive navigation is complex and influenced by social and material circumstances including local power dynamics (Bledsoe et al., 1998; van der Sijpt, 2014), not aligning well with neoliberal development frameworks that pursue individual capacity building (Wilson, 2015). Other scholars critically described how social reproductive topics such as FP or infertility have been placed into a biomedical framework, through a process of medicalisation (Busfield, 2017). This paper describes the past and present deployment of FP policies, discourse and services in Burundi, and empirically explores how women's and couples' preferences, choices and practices in matters of reproduction are framed in context.

FP is widely promoted in Burundi, a post-conflict country that has a high population density (310 inhabitants per km^2) and subsequent land pressure (République du Burundi, 2016), and a high fertility rate (5.5) with a 23% utilisation rate of modern contraceptive methods (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017), characterised as a 'low demand' by the government (République du Burundi, 2016). FP strategies and services are 'aggressively' (sic!) implemented throughout the country, supported by international donors (République du Burundi, 2011b). Conducting research in Burundi, we observed how the government discourse is deployed throughout the country via diverse media, promoting the development argument that by using modern contraceptives, women and couples will enable lowering poverty and land conflicts for themselves and their communities. We further observed how the Catholic Church responds

to this discourse by promoting alternative solutions and approaches targeting couples and focusing on social cohesion. Conducting in-depth interviews with women and other members of the community, we explored how these discourses were received and how they framed reproductive navigation. We found that preferences aligned with the discourse, through a reported aspiration for reduced fertility, but they did not translate into uptake of modern contraception. Choices and practices were modulated by a web of social and material factors, including local power dynamics, showing a more complex reproductive navigation. Despite the relatively low demand for modern contraception, policies and programmes are continuously deployed and funded by external donors, strategically adapting approaches to reduce 'barriers to uptake', yet not addressing the social and material factors and power dynamics influencing women and couple's choices and practices. The empirical research enables discussing how the political discourse on FP in Burundi frames the socioeconomic and land issues as a technical problem (population density), for which it promotes a technical, medicalised solution (controlled fertility using modern contraceptives). We argue that the focus on FP as a depoliticised, technocratic and medical solution to the mentioned issues distracts from their political causes and hence, solutions (Ferguson, 1994; Li, 2007), leaving them unexamined and unaddressed. We finally discuss how technocratisation and medicalisation of FP are not fully enacted by actors, including health providers, religious leaders and potential users, hinting at resistances to the process.

The following two sections provide a brief historical background to FP policies and programming globally, and specifically in Burundi in light of the demographic, socioeconomic and political context. The empirical approach is then described, followed by the findings from our field research that describe and discuss how different actors relate to reproductive governance. The final section reflects on the processes of depoliticisation, technocratisation, and medicalisation of FP as a development programming in Burundi, highlighting the need of a nuanced, complex and situated approach to these concept.

Global Frameworks of Family Planning

Contraceptive practices – the use of methods or devices to prevent conception – have a long history, from utilisation of abstinence, withdrawal, abortion and other barriers methods used by many ancient societies. The modern era brought about a change whereby

fertility control became a political stake 'involving many actors with radically different scripts' (Hartmann, 2016: 89). In a context of industrialisation, Thomas Malthus (1766-1834) developed his theory on the need to control demography – of the poor, working class especially – linking preoccupations of economic development with those of population size, emphasising food supply and environmental capacity. After World War I, demography and population occupied political attention on the political scene in the Northern hemisphere, throughout the political spectrum: socialists worried that working classes were too burdened by their large families to engage in social mobilisation; eugenicists promoted the need to limit the birth of unhealthy children for the development of nations; feminists called for a freedom in reproductive choices and emancipation; and anarchists created a libertarian current promoting sexual freedom and voluntary vasectomies to control births (Serna, 2018; Lock and Nguyen, 2018b). In the Souths, reproduction was cast as a crucial site of debate and intervention by Northern powers (colonial and missionaries), in an attempt to control the issue of race (need of local manpower for resources extraction and exploitation) and sexuality (e.g. Africans portrayed as undisciplined and oversexualised) (Hunt, 1999; Thomas, 2003).

The invention of biomedical technology for birth control – the pill – in the 1960's brought about radical societal transformations, as it provided women with the ability to control their fertility and sexuality. In the North, shaken by feminist and human rights movements, the pill was indeed received as a long-awaited innovation that supported the sexual liberation and women's emancipation, and that met a demand (Thomé, 2016). In the Souths, the period was marked by independence and decolonisation movements, and the new development models to be designed and implemented. High fertility rates and population growth, promoted in colonies until then to ensure workforce, were quickly portrayed as major barriers to economic development (Ehrlich, 1968; Meadows and Club of Rome, 1982). Supported by international institutions, southern governments started promoting modern contraceptives as a technical solution to the identified 'population problem', not necessarily attuned with major concerns of communities and individuals[10]. These discourses enabled

[10] In the pre-1990s era, FP in the Global South was often pursued through the use of the intra-uterine device (IUD), which gave more 'control' to doctors (see Takeshita, 2012).

the implementation of strategies such as the coercive sterilization programmes in India (Lock and Nguyen, 2018b).

The ICPD held in Cairo in 1994 marked a turning point on the topic of FP. Pushed by women's health groups, the ICPD reinscribed FP as a broader SRH concern, with the main objective to ensure bodily integrity and reproductive rights, instead of population control (Hardon, 2006). It settled a definition of FP, still used today, that refers to people's rights to be informed about and to have access to methods for the voluntary regulation of fertility, to determine freely the number and spacing of children in the family. FP methods are generally divided into two groups: modern methods of contraception (e.g. hormonal contraception like the pill, injections, implants; intrauterine devices (IUD); permanent methods of tubal ligation and vasectomy; or condoms, emergency pill); and natural methods of fertility regulation (e.g. lactational amenorrhea, symptom-thermal method, calendar or rhythm method, withdrawal). Governments draw FP policies and strategies to regulate the provision of contraceptive methods via FP services that are generally integrated into primary healthcare services. In such services, trained professionals are to provide information on available methods and support people making choices, ensuring that methods are appropriate to individuals' health and specific conditions. As highlighted by scholars, the notion of autonomy is limited by the 'medicalisation' process, whereby women are dependent on health providers to access medical contraception, for prescription and/or administration (Hardon and Moyer, 2014).

Critical scholarships have highlighted how this shift in global discourse from a population control approach to reproductive rights was rather rhetoric than effective (Gautier, 2002; Hodgson and Watkins, 1997), and that FP initiatives in the Souths largely remained grounded in the theory established by Malthus: 'Proposing birth reduction among the global poor as a solution to various global crisis phenomena—from poverty, economic recession, migration and patriarchal systems to ecological destruction — and thus blaming the poor rather than, for instance, inequality, is typical of neo-Malthusianism' (Bendix and Schultz, 2018: 260). In fact, as decried by Hartmann among others, the inverse discourse that a better distribution of resources (improvements in living standards) and power (improvements in the position of women) could bring about population change was seldom voiced or heard (Hartmann, 2016). In post-ICPD development programming, FP has

remained ambiguous as it is monitored and evaluated through population targets – such as modern contraceptive prevalence rate (mCPR) and unmet need for contraception – that have been identified as contrary to the reproductive rights approach (Murphy, 2010; Hendrixson, 2018). Additionally, the discourse on women's empowerment through controlled fertility was criticised as aligning with neoliberal frameworks of development and poverty reduction that focus on individual capacity building, thus masking structural and power dynamics, and inequities (Wilson, 2015; Potvin, 2018). As demonstrated by scholars, the Western-inspired perception of universal human rights and individual autonomous choices does not fit well in practice, as reproductive behaviours are strongly modulated by local social contexts, power dynamics and contingent circumstances, including corporeal experiences, situated at the levels of family and communities (van der Sijpt, 2014; Bledsoe et al., 1998; Cornwall, 2007).

Demography and Family Planning Policies in Burundi

The history of reproductive governance in Burundi shows important fluctuations contingent on specific changing historical and demographic contexts. Demographers Thibon (2004) and Manirakiza (2008) describe a pre-colonial period where the authoritarian patrilineal family system and livelihoods organisation translated into a regulated fertility. Families were isolated into *rugos*[11], individual mobility was uncommon, children worked as domestic dependents and married at relatively late age (around 20). The combination of natural birth spacing through breastfeeding (children were weaned at around age two), high mortality and seasonal famines that caused reduced fertility explain the relatively low overall fertility rate. Colonisation brought diseases (mainly sexually transmitted infections) that increased mortality and infertility, and out-migration that changed the marriage patterns. In a second phase colons' and missionaries' health care, education and agricultural programmes led to a decreasing mortality. Agricultural intensification required workforce, leading to pro-natalist initiatives, such as the 'Belgian domestic training institutions for African women' that promoted short breastfeeding periods described by Hunt (1990). By the mid-1940's Burundi entered a demographic transition characterized by lower mortality and higher fertility. Fertility continued to increase after independence in 1962 : agricultural cooperatives

[11] There are no villages in rural Burundi, but *rugos* – the traditional family household entity – dispersed on the hills that group families around their patches of land.

required larger workforce so women weaned their children early to join the labour force, and children represented production agents and family security (Manirakiza, 2008). Between 1950 and 1975 the population doubled, triggering land issues and the rise of the 'overpopulation' discourse.

In 1983, in the global context of FP development programming supported by international donors, the government of Burundi established its Reproductive Health National Programme (PNSR). Fertility had reached a rate of 6.9 and modern contraceptive prevalence rate was 1.2% (Ministère de l'Intérieur and Institute for Resource Development, 1988). In response to the government making FP a public policy and promoting the use of modern contraceptive methods, the Catholic Church – the predominant confession in Burundi[12] – implemented in 1989 its *Action familiale* (Family Action) that aimed to 'participate to the resolution of issues related to the galloping demography and AIDS, through means that are adapted to the Catholic Church's mission' (Caritas Burundi, 2019: 7). Such means are natural family planning (NFP) for married couples that are promoted and taught during religious education sessions for couples.

Both initiatives were however suspended by the civil war that burst in 1993 after the first democratically elected Hutu president was assassinated by the Tutsi-led army, triggering massive violence between ethnic groups[13]. In the next decade, the violence continued, causing, in addition to deaths and injuries, major internal and external population displacements[14] and land grabbing on both sides (ICG, 2003; van Leeuwen, 2010). The 2000 Arusha Peace Agreements led to democratic elections in 2005 that put a former Hutu rebel in power. Hopes for political and socioeconomic stability however suffered as the political

[12] 57% of Burundians self-report as Catholics, 34% as Protestant (branch unspecified), 3% as Muslim and 3% as Adventists (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan, et al. 2017).

[13] Tutsi and Hutu are social groups that share the same language, culture, history and geography. While Hutus represent the majority, Tutsis, who were socially privileged under the monarchy and colonization, maintained their elite positions after independence. On the history of the ethnicization of the Burundian society, see Chrétien, 1999. To be noted the different approaches, among scholars from different disciplines and perspectives, to explain the conflicts in the Great Lakes in the second half of the XXth century: scholars like Chrétien or Thibon tend to highlight the weight of colonisation or history in general; while scholars like René Lemarchand tend to draw attention on the political context and logics of post-colonial actors.

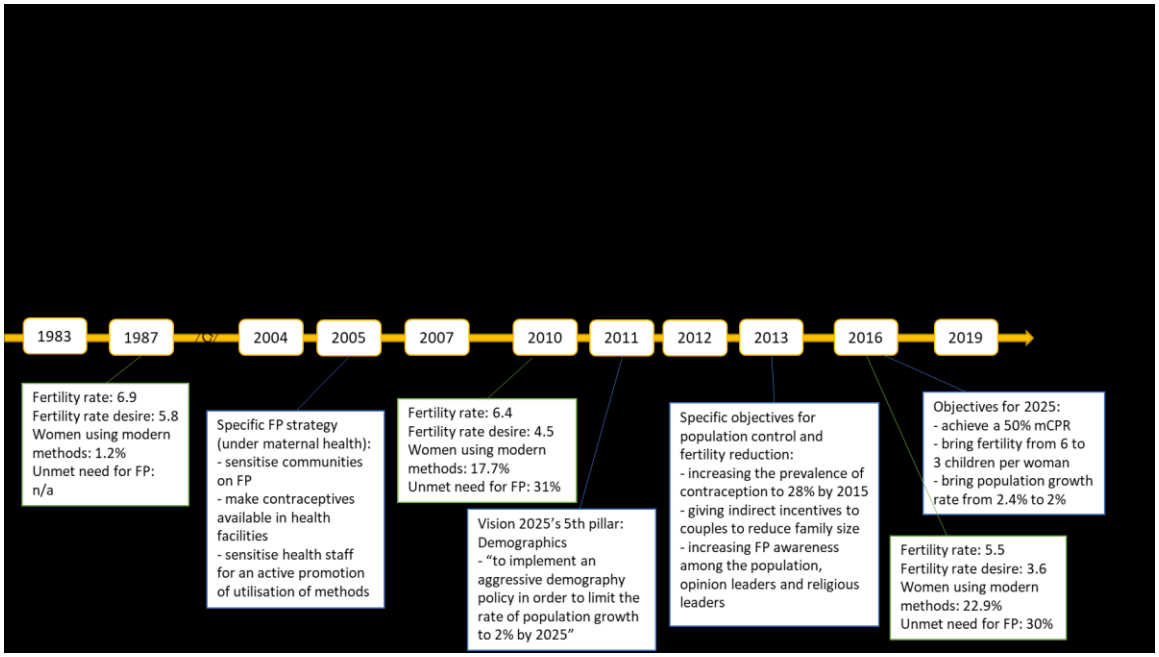
[14] Major population displacement (mostly Hutus) already occurred in 1972, after a surge of ethnic violence.

exercise predominantly consisted of securing power, dealing with political opponents and civil society activists. Socioeconomic reconstruction was secondary and largely left to international development and humanitarian actors.

Despite the (rhetoric) shift in FP discourse observed in most countries after the ICPD conference, FP policies and strategies emerging in the 2000s era in Burundi remained focused on merely population control. External donors re-invested in development strategies and supported the government in developing policies such as the National Health Policy or the Poverty Reduction Strategy Papers (PRSP) that set specific targets for population control, such as mCPR, fertility rate and population growth rate. Based on these policies, Reproductive Health Strategic Plans were developed by the PNSR with UNFPA and bilateral development agencies, establishing implementation strategies to meet the set targets.

In 2010, religious leaders (Catholics, Protestants, Anglicans and Muslims) issued the Gitega Declaration that stated their 'engagement in supporting and contributing to the government's efforts to find solutions to the demographic challenge that are sustainable, efficacious, respectful of human rights and religious values' (Caritas Burundi, 2019: 8). Thus, they aligned with the government discourse, but differed on solutions. Apart from Anglicans, religious authorities are strongly opposed to utilisation of modern contraceptives.

Figure 2 : Chronology of policies and strategies related to FP



In 2011, Vision Burundi 2025 – the 'planning instrument for development' supported by UNDP – sat the objective to 'implement an aggressive demographic policy in order to limit the rate of population growth to 2% by 2025' (République du Burundi, 2011b). Across policies and strategies, target figures are continuously increasing (28% mCPR by 2015 (2012) to 50% mCPR by 2025 (2016) – see *Figure 1*). To boost uptake of contraception, FP services are included in the performance-based funding (PBF) national scheme supported by external donors[15]. The financial scheme in place during our fieldwork incentivised health facilities according to the quantity of pills and injections delivered (5,000 BIF[16]) or implants and IUDs inserted (14,000 BIF); and incentivised hospitals for vasectomy or tubal ligation (60.000 BIF) (République du Burundi, 2014). In its commitment to the global initative

[15] Targeting broader primary health care indicators, PBF is managed by the health ministry, with technical and financial support from USAID, the World Bank, the European Commission, Belgian Technical Cooperation, and GAVI, as well as NGOs such as CORDAID, Healthnet TPO and Gruppo Volontariato Civile.

[16] Circa 3.2 USD in December 2014. The PRSP II reports that in 2006, 69% of the rural population lived below the poverty line estimated at BIF 524 (2012: 38).

FP2020[17], the government planned to increase its budget allocation for FP, and thereby called for support by external donors. In 2015, 1.56 million USD were allocated to FP activities, of which domestic resources accounted for 2%. Of the four main health programmes of the Ministry of Health, the PNSR was allocated 27% of government funding, and 32% of donor funding in 2015, thus being the second mostly funded programme after HIV (The World Bank and UNICEF, 2017).

Of the 735 health centres in Burundi, 14% are faith-based and have a convention with the Ministry to implement the minimum activities package (République du Burundi, 2011a). They run as public clinics, except for FP where only natural methods are promoted and counselled. To ensure FP services coverage, the PNSR has established dispensaries near the faith-based clinics where modern methods are provided.

More generally, the political, economic and social situation of the country has remained very fragile since the Peace Agreements. The vast majority of rural populations lives off subsistence agriculture and there are very limited economic alternatives as neither industry nor tertiary economy is developed (Uvin, 2009). In 2008, it was estimated that 42% of households lived below the subsistence level of 0.25 hectares (World Food Program, 2008). The return of refugees has led to increased land pressure and conflicts. The controversial National Commission on Land and other Goods (CNTB) put in place in 2006 tend to add fuel to the existing ethnic tensions as its partiality is questioned (Purdeková, 2017). Additionally, the inheritance system (all male children inherit an equal share of the land), deregulated land markets, and a weak land registry system have transformed the Burundian hills into a 'patchwork of continuously diminishing familial land holdings' (Vervisch et al., 2013). Land pressure and conflict has exacerbated tensions between the different concomitant mediation and justice mechanisms, such as the CNTB, the traditional *bashingantahe* institution[18] and the formal hill councils installed by the government in the 2005 reforms (Ingelaere and Kohlhagen, 2012; Wittig, 2017). In 2009, three quarters of the cases treated

[17] FP2020 invites governments to make political and financial commitments for FP, and with which multilateral organisations and partnerships, private industry and civil society organisations and foundations are invited to align.

[18] Bashingantahe was a pre-colonial institution of customary 'notables' that ensured sociopolitical order and conflict resolution that still exists today but 'shares' its role with formal justice institutions.

in court were related to land conflict (Kohlhagen, 2012). Some conflicts were related to returnees claiming back their land, while other conflicts included family disputes between siblings or parents in heritage. Recent initiatives that aimed at reconfiguring space and social relations– including peace villages, IDP site clearances and land sharing –were mostly unsuccessful, as targeted beneficiaries decried a lack of access to basic services, or lack of security (Purdeková, 2017; Falisse and Niyonkuru, 2015).

Empirical Approach

The study is based on field research conducted in two rural areas in Burundi between 2013 and 2016. We explored individual and community perceptions and responses to the discourse on the need to have fewer children, in the provinces of Karusi and Rutana, using qualitative methods. Data include field notes from observations over a cumulated period of 9 months (in health facilities, community centres, schools, churches and everyday interactions); narratives from in-depth interviews with rural women and men of reproductive age we followed over the research period (n=16); transcripts and notes from formal interviews and informal discussions with key informants (Catholic and Anglican priests, health providers, community leaders, peer educators, teachers, PNSR agents) (n=8); and transcripts from focus-group discussions conducted with peer educators, community health workers (CHW) and young people (n=40). Interviews were conducted in Kirundi and French with the support of a Burundian female and male research assistant for translation. For this study, we specifically searched our data (field notes and interview transcripts) for entries on media activities on FP, and we conducted a (non-systematic) search for articles on FP on the websites of existing press in French[19].Transcripts and field notes were analysed using a grounded theory approach (Charmaz, 2006)[20].

To set the background presented above, we conducted a desk review of policy documents from the National Reproductive Health Programme (PNSR) and other institutions in the field of reproduction. We collected and analysed policy documents such as the National Health Policies, National Demographic Policies, National Reproductive Health Policies and Strategic Plans, and studies conducted by the PNSR over a period spanning from 1988 to 2019.

[19] Iwacu, Yaga Burundi and Radio Isanganiro.

[20] For more details on the methodology, see Schwarz et al, 2018.

Findings and Discussion

A hegemonic discourse on 'overpopulation'

Conducting fieldwork in rural Burundi, we observed that throughout the country, giant billboards sponsored by the PNSR and a European cooperation agency were displayed in the streets, promoting FP. Some had representations of households with numerous dirty and sad-looking children and worried parents who said 'If we hadn't had so many children, we wouldn't have the problems we have today' (*Image 2*). Others portrayed scenes of land partition with numerous people present on a small piece of land that read 'land has become scarce, let's have fewer children, so we won't leave family conflicts behind' (*Image 3*). In administration buildings and health facilities, we regularly found posters promoting the same message: large families cause poverty and land conflict. We also found that a radio soap opera, *Agashi* (Hey! look again!), which was much listened to by rural populations, addressed the topics of FP, sexual and reproductive health and HIV/AIDS. Broadcasted twice a week on seven radio stations in Kirundi with national coverage the *Agashi* programme was sponsored by external donors (Population Media Center, 2018).

Image 2 : 'If we hadn't had so many children, we wouldn't have the problems we have today'

Image 3 : 'Land has become scarce; let's have fewer children, so we won't leave family conflicts behind'

In our research sites, the PNSR acted through a European-funded SRH programme to promote contraceptive methods and create demand in the community. Health centres were equipped with televisions displaying films on SRH – mostly about prevention of HIV and adolescent pregnancies and on FP promotion – in the facilities' waiting space. In addition, community activities were set up to boost demand for FP. CHW and peer educators were locally trained on SRH to create a link between health providers and the population, and were equipped with an image box and a booklet to support these sensitization activities. The message here was similar: having fewer children allows alleviating poverty and conflicts (*Image 4*).

Image 4 : Image box used by CHW and peer educators for FP community sensitization

Trained and financially incentivized for the distribution of modern contraceptives, health providers were the holders of the medical knowledge on these technologies, and the gate keepers for access. We found that the offer for contraceptives was limited: mostly injections were promoted, shortages were not uncommon, and we were told that non-married women were sometimes refused FP methods. Counselling quality was low because, as we observed, it was usually offered in groups during vaccination in health facilities, leaving little to no room for individual counselling. We found that health providers adopted different attitudes with regards to FP. Some complained about the 'lack of education' and 'irresponsible behaviour' of rural populations that explained the low demand for modern contraceptives. Others acknowledged women's concerns and issues in relation to contraceptives, such as a nurse who explained that frequent contraceptives' side-effects – mostly bleeding – were indeed a serious concern for rural women. He invested time for individual counselling and offered free-of-charge treatment in case of side-effects[21]. He had adopted the lay discourse that we often heard in interviews and discussions: 'all bodies are different and all methods are not suited for all bodies'. He considered that users needed to find their appropriate method, while acknowledging the limited choice of available contraceptives. Some health professionals were ambiguous as regards the scientific

[21] The PBF system did not include reimbursement of treatment of side effects.

evidence, like a Pentecostal medical doctor working for an NGO promoting FP, who expressed his concerns about hormonal contraceptives, namely the unknown long-term effects on fertility and health, such as cancer. He added he wouldn't want his wife using such products.

CHW from our research sites were trained to sensitise the community on FP, namely modern contraceptives, through an NGO programme. In focus-group discussions, CHW explained that their position was complex as they were at the nexus between the government's and the church's positions on acceptable methods for birth control. As members of the community including social and religious belonging, their role was sometimes difficult to sustain, and several CHW reported they were threatened of excommunication by the Catholic Church unless they stopped their activities. At the same time, they were also at the nexus between the medical and the lay knowledge on contraceptive technologies. The issue of side-effects was largely debated in the community, a topic that medical authorities mostly disregarded and treated as 'erroneous rumours', 'beliefs', and 'barriers to uptake'. CHW complained that their short training and limited acquired medical knowledge was insufficient to address the concerns and questions from the community, thus hampering their credibility and social status acquired through their activities.

Based on the Gitega declaration of 2010, the Catholic Church had aligned to the government discourse on the need to control demography, and the agreement was for public health facilities to promote and provide modern contraceptives, and for faith-based facilities and *Action familiale* to promote NFP, in a distinct but collaborative way. In reality, we observed that it is a competition of values, knowledge and strategies that took place, as illustrated in this newspaper interview of the PNSR head:

> *If nothing is done, Burundi won't be able to survive the demographic pressure. … Priests promote utilisation of natural methods, but they don't know much. They should let us do our work* (Nkurunziza, 2011: , our translation).

Through their activities, the Catholic Church not only promoted NFP as an alternative to the government's methods, but it also included a discourse on social cohesion and communication in couples required for practicing NFP. The discourse promoted is based on

a call for a 'responsible parenthood': an individual code of conduct that allows a responsible management of fertility, through 'the knowledge and respect of biological functions; a mastering of reason and will on the instinct and passion tendencies; a thoughtful and generous determination to grow or not grow a large family, to avoid temporarily or for an undetermined time a new birth; a considering of the moral order, as established by God and of which the conscience is the faithful interpret' (Caritas Burundi, 2019: 6). Exploring these aspects of moral order and values for reproductive responsibility with participants, we found that the Church promoted the moral and social values of natural methods: moral because disciplined sexual behaviour is perceived as virtuous; and social because these methods require continuous communication and shared responsibility, hence beneficial to couple cohesion. In the post-conflict fragile context, the consequences of social changes and disorders in the family institution – a central pillar in religion – are of great concern to religious leaders who try to accompany and support communities in preserving family values and norms. All religious leaders we interviewed were concerned by phenomena such as cohabitation without a religious ceremony – 15% of women reported living with their partner unmarried (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017) –, gender-based violence, HIV, and land conflict. In this frame, FP was often considered as an opportunity for family and couple relations counselling. In fact, educational and counselling sessions for couples organized by the parishes in our research sites made both partners attendance mandatory.

Locally, many activities of the Catholic Church around FP were focused on opposition to the activities of the PNSR. A Catholic priest explained in an interview that he perceived modern contraception as a 'dangerous easy way out of responsibilities' that is detrimental to family values. His rationale was that in a context of strong gender inequality visible through domestic violence and limited rights of women, modern methods worsened women's position, as they allow husbands to 'irresponsibly dispose of their wife's bodies without fearing consequences [i.e. pregnancies]'. An Abbot explained how he saw an issue with the government incentivizing FP services in a context of widespread poverty, including among health providers. He hinted at providers' financial and moral corruption, over-prescription of contraceptives and silence over contraindications and side effects of products. He felt his role was to inform about negative effects on bodies and fertility. Some religious leaders did

do so during mass and couples education sessions. Participants reported indeed that during mass it was announced that women using contraceptives were not allowed to take the host, as they were 'killing the unborn'.

A discourse that shapes reproductive preferences

When asked about family size preference, participants had two standardized responses: 'I wish to have the number of children that we can raise' or 'I will have the number of children that God will give me'. The first exactly echoed the government's discourse, whereby the number of children should be adapted to households' resources. The second was spontaneously given out as such by some participants, but usually further nuanced during interviews with a 'With God's help, I will have the number of children that we can raise'. Trying to go beyond the formatted responses, we explored personal and contextual reasons participants gave to their reported preference, and their actual practices. We mostly use the narratives from three women – Clémentine, Florence and Christine – to illustrate different reproductive trajectories.

We found that participants systematically associated their family size preference with their household land situation, as well as to the political and economic instability and uncertainty. Discourse on having a number of children scaled on land ownership and productivity was held by the vast majority of participants, regardless of their utilisation of methods for birth control. For example, Clémentine, a mother of three children who struggled to ensure the livelihoods of her family, with little support from her husband who suffered from alcoholism, explained how she questions the perception that three children are few, considering her financial and land limitations:

> *Clémentine: If I look at the land we exploit, it's not fertile unless we buy fertilisers, and money is difficult. … I don't want to space my births, I want to stop all-together. […] We have a small plot of land that doesn't produce much anymore. Also, are three children really few? If God keeps them as they are… I think it's enough.*
> [Married woman aged 35, 3 children, not using FP method (Butare, 2014)]

Clémentine had never used any FP method but instead had difficulty in getting pregnant, and her third pregnancy – a son – came as a blessing she explained when we first met her. Two years later, she was more concerned about fertility control because her son was 2 years

old and she didn't have a plan for achieving her goal to stop childbearing. Although her husband had agreed for her to use modern methods she feared them because her 'body is tortured by poverty and malaria'; and while she had been taught about natural methods in the past, she didn't trust much these methods because 'pregnancy occurs by chance' she said. She also explained negotiating sexual abstinence with her husband was difficult because he was often drunk. Her desire to limit her family size to three children was strongly related to her precarious situation marked by agricultural work hardship, uncertainty about food security and the related consequences on her fragile health, and her husband's dependency.

Florence, a woman of the same age, explained that after her first birth she tried the injections that were promoted to her at delivery, and as she experienced no negative effects she continued and successfully spaced her three births by five years each. She explained her rationale as follows:

> *Florence: I decided to use injections because I wanted few children and I wanted them to be spaced, because nowadays it's difficult if you have many children.*
> *Joëlle: Traditionally, Burundians like large families, why did you choose to have few children?*
> *F: Because our means are limited, and the land on which I can raise my children is limited. … If I had many I wouldn't be able to feed them.*
> [Married woman aged 32, 3 children, using injections (Rutana, 2014)]

Florence lived on a plot of land away from the *rugo*, hence away from her in-laws. She explained how she suffered when she was a child as her parents had died young and she struggled from malnutrition. She linked her desire for having fewer children to their poor situation marked by small land ownership and uncertainty around its yield. She explained a desire to secure a better future for her children, different from her upbringing conditions.

The discourse of having fewer children scaled on households' resources was also displayed by young women, and that some participants like Christine below, despite being opposed to modern methods of contraception, advocated for reduced fertility among her friends and neighbours:

> *Christine: As far as I'm concerned, I consider the means where I live. I couldn't sustain having many children because our means are limited. I would advise people to have the number of children they can raise, and also to sensitise others, because land is deteriorating, it's not easy to get enough to eat these days.*
> [Woman aged 18, lives with her partner unmarried, 1 child, using calendar method (Karusi, 2016)]

The quote from Christine go in the direction of an individual responsibility to scale the number of children on one's own means to ensure livelihoods and economic situation, and she further suggests that the message is to be promoted in the community, for a shared application of individual responsibility.

Despite the widely shared discourse on the need to have fewer children to palliate the common situations of limited land and yield and low economic resources, people adopted different strategies with regards to FP that appeared contingent on other factors. We now explore these factors.

Contingent Circumstances that Modulate Reproductive Choices and Practices

We found that decision on utilisation of FP methods for birth spacing or limiting in our participants was contingent on the existence and the role of the extended family and kin. Mother-in-laws seemed to play an important role and influence on reproductive decisions and practices of rural women. Christine came from a disrupted family ; she now lived with her partner unmarried in another province and her mother-in-law, who lived nearby, had a large influence on her couple's reproductive decisions and methods. She taught Christine how to monitor her menstrual cycle to observe her fertility periods to avoid pregnancy. Inversely, Florence who also came from a disrupted family married a man who moved out of the family *rugo* to establish a new independent household. She explained how she and her husband together discuss their economic situation and capacity to raise children within their limited resources (to cover food, health and school costs), without the influence of neither his nor her kin:

> *We discussed with my husband, and he agreed that according to his preferences, we should stop with three children, because it has become more difficult to feed the*

three recently, so to avoid putting a heavier burden on our home. … We talk about all these things in bed, or elsewhere, as long as it's only the two of us. [Rutana, 2016]

Family structure, including the presence of in-laws, had an influence on the gender-dynamics within couples. Florence explained how she actively and fully took part in the management of her households, including financial aspects. This was quite exceptional and not found in most other households we followed, where men only were in charge of finances – managing expenditures related to fertilizers and seeds, school, health and social events – and where they are responsible of the family size decisions. In interviews, participants who practiced NFP expressed pride in the fact that partners had to collaborate for a disciplined behaviour – observing abstinence periods - to successfully plan their families. Inversely, as men rarely visit a health facility unless ill or injured, women went alone to health providers for information, counselling and provision of modern contraceptives, shifting responsibility for FP practices. This responsibility and autonomy was assessed by many participants as risky. Florence for example expressed that even if she was able to control her fertility using injections, she was not protected from the risk of her husband having children outside of marriage, and bringing them into their household, adding burden on their subsistence means.

Our longitudinal research showed that FP practices were also contingent on life events and situations. One participant – a 28 years old teacher – had his wife use injections to prevent a pregnancy as she had not finished her secondary school due to a first unplanned pregnancy that led them to marriage. Despite expressing moral values against modern contraceptives and his wife complaining about the effects of injections on her body, his strategy was to use injections until she finished school, when they would switch to natural methods. He explained that natural methods are difficult to apply, but as they are educated they could succeed to achieve their preferred number of children, which, as he explained would be planned based on their financial means:

*Considering the times we're living, I will pray to God that he gives us the number of children that we can raise. … If God gives me 10 children today, I won't be able to raise them. But little by little, we'll have the means, so we'll be able to raise them. The chiefs of today won't be the chiefs of tomorrow (*uko bukeye siko bwira*). Today*

you may have the means, but tomorrow you may no longer have them. If things don't go well, we can decide to have 2 or 3 children. [Karusi, 2014)]

This narrative illustrates that having numerous children was still associated with wealth, but could soon shift to being a liability. Behind the government's discourse of 'having the number of children one can raise' lays indeed a secondary message that suggests that wealthier people are allowed more children and poorer people should restrain. And this was sometimes perceived as unfair, expressed by a few people who complained that 'those who tell us to have fewer children are not showing the example' referring to health providers and community leaders. Wealth was considered as volatile. Many families lost their assets – land and cattle – during the conflict phases, and wealth was mostly acquired through government positions and acquaintances, hence dependent on the political situation. Thus, many considered that the future was very uncertain in the current context, even for people with an improved position like the teacher above, rendering the notion of planning difficult. The theme of uncertainty emerged frequently in our data. In fact, most of the narratives showed that individuals and couples conjugated with uncertainty to plan their families, as anything else in life.

Last, choices of FP methods were contingent on bodily realities. As taught in school and in church, practicing NFP required a regular menstrual cycle, and thus were not suited for all women. We found many participants had excluded the option of NFP because of their irregular cycles. Using modern contraception could lead to physical side effects that unpredictably occurred in some women but not in others. Physical side effects were assessed as problematic by participants because they are unpredictable, and because they affected women's everyday life, their capacity to work for instance. As presented elsewhere (Schwarz et al., 2019), in a context of widespread malnutrition and anaemia, where women bear just about all the agricultural work, excessive irregular bleeding is problematic and a good reason not to use modern methods.

Concluding Remarks

This research has shown how the complex historical and political context of Burundi has led to the maintenance of a hegemonic FP discourse on 'overpopulation' since the 1980's, distant from autonomous choices and empowering practices. Most actors in the country aligned with the neo-Malthusian stance that 'overpopulation' is a barrier to socioeconomic development and a source of land conflicts. The failure in shifting from population control to sexual and reproductive health and rights prevents constructive understanding and action on individuals' and couples' FP rationales and practices: 'instead of clarifying our understanding of these [reproductive] issues, it obfuscates our vision and limits our ability to see the real problems and find workable solutions. Worst of all, it breeds racism and turns women's bodies into a political battlefield' (Hartmann, 2016: 4). Our research however shows that, in Burundi, despite a relatively low adherence to modern contraceptives, the government technocratic apparatus for FP – lead by the PNSR but largely supported by external donors – seems to serve a double purpose: first it rhetorically depoliticises the failures of the State in ensuring socioeconomic development and alleviating land pressure issues by situating responsibility at the individual and couples' level; and second it enables the government providing a simple, technical solution (modern contraceptives) to the identified problem (fertility), with full support from external donors and contraceptive products providers[22] .

In substance, by aligning with FP development frameworks and initiatives such as FP2020, the reproductive governance in Burundi follows a technocratisation process, by which the socioeconomic and land issues are presented as a set of technical problems requiring technical expertise and solutions, rather than as a series of complex political problems that require examining and addressing global and local power dynamics and systemic solutions (Ferguson, 1994; Li, 2007; Potvin, 2018). Technocratisation thus enables a depoliticisation of the serious, yet sensitive and conflict-prone issues of failed management of land tenure, economic hardship and gender inequality in access to land and livelihoods that, we argue, partly explain the relatively low demand for FP. Such global and local discourse on FP eludes

[22] On the role of pharmaceutical industries providing products for FP programmes in low and middle-income countries, see Bendix and Schultz (2018).

evidence that have shown that 'improvements in living standards and the position of women, via more equitable social and economic development, are the best way to motivate people to want fewer children' (Hartmann, 2016: xxx). However, it enables maintaining particular political systems and power structures in place.

Our empirical research has also shown that framing FP as a technical, medicalised solution that women and couple simply need to be informed about and uptake does not reflect situated, contingent embodied realities. Medicalisation has been used to describe the processes by which technologies increasingly govern populations through medical control, and exerting social control (Busfield, 2017). We have highlighted how FP medical technologies can aim to discipline social reproductive behaviour (through the government discourse), but they can also be resisted (low demand in rural Burundian women). We thus align with Hardon and Moyer's call for ' studies of medicalization [that are] sensitive to the site and technology-specific micro-dynamics of power, the specificities of local markets in which medical technologies generate value, changes in power dynamics and markets over time, and the social relations in which technologies figure.' (2014: 111). Reproductive navigation in Burundi proved more complex, contingent on social and material circumstances, and framed by power dynamics such as gender and generational relations. Interestingly, while the Church resisted to enact a medicalisation of FP by opposing modern contraceptives, their alternative solution that aimed at embracing social dynamics adopted a medicalised approach. Limiting their teachings to women who have a standardised reproductive body with regular menstrual cycles produces the effect of excluding many women. The inability to consider the diversity of bodily realities can be interpreted as a sign of medicalisation of reproductive health, whereby biomedical, standardised knowledge on fertility and menstrual cycles has taken over other forms of knowledge[23].

Our research has shown that the depoliticisation, individualisation and medicalisation processes are however not enacted by all actors. By embedding its FP discourse in the social field - instead of the medical field – the Catholic Church offered a solution closer to the concerns of populations. In post-conflict Burundi where disruptions of family structures and social fabric affect many households (Uvin, 2009), we found that the approach and services

[23] E.g. the role of traditional birth attendants and their knowledge have quasi disappeared in Burundi, as an effect of incentivising institutional deliveries through performance-based financing.

offered by the Church were appealing to rural women and couples, as they served the primary purpose of mediating social disorder and uncertainty. They are however limited in access, as we have described. Some health providers did not fully endorse the medicalisation discourse because of the discrepancy they observed in their clinical work between women's bodily experiences (side effects or irregular cycles) and the medical discourse that dismissed these issues. This discrepancy has been described as a *social distance* by Richey who observed the same phenomenon in Tanzania: 'FP service providers are marked or identified at the clinic level by their knowledge of modern methods. These technologies are designed for bodies that are the same, but when they are implemented in the real-world context, bodies are different. Service providers are then in the difficult position of negotiating between the needs of the different bodies and the expectations of the family planning apparatus' (2004: 68).

Finally, we found that the individual responsibility to control fertility, as promoted by the government, was not endorsed by many women, who reported preferring natural methods and shared responsibility. We interpret that the endorsement of a reproductive responsibility by women, in a context where gender inequities place them in fragile and dependent configurations, is not desired, even contested. Natural methods appear more desirable perhaps also because they encourage a positive form of masculinity – through positive self-control – that is precisely challenged in post-conflict times (Sommers, 2013; Daley, 2007; Berckmoes and White, 2014). We interpret the relatively low adoption of modern contraceptives not as a rejection of FP altogether, but rather as a resistance to the technical solution proposed that is in inadequacy with the social and material circumstances and power dynamics that frame women and couples' everyday life. We thus argue that the hegemonic FP discourse and solution promoted by the Burundian State are partly challenged in adoption because they are distant from local realities, knowledge, concerns and embodied social needs.

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Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest.

7. PAPER 2: ADOLESCENT PREGNANCY

Adolescent Pregnancy in the Great Lakes Region: exploring risk factors in survey data from South Kivu (DRC), Burundi and Rwanda, using a Latent Class Analysis

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Working paper

Abstract

Adolescent pregnancy is considered as a public health issue due to health risks (delivery complications, maternal mortality) and socioeconomic consequences (school dropout, social exclusion, lower socioeconomic prospects). Using cross-sectional data from a community survey conducted in 2014 among adolescents (15-19 years) in Burundi, Rwanda and the South Kivu province of the DRC, we describe rates of adolescent pregnancy, sexual behaviour, and sociocultural values, beliefs and attitudes on sexual and reproductive health (SRH). We further explored factors associated with utilisation of contraception (including condoms) used as a proxy for pregnancy prevention using latent class analysis (LCA) and logistic regression modelling, looking specifically at the role of education and social values in adolescent pregnancy related outcomes. We found that reported utilisation of contraception at last sex was low, especially among female respondents in DRC and in Burundi. Values and beliefs of adolescents on contraception and their self-rated capacity to negotiate condom use are important factors determining utilisation of contraception at the individual level, more than education. In fragile and changing contexts such as in the Great Lakes region, individual behavioural factors are likely to be driven by changing social structures, which were not assessed in this study, limiting the understanding of situated social multifaceted realities that adolescents evolve in.

Introduction

Pregnancy and childbirth complications are the second cause of mortality in female adolescents (15-19 years) globally (WHO, 2014). The highest rates of adolescent pregnancy are found in the Sub-Sahara African Region (over 100 per 1,000), as well as of maternal mortality with however great variations across and within countries (Sedgh et al., 2015; Patton et al., 2012). Pregnancy and childbirth in adolescence are associated with health risks as well as with poor social and economic prospects and conditions. The increased risk of mortality from maternal causes in adolescence is explained by limited access to reproductive healthcare services, anaemia, eclampsia, HIV and other sexually transmitted infections (STI), premature delivery, obstetric fistula, postpartum haemorrhage, preterm delivery and low birth weight newborn, and mental disorders such as depression (Nove et al., 2014; Mombo-Ngoma et al., 2016; Chandra-Mouli et al., 2014; Neal et al., 2015; Sedgh et al., 2015; Althabe et al., 2015; Bledsoe and Cohen, 1993). Adolescent pregnancies are associated with lower educational and socioeconomic levels (Sedgh et al., 2015; Althabe et al., 2015; Nove et al., 2014; Christofides et al., 2014; Cleland et al., 2006). While adolescent births are concentrated among poorer and less educated women, early motherhood often also becomes a determinant of school drop-out and lower socioeconomic prospects. In many contexts were sexual activity outside of marriage is socially banned, unmarried adolescent pregnancy is stigmatised, putting adolescent girls at higher risk of not using antenatal care services, of seeking induced abortion – illegal in many regions and practiced under unsafe conditions (WHO, 2014; Bledsoe and Cohen, 1993) –, and of social exclusion, implying long-term consequences for them as individuals, their families and communities (Sedgh et al., 2015; Viner et al., 2012).

Factors associated with adolescent pregnancy are found at the individual level, at the proximal level (family, peers, communities) and at the structural level (socioeconomic context that determines opportunities for young people for example) (Viner et al., 2012). At the individual level, adolescents who wish to avoid pregnancy may face barriers in using contraception due to low reproductive health knowledge, limited access to contraception (including condoms), unequal capacity to negotiate contraception with one's partner, financial cost, fear of side effects and misconceptions about contraception (Nalwadda et al., 2010; Diamond-Smith et al., 2012; Rutenberg and Watkins, 1997). However, pregnancy may

also be desired by adolescent girls, for instance in contexts where motherhood ensures the positive transition to social adulthood (Ahorlu et al., 2015). Known proximal factors associated with adolescent pregnancy include disruption in the family structure, household size, residential environment, socioeconomic status and gender power relations (Toska et al., 2015; Christofides et al., 2014; Wamoyi et al., 2014). Distal structural factors include local availability of contraceptive methods, laws or practices limiting the provision of methods to married women and/or only with consent of the partner, attitudes of health staff towards premarital sex, lack of confidentiality in services, social pressure not to delay childbearing, gender inequality and tolerance of violence towards women, conflicting social norms and the level of acceptance of adolescent sexuality in the community (Biddlecom et al., 2007; WHO, 2014; Sedgh et al., 2015; Viner et al., 2012).

In Sub-Saharan Africa, exposure to sexuality education, as well as increased access to peer networks that have a positive influence on negotiation skills have been shown to decrease adolescent pregnancy rates in school attending adolescents. (Rosenberg et al., 2015; Baird et al., 2010; Blum, 2007; Ikamari et al., 2013; Santelli et al., 2015). A 2016 literature review on school-based interventions for preventing HIV, STIs and pregnancy in adolescents has however shown that curriculum-based education in schools is not effective in reducing risk behaviours of adolescents unless related topics are addressed, such as gender norms, gender-based and intimate partner violence, poverty and inequalities, and provision of condoms and contraceptives (Mason-Jones et al., 2016). Looking at the apparent association between education and fertility in an ethnographic research conducted in Cameroun, Johnson-Hanks suggests that the association may be an artefact of the social processes that take place in schools. School is a place of social production through instruction and enculturation, where social norms (including gender constructions) are (re)produced and embodied; and at the same time it is a place where social actors (students) acquire the skills and agency to navigate such structures and norms and to challenge them (Johnson-Hanks, 2006). Following Giddens' structuration theory, social inequalities such as unequal gender power relations are on the one hand reproduced in the school system (as a social structure), while on the other hand the attending school students increase their agency through education to challenge these unequal structures through social practice (Giddens, 1984). Given the impressive progress made globally on increasing

access to education for boys and girls, and because schools are places where children, adolescents and young people spend a large portion of their days, it is important to better understand the interplay between school and sexual and reproductive health outcomes, particularly because of the socially transformative dynamics that take place in the school context.

In the African Great Lakes region, adolescent pregnancy rates vary across countries, with estimated rates of 21% in the South Kivu province of the Democratic Republic of the Congo (DRC) (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité et al., 2014), 8.3% in Burundi (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017) and 6% in Rwanda (National Institute of Statistics of Rwanda et al., 2011). In these three countries, the recent history of conflicts in the region has impacted the offer of public services (health, education), social cohesion, gender equity, economic development and governance (Falisse, 2016; Sommers, 2011; Sommers and Uvin, 2011), with variations between countries. In all three countries, the predominant Christian religion condemns sexual activity and pregnancy prior to or outside of marriage. Marriage is an important aspiration and step for young people in the region. In the last decades, the transition period from adolescence to social adulthood through marriage has been extending mainly due to increased access to education (for boys and girls) and simultaneously poor economic opportunities and perspectives hindering financial access to bride-wealth (*la dot*) and marriage. Thus, young people stay longer with their family before they are able to establish their own household through marriage. This situation leads sexually active young people to finding living arrangements (such as *concubinage*, cohabitation) that concomitantly challenge and reproduce social norms. Pregnancy may also be a strategy for young people to access marriage or c*oncubinage / gucikiza* and 'moving on to adult life', especially when professional prospects after school are very limited and not perceived as pertinent (Neal et al., 2015; Christofides et al., 2014). The high prevalence of gender inequities and related violence in relationships in the region also plays a role in the sexual behaviour of young people and related risk of adolescent pregnancy (Hindin, 2014; Amin and Chandra-Mouli, 2014; Ntaganira et al., 2008; Van Decraen et al., 2012).

In the frame of a Dutch-funded development project that aimed at improving the sexual and

reproductive health (SRH) of young people in the Great Lakes region[24], cross-sectional data were collected in the South Kivu province of the DRC, Burundi and Rwanda through a community survey conducted in the spring of 2014. Based on these data, this paper presents rates of adolescent pregnancy, explores sociocultural values, beliefs and attitudes of adolescents around sexual and reproductive health (SRH), as well as reported sexual behaviour in the three countries[25]. It further explores factors associated with utilisation of contraception at last sex as a proxy for pregnancy prevention using a latent class analysis (LCA) approach and logistic regression modelling to look specifically at the role of education and social values in adolescent pregnancy related outcomes.

Methods

Study setting and study participants

A multi-stage cluster survey was conducted between February and July 2014 in the South Kivu province of the DRC, Rwanda and Burundi. The study setting covered all the intervention zones of the development project plus additional control zones. In South Kivu, six health zones were targeted (Katana, Miti-Murhesa, Idjwi, Walungu, Kaziba, Nyangezi); in Rwanda, six districts (Gicumbi, Kirehe, Nyaruguru, Rusizi, Karongi, Muhanga); and in Burundi eight provinces (Bururi, Cankuzo, Karusi, Makamba, Rutana, Ruyigi, Gitega, Mwaro). Study participants were young people aged 15 to 24 years who have been living in the area for at least three months before the survey.

Sampling

The lowest administrative units were randomly selected across the targeted health zones (DRC=87), districts (Rwanda=87), or provinces (Burundi=107). In the field, the administrative unit was sub-divided into clusters of about 100 households, and within each cluster eligible participants were randomly selected to be interviewed with only one person per household

[24] The "Next Generation" programme was funded by the Dutch Ministry of Foreign Affairs and implemented by a consortium led by Cordaid, The Netherlands, through their local offices or partner offices between 2013 and 2015.

[25] In DRC, only the South Kivu province was surveyed, which is over the size of Burundi and Rwanda together. We will however refer to "countries" to designate the geographical location, for simplification.

selected. In Rwanda, an additional 10% of participants were added to the sample from 12 boarding schools randomly selected, as recommended by the Rwandan National Statistical Office. This paper presents findings from the sub-group of adolescents aged 15 to 19 years.

Instrument and data collection

A questionnaire was developed using validated questions when available (DHS, WHO, UNFPA) including participant's socioeconomic background, sexuality education and knowledge, sexual behaviour, access and use of SRH services, social norms related to SRH. Data were collected on tablets, using ODK software. Questionnaires were translated into local languages (Kiswahili, Kinyarwanda and Kirundi) and piloted in all three countries. For data collection, teams of over 30 experienced interviewers per site were recruited through local organisations and were trained over a week on interviewing technique, as well as SRH topics, and were supervised by trained supervisors who also conducted control interviews. Data were sent to the server every second day and checks were performed by the research team in Basel, to flag data collection issues when occurring, allowing rapid mitigation in the field.

Data analysis

Descriptive analyses were conducted for each country separately and involved adolescents' basic characteristics, their sexuality debut and pregnancy history, as well as their knowledge on basic SRH topics, their beliefs about contraception and their sociocultural attitudes about pregnancy outside of marriage. Based on qualitative field work conducted in the region by the first author and on the literature, the main expected characteristics that differentiate adolescents with regards to SRH attitudes and behaviour are their social status (marital or family structure, socioeconomic and educational), as well as their sociocultural values and beliefs, highly related to their religious affiliation and/or other sociocultural networks. Two logistic modelling approaches were used to explore factors associated with sexual behaviour that increases the risk for adolescent pregnancy: one 'classical' model using individual predictor variables and assessing their association with the outcome; and one model using a Latent Class Analysis approach to group adolescents across various life-style related characteristics, and to explore the association between the constructed 'social classes' and the outcome. The logistic regression analyses were performed among sexually active

adolescents only from pooled data from the three countries. All analyses were conducted using Stata/MP 14.0 version, using the survey design command (svy) after setting the multiple-stage survey design.

The first logistic regression model was constructed in two steps. First, individual predictor variables were selected based on the literature on adolescent pregnancy and contraception utilisation, and each variable was assessed separately for its association with the outcome variable 'non-utilisation of contraception (including condoms) at last sex'. All predictors that had an association having a P<0.2 were included in the model. A manual backward selection was performed, using a P-value of 0.2 as criterion for retention in the model, locking the variable country as a covariate. Last, potential interactions were tested between predictors and kept in the model if they proved to be relevant. To help interpretation of results with interaction, predictive marginal prevalences were calculated and plotted in a graph for a visual display of the data for each sub-category.

The second approached used was a Latent Class Analysis (LCA). The LCA approach was first used to group all adolescents into mutually exclusive and exhaustive clusters based on their demographic characteristics including socioeconomic and educational status and their sociocultural values and attitudes (see *Table 12* for included variables). As LCA only allows categorical variables, all variables were dichotomised, except for religion (3 categories). The LCA was conducted without covariates, and the Bayesian Information Criterion (BIC) was used to select the number of classes, balancing parsimony and model fit. Based on the resulting estimates of prior class probabilities and class-specific item response distributions, individual posterior class membership probabilities were calculated and each adolescent was assigned to the class for which it had the highest membership probability. Proportions of individuals who fit into their class with a 90% and 80% probability were used an internal validation of the final number of classes to be kept. The LCA Stata Plugin (version 1.2.1) was used (Lanza et al., 2015).

We then used the constructed classes to assess the association with sexual behaviour measured by reported 'non-utilisation of contraception (including condoms) at last sex', using a logistic regression model and including only sexually active adolescents. The variable country was included as a covariate, and an interaction term class-country to present

country-specific class effects into the model. Again, marginal prevalences of country-specific class effects were calculated and plotted in a graph to help interpretation. The model was then further adjusted, controlling for the main informative factors in the LCA model (school attendance, values about contraception, sex, age, SRH knoweldge) to assess to what degree these factors are drivers of the class effects.

Both logistic regression models were run with a sub-sample of only sexually active adolescents, excluding those who responded they were pregnant at the time of the interview (n=393). We tested the relevance of adding a multi-level mixed-effect into the models to account for the clustering of data around the sampling units, and the countries, as data were pooled. Models with a random effect around clusters had very low estimated variances, and thus it was decided only to account for the effect of country as a fixed-effect by including the variable as a covariate. Throughout the analyses, the age of adolescents was used as a binary variable, separating adolescents under 18 (15-17) from those 18 and above (18-19), the rationale being that 18 is the legal age for sexual activity, and the legal age for marriage in DRC and Burundi (in Rwanda, legal age for marriage is 21 years).

Results

A total of 2,237 adolescents aged 15-19 years were sampled across the three countries, as shown in *Table 7* (DRC: 764; B: 684; R: 789). There were more adolescent women compared to men (about 60%), across all three countries. Close to half of the respondents in Rwanda and DRC were not enrolled in school at the time of the survey, while it was less than a third in Burundi. A larger proportion of adolescents reported having received no education at all in DRC (11.5%) compared to Burundi (4.3%) and Rwanda (1.8%). Christians accounted for over 90% of the sample. The vast majority of adolescents were single (DRC: 88.3%, B: 96.0%, R: 99.3%), with however 11% Congolese adolescents reporting being married or cohabitating with their partner (unmarried), as compared to 3.8% in Burundi, and 0.4% in Rwanda.

Table 7 : Characteristics of adolescents (15-19 yrs)

	DRC (N=764)	Burundi (N=684)	Rwanda (N=789)
Sex			
men	38.6%	39.5%	40.0%
women	61.4%	60.5%	60.0%
Education			
in school	55.2%	71.3%	54.7%
out-of-school	44.8%	28.7%	45.4%
Education level			
none	11.5%	4.3%	1.8%
some or achieved primary	44.7%	53.7%	55.2%
some or achieved secondary	43.7%	42.0%	43.0%
Religion			
Catholic	50.5%	61.4%	47.3%
Protestant (and Protestant branches)	46.7%	34.0%	48.8%
Other	2.8%	4.6%	3.9%
Marital status			
Married or cohabitating	11.0%	3.8%	0.4%
Single	88.3%	96.0%	99.3%
Divorced/separated/widowed	0.7%	0.2%	0.3%

Adolescents sexuality and pregnancy

Differences were reported in the sexual activity of adolescents across countries (*Table 8*): in Burundi and Rwanda, just over 10% of the adolescents reported they already had sexual intercourse, as compared to 39.5% in the DRC. Over one in three sexually active adolescents across the three countries reported they had their first sexual intercourse before the age of 16, and about one in four adolescent girls reported that their partner at first sex was over five years older. When asked about utilisation of contraception at last sex – including utilisation of condoms – the proportions were lower in DRC (18.6%) and Burundi (22.1%), and slightly higher in Rwanda (37.3%). The proportion of adolescents reporting utilisation of contraception at last sex was particularly low among females in DRC (9.8%) and Burundi (14.6%).

Table 8 : Reproductive Health Characteristics

	DRC		Burundi		Rwanda	
% of adolescents being sexually active						
All (N)	39.5%	(764)	12.2%	(683)	11.2%	(789)
Sex						
male	48.2%		10.1%		12.6%	
female	34.0%		13.6%		10.3%	
% of sexually active adolescents reporting their first sexual partner was over 5 years older						
All (N)	16.7%	(297)	15.8%	(84)	13.2%	(87)
Sex						
male	0.1%		0.1%		0.1%	
female	31.4%		22.5%		22.0%	
% of sexually active adolescents reporting a first sexual intercourse by age groups						
Age						
< 16 years	36.6%		32.2%		43.1%	
≥ 16 years	63.4%		67.8%		56.9%	
% of sexually active adolescents reporting use of contraception at last sex (including condoms)						
All (N)	18.6%	(299)	22.1%	(80)	37.3%	(87)
Sex						
male	28.6%		39.7%		39.4%	
female	9.8%		14.6%		35.7%	
% of (all) adolescent women currently pregnant or with a child						
All (N)	19.5%	(481)	7.4%	(404)	4.2%	(458)
Age						
<16 yrs	2.9%		0.0%		0.0%	
16-17	10.4%		2.8%		1.1%	
18-19	36.1%		15.7%		9.9%	
% of adolescent women who had planned their last pregnancy						
All (N)	27.7%	(91)	51.9%	(35)	17.6%	(18)

The proportion of adolescent girls who were pregnant at the time of the survey or already had a child varied across countries and age groups, with close to 20% of all female adolescents in DRC being pregnant or with a child, 7.4% in Burundi and 4.2% in Rwanda. Adolescent women who were currently pregnant or had a child were asked if their last pregnancy had been planned: 51.9% of the respondents in Burundi reported the pregnancy was planned, 27.7% in DRC and 17.6% in Rwanda.

Sexual and reproductive health knowledge

A set of true-or-false questions about proper condom use, modes of HIV transmission, fertility and pregnancy were asked to assess the level of knowledge on key SRH topics. Table

9 presents proportions of adolescents who have correctly identified the statements as true or false, disaggregated by country and by sex. The last row presents the proportion of adolescents who could answer six questions correctly (out of seven). The results show that one male adolescent in three from DRC and Burundi has a basic knowledge on SRH, for only one female adolescent in four. In Rwanda, the proportions are higher, with 46.4% of male and 42.6% of female respondents who could answer correctly. Knowledge among female adolescents in Burundi and DRC was particularly low, compared to the other groups and countries. Overall, the low knowledge scores also show inconsistency in knowledge on the proposed topics. In Rwanda for example, scores were relatively high for questions related to HIV transmission and much lower for topics concerning fertility and pregnancy.

Table 9 : Sexual and reproductive health basic knowledge

	DRC (N=436)		Burundi (N=266)		Rwanda (N=121)	
	men	women	men	women	men	women
% of adolescents who answered correctly						
Condoms are an effective way to avoid a pregnancy (correct)	86.8%	72.6%	77.8%	60.4%	95.8%	92.2%
Women can get pregnant during their menstruation (correct)	43.2%	24.7%	56.1%	43.1%	59.2%	52.7%
Birth control pills offer protection from STIs and HIV (incorrect)	81.9%	87.2%	49.3%	43.0%	78.4%	81.5%
A woman can get pregnant on the very first time that she has sexual intercourse (correct)	49.6%	53.6%	45.6%	48.3%	67.8%	68.3%
The same condom can be used more than once (incorrect)	96.8%	93.7%	83.9%	60.3%	95.5%	93.0%
Infertility can be caused by STIs and complications related to an abortion (correct)	62.1%	56.7%	60.0%	57.0%	51.4%	49.6%
I can get HIV by hugging, shaking hands, or sharing a home with an infected person (incorrect)	83.2%	87.2%	92.9%	74.8%	95.1%	95.3%
% of adolescents who answered 6 items correctly (out of 7)	34.3%	25.6%	34.7%	23.6%	46.4%	42.6%

Sociocultural perceptions of pregnancy outside of marriage

Adolescents were asked to state if they agreed with a set of sociocultural perceptions and attitudes (5-item response scale) about pregnancy outside of marriage (*Table 9*). Less than a third in all three countries agreed that if a woman in their family got pregnant outside of marriage, they would want that pregnancy to remain a secret. Overall two thirds agreed that the embarrassment exists also on the side of the boy/man's family, with higher proportions in Burundi. High proportions of adolescents agreed that if an unmarried girl gets

pregnant, it is her own fault if she is shunned: more than 80% in DRC and less than 70% in Burundi and Rwanda. Proportions are however similar between men and women within each country. Perceptions on the responsibility of the father to provide support differed between countries (gender equity value), with Rwandan adolescents showing more equality-driven values (m: 83.3%; f: 78.1%), compared to Congolese (m: 67.9%; f: 48.2%) or Burundian adolescents (m: 58.4%; F: 52.4%). Differences between men and women across the countries show that women tend to have less equality-driven values with regard to this specific statement.

Table 10 : Attitudes around pregnancy outside of marriage and values and beliefs about contraception

	DRC (N=436)		Burundi (N=266)		Rwanda (N=121)	
	men	women	men	women	men	women
% of adolescents who rather / fully agree with the following statements:						
(a) If a woman in my family gets pregnant without being married I would want her pregnancy to remain a secret.	28.4%	33.3%	24.8%	29.4%	21.4%	20.1%
(b) Getting a girl pregnant outside marriage is embarrassing for the boy/man's family	70.1%	62.4%	84.9%	86.7%	69.5%	61.8%
(c) If an unmarried girl gets pregnant it's her own fault if she is shunned.	83.4%	85.7%	63.0%	62.0%	70.7%	64.2%
(d) Men who have children outside of marriage should support them in the same way as children born within marriage.	67.9%	48.2%	58.4%	52.4%	83.3%	78.1%
(e) Children are a gift of God, so one should not use contraception	51.6%	57.3%	29.7%	45.6%	25.2%	24.9%
(f) The use of contraceptives is a sin.	36.7%	42.4%	32.8%	47.0%	20.2%	24.5%
(g) Contraceptives can decrease your sexual satisfaction	53.5%	48.6%	50.3%	55.5%	35.3%	38.5%
(h) The use of contraceptive encourages infidelity	58.4%	51.2%	45.6%	54.1%	43.0%	46.2%

Values and beliefs about contraception

With regard to contraception, the agreement with the stated value that 'children are a gift of God so one should not use contraception' (*Table 10*) was higher among Congolese adolescents (m: 51.6%; f: 57.3%) and Burundian female adolescents (f: 45.6%), compared to Burundian male adolescents (m: 29.7%) and Rwandan adolescents (M: 25.2%; f: 24.9%). The same findings applied to the similar value 'the use of contraceptives is a sin' (DRC: m: 36.7%;

f: 42.4%; B: m: 32.8%; f: 47.0%; R: m: 20.2%; f: 24.5%). Thus, close to half of the female adolescents from DRC and Burundi expressed that contraception is not compatible with their religious values. Also, about half of the adolescents in Burundi and DRC believe that 'contraceptives can decrease your sexual satisfaction' and that the 'use of contraceptive encourages infidelity'.

Sexual behaviour of adolescents: exploring the risk factors of non-utilisation of contraception

Sexual behaviour of adolescents, using observed variables

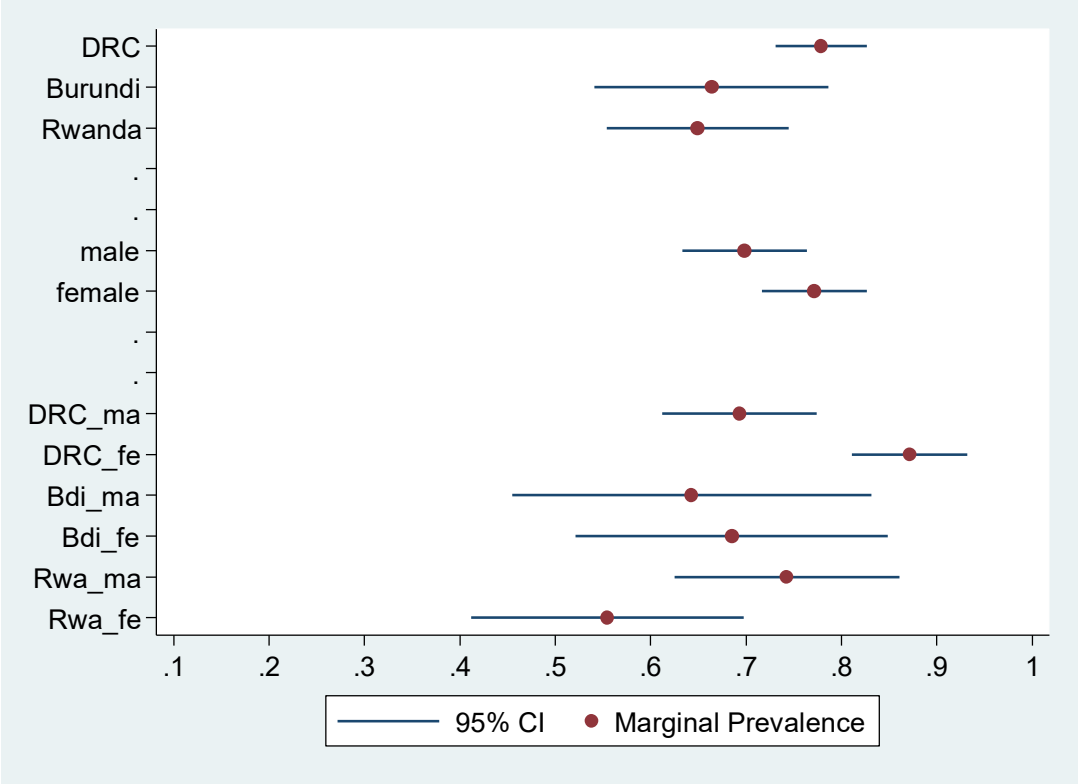
Table 11 presents the results of the logistic regression constructed using observed factors collected in the survey in non-pregnant sexually active adolescents (n=378), including an interaction term country-sex. The model shows that significant predictors of non-utilisation of contraception at last sex are: sex (OR=3.448, p<0.01 in DRC; OR=1.247, p>0.05 in Burundi; OR=0.375, p>0.05 in Rwanda); values on contraception (OR=4.175, p<0.001); beliefs about contraception (OR=0.365, p<0.001); having a child already (OR=3.061, p<0.01); being in school (OR=1.807, p<0.05) and the capacity to negotiate a condom (OR=0.486, p<0.05).

Table 11 : Logistic regression odds ratios of non-utilisation of FP methods (observed variables)

		OR	[CI, 95%]
Interaction Country # Sex			
DRC	Male (ref)	1	
	Female	**3.448****	[1.632,7.285]
Burundi	Male (ref)	1	
	Female	1.247	[0.335,4.648]
Rwanda	Male (ref)	1	
	Female	0.375	[0.138,1.018]
Age (>18 years)		0.600	[0.352,1.022]
Having a child		**3.061****	[1.364,6.868]
Being in school		**1.807***	[1.036,3.149]
Values (contraception is a sin)		**4.175*****	[2.076,8.397]
Beliefs (condoms decrease satisfaction)		**0.365*****	[0.214,0.624]
Capacity to negotiate a condom		**0.486***	[0.261,0.908]
N		378	

* p<0.05, ** p<0.01, *** p<0.001

Graph 1 : probability of reporting non-utilisation of contraception (full model, showing only interaction country # sex)



To help interpretation of the effect of country and sex (and their interaction terms) *in Table 11, Graph 1* was plotted to show the marginal predicted prevalences of non-utilisation of contraception at last sex for each sub-category (adjusted for the effect of the other variables included in the model). Female adolescents in DRC have a significantly higher predicted prevalence (87%) of not using contraception compared to their male peers (69%), as well as compared to female adolescents in Rwanda (55%). Rwandan female adolescents have indeed the lowest prevalence of reporting non-utilisation of contraception at last sex, and their prevalence is lower compared to Rwandan male adolescents (difference not significant). Prevalences between male (64%) and female (69%) Burundian adolescents do not show significant differences.

Other factors such as age of sexual début, age difference with the first sexual partner, alcohol consumption, having received sexuality education and basic SRH knowledge,

appearing in the literature as important factors, were not significantly influencing the reported non-utilisation of contraception.

Building latent classes of adolescents

The second approach used to explore determinants of non-utilisation of contraception is based on Latent Class Analysis*. Table 12* presents the LCA model results, listing the item-response probabilities included in the model. The model tested an increasing number of classes, starting with 2. The lowest BIC value was reached with 5 classes, however it was decided to use a final model with 4 classes, based on the following arguments: (i) the BIC value was only slightly higher with 4 classes (8967 vs. 9071); (ii) the 5 classes model had one cluster with very few observations; (iii) the calculated 90% and 80% posterior probabilities to fit into a class were stronger with 4 classes.

Four classes were created, grouping all adolescents (including non-sexually active adolescents) around different life-style characteristics:

- Class1 (n=862) grouped adolescents (46.7% male) that are mainly single, currently in school (92.5%) and mostly in secondary school (78.5%). Most have received sexuality education (77.2%), they listen to the radio at least once a week (75.5%), and half of them scored well on their SRH knowledge.
- Class2 (n=499) grouped adolescents who are younger (9.3% are above 18 years) and single, and they are currently in school (99.5%) but mostly in primary school (28% are in secondary school). Fewer have received sexuality education (42.3%) and only 9.3% scored well on their SRH knowledge.
- Class3 (n=706) are mostly single adolescents that are out-of-school (1.1% are in-school). Only a third has received some sexuality education and 20% has basic knowledge on SRH
- Class4 (n=170) groups adolescents who are mostly female (6.8% male), older (85.4% over 18 years), married or living with their partner (73.3%) and they were then pregnant or already had a child (87.3%). They are mostly out-of-school (1.7% in-school). Over half have received some sexuality education (56%), but 35% has basic SRH knowledge.

Values and beliefs were evenly spread through the classes of adolescents.

Table 12 : Distribution of the variables included in the LCA across the four classes

	Class1 In secondary school, higher knowledge	Class2 In school, younger, lower knowledge	Class3 Out-of-school non married, no children	Class4 Out-of-school, female, older, partnered with a child
Sex (male)	46.7%	37.4%	37.9%	6.8%
Age (>18 years)	48.1%	9.3%	45.7%	85.4%
Married/living with partner	0.1%	0.2%	0.2%	73.3%
Pregnant or with a child	1.4%	0.0%	0.0%	87.3%
Currently in school	92.5%	99.5%	1.1%	1.7%
Some secondary school	78.5%	28.0%	3.2%	23.9%
Religion: Catholic	59.2%	58.4%	55.0%	40.2%
Protestant	35.8%	38.3%	41.9%	53.7%
Other	4.9%	3.3%	3.1%	6.2%
Poorest quintile	8.4%	17.7%	26.3%	23.6%
Has received sexuality education	77.2%	42.3%	34.8%	56.0%
Listens to radio at least 1x/week	75.5%	46.9%	53.2%	50.4%
Has basic SRH knowledge	50.6%	9.3%	20.9%	35.0%
(b) Pregnancy outside of marriage - woman's fault if shunned	64.9%	71.4%	68.3%	66.2%
(d) Pregnancy outside of marriage - man's financial responsibility	72.1%	43.5%	58.5%	48.9%
(f) FP value - contraception is a sin	33.2%	41.4%	35.2%	34.9%
(h) FP beliefs - infidelity increase	45.0%	24.4%	39.0%	38.0%
Has consumed alcohol in the last 7 days	19.4%	19.0%	23.0%	16.9%
N	862	499	706	170
N in DRC	286	158	208	112
N in Burundi	244	227	173	40
N in Rwanda	332	114	325	18

Items (b) (d) (f) (h) - see table 11 for full questions.

Sexual behaviour of adolescents, using latent class

The four classes of adolescents were tested against their reported sexual behaviour, measured by non-utilisation of contraception/condom at last sex. The proportions of adolescents who reported not using contraception at last sex were as follow: 70.4% in Class1; 85.3% in Class2; 70.7% in Class3; and 80.4% in Class4 (not shown).

A logistic regression model was then constructed to assess the different odds across classes not to use contraception, using Class1 as reference (largest group), and controlling for the effect of the country, and including an interaction term for the class and the country. As displayed in *Table 13*, adolescents belonging to classes 3 and 4 in DRC have higher odds of

reporting non-utilisation of contraception at last sex (respectively OR=2.316, p<0.05, OR=4.197, p<0.01) compared to adolescents from class 1 (reference). Class2 also had higher odds (OR=3.039), but the P-value was above 0.05. In Burundi, the classes showed less different trends compared to DRC: the odds of classes 2 and 3 were higher compared to class1, and class4 was similar to class1, but none of the results were statistically significant. In Rwanda, the association changed direction with the group of adolescents in class3 (mainly out-of-school and mostly single) compared to class1 (OR=0.444, not significant), hinting that they are less at risk of adolescent pregnancy as their odds of not using contraception were lower. Rwandan adolescents from class4 (mostly with a child and/or living with their partner) have higher odds of reporting non-utilisation of contraception (OR=1.667, not significant) compared to their in-school single same-aged peers.

Table 13 : Logistic regression odds ratios of non-utilisation of contraception, including condoms, at last sex (latent class)

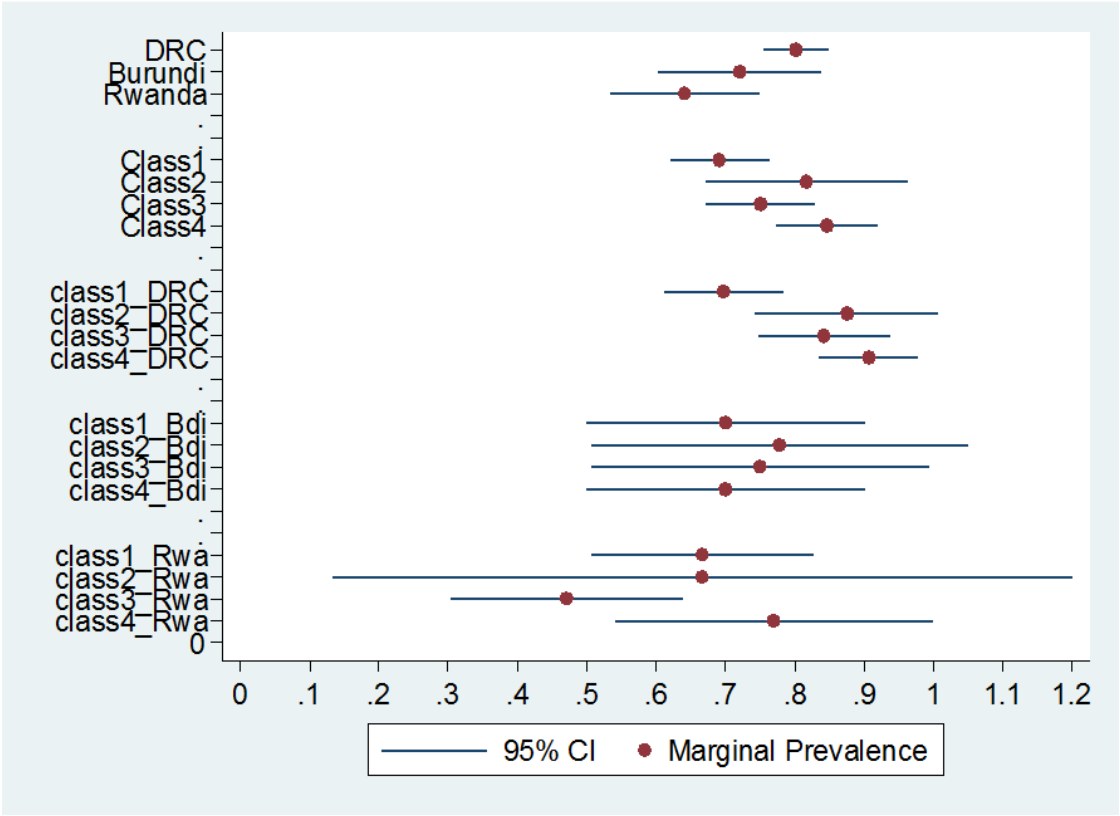
		OR [CI, 95%]	
Interaction	Class # Country		
DRC	Class1 (ref)	1	
	Class2	3.039	[0.848,10.90]
	Class3	**2.316***	**[1.019,5.263]**
	Class4	**4.197****	**[1.649,10.69]**
Burundi	Class1 (ref)	1	
	Class2	1.500	[0.238,9.441]
	Class3	1.286	[0.255,6.492]
	Class4	1.000	[0.259,3.867]
Rwanda	Class1 (ref)	1	
	Class2	1.000	[0.0815,12.27]
	Class3	0.444	[0.165,1.194]
	Class4	1.667	[0.380,7.317]
	N	398	

*Confidence intervals in parenthesis (at 95%). * p<0.05, ** p<0.01, *** p<0.001*

Plotting the probabilities of reporting non-utilisation of contraception at last sex, *Graph **2*** visually displays the effect of class by country on the outcome. While DRC and Burundi adolescents seem to follow the same trend with non-utilisation of contraception increasing

between class1 and the other classes, Rwandan adolescents diverge in class3, where their predicted prevalence drops.

Graph 2 : probability of reporting non-utilisation of contraception (model with only interaction country# class)



To further explore the factors explaining the differences between classes, selected variables (based on literature) were added into the model to see how they influenced the association between the classes and the outcome. The variables (being in-school, sex, age, alcohol consumption, SRH knowledge, and values on contraception) are included in the latent classes already, but controlling for their additional effect allows understanding if they are a strong driving explanatory factor within the classes. When adding one by one 'sex', 'age', 'has received sexuality education' and 'values on contraception', the difference between class3 and class1 in DRC was no longer significant, hinting that they are important explanatory factors driving the association with the outcome. When adding 'being in school', 'alcohol consumption' and 'basic SRH knowledge', the difference between class3 and class1 in DRC remained significant, hinting that these variables are not strongly driving the association with the outcome. Full model with all added steps is available in Appendix 2:

Paper 1: Fixed-effect logistic regression odds ratios of non-utilisation of contraception, including condoms, at last sex (latent class)).

Discussion

Looking into the sexual behaviour of adolescents using community survey data from DRC (South Kivu province), Burundi and Rwanda showed that adolescents in the three neighbouring countries follow different trends in terms of timing to enter a conjugal life, sexual behaviour (age of sexual debut, utilisation of contraception at last sex), pregnancy and family planning. Differences in knowledge of SRH, attitudes around pregnancies in adolescence and values and beliefs about contraception were also observed. Rwandan adolescents tended to have a better knowledge on SRH topics, and reported values that were more gender-egalitarian and less conservative (fewer religious values associated with contraception). The difference observed in Rwandan adolescents may be explained by a more stable and strong government and thus institutions that act as enabling environment for public services provision, including sexuality education. In contrast, the South Kivu province and Burundi remain fragile contexts where public services are very weak. Overall, the reported utilisation of contraception among adolescents at last sex – a proxy indicator for prevention of pregnancy – was generally low (25.4%), particularly among female respondents from Burundi and DRC.

The two approaches used to further explore factors associated with utilisation of contraception and thus better understand predictors of adolescents' sexual behaviour (not including sexually transmitted infections) have shown contrasted yet coherent results. The 'classic' multivariable logistic regression using observed variables has shown that several factors are associated with the outcome, including sociocultural factors (i.e. religious values and beliefs about contraception), agency factors (i.e. self-rated capacity to negotiate condom use with a partner), and socio-demographic factors (i.e. sex and having a child already). Being in school was positively associated with the outcome, suggesting that adolescents who are in school have higher odds of reporting non-utilisation of contraception at last sex, which seems to contradict the literature (we come back to this below). On the argument that such model with multiple factors being associated with the

outcome is not very practical in identifying adolescents at risk of pregnancy for intervention purposes, the second approach aimed at apprehending adolescents grouped around their diverse, heterogeneous life-style realities. The latent class analysis clustered adolescents into classes that indeed differ: some were living with their partner and had started childbearing already (class 4); others were single, nulliparous and in school, younger or older (class 1 and 2); others were no longer in school but still living with their parents or families and nulliparous (class 3). Exploring how these different classes behave with regards to utilisation of contraception at last sex (controlling for the additional effect of specific factors) showed that being in school was not a strong driving factor for the difference observed between classes with regards to their association with the outcome, especially in DRC and Burundi. Inversely, religious value, sex and age and having received sexuality education were stronger explanatory factors, as they decreased the effect in class3, hinting that regardless of access to school, these factors explained a larger part of the reported different sexual behaviour of single adolescents in DRC. In Burundi, the differences across classes were following the same trends as in DRC, yet they were not significant (the sample of sexually active adolescents was much lower in Burundi). The same sample limitation may explain the non-significant results in Rwanda. However in Rwanda, the single adolescents who were out-of-school reported lower odds of non-utilisation of contraception compared to their same-age in-school peers.

Is being in school protective?

In these analyses, the association between school and utilisation of contraception has shown apparent different findings. Using the multivariable logistic regression, being in school was positively associated with non-utilisation of contraception at last sex (OR=1.807). Using the LCA model, adolescents from the two out-of-school classes (class3 and class4) had higher odds of reporting non-utilisation of contraception compared to class1, except in Rwanda (where class3 had lower odds), yet adjusting the model again for the effect of 'being in school' showed that this particular factor was not a strong explanatory contributor to the different reported behaviour between the classes, compared to religious values for instance. The effect emerging in the first model may be driven by the Rwandan out-of-school adolescents who seem to behave differently (well shown in Graph2), although the interaction country-school was not significant and thus not included in the first model.

School has several dimensions. It can be seen as a structure where boys and girls mix and create relationships more than they would otherwise, but are under the supervision of teachers. Schools can be public and secular, they can be faith-based as is often the case in these countries. It is also as a place where knowledge and skills are (re)produced, including sexuality education, basic SRH knowledge, capacity to negotiate safe sex practices. In the multivariable model, neither 'having received sexuality education' nor 'basic SRH knowledge' were associated with the outcome, while in the LCA model sexuality education did play a role in the different behaviour between class3 and class1. In the literature, school enrolment is assessed as a strong protective factor associated with adolescent pregnancy, yet the understanding of what happens in school that may protect adolescents from pregnancy remains unexplored. Based on a cohort of adolescents in South Africa, Rosenberg *et al.* have found that the incidence of pregnancy was lower among adolescent enrolled in school, yet within this subgroup pregnancy occurred more commonly during school holidays compared to within the school term, hinting that school has a protective role through its structured and supervised environment which is less prominent during school holidays (Rosenberg et al., 2015). Authors such as Johnson-Hanks have described schools as places where gender-transformative dynamics are at play, especially in a period where girls have increasingly access to education and where the age of marriage is rising (Johnson-Hanks, 2006). Adolescents attending school have potentially higher skills and future perspectives that may allow greater negotiation capacities as well as locus of control over their sexual and reproductive health (Grisolía et al., 2015), and may be more likely to make 'moral arrangements' with religious norms with regards to contraceptive use. However, in the Great Lakes region, despite improvements in ensuring access to school for boys and girls (but not necessarily quality), economic prospects and opportunities remain low, especially in rural settings in Burundi and the South Kivu province of DRC that remain very fragile. Following this logic, adolescent girls, regardless of their school enrolment status, may perceive pregnancy as a way to ensure greater security for their future, provided that the partner acknowledges their paternity and provides economic support for the family (Christofides et al., 2014; Ahorlu et al., 2015). However this livelihood strategy may be risky, as it is contingent on men's acknowledgment and/or pressure from families. Other interpretations on why school is not a strong protective factor associated with non-utilisation of contraception are that school-attending adolescents may face more barriers in

accessing condoms and contraceptives due to a lack of confidentiality in the community where they are easily identified as students (also due to school uniforms), or as some attend boarding schools that are often faith-based.

Overall, school may thus have a different or mixed effect on behaviour of adolescents in the countries and within countries, and these effects are difficult to capture and interpret with quantitative approaches.

Having had a pregnancy is not protective

Adolescents who already had a child had higher odds of reporting non-utilisation of contraception (in both models, except in Burundi with the second model). A cohort study with adolescents in South Africa has shown that having had a previous pregnancy was protective against an unplanned pregnancy (but not an unwanted pregnancy), explained by the fact that a pregnancy enables and encourages young women to interact with health care services, including family planning services (Christofides et al., 2014). In the second model, we controlled for the effect of 'basic SRH knowledge', and it did not explain the difference in the class reported behaviour.

In this study, among the adolescents who already had a child, 92.4% were women, 46.7% lived with their partner (married or unmarried), 77.2% responded the pregnancy was unplanned and 9.7% responded they never used contraception because they wished to have more children (not shown). Thus, adolescents who already have a child present different realities: those who reported living with their partner, non-utilisation of contraception at last sex may in fact be intentional and explained by the desire to have more children as they have already entered social adulthood and reproductive life; while other adolescent women who do not intend to conceive another child may lack the knowledge on contraception including when to start after the birth of the first child or may face barriers in using contraception due to poor access, religious norms, fear of side-effects among others (Schwarz et al., 2019). It can also not be excluded that respondents using lactational/amenorrhea method may not have reported it as a method of contraception in the survey, while using it intentionally to space the next pregnancy. Underreporting of natural methods in survey data is a known phenomenon (Rossier et al., 2014).

Sociocultural values on contraception associated with sexual behaviour

Sociocultural values and beliefs around contraception was a strong explanatory factor of non-utilisation of contraception at last sex. Adolescents responding that the use of contraception is a sin had higher odds of not using contraception. The model grouping adolescents around life-style characteristics showed that these religious values contributed more in explaining a different behaviour between adolescents than school attendance. Finally, interestingly, in the observed variables model the belief that contraception can decrease satisfaction emerged as a protective factor: the adolescents who reported using contraception at last sex were more likely to agree with the statement that contraceptives can decrease satisfaction. This may be explained by an acknowledgment by users that they feel their satisfaction decreased when using a condom or another contraception method: condoms for practical reasons (having one at the right moment, fitting it, fear of side-effects) and hormonal contraception for loss of libido (experienced or heard as a common side-effect).

Finding that values and beliefs are explanatory factors are in line with qualitative research conducted by Wright *et al* (2006) in Tanzania who explored how norms such as abstinence, respectability and taboo of adolescent sexuality come in contradiction with social expectations (sex as inevitable, as a resource for women, as reinforcing masculine esteem) and thus leads to different behaviour and commitment of adolescents according to their values, often generating conflicts through this redefinition of sexual relationships (Wright et al., 2006). This field of changing norms and values emanating from different factors including globalisation or 'modernisation', has been described in this region (Sommers, 2011; Sommers and Uvin, 2011; Uvin, 2009) and may be applied to explaining different behaviour in adolescents, related to their social position in their community.

Is sexuality education influencing behaviour?

Clustering adolescents – sexually active or not – into classes has shown that having received sexuality education was a factor that separated adolescents (class 1 adolescents had received sexuality education in much larger proportions). Sexuality education did contribute to explaining a different reported behaviour between class3 and class1 in DRC. Yet, in the first model, having received sexuality education was not retained, as it was not significantly

associated with the outcome (in univariable logistic regression using $p<0.2$ as selection criteria). Here again, sexuality education may reflect different facets if it is provided by teachers, by health providers, by church group leaders, by community health workers, by parents, who all have their own characteristics in term of religious convictions, gender, ability to address such sensitive topics. A recent review of evidence on interventions that have a positive effect on SRH of adolescents, including reduction of unintended pregnancies, showed that interventions that proved effective were comprehensive sexuality education (CSE) and appropriate SRH services (Chandra-Mouli et al., 2015). CSE that aims at empowering young people by including aspects of gender, power and rights has shown promises of reducing rates of sexually transmitted infections and unintended pregnancies (Haberland and Rogow, 2015). Similarly, SRH services that are appropriate for young people (through staff that are trained and supported to be non-judgmental) are more likely to be used by adolescents when in need. Further, interventions proved effective when implemented at a high dosage and with a long-term perspective. Such evidence-based multi-sector programmes are tackling enabling factors identified in our analyses: religious norms, values and beliefs about contraception and about pregnancy in adolescence. By addressing these aspects, empowered adolescents may improve their ability to act within their intimate spaces (agency) and change harmful power relations and behaviour for positive SRH outcomes. However, while such interventions find an enabling implementing environment in schools, reaching out-of-school adolescents remains a challenge. Also, ensuring that sexuality education is comprehensive is challenging in setting where many public services are run by the faith-based institutions.

Concluding remarks

We used a Latent-Class Analysis (LCA) approach with the aim to reflect the complex heterogeneous social realities of adolescents in the three countries. We aimed to explore the interplay of various factors such as values and beliefs about contraception, school enrolment as a place for socialisation and changing norms taking place within and across countries. The LCA approach allowed exploration of such various patterns of social realities and their association with sexual behaviour, showing that adolescents may be experiencing

very different life circumstances – whether they are enrolled in school or not for instance – and that despite these similarities and differences, there appear to be other factors at play when trying to determine what predicts their sexual behaviour, such as religious values, age and sex, and sexuality education received.

Adolescents in the Great Lakes region have reported very low rates of utilisation of contraception including condoms at last sex, especially among female respondents in South Kivu province and in Burundi. Values and beliefs of adolescents on contraception and their self-rated capacity to negotiate condom use are important factors determining utilisation of contraception at the individual level, along with other factors. Such individual level factor (agency) have to be contextualised in their wider structural environment where access to commodities and youth-friendly SRH services and messaging about contraception found in the community (including misconceptions) also play a role in influencing the behaviour of adolescents. School can be defined as a social structure where adolescents are socialised differently based on their specificities (explaining the difference observed in Rwanda and DRC). In these fragile and changing contexts, the structural level can be a barrier in ensuring safe sexual practices (availability of services, information and commodities, religious norms, gender inequality) as well as an enabler (access to schools for girls, promotion of modern contraception, HIV prevention), where at the same time, adapting and changing social practices of adolescents and the whole community (mixity in schools, *concubinage*, sexuality before marriage) are re-shaping these social structures. Identifying single factors through regression modelling is thus restrictive in understanding these multiple dimensions at play in the community that shape adolescents' sexual behaviour. Latent class analysis allows, with limitations, to identify adolescents in their social multifaceted realities that drive their behaviour.

Limitations

Our study has several limitations that may have influenced our findings. Surveying adolescents on such a sensitive topic as sexual behaviour is prone to response bias. This has been mitigated as much as possible through the selection and training of the interviewers on SRH and interview techniques, increased precautions taken to ensure confidentiality and through cross-validation of responses within the questionnaire (for instance about

contraception use at last sex). Response bias may have occurred when the respondents were asked if they ever had sex. The proportion of sexually active adolescents could thus be underestimated, and we may have a subsample of sexually active adolescents who are slightly more at ease in talking about sexuality (as they have passed the barrier of disclosure) (Mason-Jones et al., 2016). The reported utilisation of contraception including condoms was rather low, whereas a desirability bias would have expected the figures to be inflated due to the widespread HIV prevention campaigns.

For the analyses, we explored utilisation of modern FP methods only, leaving out natural methods. This decision was based on the fact that natural methods were reported by only 10 adolescents (rhythm method and withdrawal, while none reported using lactational/ amenorrhea method). As shown by Rossier et al, not prompting specifically for natural methods– which was the case in our survey – results in underreporting of such methods (Rossier et al., 2014). Finally, a known barrier for non-utilisation of contraception is the access to services and commodities for young people. This was not taken into account in the survey. As reported above, young people may face structural barriers that can be more important than individual behaviour in explaining sexual unsafe practices (e.g. availability of condoms).

We used two complementary logistic regression modelling approaches that both present advantages and limitations. Because data refers to beliefs, attitudes and behaviour, exploring explanatory and mediating factors is difficult as such aspects are interacting and associated with one another. Using a logistic model with manual selection of variables has the advantage of showing which variables are associated with the outcome controlling for other factors, but if one wishes to additionally consider interactions between the explanatory variables, models may become uninterpretable. The approach using latent classes had the advantage of first grouping adolescents around some characteristics and then assessing their association to reported behaviour, which made the interpretation easier in terms of 'lived social situations' of adolescents that can be captured through multiple factors (being in school, married, future opportunities, beliefs).

Finally, exploring behaviour using reported beliefs and attitudes with cross-sectional data has fundamental limitations, as it is not possible to rule out a reverse causation, e.g., effects

of behaviour on attitudes (such as being pregnant on attitudes towards pregnancy). Brückner *et al* analysed longitudinal data of adolescents in the USA to look at the associations between attitudes towards pregnancy and pregnancy occurrence, as well as attitudes towards contraception and reported contraception use (Brückner et al., 2004). Their conclusions were that attitude towards contraception was a better predictor of pregnancy with reported contraception used as a mediating factor, while prior attitudes towards pregnancy was not a significant predictor. These findings support our use of 'utilisation of contraceptive' variable as an outcome being a proxy for being at risk of pregnancy, and testing its association with reported attitudes towards contraception.

8. PAPER 3: REPRODUCTIVE LIFE COURSE

Reproductive Preferences and Practices: Social Scripts and Life-Course Perspective

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Working paper

Abstract

Social organisation around the family as the main unit of production, consumption and reproduction has been subject to changes over the history of Burundi. New families establish on land distant from their families, shifting the influence of kin on household decisions, such as family size. Increased fertility was promoted under the Belgian colony, and today reduced fertility is urged by the government, on the rationale that population growth causes land conflict and hinds development. Using qualitative data collected in Burundi through in-depth interviews and observations over a three-year period (2013-2016), and following a life-course perspective, we explore sexuality and reproductive preferences and practices of individuals and couples as intimate spheres where gender and generational power dynamics are enacted daily, revealing the broader social transformations in place. We describe the social positions of unmarried youth and married individuals that present different reproductive stakes. Single individuals seek to establish their social adulthood via marriage within a social (moral) script of abstinence. Yet pregnancy is the common entry door to marriage, representing at the same time a potential exclusion phenomenon. Accessing marriage has become difficult for many young people, and cohabitation is a common practice. Bargaining power of married (or cohabitating) individuals and couples on livelihoods and reproductive matters varies, contingent on the type of union, on the status and influence of kin and on access to family planning methods. Overall, we observed a pervasiveness of the normative ideal of the family structure bound through religious marriage, reported preferences for a controlled and limited family size that echo the hegemonic discourse on fertility reduction, and a variety of social and reproductive practices. We situate the diversity of reproductive preferences and practices in the interplay of individual social position and goals, and proximal and distal social structures, including gender- and generational-power dynamics, insecurity and uncertainty. Finally, we highlight the hindered bargaining power of women, despite improved access to education and potential lowered influence of in-laws in family-related decision making, due to their dependence on men to access and use land. For many rural women, their productive and reproductive bodies are their most important resource, providing them access to land.

Introduction

> *'Cultures do not respond to pressures. Rather, individual human beings cope as best they can, formulate rules, follow and break them; and by their statistical patterns of cumulative decisions, they set a course of cultural drift. [...] We need a theory of change in social structure that takes into account both the clear importance of ecological adaptation and the importance of humans as creators and manipulators of rules'. (Keesing, 1975, cited in (Ensminger and Knight, 1997))*

Social norms are informal rules that structure behaviour and social expectations on how individuals and groups can act in social situations, such as sexuality, marriage, births, etc. Women's and men's roles and relations are socially constructed as a consequence of a number of institutionalised and embodied sociocultural frames – coined by the concept of *available existing repertoires* by Bledsoe and Banja (2002). These repertoires define gendered social scripts that shape individual expected, appropriate and desirable behaviour. As products of history and culture, existing repertoires are subject to change. Ensminger and Knight have described social norm changes through the case of Kenya, investigating, among others, the example of declining bridewealth practices (Ensminger and Knight, 1997). By examining the strategic decision making processes situated in the social context, they show how changes in bridewealth practices respond to an increasing bargaining power of young men and women at the expenses of the elders. Asymmetries in the bargaining power of groups is a primary mechanism of social norm change, they conclude.

In the field of family planning, these transformations of social organisation and of power dynamics – particularly gender and generations related – translate into a coexistence of diverse available reproductive regimes (Agadjanian, 2005), such as single mothers, smaller families, couples using behavioural natural methods, couples using modern methods. In Burundi, social norms are changing. Intergenerational and gender power dynamics are being reshaped, driven by global influences but also by socioeconomic uncertainty and land conflict impacting social fabric in rural areas. Precolonial family organisation is described as being regulated

This paper aims at describing and locating reproductive stories of rural individuals and couples, within a life-course perspective, and in a context of changing social norms and scripts. Using narratives collected in rural Burundi between 2013 and 2016, we examine how participants describe their reproductive navigation through the different life course phases, focusing on bargaining power of individuals, couples and households, to better understand the underlying social norms changes occurring in Burundi.

Study setting: Family organisation, land access and gender norms in rural Burundi

Family organisation

Demographers Thibon (1988) and Manirakiza (2008) describe a pre-colonial period[26] where the authoritarian patrilineal family system and livelihoods organisation translated into a regulated fertility. Families were isolated into *rugos*, literally the 'house fence', the traditional family household entity. There are no villages in Burundi, but *rugos* dispersed on the hills that group families around their patches of land. Individual mobility was uncommon, children worked as domestic dependents and married at relatively late age (around 20). Disobedience from the family model such as pregnancy out of marriage was heavily sanctioned. Despite a very short post-partum abstinence specific to the region, unspaced pregnancies were socially sanctioned by shame. The combination of natural birth spacing through breastfeeding allowing larger birth spacing (children were weaned and given a name at around age two), high mortality and seasonal famines that caused reduced fertility, and late marriages explain the relatively low overall fertility rate.

Colonisation first brought diseases (mainly sexually transmitted infections) that increased mortality and infertility, and out-migration that changed the marriage patterns and induced lower fertility. In a second phase colons' and missionaries' health care, education and agricultural programmes led to a decreasing mortality. In addition, agricultural intensification required workforce, leading to pro-natalist attitudes and initiatives, such as the 'Belgian domestic training institutions for African women' described by Hunt (1990). Colons and missionaries also promoted the model of nuclear families. By the mid-1940's

[26] Burundi was colonized by Germany (1890-1919) and Belgium (1919-1962).

Burundi entered a demographic transition characterized by lower mortality and high fertility.

Fertility continued to increase after independence in 1962 : taxed agricultural cooperatives required larger workforce so women weaned their children earlier to be able to join the labour force, and children represented production agents and family security (Manirakiza, 2008). Between 1950 and 1975 the population doubled, triggering land issues and the rise of the 'overpopulation' discourse. These changes affected the family model, as described by Thibon:

> 'The family model that had overcome the disruptions of the previous period [colonisation], gradually lost its credibility. Famines and then labour migration, distributed monetary income but also competition between children in access to land encouraged young people to marry early, to create households that turned away from parental authority and cohabitation. In this respect, the new dowry practices are symptomatic, on the one hand the monetarization of the dowry allows a faster constitution, on the other hand the old accumulation habits are abandoned' (1988: 187).

Burundi regained independence in 1962, but experienced successive outbreaks of violence and a civil war, locally called *la Crise* (1993-2005). La Crise caused, in addition to hundreds of thousands of deaths, important movements of population within the country and outside its borders. It also contributed to bringing disorder to family organisation, as it brought terror, orphans, mistrust, ethnic tensions and further economic hardship. Groups of populations had to flee to IDPs, or out of the country. Scholars have described how the civil war, land pressure and chronic poverty have affected the Burundian social fabric at households and community levels (Courtois, 2016; Uvin, 2009; Sommers and Uvin, 2011; Mercier et al., 2015; Berckmoes and White, 2014; Bundervoet, 2010). Peter Uvin describes how the social fabric was affected by violence, especially perceptible through the low interpersonal trust and the disorder in family structures :

> 'Household conflicts are one of the most serious problems faced by many Burundians, especially women and children. The stunning outside pressures

> Burundians have been subjected to – the ravages of war, the insecurities of banditry and theft, the grinding pressure of misery, the land scarcity and the fear for tomorrow – often get mediated into deep and long-lasting intra-household conflicts, pitting husbands against wives, brothers against sisters, children of one marriage against children of another. These conflicts are very painful and debilitating: they take up enormous energy, and create fear and pain in the lives of people who are already under considerable stress.' (Uvin, 2009: 27)

The population faces great struggle – impossibility, asserts Courtois – to reproduce the sociocultural system, especially with regards to family and households organisation. The rugo is disappearing and being replaced by smaller and dispersed entities on the family land, if the latter permits. This in turn modifies the generational power dynamics within households, limiting the influence of kin on households' organisation and decisions. As observed by Vervisch et al, the traditional economic and social capital system that relied mainly on kinship and neighbourhood solidarity have been seriously hampered during the crisis, further impacting livelihoods and food security of households in rural areas (Vervisch et al., 2013).

Today, in a context of land scarcity, young people have to find adaptive strategies to ensure. In Burundi, the expression of *chercher la vie* (searching for life) is commonly used by young people to describe their quest for social and economic status and being as an adult (spouse, parent, community member). Finding an employment that allows self-sustainment and becoming independent of their families is an expressed aim of young people, especially young men, as found by Berckmoes (2015), Uvin (2009) and Uvin and Sommers (2011). Opportunities for employment have become very limited in rural areas, and often restricted to those who have 'personal connections with political cadres (authorities) rather than based on merit' as Berckmoes learned from her study participants, mostly young male adults (2015: 9). *Chercher la vie* is close to what Johnson-Hanks described as 'vital conjunctures' in Cameroun: 'under the conditions of uncertainty applicable in contemporary African, effective social action is not based on the fulfilment of prior intentions but on a judicious opportunism' (2005: 363). Women and men are social actors who, in a context of uncertainty, seize or decline opportunities and chances when they occur, including

concerning reproduction, that induce a puzzling meander between reproductive preferences and outcomes.

Growing land pressure and conflicts

La Crise has led to an economic impoverishment of the Burundian population, together with a social destructuration. The very high rural population density (450 hab/km^2) that mostly lives off agriculture has led to increased land exploitation, fragmentation and degradation. Estimates from 2010 showed an average farm size of 0.5 hectares, leading to low levels of agricultural productivity that yet supports as much as 95% of the country's population (USAID, 2010). Additionally, the end of the crisis and the new political leadership has allowed the return of IDPs and refugees from both 1972 and 1993 migration waves who attempt to claim back their land, in the meantime occupied and exploited by other households over generations. Following the requirements from the Arusha Peace Agreements, a set of land administration reforms were put on the political agenda, but the poor governance of these measures has stirred further tensions and conflicts.

Gender norms

Burundi is socially organised with clear gendered roles and relations in the domestic, labour, financial and political spheres. The social organisation in Burundi is patrilineal and patrilocal. When women marry, their family is offered a bridewealth and they join their husbands' household and children born from the union belong to the father's family. By customary law, women and girls do not inherit land. The land law that includes succession laws has been frozen in the political process, because deemed to conflictual in view of land issues. Traditionally, when men marry their father provides land to establish the new family's house and to cultivate, as well as money to pay for the bridewealth. Hakizimana describes a 'patriarchal society where decision power belongs to husbands and his lineage, and women are reduced to the role of life reproducers, children carers and female children educators and domestic and land workers. It is through maternity, ideally numerous, that women integrate their husband's clan' (2002: 236). The economic structure of rural households sets women in charge of agricultural and care work, while men supervise and manages benefits from cash crop agriculture and execute paid jobs to cover expenses such as clothing, school

and health care fees and social ceremonies. Children support with households' chores (fetching wood and fire).

Scholars have described how Burundian femininity is characterised by values of submissive attitude and shyness (Seckinelgin et al., 2011: 61); obedience, moral behaviour, politeness and respectfulness (Uvin, 2009: 135); and public voicelessness (Courtois, 2016: 203-206). While Burundian masculinity is built on a glorification of militarism, oppression and violence (as royal warriors, as soldiers, as rebels) (Daley, 2007: 107-134). Intra-households' gender relations are defined by and performed within these normalised gender identities and roles – and intersecting with social position – are framed by a *habitus* of male domination as fathers, brothers and husbands and mirroring female submission as daughters, sisters and wives (Courtois, 2016: 196-198). Exploring women's bargaining power within the household looking at say over children and asset-related decision-making, Ngenzebuke et al. (2014) found two major factors increasing a woman's bargaining power: her own (biological) kinship social position ; and her husband's education (more that her own education).

Few scholars have looked specifically at changing gender power dynamics (Daley, 2007; Courtois, 2016), and how these are reflected in the different stages of social life of women and men. It seems that young generations in rural areas continue to aspire to agricultural work as well as to marriage as a necessity for reaching adulthood and ensuring their family's social reproduction. Studying the involvement of young men in violence, Berckmoes et al (2015; 2014) showed how socioeconomic alternatives such as work migration and political activism were perceived as temporary, and were contingent on education and gender. Sommers and Uvin (2011) present adaptation strategies as male-driven, portraying young women as mostly passive counterparts awaiting to execute the female social script to accessing adulthood through marriage and maternity. Little has been written on reconfigurations of the gender and generational dynamics in the recent history of Burundi. Giving voice to women, Courtois describes the current social reproduction situation in Burundi as a structural and cultural impasse (Courtois, 2016: 10). With lowering support from their parents, young couples are struggling to collect the financial means to marry religiously (the socially recognised marriage) and as a consequence practice *gucikiza* ('illegal' cohabitation), depriving women from customary or legal marital rights. In 2016, it was estimated that 29% of the households were female-headed which, while representing an

alternative model (sometimes chosen, but often imposed), are considered as 'deviant' and subject to societal hostility, violence and stigma, as thoroughly studied by Courtois (2016). Since 2005, school is free for boys and girls, and girls were massively enrolled in primary schools. However, they also quickly drop out as school quality is very low, chances for job opportunities are close to null and are contingent on social networks, and they are needed in households to ensure daily chores.

Family planning policies and discourse

As a response to the demographic situation and concurrent with global policies, family planning policies and services have been introduced in Burundi in the 1980s, including provision of modern contraception for birth control and spacing. Modern contraception is promoted free-of-charge in public health facilities that are incentivised for their provision through a performance-based financing scheme. Uptake has been slowing increasing but remains low at 22.9% (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017). Health facilities are generally understaffed and stressed by the high demand, and health indicators – maternal mortality ratio of 548 per 100,000 live births and under-five mortality rate of 58.5 per 1,000 live births – reflect the poor situation of the country. We described elsewhere how a globally-supported discourse on FP was produced and disseminated in Burundi, by the government and by the Church, framed as a political solution to the land, economic and security issues – rather than to health and well-being – that still prevails today (Paper 1: Reproductive Governance).

Methods

Fieldwork was conducted using qualitative research methods (observations and in-depth interviews and focus-group discussions (FGD)) over a total period of nine months between 2013 and 2016, in four different sites in rural Burundi: Karusi centre and Nyabikere (Karusi province, central Burundi); and Rutana centre and Butare (Rutana province, South-East Burundi). Both provinces have very high population densities (Karusi: 376 hab/km2; Rutana: 214 hab/km2), and the vast majority of the population lives on agriculture. Both provincial centres have a large Catholic Church and parish, as well as many different smaller protestant churches and mosques that are all largely and frequently visited. Karusi province was

strongly hit during the recent war, resulting in IDP camps that have increased in size over time and today groups many widows and reconstituted families that travel daily to their former fields for agricultural work. Rutana province provides slightly better temporary economic opportunities as it is neighbouring Tanzania and it hosts the national sugar factory SOSUMO. Both provinces hosted a Dutch-funded development programme that aimed at adolescent pregnancy reduction through peer education and youth-friendly services, and uptake of modern contraception through FP services and FP products availability improvement and community sensitisation and mobilisation.

During the period of our field work, 2015 elections preparations were causing significant stress and turmoil in the research sites. Arrests and/or disappearing of political opponents, demonstrations and intimidations by the ruling party's youth movement, and a general climate of low interpersonal trust were daily observed or reported on the radio, reviving traumas from the war. The volatile political situation and the socioeconomic consequences such as low interpersonal trust restricted field work, especially in terms of following participants in their daily routines or visiting them at home[27].

To understand reproductive paths, preferences and practices in context and in relation to other aspects of life dynamic situations, we opted for a longitudinal qualitative approach, following participants over time. We conducted in-depth interviews with women and men, following a biographical approach focused on SRH events and interviewing most participants 2 to 3 times over the 3 year period. We discussed love and intimate relationships with young people mostly during informal discussions and FGD, and sometimes during in-depth interviews. We also asked married participants to describe how they experienced finding a partner and getting engaged in marriage. We purposively recruited participants from varied social profiles: young unmarried sexually active men and women; single mothers; married men and women of various ages; men and women cohabitating not legally married; educated and non-educated participants. We also aimed to recruit participants using modern methods of contraception, using natural methods, and not using any methods. In all four sites, we recruited from two main locations: community and youth centres and

[27] Early on, informants and participants expressed the issue of being seen with a European, especially at home, as that could cause false believes (such as access to money) and envy within the neighbourhood.

vaccination services. We interviewed 16 rural participants (13 women, 3 men, various parity, age range 18-37, mostly cultivators), and held informal discussions or formal interviews with 18 key informants (religious leaders, administrators, health staff, teachers, youth/community leaders, NGO agents). We conducted in addition observations and informal discussions in the community (youth/community centres, health centres, schools, church and marketplace), and six focus group discussions with young people (16-32 years old) and community health workers (29-44). Adapting to the tense socio-political situation, we strategically opted for participants' recruitment and meeting in locations that were perceived as possible places to find a European present[28], mainly community and youth centres and health facilities. All participants were informed about the research aims and signed a consent form. Interviews were conducted in Kirundi and translated into French by a research assistant, and recorded. On the same day, they were transcribed re-translating the exact verbatim, and discussing the content and meanings with the research assistant (recorded as written memos). Transcripts and field notes were analysed following a grounded theory approach (Charmaz, 2006), and using Atlas.ti© software. Data, including memos, were analysed inductively after each field trip, allowing us to construct categories and themes that were compared and discussed within the research team, and further researched in the next field trips.

Sexuality (and fertility control) in young unmarried people

For unmarried young people, abstinence (*kwihangana*) was the social norm promoted through the religious discourse and national and most NGOs' SRH programmes. Abstinence was promoted as a morally valued behaviour because sexuality is circumscribed to marriage. Bringing disorder in the family institution, pregnancy before marriage was reported as being traditionally strongly punished in the past. It was often quickly arranged into a marriage, with the woman's family pressuring the man's family to take responsibility for the birth to come and to re-establish honour by marrying the woman before birth. The shameful situation of having a child before marriage was expressed in narratives through the formula

[28] During field work, apart from infrequent visits of UN/NGO staff for the day, there were no other white-European living in Karusi, and only a few in Rutana.

of ‘delivering at home’ (i.e. while still living in one’s own parents’ house). Transmission of knowledge on sexuality and reproduction was ensured by maternal aunts to young women about to marry, and then pursued by the Catholic Church through its *Action Familiale* programme teaching young couples about natural family planning.

To discuss the current redefinition of the social script for young unmarried people with regards to sexuality and reproduction, we present the case of Kristella, a young woman we met regularly over the study period.

Kristella was 24 years old when we met her. Born in 1990, her childhood was marked by the war: she grew up in the IDP camp with her mother (her father was murdered in 1993) and with other younger children (abandoned cousins). She attended school from age 8 to 19 intermittently because her mother was ill and needed support to sustain livelihoods. She alternated small jobs (in cabarets[29] or in the marketplace) and agricultural work on the land of her deceased father, 2h-walk away. When possible, she hired a day worker to cultivate her land while she looked for other cash jobs, a typical man’s role. She in fact held the role of head of household, being responsible for her ill mother and the other children. Her mother had never talked about sexuality or fertility with her, but she was taught in school that sex leads to pregnancy, and that she had to remain honourable (virgin) to find a husband. She met her boyfriend in 2012, with whom she had a relationship including sex. When we met her first, she explained that to avoid pregnancy, her boyfriend was counting her cycle days to avoid having sex during her fertility period. She felt incapable of doing the calculations herself and she assessed modern contraceptives were not suited for nulliparous women. Her partner’s plan was to look for a job, so they could marry. She explained that if she got pregnant in the meantime, it would not be dramatic as she expected that he would acknowledge the child and support her by getting married. Her dilemma was however that she did not want to abandon her role of head of household at her mother’s house, although it would be expected of her if she married. She also explained she was in a passive position because it is the man’s role to decide when to marry and to find the financial means for it. When we met her 7 months later, her boyfriend had found a job but had not shown any sign of saving up for marriage. Her doubts about his commitment had increased, and she

[29] A cabaret is a small bar, usually outdoors and mostly visited by men.

assessed getting pregnant would be risky then, as he may abandon her. She explained her low bargaining power (for marriage and in case of pregnancy) by the fact that she had a low education level. She had decided to stop having sex with him but to try to continue the relationship because he was still being committed and supportive (including financially). We met her again 1.5 years later and their relationship had ended. He had found another (educated) girl, and she had continued providing for her household. She explained she had lost some social status by breaking-up as people in the community – especially in the cabaret where she worked – knew she was single again and were less respectful as before, trying to engage in 'sex without perspective'. She said she would now remain abstinent until she finds a man who is seriously willing to engage in marriage, explaining that 'sex with no vision (marriage) meant no pleasure'.

Sex before marriage

Social changes that are observed in many countries explain the limited capacity in observing abstinence until marriage, and the inadequacy of the abstinence-only messaging. Increased access to school for both boys and girls allows young people to exchange and meet. The influence from the outside world through the development of technologies of information and communication that broadcast other social repertoires. The postponement of marriage age induced by the necessity for young men to first find themselves the resources (bridewealth, land, cash to build a house) increases the latency period between sexual maturity and marriage. DHS data reports that in the age group 20-24 years, 47.2% of women and 78.8% of men are single (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017). Our survey data showed that 12% of adolescents (15-19 years old) are sexually active, and only 22% of them reported using contraception at last sex (including condoms), with a lower proportion found in women with 14.6% (see Paper 2: Adolescent Pregnancy). Marriages are no longer organised by families, but young people get to choose their partners. Thus, the traditional sequence of marriage enabling sexuality and parenthood has inverted for sexuality and pregnancy leading to marriage.

Our study among young people showed that they engaged in relationships that often included sex. They expressed the difficulty of refraining sexual desire and not engaging in sex when in a relationship, explaining that 'the body is difficult' (i.e. difficult to control

sexually). Sexual desire was mostly portrayed as a male 'natural and irrepressible' attribute, and desire containment a female moral value. A young man explained he always carried a condom in his pocket, to be ready in case he encountered a woman he liked (FGD, Karusi, 21.05.2014), while many girls complained about the pressure experienced from boys and older men for sex. Kristella described from her relationship that 'if you're with a person that you love, it's difficult to be abstinent'. Later, she explained the issues she faced being single again:

> *I pray for God's help to give me the strength to abstain, because it's not easy, especially if you work in a bar. Before, I was respected [i.e. when I was in a relationship]. Now that people understand that he is no longer my partner, I have problems. Men run after me, but I see that they have no vision for me.*

Other stories showed that young women were not passive actors but also strategically used sex or abstinence. A young man explained how he avoided girls from his school, describing their pressure to engage in sex that he saw as a strategic move to ensure their marriage through a pregnancy. In the case of Kristella, she used abstinence strategically for social purposes. She indeed opted for abstinence when she realised that her partner was perhaps no longer willing to marry, to test his commitment.

Pregnancy, a (risky) door to marriage

Pregnancy has become a common lever to marriage, but at the same time an event that potentially triggered the exact opposite outcome: a rejection from the partner and a door closed to marriage in general.

We met several young people who explained how it was the pregnancy that triggered the process of negotiating with their partner and both families the possibility and modalities for marriage or cohabitation. A 25 years old painter from Karusi explained how he and his girlfriend decided jointly to get pregnant in order to 'force' the acceptance of their union by their parents. Pregnancy was a means for them to achieve their social goal of building a socially accepted family. In the case of Kristella, at the beginning of her relationship, she had assessed that a pregnancy would not be catastrophic, as she was confident that her partner would engage into marriage in that occurrence. A year and a half later, his lack of

commitment changed her risk assessment. Pregnancy could be socially risky for her, as she assessed he would be little likely to 'take his responsibility' by acknowledging the paternity and engaging in marriage.

Consequences of pregnancy without a subsequent union were mostly negative, triggering family disorder and seriously restraining the future chances of finding a husband. We met several single mothers who described the difficult social and economic consequences of their pregnancies that did not concretise into marriage. One woman explained she was sent away from her own home as she represented shame, an additional mouth to feed in a struggling household, and because she birthed a boy who could later claim land in heritage and cause dispute. She lived in a the IDP camp in a household headed by an old frail woman and three adopted children, and looked for small jobs to feed herself, her son and contribute to the household's livelihoods. Her plan was to raise her son until he reached the age of 6-7 when she would send him to his father, as is traditionally done[30]. As for her own future, she expressed little to no hope. She needed to find a man who could get her 'la ration' (financial daily support) or access to land (through marriage), but she explained how men lost interest in her since she had a child, or only considered her for unserious relationships. In her case, pregnancy made her 'move forward' socially to an adult position – which she assessed positively – but failed in securing an improved social position – which she assessed as very problematic.

A limited access to FP methods

Controlling pregnancy was difficult for young unmarried people. Knowledge on menstrual cycle that could allow being prudent about fertility periods was very low among young people, regardless of their education level (Swiss TPH, 2014a). Utilisation of condom is low in Burundi (Swiss TPH, 2014a; Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017) (Paper 2: Adolescent Pregnancy), and in our research it appeared problematic on several levels. Just as sexual intercourse itself, negotiation for utilisation of a condom was mostly perceived as male-driven. Women who proposed sex or condom utilisation were suspected of having poor moral values, and to an extent engaging in sex was

[30] We have indeed found that children are raised elsewhere but then brought to their biological father at age 7 to claim their share of the land. Several children in Karusi's orphanage were in that situation we were told by the superior mother.

sometimes perceived as suspicious as expressed by this young man during a FGD: 'if the girl accepts having sex it means she has done it before, because a girl who has never had sex fears these things. So if she accepts, it's not the first time, she's done it with someone else, so I ask myself 'is she healthy?' (i.e. HIV negative)'. (FGD, Karusi, 21.05.2014).

We also found that many girls and women feared utilisation of condoms, due to a perceived risk that the condom get lost in the vagina/uterus and would necessitate a medical intervention, leading to shame and expenditure. Mistrust was also expressed from women on men properly using condoms. Access to other methods of contraception was reportedly difficult for unmarried people. Modern methods were only available through prescription by a health provider, and most unmarried young people feared judgement and lack of confidentiality in health facilities. During a FGD with scholars, one participant explained they could go to the facility to get information (about menstrual cycle in the discussion), but not to get methods: 'if I go to the facility and ask for information they will give it to me, but they will also give me advice 'but above all don't go and do that'!'. Modern methods were considered by many young people and health staff as unsuited for moral reasons, but also for physical reasons. Participants expressed a fear about contraceptives effects on the body – especially bodies that have not yet proved their fertility and carried a pregnancy (see Schwarz et al., 2019). Kristella explained she did not want to use contraceptives: 'it's complicated to use these methods when you're young, because they can tire your body'.

Marriage as a social goal, a normative ideal, but difficult to achieve

Marriage was often referred to as *imbere* 'moving forward in life' or *narunguruje* 'moving to the next stage', i.e. to adulthood. Designation of people in fact changes with marriage and gender: women evolve from *umukobga* to *umugore* through marriage; and men from *umuhungu* to *umugabo.* Marriage was also signified through clothing in women with the use of *pagnes* (printed cloth). A young married acquaintance interestingly expressed that she missed wearing jeans, explaining how since she had become a 'maman' through her pregnancies, she wore dresses and *pagnes*, but no longer jeans or shorter skirts that are only suited for the single and nulliparous. For women, marriage equates changing social (and legal) belonging, as the patrilocal system meant they moved to their new household,

family and kin. The social script had marriage validated within the first years through the birth of children, ensuring the patrilineage.

Young people choose their partners freely, but marriage decision and organisation is male

For all young people we interviewed, (religious) marriage remained a reported social goal as it represented social adulthood and belonging. It enabled settling into one's own house and being independent economically and socially. Additionally, it enabled access to major social ceremonies (baptisms, communions, funerals) whereas couples 'living in sin' cohabitating are denied this access. Administrative marriage had little social value, but it was promoted for its legal value of rights and protection that spouses may need in the future. The administrative marriage is considered a procedure attached to the religious one, but not substituting it. It was mostly men who bore the gendered role of being responsible and in control of engaging into and organising marriage. The story of Kristella illustrates the low bargaining position of women in negotiating marriage, which she explained by her lower educational status, and by his social role in being the one who gathers money and decides on the opportune moment. However, many young couples we met were formed after the unexpected occurrence of a pregnancy, and were not married in Church because of financial barriers. They all expressed their goal of marrying in Church, but explained that their priority goal was however to find the financial means to ensure livelihoods (health and schools fees, crops seeds and fertilisers), and build or finish their house first. Religious marriage implied major costs, including a fine that couples who lived together 'illegally' before the ceremony had to pay, increasing with each year of cohabitation. Religious marriage remained the desired norm to reproduce, and deviations were mostly occurring involuntarily and due to financial stress.

We found that not marrying was not a social script that existed, because it impeached from 'moving forward'. Until married, women were in charge of households' chores that are mostly considered as children's duties. Men that were not married were soldiers or migrant workers who had postponed their marriage, but would commit to it as soon as returned. The rare figures of unmarried adults, apart from religious persons, were perceived negatively and deviant, such as female-headed households. In Burundi, the later were not unusual, up to 29% of all households in rural areas (Ministère à la Présidence chargé de la

Bonne Gouvernance et du Plan et al., 2017). Across our sample of participants, female-headed households were often a consequence of war. Young females dropped out of school to take care of children – either siblings or war orphans, children born outside of marriage or abandoned – that were not necessarily related to them. A certain social status of responsible adult was achieved through their fostering role. Such status was however contingent on social position and context which could represent very difficult living conditions. Some women had access to their father's land and could cultivate for subsistence, such as Kristella; but others had to struggle to find their daily ration. In addition, as Courtois has shown, female headed household were often targets of hostility and violence (Courtois, 2016).

Negotiating fertility control (and sexuality) in marriage

Traditionally, information on and preferences for birth spacing and family size were transmitted to women by their mother-in-laws, and the topic was not discussed between spouses. In Burundi, sexuality is openly evoked through jests and puns, but remains a difficult topic of discussion between spouses, as Hakizimana also reported from his research: 'dialogue between spouses about children doesn't exist, because only Imana (God) counts children' (Hakizimana, 2002: 148). High fertility was traditionally valued, but unspaced births was negatively associated with 'uncontrolled' and irresponsible sexuality, designated by a specific Kirundi term 'intahekana' (Hakizimana, 2002). Birth spacing of 2 to 3 years was controlled by women via breastfeeding, and the prescribed post-partum abstinence was short (2-3 months). Manirakiza explains how, until recently, the family was a unit of production and consumption, and the whole productive system is developed within it. Thus, Children are a source of wealth because they participate in the productive work of the household. Yet, children need to be spaced so that the previous child can take care of new born, while the mother goes to work (Manirakiza, 2008: 94). Both 'first' and 'last' names are freely chosen for children (rarely do people carry a family name). Yet the tradition is that after the fifth child, children are given standard names that speaks of their ranking in the family: the sixth child is called *Kabwa* ('be careful') and the next ones are called by the ranking *Nyandwi* ('seventh'), *Minani* ('eighth'), etc. Our first interpretation was

that this naming practice warned against the maternal health issues with numerous pregnancies. Yet, when asking, most people explained that it was a sign of wealth and prestige to have children named *Nyandwi* or *Minani*.

This is the described traditional reproductive life course that runs until menopause for women, established as the ideal norm. In fact, most reproductive life courses are not linear, and many mishaps and bodily factors interfere. In addition, they evolve within a social environment that further influences decisions, practices and outcomes, including conflict, malnutrition and child mortality. We start by describing and situating diverse reproductive life courses through three short case descriptions.

Florence (32 years old) was raised by her older sister (both parents had died), who could only afford to send her to school until third grade. She got married when she was 16, proudly 'moving forward', and prepared by her maternal aunt who told her she should 'respect her husband as if he were her father and her mother-in-law her own mother'. Shortly after marriage, the later died and she and her husband left the rugo to build a house on her husband's inherited land. She exploited the small plot of land that they owned and sold surplus and fruits in the marketplace, and her husband sought small jobs to cover for education, health and fertilizers expenditures. She had a first son at age 18, and in accordance with her husband, they decided to use injections to space the next births with 5-year intervals. Last time we met her, she had three children and wanted to limit her family size there, due to their stressed livelihoods and land. She explained they did not have the means to feed and care for a larger family, and the small land they owned could not be divided again for heritage. During an interview, she raised the topic of reproductive responsibility: she was interested by permanent methods that could be adopted by both her and her husband, thus alleviating all fears about her husband potentially bringing children born from adultery to her home. She assessed this risk as very unlikely due to the 'bonne entente' between her and her husband, and that her fears came from rumours in the community about men's behaviour. Though injections suited her, she expressed she would prefer a solution that did not require regular injections and that involved her husband more.

Désirée (27 years old) lived on her husband's small piece of land that they shared with his brother's family. The land was not sufficient to feed her family, but she was able to

complement her crops by cultivating on her own father's plot. She also punctually hired additional land for cash crops, and ran cash generating activities (e.g. making banana wine). Her husband regularly left for seasonal agriculture work in Tanzania, and she remained in charge of the household covering expenses herself. She had a first child (boy) at age 20, and was surprised by another pregnancy again after 6 months. She described this unspaced birth as 'traumatising' and shameful. She tried to negotiate with her husband to use modern contraception but he refused because 'he is a believer', and she also was doubtful due to stories of side effects she heard in the community. They decided to attend the monthly church meetings to be taught about natural methods. She proudly explained how, together with her husband, they are able to identify the periods of required abstinence by counting her menstrual cycle days. She thus managed to space the next pregnancy by four years. On the last interview we had with her, which was at a period of strong political fragility and economic hardship, she said that she wished to limit her family to the three children she has, explaining that their land is 'enough to live on, but not enough to plan on (for the future)'. She was confident that she could succeed in limiting her family using natural methods with full compliance from her husband.

Clémentine (35 years old) was married at age 13 and she had her first daughter at 14. Shortly after, war broke out and her husband left to join the rebels, while she stayed with her in-laws who took care of her. Her husband returned after 12 years, and she quickly had a second daughter. Her third child arrived 8 years later, the interval being due to her poor health (anaemia and malaria episodes), she explained. In our last encounter in 2016, her boy was 2 years old and she explained she wished to stop childbearing, three children being enough considering their small and infertile land, and because of her poor health. In addition to working on their land, she worked as day worker in the fields for others in exchange of food or money to buy fertilisers. Her husband helped, but she could not rely on his contribution, as he mostly spent the money on alcohol. She did not know how to achieve her reproductive goal: she was afraid of modern contraceptive's effects on her fragile health; and she assessed natural methods not applicable because negotiating abstinence was difficult with her drinking husband.

Birth spacing : finding the right pace

Désirée explained how she felt shame when she was pregnant with her second child while the first was only 6 months old, because it brought social disorder in her household. First, she had to wean the first born very early which she perceived negatively for economic and health reasons. Second, because she physically suffered during pregnancy her husband had to help her with household chores which are female tasks. And last, her sister-in-law reacted and warned her against unspaced and numerous pregnancies that would cause heritage conflicts in the family. Inversely, Clémentine explained how the long delay between her second and third births (8 years) worried her. She attributed it to her poor health (anaemia and malaria episodes) but also explained she worried she had been poisoned or had prematurely reached menopause, and thought about seeking help from a traditional healer. She added that it was because her husband was a good Christian that he did not cause trouble with her fertility issues. Infertility was and still is indeed very problematic for women as they risk being sent back to their families or seeing their husband take another wife, condemning them to a socially stigmatised life of household chores without children to help. Hakizimana described that 'downgrading, offensive and humiliating terms designate sterile women. They are considered as children's enemies, poisoners and savage beasts. They are repudiated because they do not fulfil their primary role in households, namely the continuation of the paternal lineage through numerous births, preferably boys' (Hakizimana, 2002: 236).

Discussing fertility preferences

Florence successfully spaced her births by using injections, in accordance with her husband. Their reproductive preferences and practices were decided within the couple, with little to no influence from her husband's kin as they lived geographically separated from them. More generally, discussions around sexuality and fertility control within couples changed within the last decades. It changed with the emergence of the hegemonic discourse on FP in the 1980s, in parallel to HIV prevention campaigns that together contributed to the health sector entering the intimate sexual sphere of individuals and couples (biopolitics, developed in Paper 1: Reproductive Governance). In our data, we observed a diversity of practices, with couples openly discussing reproductive preferences as in the case of Florence. In other cases, women explained they could initiate the discussion on the topic by asking a question,

and men expressing their opinion, asserting their preferred choice. Women strategically used the topic of FP raised by radio talks, community health workers, administrators, or even my interviews, to find opportunities to discuss fertility preferences and practices.

Family planning preferences and practices

Just about all participants – male and female – in our research expressed a preference for smaller family sizes, in discourse. We described elsewhere a very strong hegemonic discourse on the need to decrease fertility in Burundi (carried by the government via its National Programme of Reproductive Health promoting uptake of modern contraception, and supported by external donors and religious authorities) to address the issues of land pressure and *maldevelopment*. The discourse, at least rhetorically, echoed in the narratives of individuals and couples. All three women faced serious economic hardship when we met them last in 2016, and linked their preference for a limited family size to their land and livelihoods situation. But along this common discourse, practices differed: Florence used injections; Désirée used natural methods; and Clémentine used nothing. We now explore the rationales and factors that appeared to influence reproductive practices. We found that two main factors drove reproductive strategy: the bargaining power of women and couples within the changing gender- and generational-power dynamics; and the availability and – bodily and social – acceptability of fertility control methods.

Bargaining power of women and couples

We found that discussing and negotiating family planning was contingent on bargaining power of women within couples, and of couples within larger families. Florence and Désirée described themselves as being in control of their reproductive choices and practices, in full collaboration with their partner. We hypothesize that their bargaining power with regards FP was enhanced by the lack of influence from in-laws in the case of Florence, allowing her to discuss preferences and co-decide on practices directly with her husband. In the case of Désirée, she lived on her husband's land that they shared with a brother-in-law (they cultivated together and shared the harvest products), but her bargaining power was raised because of her economic agency. Her own family possessed more land compared to her husband's, and she could access part of it for supplementary crops. Furthermore her entrepreneurial skills made her in charge of duties around the household that were

traditionally ensured by the husband (such as renting land, covering expenses) who, in her case, was often away for migrant labour. Both women described their marital relationship very positively, highlighting the good temper and cooperation of their husband, but also their own tactful and well-behaved discipline. Clémentine, on the other side, had a low bargaining power. She lived with her husband in the vicinity of his older brothers who had links and responsibilities in Bujumbura. She positioned herself as needing to cause the minimum trouble into the household and to maintain a status of respectful wife: she described the drinking problem of her husband but explained that she always remained respectful and ensured not to 'commit any error' at home, including accepting sex when he came home drunk, and was not complaining when he spent his daily pay on banana wine. She spoke of rumours about her husband's unfaithfulness in the past, and she subsequently visited the health facility to get HIV tested. But she was mostly worried that he could bring a child born outside into their economically struggling household. Her strategy was to remain irreproachable, so that in case of marital issues – such as her husband bringing a child, HIV or a wife into their home – she could get the support from her brother-in-laws and the authorities: 'my in-laws will support me, in all procedures, because they will recognize that it's their brother that faulted'.

Availability and acceptability of fertility control methods

Achieving reproductive preferences required opting for a FP method. There were two main options available in rural areas: modern contraceptives (pills, injections, intra-uterine devices, implants, condoms) and natural methods taught in Church (counting days methods and periodic abstinence). Abortion was rarely expressed as an option for birth control, as illegal (but practiced by traditional healers) and highly morally condemned. Clémentine and Désirée expressed how side-effects caused by modern contraceptives were reasons not to consider these methods. Circulating stories about physiological effects – mostly bleeding – caused concern in a context of widespread malnutrition and anaemia, together with concerns on the social and financial consequences of such side-effects in rural areas where women ensure daily livelihoods through agricultural and care work. Before using modern contraceptives, women had to weight risks between unwanted pregnancy and potential side-effects, as we described elsewhere (Schwarz et al., 2019). Adopting natural methods for birth spacing and limiting was also perceived as problematic by some participants, because

they are difficult to understand and to apply: 'In Church, they teach us (to count days), but I couldn't understand much, it seems impossible!' said Florence; Clémentine was taught by a health practitioner but she doubted the efficacy of the method, 'getting pregnant comes by chance. You may want to control when it's time or not yet time, but in vain, it comes by chance'. Désirée, who proudly used natural methods to space her births explained that because she is illiterate, she relied on her husband to calculate her cycle days. She however further explained that she had learned to feel her body and recognise the signs of her cycle. Access to natural methods was restricted, as they were only taught in Church (and requested the participation of both partners) or in faith-based health facilities, thus excluding all couples not religiously married.

We also found that women who had reached their preferred number of children (3 in the cases of Florence, Désirée and Clémentine) were seeking solutions for birth limiting. Désirée planned on continuing with natural methods to reach her goal, while Clémentine had not identified a strategy. Florence was looking for a different method for birth limiting, as she worried that getting injections every 3 months could undermine her health in the long run. She was seeking information on permanent methods, and vasectomy was promoted at that moment in her town. She had discussed it with her husband who said he feared the potential impact on his sexual functionality, and after speaking with a community health worker, he advised her to continue with injections. Many women reported that reproduction was a female affair and that they could try to control their births but that they could not control the size of their family. This was expressed through a frequently reported fear that men would bring children born outside of marriage into their household. Florence and Clémentine were interested by permanent methods for both themselves and their husband, because they did not want to risk their husband bringing more children into a household they were in charge of. This later fear was echoed in other interviews, but we encountered only one woman who had experienced this situation in addition to the story of Evelyne who was planning on raising her son until she would indeed bring him to his father's.

Discussion

In this paper, we have shown how changes in the family structure through the recent history of Burundi has changed the social support mechanisms, especially for rural populations that constitute over 90% of the population. During the colonial period, the reproductive governance aimed to increase fertility to provide labour for the exploitation regime, by promoting a new social repertoire through the Belgian 'domestic training institutions for African women', which included shortened breast-feeding periods as described by Hunt (1990). After the civil war, a new hegemonic discourse emerged, promoting controlled and reduced fertility for socioeconomic development at the individual, community and national levels. As described elsewhere (Paper 1: Reproductive Governance), the new reproductive governance aims to induce a self-discipline to individuals and couples for an uptake of family planning methods that allows household limiting their children according to their means, and thus contribute to the efforts of socioeconomic development of the nation.

We have described how the household organisation has changed in rural Burundi, whereby newly formed couples establish on land outside the traditional *rugo* and distant from the extended family. This increase bargaining power of couples with regards to kin, but also potential bargaining power of women as they only have to discuss and negotiate household management with their husband, and not his family. For young people, the absence of kin result in women having less power to negotiate an arranged marriage in case of pregnancy, leaving them in vulnerable social positions as single mothers. Additionally, considering the gendered organisation of labour and domestic affairs in Burundi, the new reproductive governance promoted by the State through its institutions could appear as an opportunity for women to increase their bargaining power by taking responsibility over reproductive practices. Access to education could constitute a hope for changes in gendered roles in the labour sphere. However, on the other side, bargaining power of women remains constrained by their lack of access to land and to financial resources. This position keeps them subordinate to their fathers, husbands or kin to ensure livelihoods and security. In this frame, taking reproductive responsibility can prove risk for women, contingent on their social position within the household and wider kin.

This was described through the three narratives of married women we presented. Florence depends fully on her husband to access land and, as an orphan, she benefits from no bargaining power from her own kin. She described a good bargaining power within her household because their relationship is good and, we interpret, because this no influence from his kin. They jointly decided to limit their children because their land is little and because she wants to raise them in good conditions. Yet, she expressed fears that her husband may have children with other women, whom he would bring into the household. Taking reproductive responsibility did not mean having control over the household's size, in her case. Désirée has secured a better access to land by benefiting from plots of land from her own family, which allow her to be entrepreneurial and slightly increase her household condition, and her decision-making on economic management. Her husband who leaves for work in Tanzania leaves her as the main person in charge of agricultural work, with her younger sister-in-law. Her short birth spacing is however a physicality problem, as it restrains her from her economic activity and role within the household. For both Florence and Désirée, they need their productive bodies to work the land and maintain their social status and role within the household. Clémentine's position was different, due to the presence and influence of her in-laws. She could get support from her in-laws, as she did in the past when she was ill during pregnancy, and she assessed that they would support her if her husband caused trouble because of his drinking. She however assessed that to maintain support she had to remain irreproachable in terms of behaviour and health. She feared illnesses could be a cause a loss of support, hence her fear of using modern contraception and risking side effects.

The fragility of the State is exacerbated by the land issue. The new regime has not only failed to improve the socioeconomic situation through development programmes funded by external donors, but it has failed to respond to the increasing issues related to land. Yet, the hegemonic discourse held by the government points the population density as the main problem of the land conflicts. The population control rhetoric drives family planning services away from reproductive health and women's empowerment and freedom to choose. It is unclear if women and couples adopt the government's discourse, and discursively expose a desire for reduced fertility because of their land issues, or to avoid being seen as opposing

the government. This is a topic that we could not explore in interviews, and limits our findings, as political affairs were never discussed for ethical (and protection) reasons.

The land issue is not addressed by the government, due to fears of fuelling land conflicts. Yet, while not addressing it, it weakens social organisation in rural areas, kinship obligations and gender-dynamics. This severely jeopardises women's autonomy, agency and bargaining power within the family. Moreover, it contributes to further bringing disorder into the basic social organisation around the family, the main unit of production and reproduction in rural areas. The loss of influence and support from kinship due to the reorganisation of family structures sometimes improve, sometimes lowers women's bargaining power.

Agency of women – defined as the ability to define one's goals and act upon them, and encompassing the meaning, motivation and purpose that individuals bring to their activity—their sense of agency (Kabeer, 1990) – was traditionally very limited in the patriarchal agrarian rural context of Burundi. The recent law reforms on inheritance and marital property regimes that were drafted but never submitted for approval, because considered too conflictual in the current context of land pressure and conflicts (Saiget, 2016; Serwat, 2019), asserts how gender inequality is rooted in and maintained by unequal access to land. For women in rural areas, the weak State and absence of land management initiatives has a negative impact, as their access to and use of land remain only possible through men while there are very limited income-generating alternatives.

The hegemonic discourse of the State, promoting uptake of modern methods of contraception, and thus putting women in charge of reproduction, physically at least, does not bring the potential changes expected from bargaining power asymmetries (Ensminger and Knight, 1997), as their negotiation margin is constrained by the tangible land use dependency. Currently, most women navigate in a context where their own productive and reproductive bodies are their most important resource, providing them access to land. For some women, maintaining their bodily resource led to utilisation of methods of family planning, to avoid health-impacting unspaced pregnancies for example. For others, it meant avoiding utilising modern methods of contraception due to their unpredictable side effects that could affect their productive and reproductive body.

The intergenerational and gender power dynamics that are being reshaped, frame the navigation of young people and adults into social situations and intimate relationships. Through different strategies and practices around sexuality and reproduction, young people and adults sometimes follow, sometimes challenge the available normative repertoires – social scripts –, not so much as acts of resistance to the underlying patterns of domination and inequality but rather as acts of adaptation to insecurity and uncertainty.

9. PAPER 4: THE BODY IS DIFFICULT

'The Body is Difficult': Reproductive navigation through sociality and corporeality in rural Burundi

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Abstract

Navigation from family planning (FP) intentions to practices is not linear, it is contingent on different social factors comprising preferences of individuals and couples, their social gendered position and bargaining power, the wider political, economic and social context, but also on physical, bodily circumstances. We use qualitative data collected in rural Burundi between 2013 and 2016 to explore how these diverse factors influence reproductive navigation in a context framed by uncertainty and changing social norms. We describe representations of bodily (pre)dispositions for fertility and reproduction, such as the 'natural' capacity for birth spacing or the bodily requirements to adopt natural methods (having a regular cycle) or 'modern' methods (not having negative side effects), that explain a shared perception that 'the body is difficult'. We found that through these bodily constraints, women enact their embodied agency to ensure livelihoods and social status, thus framing their reproductive intentions and practices. We argue that in the context of Burundi where corporeality (bodily matters) is key in gendered social belonging, FP programmes and faith-based services fail at responding to the needs and concerns of women and their embodied reproductive experiences.

Keywords: embodiment, contraception, materiality, reproduction, Burundi

Introduction

In the fall 2014, we met Emmeline for the first time, in a rural town of Burundi. She was 30 years old, married with two young children and she cultivated the family fields for the subsistence of her household. She explained how she started using 'modern' contraception promoted in her health facility:

> *What made me think of modern contraception? It's because I saw that I was often ill, I was weak, I had poor health and issues in my body. So I thought of it. And also because each time I had a pregnancy, I didn't feel well, I had abdominal pain and I had to stop the course of my everyday activities. So that's why I thought of coming to the health centre [to access contraception]. (Butare, 2014)*

When we met her a year and a half later, she continued:

> *Emmeline (E): After stopping the injections [because of the side effects they caused], I had a pregnancy*
> *Joëlle (J): Was that pregnancy desired?*
> *E: No…*
> *J: Your first child was eight years old, didn't you wish to have a second child then?*
> *E: It was not time yet because of my poor health (Butare, 2016)*

Emmeline explained that after her first pregnancy that spontaneously aborted, she suffered from abdominal and back pain. She was treated for it, but her health problems resumed when she was pregnant again. After the successful birth, the health provider advised her to use 'modern' birth spacing methods. She chose the free injections offered at the health centre to avoid a pregnancy and gain time to recover her health, she explained. She experienced side effects (menorrhagia and abdominal pain) that she treated for a while with pills prescribed by her health provider. She abandoned the injections and became pregnant again, causing her health issues to come back. The health provider advised her to go to a clinic to do an echography. She however decided not to forgo the exams because of the

costs that would burden her household already struggling to cover basic needs. She explained she had no access to cash, and had to ask her husband for health expenditures. She feared being a financial burden because of her ill health; and at the same time, she worried that it would cause her an incapacity to work the fields, thus becoming a social burden.

Emmeline's narrative illustrates how reproductive preferences, choices and practices are often not linear, can be influenced by different socioeconomic factors from the structural to the individual levels, and are contingent on *bodily realities* themselves being framed by structural factors such as gender division of labour, or access to socioeconomic livelihoods. Scholars have shown, since the postmodern turn and based on research in other contexts, that fertility and reproduction are to be understood within power dynamics situated in history and economics, in gender and culture, in social norms (Ginsburg and Rapp, 1991), and are to be conceived as 'socially-embedded processes' (Greenhalgh, 1995: 17). The situated reproductive opportunities and constraints to the realisation of ambitions are framed by community structures, family systems and kinship networks, and by 'available existing repertoires' (Bledsoe and Banja, 2002) – i.e. the gendered social scripts that shape individual expected, appropriate and desirable behaviour. Van der Sijpt added the importance of corporeality – the material (physical) processes and activities of bodies, socially bound to systems of meaning (Grosz, 1994) – in understanding reproductive navigation by exploring how bodies can experience 'reproductive mishaps' such as miscarriages or infertility (van der Sijpt, 2014). As she summarises in her 'model of reproductive navigation', individual aspirations and autonomous actions of women are situated, and contingent on the social environment (sociality) and on the material body (corporeality). Reproductive bodies are both social and material, and these two modes are not distinct but continually interact, framing women's conceptualisations of reproductive health, influencing their preferences and practices, as we also found in our research. There is a wide production from gender studies scholars that theorised how gender relations are to be framed as power relations with a material, economic and physical basis (Delphy, 2013). The productive and reproductive bodies of women are central when grasping mechanisms and reproduction of gendered hierarchies.

Our study conducted in rural Burundi explored how women navigate their reproductive aspirations and actions in context. In this paper, we show how women navigate different aspects of fertility and reproduction and make choices that are primarily driven by an intention to preserve their productive and reproductive bodies, as their main social and material resource to ensure livelihoods (agricultural work) and social belonging (through maternity and sexuality). In the Findings and Discussion section, we use narratives to describe how women navigate different reproductive processes – marriage and their first pregnancy, birth spacing, and utilisation of 'natural' and 'modern' methods of contraception –, and we scrutinize the social and material values and representations that frame the embodied practices. Finally, we conclude by situating our findings within the global reproductive health discourse, stressing that the assumed linearity between reproductive intentions and practices in FP programming does not correspond to reality, and fails to respond to the needs and concerns of women and their embodied experiences. We thus conclude on the importance of framing reproductive practices as an embodied process in which bodily considerations are key.

Methodology

Empirical data presented in this article were collected through a longitudinal qualitative study spanning over nine months between 2013 and 2016 in four rural sites of Burundi, namely Karusi and Nyabikere (Karusi province, central Burundi), and in Rutana and Butare (Rutana province, South-East Burundi). To understand reproductive preferences and practices in context, we purposively sampled rural women of reproductive age, aiming to include married and cohabitating women, single mothers and single sexually active nulliparous women. We conducted in-depth interviews using a biographical approach focused on sexual and reproductive health (SRH) events and interviewing participants two to three times over the four-year period. To understand the context and allow situating narratives, we conducted observations in everyday life spaces such as health centres, churches, schools, markets, cabarets and NGO community activities. We additionally conducted formal interviews and informal discussions with key informants (health authorities, traditional birth attendants, religious leaders and administrators). Fieldwork

was conducted by the first author and local research assistants that were trained on SRH, confidentiality and ethical research. We consecutively trained four research assistants (3 female, 1 male), all with a university degree and living in the capital Bujumbura. As a pair, we were perceived as outsiders, which sometimes stirred mistrust that we tried to mitigate by declaring that we were not promoting 'modern' methods of contraception and through the repeated visits. At the same time, in a context of general low level of interpersonal trust (Falisse et al., 2018), not being members of the community in fact enabled trust to discuss intimate topics, as we were told several times by participants.

Adapting to the tense socio-political situation, we abandoned the initial plan to conduct interviews and observations in participants' homes, as most expressed their reluctance of being seen hosting a foreigner, fearing reactions from neighbours and authorities. Instead, we opted for recruitment and interviews in health facilities, in spaces that allowed privacy for discussions. The limitation was partly mitigated by the longitudinal design of the study, allowing discussing in-depth the individual and household situation and evolution across the period, and by positioning ourselves as non-health providers. We recruited most participants in the vaccination waiting zone, briefly explaining the purpose of our research and the ethical guarantees of confidentiality and anonymity. Upon consent to participate, interviews were conducted in Kirundi and French, and were transcribed in French the same day discussing content, translation and meanings with the research assistant. Discussions were transcribed into memos.

In total, we conducted 39 interviews with 16 participants (13 women, 3 men, various parity, age range 18-37) followed over time, and 7 key informants. Transcripts and field notes were analysed following a constructivist grounded theory approach (Charmaz, 2006). We used sensitising concepts to orient data collection, and in data analysis to support the development of thematic categories (Bowen, 2006), namely the interplay between agency and structure, gendered social reproduction, and embodiment. Data were analysed after each field trip, allowing the construction of categories that were discussed within a broader research team, and further explored in the next field trips. Analyses were first conducted on rich transcripts using line-by-line initial coding looking for words, actions and processes (by XX), and included memo writing that attempted contextualisation of reproductive events within the agency-structure interplay (Frohlich et al., 2001). The rest of the data were

analysed using focused coding, allowing the construction of categories that were then compared across narratives and scrutinised repeatedly for power, purpose and patterns. Finally, we constructed a grounded theory based on the categories related to *bodily experiences* using memos and literature, presented in this paper. Names used in this article are pseudonyms.

Study setting: reproductive context and contingencies of rural Burundi

Karusi and Rutana provinces have very high population densities (respectively 376 and 214 hab/km^2), and the vast majority of the population lives on subsistence agriculture. It is estimated that more than 67% of Burundians live below the national poverty line, with a higher proportion in rural areas (République du Burundi, 2011b: 24). Karusi province was strongly hit during the civil war that devastated the country between 1993 and 2005, resulting in internally displaced persons (IDP) camps that group many widows and recomposed families. Rutana province presents a similar profile, with slightly better temporary economic opportunities as it is neighbouring Tanzania and it hosts the national sugar factory.

Women are economically and legally dependent on men. Customary marital and inheritance laws put women under their husband's jurisdiction as subordinates with little to no flexible avenues for social advancement and accumulation (Daley, 2007: 53). Their access to land is conditioned on their belonging to a man, their father or husband. As described by Hakizimana, Burundi is a 'patriarchal society where decision power belongs to husbands and his lineage, and women are reduced to the role of life reproducers, children carers and female children educators and domestic and land workers. It is through maternity, ideally numerous, that women integrate their husband's clan' (2002: 236), and gain social status. Socioeconomic organisation sets women mainly in charge of households' subsistence agriculture, while men 'seek money' through temporary jobs on construction sites or seasonal agricultural jobs in neighbouring Tanzania to provide for expenses such as school fees and equipment, health expenditures, and social events.

Current social changes operating in post-conflict Burundi are transforming the gender and generational dynamics, redefining women's social position and bargaining power in the

household. Studying the social transition from youth to adulthood in Burundi, Berckmoes and White described how 'structural problems such as land scarcity, climate change, population pressure and a rural economy that offers limited opportunities for non-agricultural income generation, stand in the way of successful youth 'transitions' and impede clear scenarios for ways out' (2014: 200). The limited scenarios to build social status and ensure livelihoods identified by youth were marriage for girls, and migration for boys, and all shared a 'lack of adult support and guidance [showing] that the youth generation feel increasingly disconnected from their parental generation' (201). Land pressure also leads to numerous children becoming a source of conflict due to the customary heritage law whereby all male children are attributed an equal share of land (Keenan, 2015). Socioeconomic impoverishment and instability reduces the social protection of women as they are more likely to accept cohabitation (*gucikiza*) without formal marriage, leading to precarious social situations because their access to land is not secured (Courtois, 2016).

Largely supported by external donors, the government promotes Family Planning (FP) as a technical solution to the socioeconomic and political problems (Schwarz et al., 2021). The hegemonic discourse suggests that by controlling their fertility and having fewer children, individuals, families and communities will contribute to an economic improvement of their own situation, to a reduction of land pressure, and to the nation's stability. Fertility rate in Burundi was 5.5 children per women in 2016, and prevalence of women in union using a 'modern' method of contraception was 22.9% (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017). Contraceptive methods[31] are promoted by the government and provided for free in health facilities. Health providers receive financial incentives for the distribution of 'modern' methods through the performance-based financial scheme. The predominant Catholic Church, as well as the fast-growing evangelical churches, are opposed to the promotion and utilisation of 'modern' contraception, but have aligned to the government discourse on the need to reduce fertility and promotes 'natural' methods such as standard-days method and periodic abstinence. The offer for contraceptives is limited, and the counselling quality is low. Only 29% of women using

[31] Methods promoted included 'modern' methods of contraception (contraceptive pill, injections, implants, intrauterine devices (IUD), the emergency pill, condoms and tubal ligation/vasectomy), and 'natural' methods of fertility regulation (lactational amenorrhea, symptom-thermal method, calendar method, withdrawal).

'modern' contraception reported that they were informed on potential side effects of the method, on what to do if they occurred, and on other available methods (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017: 108). Side effects were in fact reported as a major barrier to taking up 'modern' methods of contraception (Schwarz et al., 2019). Documentation on traditional medicine in Burundi is scarce and shows that healers today mostly work in secrecy and have multiple practices 'such as herbalism, divination-herbalism (*abapfumu*), rain-making (*abavurati*), sorcery (*abarozi*) and/or Christian syncretism' (Falisse et al., 2018: 487). Recent research has shown that their range of action and methods have changed over time, adapting to the socio-political periods, for instance operating in the field of psychosocial support and community cohesion in the post-conflict era (Falisse et al., 2018; Ventevogel et al., 2018; Cazenave-Piarrot, 2017). In relation to fertility and reproduction, we only found mention of the power of sorcerers (*umurozi*) to cause infertility, and the one of healers (*umupfumu*) to treat it.

These interplaying contextual structural factors set the frame for the embodied actions of rural women analysed in this article.

Findings and Discussion

Discussing FP strategies and preferences with women in rural areas of Burundi, the phrase 'the body is difficult' (*umubiri uragoye*) or 'it [depends on] one's body' (*n'umubiri w'umuntu*) emerged frequently, designating different situations. We explore all these descriptions of the body in situations related to fertility and reproduction of participants – through marriage and first pregnancy, birth spacing, and utilisation of 'natural' and 'modern' methods of birth control –, constructing our argument on the pertinence of considering these bodily experiences in relation to social contingencies when aiming to understand reproductive navigation.

(In)fertility: unpredictable capacity and strategic timing

As found in many contexts, successful fertility was a condition to accessing social adulthood: by becoming mothers or fathers, individuals 'move to the next stage' (*narunguruje*) and gain adult social status. The first pregnancy – estimated at a median age of 21.3 years in rural areas (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017) –

however had to be socially timed. We found that for younger generations, pregnancy was an event that opened up to two opposite outcomes: it could trigger marriage or cohabitation; or it led to a status of single mother, jeopardizing chances for marriage or cohabitation in the future. Narratives from single mothers showed how they had hoped the pregnancy would allow concretising the relationship into marriage, but how instead it lead to their companion abandoning them as single mothers with very little chances of finding another man willing to marry them. Single mothers thus became a burden to their own family, with limited perspectives for *narunguruje*.

Often expressed in terms of God's will to gift women with children, or serendipity, we found that fertility was strongly associated with a perception of bodily capacity. Fertility was considered an unknown until women had their first child, as expressed by this woman who had five children and hoped for one more:

> *Before your marriage, had you dreamed of having six children?*
> *I couldn't have thought of it before knowing I could have children! (Woman aged 37, Nyabikere)*

The unknown about fertility capacity was also described by young, nulliparous women who considered that 'modern' contraceptive methods were not suited for them, as they should not modify their bodily capacity for fertility with 'artificial methods' before having tested their capacity to bear children.

Primary infertility was feared by women, as married women without children were socially perceived as 'worthless'. Hakizimana described that 'downgrading, offensive and humiliating terms designate sterile women. They are considered as children's enemies, poisoners and savage beasts. They are repudiated because they do not fulfil their primary role in households, namely the continuation of the paternal lineage through numerous births, preferably boys' (Hakizimana, 2002: 236). Data on infertility is scare; the 2008 census reported that 6% of women aged 45-49 years were nulliparous (Ministère de l'Intérieur, 2011). Secondary infertility was perceived as less stigmatising, and was explained by many as being the consequence of the widespread malnutrition and subsequent anaemia and

poor health. Yet, many other causes could explain secondary infertility, as expressed by this woman who had long intervals between her pregnancies:

> *J: So, between your second and third pregnancy, many years have gone [9 years], how did that happen?*
> *Participant (P): That it takes time is normal. There are women who wait and wait until the end! Some need more time to get pregnant, that's how they are!*
> *J: Were you worried because so many years had gone?*
> *P: Worried to have problems because it took me so long? No, I had no problems. Only, even before that, I had issues getting pregnant because I lack blood. […] But how not to worry? The body is difficult. You think what happened? Have I finished [reached menopause]? And then, feeling I was pregnant, I was surprised! Or you think perhaps I've been poisoned? You think of many things… (Woman aged 35, Butare)*

This narrative illustrates how women had different explanations of such 'difficulties of the body' that comprised inner-bodily causes (lack of blood, menopause), outer influences that entered and modified the body (witchcraft, illnesses like malaria), or an accumulation of both.

As several participants explained, individuals could enact on their own bodies, or someone else's, by hiring a healer (*umupfumu* or *umurozi)*. We found reports of 'evil' healers (*umurozi*) who could spell infertility on someone else. Participants however explained that 'good' healers (*umupfumu*) could help women to 'temporarily' abort, by 'putting a pregnancy on hold' in the womb. This action allowed pregnant women to gain time to secure their social situation (find a suitable partner, mostly), and then the *umupfumu* could 'release the pregnancy' in their body.

Birth spacing: a 'natural' bodily capacity

For couples who married, social pressure was set on the woman for a first birth that should arrive rapidly to confirm fertility and ensure lineage. After the first birth, spacing for the next pregnancy was highly valued. The value was based on socioeconomic advantages: the ideal interval of about three years allowed the newborn to be cared for by his or her

preceding sibling while the mother is occupied with her daily domestic or farming work[32]. Data show that the majority of women (82%) spaced their births by at least 24 months, with no differences across education level or economic well-being (Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017). Further, spaced births were associated with a notion of disciplined sexuality and family organisation, as also found by Hakizimana: 'High fertility was traditionally valued, but unspaced births was negatively associated with 'uncontrolled' and irresponsible sexuality, designated by a specific Kirundi term *intahekana'* (2002). One participant explained how her unspaced pregnancies caused her shame:

> *When the first child was nine months old, I faced many problems because I already had a three-month pregnancy. Imagine! It really traumatised me. […] Having a pregnancy when your first born is nine months old, it means you have to wean him. You understand it's problematic, as a woman your life becomes difficult. Even if your family is self-sustaining, you can't have a good life. Luckily my husband took care of me and helped me take care of the family I already had. He would watch our firstborn, fetch water and wood, while I was pregnant. I suffered a lot. He was accomplishing the chores a woman must bear! (Woman aged 27, Nyabikere)*

Her shame was associated to her not being able to fulfil her gender-assigned tasks, and she subsequently actively sought a FP method to avoid facing such situation again.

While birth spacing was socially valued, it was intertwined with health values that women expressed with regards to mother and child health. For example, Emmeline in the introduction highlighted the health rationale to space births, allowing her *reproductive* body to regain strength between pregnancies thus ensuring the fitness of her *productive* body for everyday life activities, and enhancing better health for her children. This was also explained by other participants:

[32] For a historical perspective on the reproductive economy regimes operating during colonial times, see Hunt (1990).

The advantage with spaced births is that you can have children that grow and you have a good health, instead of always carrying successive pregnancies, feeling ill in your body and having poor health that impacts your [socioeconomic] development. With birth spacing, you can be strong and develop your household situation, and your child can grow well. (Woman aged 22, Butare)

Birth spacing was very valued for social and health reasons, and benefited both productive and reproductive bodies. Yet similarly to fertility capacity, the capacity for birth spacing was often perceived as a 'natural' bodily given that was unpredictable. As one's natural bodily capacity to space births could not be predicted, it thus had to be tested, often causing mishaps of unspaced births.

If natural birth spacing failed, after testing for it, then women took action by seeking a FP method. They turned to 'natural methods' taught in Church, or to 'modern methods' promoted by healthcare providers. We found that it was not personal values and preferences only that drove the decision on which method to use; rather, decision was influenced by a contingent interplay between sociality and corporeality, which we develop now.

'Natural methods': the need to have a regular body

Fertility awareness-based methods (FAM) – in context, mostly standard days method or cervical mucus method – are promoted in church where they are taught to married couples and in schools. We found that they were valued by most participants because natural and non-invasive, but they required certain abilities determined by bodily and cognitive capacity. The main message given about FAM was the prerequisite that 'you have to be regular' with menstruation cycles. Being regular was perceived as a naturally given biological capacity that was not equally distributed in women, as illustrated in this quote:

In our biology class, we learned to count menstrual cycle days, the ovulation date, the fecund period in women, and the period during which you can have sexual intercourse without conceiving. But it all depends on the girl, if she is regular or not. (Man aged 24, Karusi)

Being irregular was presented and perceived as an irremediable barrier to using FAM, as expressed by this single mother, who had no strategy to avoid another pregnancy:

> *J: Would you like to learn about fertile and infertile periods in the cycle ?*
> *P: Well… I hear others say that some are regular, and others irregular. So… if you have irregular menstrual periods, then you can't calculate. […] And I know that I am irregular, because they say that those who are regular have their periods on the same day every month (Woman aged 24, Karusi)*

Not having the *right body* – a regular one – excluded women from accessing these methods. For those with regular cycles, 'natural' methods often appeared challenging because they required capacity to calculate and monitor cycle days and sexual discipline to observe periodic abstinence. Among participants using FAM, we found that it was often men who calculated the cycle days of their partner, and women explained it by a perceived higher capacity of men to do it:

> *J: Do you know how to calculate your cycle?*
> *P: I don't. My boyfriend does it. I've been taught in [community] sessions about these calculations and I've asked many questions, but it remains difficult for me to understand and know them (Woman aged 24, Karusi)*

Women however also contributed to using FAM by building knowledge and awareness of their bodily signs of fertility periods, which they explained with pride in interviews. They described their capacity to 'feel their bodies' and identify key fertility signs such as the ovulation period:

> *J: And these natural methods work well for you?*
> *P: Yes, they work well, and it's the only method I've ever used! […] but it necessitates great attention and a particular mastering*
> *J: With your technique, you verify each day at the same time?*
> *P: No. When secretions start, I can feel it, and it indicates that the fertile period arrives. That's when I wash my hands and touch myself to confirm the situation.*
> *J: What is the signal that tells you that you need to check?*

P: I know because I'm familiar with it, now. It's like when you're about to have your menstruations, you know. Even if menstruations arrive at night, you can already feel it during the day. It's the same for this fertile period. Even if I'm in the fields working, I go there with soap and clear water, and when I feel the situation, I wash my hands and verify, and I check the time because this period can last between 12 and 24 hours. Yes, I even know the life span of an ovule! (Woman aged 34, Nyabikere)

Finally, utilisation of 'natural' methods required disciplined behaviour and docile bodies to observe abstinence over the fertile period. Observing abstinence was mostly perceived as a male role. Sexuality of men was described as determined by irrepressible and 'natural' sexual desire that could hardly be contained, as explained by this participant:

[Being faithful] all depends on a man and his habits. This habit, you can't take it off a man. They walk with it. For example, this woman's husband had the habit of having sexual relations elsewhere because even the children he had outside [of marriage] where from different women. (Traditional birth attendant aged 52, Gihogazi)

At the same time, men's capacity to enact or tame their 'natural' needs was socially valued. In fact, it is men who are socially responsible for sexuality, reproduction and family organisation:

There are fertile periods, that period is when you have a lot of water in your vagina. You have to be abstinent during this period, and my husband really helps me. Because I believe that it all depends on men's decisions: if he doesn't abstain from me, how could I space my births? (Woman aged 27, Nyabikere)

Negotiating sex, reproduction and family organisation was traditionally limited for women and mostly considered as transgressive (Hakizimana, 2002). We found that such negotiation was contingent on the social position of women. A woman, married at age 14 and living with her husband and her in-laws described how she strategically enacted her body – and

sexuality – to secure her social position, anticipating potential problems her resistance could cause:

> *J: Because we are legally married, if my husband brings a woman or a child, I can seize the jurisdictions*
> *R: Is there something you can do to avoid the situation?*
> *J: To avoid this, I must do everything for my husband. It necessitates communication also, and I must obey my husband, avoid committing any fault because that could be a reason for him to bring another wife.*
> *R: What type of fault do you have to avoid?*
> *J: Mostly what causes polygamy. In my case, my husband works to pay his beer, and when he returns at night without bringing anything for the household, when he comes into our bed if he invites me to have sex, I can't tell him I'm unhappy and I'm hungry. Rather, I have to accept, otherwise that can bring further problems. If I refuse, that could push him to get another woman. These are the types of fault that I avoid.*
> *J: It means that if you don't want to have sex, you'll do it anyway to avoid him going elsewhere?*
> *P: Yes, that's the only way, I must accept. (Woman aged 35, Butare)*

Younger participants' narratives revealed that the gendered roles in sexuality and reproduction can show other declinations, with women taking more active roles in suggestions and decisions, that we interpret as manifestations of changing gender power-dynamics. We found that young women could strategically negotiate sex and reproductive events in a context of men's diminished capacity to reproduce their expected masculine roles and responsibilities. This is illustrated by the story of a single and nulliparous participant who explained how, after one year of relationship including sexual relations, she imposed abstinence to her boyfriend. She wanted to test his willingness to make their relationship official by organising marriage. She sadly but proudly explained a year later how her strategy allowed discovering that he was not serious about their relationship, and how she had avoided a pregnancy that would have been problematic in her social situation.

To wrap up on 'natural' methods, we hypothesize that they are highly valued because they serve a double purpose: they offer birth control; and they enhance couple collaboration and cohesion around sexuality and reproduction. The capacity of men to discipline their bodily needs and desire is promoted as virtuous and socially valued, as expressed in the narrative of the woman above who took great pride in her successful couple cooperation for 'natural' methods. Yet, the social cohesion promoted by the Church is established on specific gendered roles in sexuality and reproduction that are currently being challenged by the ongoing poverty-induced social changes.

'Modern methods': a risky choice for the body

We found a widespread discourse around 'modern' contraceptives on the issue of the negative side-effects they provoked on bodies, and the socioeconomic consequences of *failed bodies*. As we developed elsewhere, physical side-effects frequently caused by hormonal contraceptives – mostly menorrhagia and subsequent fatigue and anaemia – were indeed problematic for rural working women (Schwarz et al., 2019). On explaining the unpredictable occurrence of side-effects, most narratives expressed a perception that methods do not suite all bodies: 'it depends on one's body! It can happen that you don't get side-effects, while others have them' (Woman aged 18, Karusi). The perception was not so much that hormonal methods are harmful, but rather that the reaction it triggered varied across bodies:

> *J: Aren't you afraid of these side-effects you've heard people talk about?*
> *P: (Laugh) you know, we say it depends on the person, and side-effects don't appear in everyone, that's why I couldn't tell [these methods] are good or bad. (Woman aged 34, Nyabikere)*

Success in using 'modern' methods depended on one's bodily capacity – having the right body – to react successfully to the outer interference of contraception. Women openly expressed their fear – and perceived risk – in modifying their inner materiality by ingesting, injecting or inserting an outer *materia medica* (Whyte et al., 2002). It was the bodily capacity and reaction to the medicine that was unknown and created concerns, rather than a perception that methods are harmful in general.

When interviewing women who used 'modern' methods, we asked how they chose their contraceptive. Emmeline explained that she chose the injection because she had already used injections for the treatment of her illnesses (referring to malaria) and therefore trusted it more than the other methods available:

> *J: Why did you choose the injection, why did you prefer this method?*
> *P: It's because I was often ill before, and at the health facility they always gave me injections for treatment and they made me feel better. That's why I thought I should get an injection (laughing)! (Emmeline, Butare, 2014)*

Participants explained that there were no means to predict potential side-effects on their bodies and one thus had to test methods and see their effect. Such testing was however perceived as risky: first, it only allowed testing immediate effects and not long-term ones; and second, some effects were remediable while others were not and damaged the body permanently. We described elsewhere how the health system mostly trivialised the issues of side-effects and thus failed to acknowledge and respond to the lived bodily experiences of women (Schwarz et al., 2019).

We found that testing effects on the body was a physical and social risk many women were not willing or able to take contingent on their socioeconomic situation, as they needed functional productive and reproductive bodies to sustain livelihoods and social belonging. Many women expressed the fear that in case of physical side-effects their husband would leave them or take another wife.

Concluding remarks

Our research shows that, as an embodied experience, *corporeality* and *sociality* in reproductive navigation in rural Burundi interplay constantly in everyday life, and reproductive decisions and practices should be understood as *embodied actions.* Social circumstances and power dynamics shape these embodied actions and meanings, and at the same time, bodily capacity drives social position and gendered power relations. We found that in a context where the reproduction of gendered social organisation is in crisis (Courtois, 2016; Berckmoes and White, 2014), whereby women and men struggle to ensure

livelihoods and social belonging, the material body appears as an important resource for women and its preservation is essential. This frames the perception of risk, socially assessed by women for instance with regards to 'modern' contraceptives. The notion of perceived risk associated with hormonal methods in rural Burundi is useful to understand the limited uptake of 'modern' contraceptives, offering an alternative explanation to 'rumours' or 'fear of side-effects' that are mostly associated with a lack of information, and with cultural and religious values in the global and national FP programmes. We found that FP programmes offered by the Catholic church were perceived as much more appealing to participants because they were grounded in social and family organisation. However, they partly failed by excluding women with 'irregular bodies'. A limitation of this research is that we did not conduct observations of teachings provided in church or interviews with religious educators, for instance to understand what alternatives are offered to women with irregular cycles or how the role of men in sharing reproductive responsibility is promoted. Our understanding of their discourse is solely based on the narratives of participants.

Our findings align with the reproductive navigation model of van der Sijpt that frames reproductive decision-making as a process that is not universalist and linear, but rather is contingent on complex social, economic and political dynamics, as well as on bodily matters (2014). Reproductive health policies and programming in the Global South, largely pushing for uptake of contraceptive methods and supported by external donors, present a rationale based on individual autonomous and empowering decisions and on linearity between reproductive intentions and behaviour. International programmes like FP2020 support governments in establishing population targets such as the 'unmet need for contraception', calculating the gap between women's fertility intentions and their contraceptive use reported in surveys, that is to be filled with an increase in 'modern contraceptive prevalence rate' (Hendrixson, 2018). As we have shown, starting with the narrative of Emmeline, there are many pathways and contingencies that modulate reproductive navigation from intentions to practices, which is certainly not linear. Further, as highlighted by Adjamagbo and Locoh, there is a remarkable shortcut in the assumption that by using 'modern' contraceptives, women meet their needs and empower themselves, as if they lived in a vacuum of gender dynamics and social structures that influence choices and behaviour (2015), and we add, in a vacuum of bodily realities. The importance of bodily matters – not

expected at the onset of this research – is a finding that adds to the framework for understanding reproductive intentions and practices, already identified by van der Sijpt, but provides more descriptions on bodily matters in other processes of fertility and reproduction. On the argument that modern contraception empowers women, we did not find that rural women see their economic or symbolic bargaining power enhanced by a control of their fertility. We have in fact shown elsewhere how the reproductive governance discourse and scheme puts pressure on women and couples for a controlled fertility, but are partly resisted (Schwarz et al., 2021).

As found in other regions, we highlighted that the current transformations of social organisation and power – particularly gender and generation related – translate into a coexistence of diverse available reproductive regimes (Agadjanian, 2005), such as single mothers, smaller families, couples using behavioural 'natural' methods, couples using 'modern' methods. Not all participants assessed their trajectories and situations as positive or desired, some were in fact very constrained and experienced as impossible, but our aim was to reveal strategies and embodied adaptive behaviours that women enacted within their very limited spaces of power. We found that women cautiously assessed their (limited) reproductive options and made choices that primarily aimed at preserving their main resource: their productive and reproductive body. Besides giving voice to women on their role in social organisation, revealing the great challenges and difficulties that exist in Burundi today around social organisation and social reproduction sets an insightful background for research and policies in other fields, such as peace building or economic and agricultural development. To be noted that we did not find significant differences across research sites in the experiences of women and couples with regards to reproductive practices, nor economic situations.

This research is grounded in the specific context of Burundi, framed by a large population density and issues related to land use and ownership, as well as by a socioeconomic 'enduring and looming' crisis (Berckmoes, 2015), that have contributed to maintaining very unequal gender roles and positions. Johnson-Hanks described how 'under conditions of uncertainty applicable in contemporary Africa, effective social action is not based on the fulfilment of prior intentions but on judicious opportunism' (2005: 363) that she further nails as 'vital conjunctures'. As Courtois (2016) has shown through the case of female-

headed households or Serwat (2019) with land reforms and decentralisation processes in Burundi, within the observable changes in gendered reconfigurations women mostly suffer in current circumstances, opportunities are very limited and gendered inequalities in rights, roles and expectations remain pervasive. With regards to fertility and reproduction, the context of Burundi is specific because of its high population density and subsequent land pressure, whereby the value of numerous children has (partly) shifted from being an asset to being a liability, as also found in Rwanda (Farmer et al., 2015) but not in the vast neighbouring DRC where children are still perceived as '*une richesse*' (Dumbaugh et al., 2018). Burundi has changed since the study, but we assess that our findings are still valid today: land reforms have not taken place; FP programmes are still supported by external donors; and although the evangelical churches have gained influence, their position on contraceptives is similar to the Catholic Church. Finally, this research included male participants, but it focused on reproductive practices in women mostly. More research is needed to explore (re)configurations of masculinities around sexuality and reproduction, and social (re)organisation.

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10. PAPER 5: CONTRACEPTIVE SIDE EFFECTS

‘So that's why I'm scared of these methods’: Locating contraceptive side effects in embodied life circumstances in Burundi and eastern Democratic Republic of the Congo

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Abstract

Contraceptive side effects (SE) are often portrayed as either unproblematic trade-offs for pregnancy prevention or misconceptions and fears that negatively affect individuals' contraceptive decisions. Little attention is given, however, to wider, socially-rooted meanings and rationales for these feared and experienced SE. Through inductive analysis of in-depth interviews conducted with women and men from rural Burundi and South Kivu province, Democratic Republic of the Congo between 2013 and 2016, we locate contraceptive SE narratives in individuals' broader and changing life circumstances. We extracted two conceptual categories related to SE from participants' narratives: 1) bodily symptoms attributed to modern contraception; and 2) social meanings of SE in everyday life. We then situate these narratives in context – sources of knowledge on SE, barriers to addressing SE, and individuals/couples' life circumstances – to understand their embodied realities. Using Krieger's ecosocial theory, our findings suggest that in rural contexts of poverty, uncertainty and power inequities the empirical realities of SE are legitimate concerns stemming from actual or anticipated bodily symptoms located in the embodied life circumstances of individuals and couples.

Keywords: Burundi, Democratic Republic of Congo, contraception, family planning, side effects, rumors, fertility, embodiment.

Introduction

Family planning (FP) is promoted as a solution to a number of challenges in low and middle income countries (LMICs) including population growth (often presented in causal association with poverty, hunger, migration and environmental degradation), poor maternal and child health outcomes and gender inequity (Cleland et al., 2006; Bongaarts, 2016; Obaid, 2009). Because of their efficacy in preventing pregnancy, modern contraceptives (hormonal contraceptives, intrauterine device, vasectomy and tubal ligation, and barrier methods such as condoms) rather than 'traditional' methods (periodic abstinence, withdrawal) are the central instruments of public health FP discourse, programs and services (Rossier and Corker, 2017; Hartmann, 2016; FP2020, 2018). Substantial political and financial support for FP programing since the 1960s, especially in LMICs, led to declines in fertility rates across most regions of the world except in sub-Saharan Africa (SSA) where rates of contraceptive uptake remain low and/or stagnant in most countries (Potts, 2014; Ezeh et al., 2012).

Analyses of barriers to contraceptive use in LMICs are rife with references to side effects (SE), mostly portrayed as either unproblematic trade-offs for pregnancy prevention or misconceptions and fears that negatively affect individuals' contraceptive decisions (United Nations, 2015; Sedgh and Hussain, 2014; Campbell et al., 2006; Diamond-Smith et al., 2012; Darroch, 2013). Health social science researchers demonstrate, however, that contextual complexities, ambiguities and contingencies drive individual/couple reproductive decision making and behaviors (Bledsoe and Banja, 2002; Johnson-Hanks, 2005; Jaffré, 2012; Marston et al., 2018). Gender inequity was found to intersect with financial and social barriers to fertility regulation. For instance women in lower social positions anticipated difficulty in negotiating access to family funds for the management of SE if needed, while a pregnancy was assessed as a lesser social burden (Campbell et al., 2006). Considering individual women's needs in delivering FP counseling is, therefore, essential (Bitzer et al., 2018). Yet despite existing evidence acknowledging the contextual realities of SE, there is an epistemological gap where public health literature and discourse continue to view service quality, promotion and correcting misinformation as the necessary solutions (Foley, 2007). In addition, international initiatives such as Family Planning 2020 (FP2020, 2018) continue to follow target-driven strategies to increase modern contraceptive prevalence rates (mCPR),

prioritizing uptake over reproductive justice, bodily autonomy and the contextual nuances of self-determination (Hendrixson, 2018).

In this paper, we explore fears and experiences of SE through in-depth interviews of women and men, contextualized in their own fertility and FP practices and preferences in rural Burundi and South Kivu province, Democratic Republic of the Congo (DRC). We specifically consider (1) how SE are perceived or experienced as problematic in these specific contexts; and (2) the meanings individuals and couples attribute to the occurrence – or anticipated occurrence – of SE and the role of those perspectives in navigating contraceptive use and non-use. By locating SE narratives in individuals' broader life circumstances, our aim is to expand the literature base and subsequent policy discussions that acknowledge contraceptive SE as legitimate concerns and socially-embedded phenomena, especially in poor and fragile settings.

Research context

Situated in the African Great Lakes region, the research settings share common fragile sociopolitical contexts. Ongoing armed conflicts, pervasive poverty and weak state institutions and infrastructure create widespread instability in both Burundi and neighboring South Kivu province, DRC. Population growth, displacement and density as well as agricultural overexploitation have made land an object of tension in both settings, where the vast majority of the rural population lives from agriculture. In addition, deforestation, agricultural epidemics (South Kivu) and climate disturbances (irregular and heavy rainy seasons) directly affected communities' economic activities. It was estimated that 71.7% and 77.1% of the population in Burundi (2013) and DRC (2012) respectively lived under the international poverty line of $1.90 a day (World Bank, 2018). These demographic, political, economic and ecological realities shared between the two contexts have led to new social practices and configurations such as informal marriages and co-habitation, resulting in less stable familial structures, weakened marital and kinship accountability for the welfare of women and children (Berckmoes and White, 2014; Uvin, 2009). As customary laws (and formal laws in Burundi) follow patrilineal systems that do not entitle women to land inheritance, women are dependent on their husband for land access. The 'social contract'

stipulates a woman can expect financial support from her husband and his extended kin provided she births an acceptable number of children and performs substantial agriculture work (Manirakiza, 2008; Dumbaugh et al., 2018).

Table 14: Health indicators for Burundi & South Kivu, DRC

Indicator	Burundi	South Kivu, DRC
Maternal Mortality Ratio[a,b] (by 100,000 live births)	712/100,000	693/100,000
Under 5 mortality[b,c]	72/1000	94/1000
Under 5 Chronic malnutrition[d]	55.9%	53.0%
Total fertility rate[d]	5.5	7.7
Modern Contraceptive Prevalence Rate (all women)[b,e]	16.4 (2017)	10.3 (2017)
Modern Methods used[b,e]		
Injection	50.9%	11.3%
Implant	26.3%	6.3%
Pill	7.5%	8.8%
Male condom	5.3%	57.5%
Other modern methods	10.0%	17.1%

[a] WHO 2015.
[b] DRC: National rate.
[c] UN-IGME 2017.
[d] Demographic & Health Survey DRC (2014) or Burundi (2016).
[e] FP2020.

Reproductive health indicators and health system characteristics

Despite both national governments' explicit prioritization of reducing fertility rates through increased uptake of modern contraceptives including commitments to international initiatives such as FP2020, fertility remains high and utilization of modern contraception, though increasing, remains low (*Table 14*). Recent studies reported that in both settings discontinuation of contraceptives is high (38.1% of female ever-users in Burundi, 57.0% in South Kivu), stemming from frequency and severity of SE/health problems (29.9% in Burundi, 31.1% in South Kivu), as well as bad quality of SE management and poor FP services in general, pregnancy or desire to have more children, religious teachings, pro-natalist culture, rumors and misconceptions, and couple disagreement on FP use (Programme National de Santé de la Reproduction, 2014; Merten et al., 2016). Both health systems rely heavily on external aid including funding for performance-based financing (PBF) schemes. Geographic access to health facilities is relatively good in Burundi but poor in rural DRC;

quality of services and supply chains in both countries, however, are weak. Only in the last 5 years were FP products made more widely available in the Burundi and South Kivu health facilities where research took place. In both countries, SRH services are under the umbrella of the health ministries' *Programme national de santé de la reproduction* (PNSR/National Program of Reproductive Health) which is decentralized in South Kivu by province. PNSR in both countries have SRH strategies and policies, but because of underfinancing and understaffing, their orientations and activities are largely driven by external funding (bilateral aid and international organizations). In Burundi, FP services and commodities were provided free of charge through the PBF system, except for SE management; in South Kivu most FP services remained payable. Both countries recently revised their FP policies after committing to the FP2020 program, aiming to reach 50% (Burundi) and 19% (DRC) modern contraceptive prevalence by 2020, mainly through supply-side improvements (FP2020, 2018).

Methods

Our research was embedded in larger, mixed-methods studies of sexual and reproductive health (SRH) interventions conducted in both settings from 2013-2016 (Elouard et al., 2018; Dumbaugh et al., 2018). Ethical approval for this research was granted by the Ethical Commission of North-West and Central Switzerland, the Burundi National Ethics Committee, the South Kivu Ministry of Health and the Internal Review Board at the Université Catholique de Bukavu, DRC. This paper presents qualitative results.

Burundi and neighboring DRC differ in a variety of ways: historically, ethnically, population size and density, the above relevant health indicators and health systems characteristics. However, despite important differences, both contexts share similar socio-cultural constructs of gender norms and contemporary rural eco-geographical and socio-political realities of insecurity and uncertainty. Most importantly for this analysis both countries recently introduced widespread contraception in research areas and are politically, financially and, through largely donor-driven priorities, discursively committed to the homogenized international FP agenda. In conducting independent analyses of each context, we noted commonalities around contraceptives perceptions and practices, and strikingly

similar language and fears around contraceptive SE from both settings. Thus, despite combining contexts not being common practice in qualitative analysis, we opted for a joint analysis over a comparative approach to demonstrate that these phenomena are occurring across contexts. Similar approaches may be applicable elsewhere, revealing important implications for future of FP policy and practice.

Data collection & participant selection

Research took place in three health districts of South Kivu (Idjwi, Miti Murhesa and Katana) and two provinces in Burundi (Karusi and Rutana). Co-first authors and research assistants, all female, conducted data collection independently, discussing methodology and emergent themes throughout fieldwork. JS (38-year-old European) collected data in Burundi supported by SN (32-year-old Burundian with fieldwork experience in HIV prevention) and occasionally by local researchers (including 1 male). MD (32-year-old American) collected data in DRC with the support of two research assistants in their 30s: WB (Congolese pediatrician and researcher at the provincial reference hospital) and MM (Congolese nurse). All local research assistants, fluent in French and local languages, were trained in qualitative research methods; they supported introductions into research areas, translated interviews conducted in languages other than French and discussed findings with co-authors.

We used purposive sampling to recruit participants. The Burundian research team spent 9 months total conducting in-depth interviews, focus group discussions (FGDs), observations and informal discussions at community centers and health facilities. We approached most participants in vaccination services' waiting rooms, inviting them to participate individually and guaranteeing confidentiality. Most participants were interviewed several times over the research period in locations chosen by them, ensuring privacy. We followed-up with most participants via telephone or social media when insecurity did not allow field visits, thus facilitating longer-term relationships. South Kivu research teams conducted in-depth interviews and FGDs over 12 months total, recruiting participants in the community often identified by community health workers (CHWs) or at maternity waiting homes after participant observation. Follow-up interviews were not feasible in South Kivu given challenging field access. All interviews lasted 40-120 minutes, were conducted in local languages when the participant was not fluent in French and followed semi-structured thematic interview guides developed for each context.

Both users and non-users of contraception were interviewed. In both settings most participants were women of varying parity, aged 15-49; smaller numbers of male partners, youth, elders, health staff, religious leaders, CHWs and traditional birth attendants were also interviewed. The overwhelming majorities of both populations are Christian (Catholic and Protestant) (Ministère du Plan et Suivi de la Mise en œuvre de la Révolution de la Modernité et al., 2014; Ministère à la Présidence chargé de la Bonne Gouvernance et du Plan et al., 2017) and all study participants identified as such. We conducted 39 in-depth interviews (with 23 persons) and 4 FGDs in Burundi, and 78 in-depth interviews and 2 FGDs in DRC. All interviewees gave written consent to participate.

Our methodological approach was rooted in the principles of constructivist grounded theory (Charmaz, 2006) and interview guides were developed around sensitizing concepts related to fertility, reproduction and contraception (Bowen, 2006). The topic of contraceptive SE emerged intrinsically during conversations without participants necessarily being prompted.

Data extraction, analysis and synthesis

Data analysis began during data collection through frequent conversations within and between research teams; interview guides evolved thematically throughout field work.

For the final joint analysis, narratives about contraceptive SE were coded into two conceptual categories emerging from data: 1) bodily symptoms of contraception and 2) meaning of SE for everyday life as recounted by participants (*Table 15* & *Table 16*). We then explored the proximal factors influencing lived experiences of SE, namely the different sources of knowledge on SE and structural barriers to addressing SE-related issues. Last, we reviewed transcripts iteratively identifying how participants located SE – bodily symptoms and social interpretations of those symptoms – in their reproductive experiences, projections and broader, contextualized life circumstances.

From inductive analysis of narratives we built a third level of theoretical categories, situating bodily SE of contraceptives and their social meanings in embodied realities of (dis)order and risk, socioeconomic uncertainty, and agency and power. Drawing from the ecosocial theory of Nancy Krieger, we illustrate how contraceptive SE are embodied experiences for women and men arising from the social and ecological contexts of rural Burundi and South Kivu. Primarily used to study (unequal) disease distribution in populations, ecosocial theory

attempts to understand how people embody social and ecological ways of living that are shaped by power relations (gender, class, race), property, and the production and reproduction of both social and biological life (Krieger, 2011).

As with all qualitative research, our findings are particular to our research settings. Both contexts were complicated by extreme political fragility and insecurity, affecting the research methods we were able to employ (for example, no evening or overnight participant observation) and limiting access to remote, possibly more marginalized populations.

Results

Narratives of SE emerged widely during discussions in both research settings. We first present findings that formed the two conceptual categories: *bodily symptoms* attributed to contraceptives (*Table 15*), and *social meaning of SE* in everyday life, namely financial and social consequences associated with SE (*Table 16*). We then present proximal factors (*sources of knowledge* and *structural barriers to addressing SE*) that situate how *navigation of SE* is contingent on individual's and couples' life circumstances and the broader ecosocial context.

Bodily symptoms and social meaning of SE in everyday life

Both contraceptive users who had and had not experienced bodily symptoms described SE they related to modern contraception; non-users also recounted SE from the stories of others in their community. Respondents reported two categories of SE: (1) acute but reversible pain, illness and bodily dysfunction; and (2) irreversible or fertility-threatening effects (*Table 15*).

Table 15 : Bodily symptoms

Acute, reversible pain, illness and bodily dysfunction	Abdominal/uterine pain, weakness/ fatigue, headaches, palpitations, bleeding, swelling, infections/illness such as malaria, weight gain or loss, blood blockage, hair loss, poor vision, loss of libido, vaginal irritation, condom/implant/IUD lost in the body.
Irreversible or fertility-threatening effects	'destroyed' or 'rotted' uterus, infertility, cancer, miscarriages, amenorrhea, birth defects, risky labor, delayed fertility

Participants reported one group of SE as acute bodily symptoms including abdominal pain, weakness, and the most widely cited SE, irregular bleeding. In these contexts the regularity of menstrual flow is perceived as an essential sign of health and fertility and its perturbation was perceived as problematic:

> People think that if a woman bleeds a lot, she risks running out of ovules that play an important role in reproduction. [...] Blood flow has an important cultural meaning: blood means life. People think that women who bleed a lot are not in good health; her husband can't approach her. *(Woman, key informant, 30 years old, DRC)*

This is further illustrated by a young Burundian woman who uses injections without experiencing SE, but who reports deterrent experiences of others:

> Some women who came to the health facility to get injections had issues with their uterus. The uterus illness made them bleed a lot, bleed continuously, so they stopped using injections. *(Woman aged 22, 2 children, Burundi)*

The socio-cultural centrality of regular menstrual flow to women's health echoes findings from other settings (Geissler and Prince, 2007; Nichter, 2008). There is in fact clinical evidence that most hormonal methods cause menstrual disturbances; for example, the locally supplied hormonal injection product (Depo-Provera by Pfizer) causes frequent adverse reactions including menstrual irregularities (bleeding or spotting, 57% of users at 12 months, 32% at 24 months); abdominal pain/discomfort (11%); weight gain (> 10 lbs. at 24 months 38%); dizziness (6%); headache (17%); nervousness (11%); decreased libido (6%) (Pfizer, 2017). From a medical perspective heavy bleeding can pose serious health risks including anemia especially for under- and malnourished women (Hartmann 2016).

Participants related chronic bodily and fertility- threatening effects to fears of irreversible outcomes such as 'destroyed' or 'rotted' uterus, cancers, miscarriages, birth defects or future infertility. As in other settings, such recounts of SE reflected a general uncertainty surrounding the intake/injection/insertion of 'unnatural' products in the body and/or by the perturbation of the menstrual cycle (Hardon, 2002; Cheung and Free, 2005; Williamson et al., 2009).

Participants also expressed concerns around potential bodily effects induced by long-term utilization of contraception. This Burundian couple used injections to space their three children, experienced no SE and did not want more children. The wife however sought information about female and male permanent methods as she was concerned about the effects of using injections for a long period until menopause. A CHW reassured the couple that they should not be concerned. The wife, however, still had fears:

> Being a woman, you can go get these injections, you get injected regularly. But I meet many women in the health facility who have bad consequences with these injections and whose husbands have left because of that. Yes...women talk about these rumors. (*Woman aged 32, 3 children, Burundi)*

Most participants expressed that contraceptive SE were unpredictable and could not be anticipated or prevented: their occurrence depended on how one's body reacted to the use of these 'unnatural' products. One had to 'try out' contraceptives to find out how the body would react:

> Contraceptives can make you lose weight or gain weight and you won't [be able to] conceive quickly anymore...your body changes...I don't know if contraception is good or bad. Only each person knows if contraception is good or bad [for them]. (*Woman aged 20, first pregnancy, DRC*)

One Congolese woman sought FP services at a facility across the border in Rwanda where she reported they ran 'tests' (though she could not specify what kind) to match individuals to the 'right' method of contraception, thereby reducing the bodily unpredictability surrounding SE. In other SSA settings women also believed biomedical tests could identify methods of contraception best suited to individual bodies (Rutenberg and Watkins, 1997; Hindin et al., 2014; Schwandt et al., 2016), though these findings were interpreted as references to the WHO recommendations, not requirements, to take women's blood pressure before prescribing hormonal contraception and establish hemoglobin levels for women using intra-uterine devices in order to prevent SE-induced anemia (World Health Organization, 2016). In our research, most participants did not believe biomedical intervention could mitigate the unpredictable occurrence of SE. Some participants

acknowledged that using contraception necessarily involved 'method shopping', i.e. the trial of different methods until identifying a method that works best for the individual. For example when pills gave a Congolese participant (aged 30, 4 children) complications, the health providers told her to try the injection instead. The woman refused the injection, opting for condoms with her husband's support. After experiencing vaginal irritation with condoms and falling pregnant again, the woman's husband agreed to practice periodic abstinence, a method without SE that best met her and her husband's needs and preferences.

Infertility or delayed fertility especially raised serious concerns, as conveyed by this youth SRH peer educator in Burundi:

> P: I see that these methods are not good for all women. I've never taken these pills, but I'm scared of them….
> I: Can you explain why you think these methods are not good for all women?
> P: I have often seen women who have fallen ill afterwards.[...] I think that these modern methods are not adapted to all. There was a person who used the implant, and after taking it out, she became totally infertile. She took it out when her child was 4 years old. Now, she only has this one child. (*Woman aged 24, no children, Burundi*)

This participant further explained she feared modern contraceptives could 'tire' her body and thus jeopardize her ability to bear children. The belief that modern contraception was not well-suited for young, nulliparous women, also expressed by health providers, was similarly found in other SSA settings (Castle, 2003).

Participants described contextualized meanings of SE associated with or resulting from bodily symptoms (*Table 16*). While participants generally divided the meanings of SE in everyday lives between *financial* or *social consequences,* these categories are mutually constitutive and connected.

Table 16: Social meaning of side effects

Financial consequences of SE	Fees at health facilities for management of SE, transport fees to reach health facilities (or referred hospitals), loss of working revenue due to incapacity to work or time spent on managing SE
Social consequences of SE	Loss of social support from partner/family, marital conflict (infidelity and polygamy) due to infertility or sexual abstinence during menstruation, loss of social status (infertility), shame

Financial costs were frequently mentioned, tangible consequences of SE. SE often led to unanticipated visits to health facilities, even hospitalization, putting pressure on already strained livelihood generation and sometimes resulting in catastrophic household expenditures.

To gain and maintain the respect and social support of their husband, family and in-laws, women needed to remain 'irreproachable' by not causing any familial problems. Health issues leading to financial costs, incapacity to work or infertility could have severe social consequences. For example, a woman's future bargaining power could be weakened if she needed to negotiate a family issue such as claiming social or financial support from a spouse or wider kinship networks.

Many women feared that physical effects such as irregular bleeding resulting in weakness and reduced working capacity could have social consequences such as marital conflict, driving their partners to take another wife:

> I: Are you afraid of SE themselves or what can result because of SE or both?
> P2: It's the heavy menstruation that makes a man leave his wife.
> P1: It's the heavy menstruation that makes the man say 'No, I can't tolerate you". (*FGD women aged 27 and 30, 3 and 8 children, DRC*)

Delayed fertility or permanent infertility (attributable to contraceptives) could also lead to serious social consequences such as marital abandonment:

> There are negative effects of contraception: perhaps you want to space your next birth for three years, and you use contraception. But then you can't have children for six years because of complications [from contraceptives]. And if you don't give

birth to another child, your husband will send you away. *(Woman aged 23, 1 child, Burundi)*

In some situations we found male partner support of contraceptive use mitigated social consequences of SE: some men were tolerant of SE and engaged in contraceptive decisions, including trying different methods like condoms and periodic abstinence which required their consent and active participation.

Situating SE and consequences in context

Inductively moving from participant narratives, we embedded the described physical symptoms and social meanings of SE into proximal factors related to contraception in both research settings, and into specific life circumstances of participants at the individual, couple and household levels.

Sources of knowledge on side effects

As found in other contexts, knowledge exchange among different actors in social networks in Burundi and South Kivu was central to gaining information/understanding and forming opinions on contraceptive SE (Diamond-Smith et al., 2012; Kibira et al., 2015). Traditionally, older women including traditional birth attendants were central authorities on reproduction (birth spacing, birth, child rearing). With the introduction of contraceptive technologies, older women's authority is increasingly challenged in this domain. In both contexts a few older individuals narrated rumors related to contraceptives' introduction including attempts to sterilize rural populations. These stories however emerged during isolated, informal conversations, not in formal interviews with participants, even when prompted.

Contemporary users and potential users of contraception drew on multiple actors' knowledge, experiences and opinions including neighbors, family members, health providers, CHWs and religious leaders. Women and men often looked to different actors for specific types of information and weighted knowledge accordingly.

For example, when deciding if she should use contraception this young, educated but unemployed participant solicited information from both older women in her community and health providers. While the former warned her against SE, she eventually followed the providers' recommendation to space her births using the injection:

> P: After giving birth, I wanted to avoid a pregnancy, so I went to the health facility, and the doctor told me how to use these [hormonal] birth spacing methods. And then I asked old mothers in the community which methods are preferable, and whether there are side effects. These mothers said that you can have side effects, and would need treatment at the hospital that costs a lot of money. [...]They told me you may prefer the injection, but because you are still young you may fall ill, and you don't have the money to be treated. I went back to the facility to ask the doctors which method should I choose? *(Woman aged 24, 1 child, Burundi)*

While older women and health providers' perspectives contributed significantly to women's knowledge of SE, experiences of current or former contraceptive users in the community were a central source of information for potential users:

> Every person who uses these methods becomes very weak during menstruation. And they say that a vigilant person wouldn't use the contraceptive injection. There are others for whom contraception is a salvation if they use it. Their periods may come three times a month but there are women who prefer…to suffer through these heavy periods instead of continuing to give birth. But there are many women who oppose the injection, saying that it's better to continue to give birth instead of using this injection, to continue to give birth until the day when God alone says that I can stop giving birth. Many women are opposed to this injection and we non-users are scared of them. It isn't possible to want to use what your friend refused to use. (*Woman aged 35, 5 children, DRC*)

This was also observed by Rutenberg and Watkins (1997:290) in Kenya where women sought to supplement information from health workers with the knowledge of women 'whose bodies and circumstances are similar to their own'.

Men's knowledge and perceptions of SE also contributed to women's knowledge and, especially given unequal gendered power dynamics of most relationships in our research settings, influenced contraceptive practices. This Congolese woman's partner illustrates:

> People talk a lot about family planning…I ask others for information about what one can do if you give birth to children very close together. My husband told me, 'The

> wife of a friend used the injection before. She refused to use the method that offers five years of protection because it has serious side effects. Instead she used the injection that gives three months of protection. What are we going to do? Can't you forget about using contraception so that you don't risk dying tomorrow because of these methods that give complications to other women?' I see that my husband prefers that we can continue to have children [over me using modern contraception] (*Woman aged 24, 2 children, DRC*)

Another strong authority and influence on SE knowledge and, subsequently, FP practices was religion. While the platforms of Protestant churches vary widely, the Catholic Church recently aligned with both governments' fertility reduction strategies in the form of 'responsible father- or motherhood' in limiting births based on couples' financial means only using, however, periodic abstinence. During fieldwork, the Catholic Church in both settings responded forcefully in opposition to initiatives promoting modern contraception. While religious leaders we interviewed did not specifically link contraceptive SE to moral claims against modern contraception, they did cite bodily SE as a general reason not to use contraception.

> P: So here, in church, in preparing young people who are about to marry, we give information about responsible fatherhood. We also talk about the negative effects of these methods, because I think that in health centers they don't talk about them…
> I: What negative effects do you tell them about?
> P: There are people who are attacked by cancer, and there are also effects on brain cells, I think, yes... *(Burundi, Catholic Abbot, aged 45)*

One female Protestant participant directly linked SE to the 'sinful nature' of modern contraception wondering if the SE she experienced from the implant were because 'God was upset…unhappy…which is why there were complications [SE]' (*aged 33, 8 children, DRC*).

Finally, health staff, including CHWs, are strong actors in co-constructing knowledge around SE. Health providers acknowledged and normalized contraceptive SE, many accepting 'method shopping' as a typical part of contraceptive use; other providers felt powerless to counsel on SE due to their unpredictability. Users reported that in clinical interactions

provider attitudes towards experienced SE differed greatly, from dismissive to supportive. DHS data show that 35.3% and 57.1% of Burundian (2010) and Congolese (2014) contraceptive users respectively received information about SE when offered contraceptive methods. Participants in our study did not necessarily perceive health providers as incompetent regarding SE, but rather that their capacity to anticipate or influence the occurrence of SE was limited due to the unpredictable effects of these modern methods on the body:

> I: Can you explain why health providers give out methods that are bad?
> P: No, it's because of a person's body. It can happen that you do not have side effects, and others have them. I can't say that it's the doctors who give out bad medicine. (*Woman aged 18, 1 child, Burundi)*

One contraceptive user indicated that SE information given by her health provider positively affected her continued use, despite experiencing about 5 months of amenorrhea using the injection:

> I: When you saw that you weren't menstruating, did you go to the health center where they gave you the injection to ask why?
> P: I asked the person who injected me, I ran into him on the road…he said it was not a problem. That I could simply go to the health center when they told me [after three months] and I could have another injection without a problem. (*Woman aged 32, 9 children, DRC*)

In Burundi, CHWs explained in a FGD that they felt ill-equipped to provide knowledgeable answers to questions about contraceptive SE stories in the community, thereby diminishing their credibility. In fact, providers' FP guidelines in both settings thoroughly describe counseling requirements based on users' needs, including potential SE for each method and treatments. Community FP promotional materials however, such as image boxes and leaflets used by CHWs and peer educators, describe the different methods without mentioning or providing information on potential SE.

Structural barriers to addressing SE

In both research settings, a myriad of structural barriers to accessing quality services limits the mitigation and management of contraceptive SE. Cost of accessing services, stock outs and some provider's limited training inhibit 'method shopping' as consumers, especially if SE occur, are not offered a consistent choice and range of methods for individualized, comprehensive follow up care. FP information and counseling is mostly offered through group sessions during antenatal care and childhood vaccination, lacking confidentiality and individualization. Participants described counseling as a mere presentation of available methods focused on administration modes: 'they tell you what there is, and you choose which one you want' (*Woman aged 18, 1 child, Burundi*).

In some cases, health staff are not sufficiently trained, equipped or willing to provide FP counseling or services, including removal, of all methods. For example in one South Kivu health district, outside of the large reference hospital only one health provider was fully trained in and equipped for implant insertion and removal. In one setting in Burundi, fear of SE was directly linked to the fear of being referred to the hospital for treatment as it was run by Catholics; stories of rough treatment and judgment, even denial of service for using contraception, circulated throughout the community.

The PBF scheme incentivized FP provision with variations between products: incentives were up to five times higher in both settings for long-lasting, inserted methods (implant or IUD) compared to methods over which the user has more control (pill or injection) and distribution of condoms or information on periodic abstinence was not incentivized nor was any compensation attached to the removal of inserted methods, while continued use of methods was incentivized. Service fees for treatment of SE varied from facility to facility in both settings however in Burundi, some providers reported that despite treatment of SE not being included in the PBF scheme, they provided free care to encourage continued contraceptive use while others charged fees. Recent studies highlight the detrimental effects of PBF in LMICs, including perverse incentives encouraging the delivery of unnecessary services and emphasizing quantity over quality (Paul et al., 2018). During field work we did not actively explore PBF-induced malpractice as this was assessed politically risky; we did collect information that shows lack of FP quality counseling, which may be

linked to poor training, lack of time, and/or perverse effect of incentives. The latter interpretation was made by the Burundian Catholic Abbot quoted above arguing that no information about SE was provided so as not to discourage uptake:

> At the health center, they promote contraceptive products because they need to hand them out. And I know it very well, providers write in their registrars the number of people using these methods, and they receive incentives, yes! The effect of these incentives, you understand very well that in a poor country, as a provider you will promote and try to hand out as many products as possible so that you can have a lot of money!

This perception was also found in the Burundian community, as a young woman living in the catchment area of the Abbot reported that 'health providers don't talk about SE, because if they did, no one would go to the facility to get contraceptives' (*Burundi, 18 years old, 1 child*).

Some women who experienced SE sought medical care or a change of method. Others however did not report complications either stopping the method or continuing despite SE. Tolerance for SE was contingent on specific circumstances at the moment they were experienced, as developed in the following section.

Navigation of side effects contingent on life circumstances

Our data suggests that in the balance between safety and efficacy of FP methods, tolerance of SE was contingent on circumstances that drove participants' wishes to avoid pregnancy. Yet, this tolerance could be overthrown by changing circumstances or moral values, as illustrated by the narrative of this Burundian school teacher who had his wife use injections to prevent pregnancy while she finished secondary school. The teacher reported his wife was unhappy because of SE – weight gain and loss of libido – and they feared long-term effects on her fertility. These experienced and feared SE were however temporarily tolerated given their life circumstances:

> We use injections because I want my wife to finish her studies. Seeing how in church we are taught that using these methods is a sin, I see that I will abandon them, because these methods have side effects. For example when [a woman] stops using these

> methods she can have complications or not have other children. So that's why I'm scared of these methods. [...] We used it because we didn't have any other choice. But when she finishes school, we will change to natural methods. And if side effects appear from these injections, we will accept them, because we don't have any other choice. *(Man aged 28, 1 child, Burundi)*

Interpretations of morality can also sway tolerance for SE. This 33-year-old Congolese mother of eight children used an implant with her husband's support to limit her births so they could 'take care of those children they already had'. The couple tolerated irregular bleeding for 1.5 years before they were told at their Protestant church that contraceptive users would be condemned. The couple simultaneously found the SE becoming intolerable and related SE to religious condemnation, so decided to remove the implant.

Tolerance for SE was also contingent on relationships' configuration. For instance, irregular or excessive bleeding may be tolerable for women in stable relationships with supportive partners who shared a common birth spacing/limitation plan, yet may be less tolerable for women in unstable relationships as bleeding may cause further conflict with their partner. Unstable relationships could also, however, make the balance between the consequences of pregnancy and risking contraceptive SE lean in the other direction. This 32 year old Congolese woman illustrates: her alcoholic husband gave little support for the eleven children in the household – some of whom were from his previous marriage – so she decided to use injections to avoid another pregnancy. She subsequently experienced heavy bleeding, requiring hospitalization, and stopped receiving injections. After the birth of another child, she started contraceptive pills without her husband's knowledge:

> He was not going to build me a house or feed my child. It was then that I realized I had to start using contraceptives. I went on my own [to the health center]...As [my husband]…does absolutely nothing [for the family] I thought it was a good idea to use contraception [without his knowledge], knowing that he would not agree.

Several women contraceptive users avoided pregnancy because their partners no longer upheld their end of the 'social contract' to provide materially for the family; the consequences of subsequent pregnancy were greater under these circumstances than the risks of contraceptive use (Dumbaugh et al., 2018). Perception of and (in)tolerance for SE

are therefore reflections of intersecting factors which ultimately affect the desirability – or necessity – of contraceptive use at different times in an individual's or couple's reproductive lives.

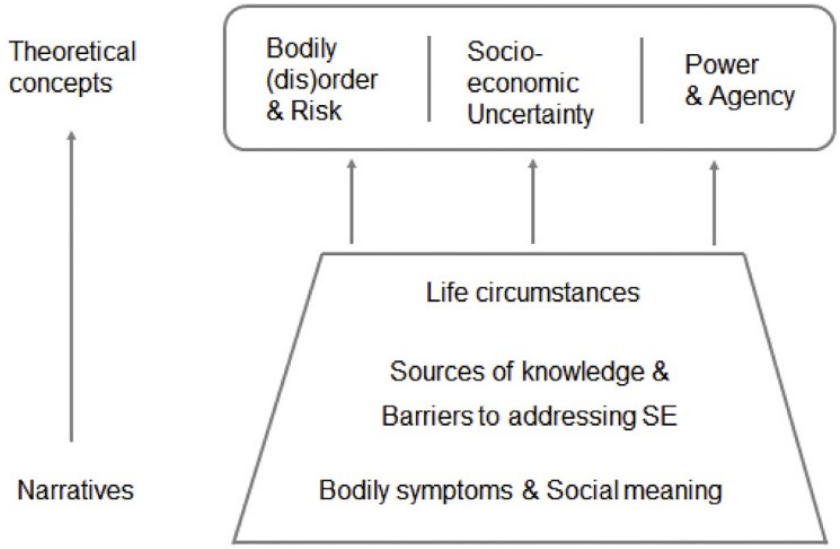
Discussion

In this paper, we located feared and experienced SE of modern contraception as more than merely treatable physical symptoms or dismissible misconceptions and rumors. Using Krieger's ecosocial theory, we contextualize the empirical realities of SE demonstrating why these symptoms on bodies – at once biological organisms and social beings – are for many feared and intolerable in specific ecological and social contexts. To understand patterns of inequalities in health, which ultimately effect health behavior and decision making, Krieger suggests seeking clues in,

> …the ways of living afforded by current and changing societal arrangements of power, property, and the production and reproduction of both social and biological life, involving people, other species, and the biophysical world in which we live (2011:213).

Ecosocial theory unearths causal connections between social and biological processes resulting in *embodiment*. Land overexploitation combined with climate disturbances heavily impact agriculture-reliant households. Malnutrition, increased labor demands to compensate for lower land productivity and resultant poorer health all negatively affect women's fertility as well as the health of their children and families for whom they are often the primary caregivers. Further, in our research SE emerged as bodily events with potential financial and social consequences, which, in these specific contexts were not tolerable for many individuals and couples. Contingent on ecosocial context and life circumstances, the risk of SE occurrence often outweighed the risk of a pregnancy. In context, bleeding is more than 'just' bleeding. By framing SE within participants' 'ways of living', the ecosocial lens synthesizes lived experiences of SE. This allows a contextual understanding of SE as embodied events, forming a third level of theoretical categories (*Figure 3*): bodily (dis)order and risk; uncertainty; and power and agency.

Figure 3 : Framing contraceptive side effects from narratives to theory



If achieving birth spacing or limitation through modern contraception correlates with (unpredictable) SE occurrence and related consequences, individuals and couples need to assess risks that are defined by and 'cannot be isolated from [their] social, cultural, historic' (Lupton, 1999: 2) and ecological contexts. When blood flow is intrinsically linked to fertility, health and, subsequently, social belonging, and infertility incites disorder and dire social consequences especially for women , decisions to modify one's bodily reproductive ability are deeply embedded in the complex ecosocial realities marked by and contingent upon multiple uncertainties (Dumbaugh et al., 2018). Women and men in Burundi and South Kivu operate in a 'routinized state of uncertainty' (Johnson-Hanks, 2005: 376) defined by livelihoods insecurity and informal arrangements at the household level, broader realities of ongoing political conflict, economic instability, land infertility and scarcity, and barriers to accessing health care. Steering reproductive navigation, including weighing risks of unwanted pregnancy or risks of SE (in pharmaceutical terms: weighing efficacy against methods' safety), is contingent on a multitude of cumulative, socially-embedded, dynamic and uncertain factors that are unequally distributed amongst the population. In these uncertain contexts, fear of SE may reflect the acceptable risk of pregnancy for some women and men, while tolerance for SE may reflect a trade-off to avoid an unwanted pregnancy for others, all contingent on their embodied circumstances.

Power dynamics significantly frame women's agency and therefore reproductive choices in these settings. A multiplicity of actors is pushing for decreased fertility: the State through policies and media heavily supported by international agendas and aid; health providers through incentivized FP services; and the Church through the concept of responsible parenthood. Yet, despite changing norms and values (access to education, acceptability of cohabiting, broadening authorities of knowledge) gendered-power dynamics continue to strongly define marital and community relationships, maintaining considerable pressure on rural women's reproductive and productive capacity.

In such contexts of multilevel and fluid uncertainty and power dynamics, women's decisions *not* to use contraception because of feared, unpredictable bodily changes are an embodied expression of agency: a decision to maintain control over their *embodied* life circumstances. In this way, 'fear of SE' communicates legitimate concerns intertwining bodily symptoms with the core of social belonging, livelihoods and broader contextual ecosocial circumstances.

Policy and program implications

Our findings have broader implications in SRH and FP arenas especially in the context of rights-based SRH promotion, support and service delivery that aim to go beyond rhetoric (Hartmann, 2016; Gautier, 2002; Hendrixson, 2018). We highlight below key points for future policy orientation:

- *Consider individual suitability and risks, not only efficacy, of contraception in FP promotion and distribution:* by prioritizing promotion of long-acting modern contraceptives for their efficacy, the health system fails to legitimize alternative methods (barrier, natural) that may be preferred by or safer for women in certain contexts for their absent/lower SE risk. FP services should integrate 'cultural factors that impact contraceptive risk assessment' (Geampana, 2016: 9) for informed, supportive and safe use.

- *Understand, legitimize and integrate local representations of health, fertility and pregnancy*: understanding and integrating local representations, such as the central importance of blood flow, and sources of knowledge, like older women, that women and men use to frame experienced and feared SE and contraceptive use, especially

from an ecosocial perspective, into FP promotion and counseling could ‘reduce the social distance’ between potential users/their social networks and providers (Aubel, 2012; Rutenberg and Watkins, 1997: 303) thereby expanding informed contraceptive choice and facilitating individuals’ and couples’ realization of fertility preferences.

- *Frame contraceptive use and method choice as a process*: personalized SE counseling and adequate follow-up care should be integrated from the beginning of provider interactions with potential users, including a variety of methods including non-hormonal; and follow-up care in the case of experienced SE should be accessible (i.e. removal of user fees for SE treatment).

- *Male involvement for gender transformation*: given the interplay between ‘fears of SE’ and gendered power dynamics, male involvement in reproduction decision making may improve FP but should be embedded in broader gender transformative strategies. Male involvement interventions should ensure that women are not inadvertently disempowered by male inclusion (Barker et al., 2010) or that male involvement is not interpreted as simply soliciting men’s ‘approval’ for women’s contraceptive use thereby reinforcing the feminization of contraception (Kimport, 2018).

- *Rethink supply-side FP strategies:* incentivizing health providers to deliver contraceptives (PBF) and internationally set coverage targets (mCPR) may motivate providers to only promote prioritized methods and discourage discussions of alternative FP options based on users’ contextualized situation and needs. This is particularly problematic in poor contexts where large proportions of providers’ income emanate from incentives and user fees (Magrath and Nichter, 2012; Paul et al., 2018).

- *Advocate for improved contraceptive methods:* most current contraceptive options are not both efficacious and SE-free; SE are normalized as ‘the price (women) pay’ for preventing pregnancy. Global actors should prioritize development of contraception that simultaneously responds to the reproductive rights, needs and health of users, both female and male, including individual’s control over the method (Hardon, 2006).

Conclusion

In this paper, we situated stories circulating about contraceptive SE in women's and men's lived realities, revealing them as embodied expressions of contingency, uncertainty and gendered inequalities prevailing in rural ecosocial contexts of Burundi and eastern DRC. Decades of investment in contraceptive programs focused primarily on service delivery and modern contraceptive uptake to reduce the unmet need for FP, largely dismissing/de-contextualizing concerns about SE, have yielded disappointing results across most of SSA. As observed in Burundi and South Kivu, FP is an arena of political and ideological debate, where the objectives of governments, international agencies and religion confront social norms and people's strategies and agency in securing livelihoods (including through fertility). In this arena, SE become a strategic object – muted by some and widely discussed by others. If the ultimate aim is to facilitate the realization of SRH and rights, measures of success should be shifted from increased modern contraceptive use 'at all costs' – blurring the lines between political strategies of fertility reduction and rights-based approaches – to the ability of individuals to realize their fertility preferences in their lived embodied realities through safe, informed choices. While quality care and methods choice are essential components of SRH programs, the understanding of SRH and rights should expand beyond international FP boardrooms and clinic walls to include consideration of embodied life circumstances across development domains. Understanding reproduction, contraception and their contextual risks and consequences from an ecosocial perspective is a first step in moving global reproductive health and justice movements forward.

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Supplementary data

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11. OVERALL DISCUSSION AND CONCLUSIONS

The main objective of this thesis was to explore reproductive preferences, strategies, practices and experiences in a country characterised by a socio-political fragility, a very poor economic situation that is heavily reliant on the agricultural sector, a high population density and subsequent land pressure and conflicts, strong gender inequalities, and a low adherence to family planning methods. We aimed at understanding people's *situated* perceptions, practices and experiences of family planning in rural Burundi, using quantitative and qualitative approaches.

Our research aligns with the work of Bledsoe (1998), Johnsons-Hanks (2005), Cornwall (2007) and van der Sijpt (2014), suggesting that the reproductive decision-making process is not universalist and individualist (autonomous decision and rational choices) as discursively promoted since the 1994 ICPD, but rather is contingent on complex social, economic and political dynamics. As revealed through our narratives, rural women and men have to navigate complex dynamics in context, from structure (health system, education access, marriage access, FP discourse, changing social norms including gender power dynamics) to agency (social position, influence of husband, kin, education level, empowerment) and back.

A hegemonic discourse on FP for development and peace

In Paper 1: Reproductive Governance and Paper 3: Reproductive Life Course, we described how the notion of 'population' has been a governance issue at stake that was managed through social organisation around the family at different levels in different periods. Thibon (1988) describes how in the precolonial period social organisation was controlled by the family patriarch, through the structural arrangement into *rugos*, the large but closed patriarchal household. By deciding when (and with whom) children married, the later were kept until their twenties as domestic dependents, ensuring agricultural activities. Children represented production agents and family security (Manirakiza, 2008). With fields close by the *rugo,* women were able to breastfeed for long periods, thus ensuring birth spacing through the lactational amenorrhea method of over two years. Thibon suggests that these relatively late marriages and birth spacing methods allowed a regulation of fertility, which was further lowered by the high mortality and seasonal famines that caused reduced

fertility. Burundi was colonised first by Germany (1890-1919) and then Belgium (1919-1962), as well as by Christian missionaries. Under the Belgian exploitation regime, a reproductive governance was established through the 'domestic training programmes' that taught Burundian women the values of nuclear family, housekeeping, domestic labour, child rearing and early weaning (Hunt, 1990). The colony needed labour, and women were incited to serve the interests of the occupiers through their reproductive bodies. That injunction to be fertile continued after independence in 1962, as the government engaged in the development of taxed agricultural cooperatives that required labour. Between 1950 and 1975 the population doubled, triggering land issues and the rise of the 'overpopulation' discourse.

We used the concept of *governmentality* from Foucault to theorise how the reproductive governance was shifted again in the 1980's, as a global discourse on 'overpopulation' and economic development was constructed in the North (Paper 1: Reproductive Governance). We retraced how FP was introduced in Burundi in the 1980's as a strategy to control population growth, resonating with the global development discourse at the time. After *La Crise*, FP policies and strategies were multiplied, supported by external support. The discourse had rhetorically changed since the 1994 ICPD Cairo conference, whereby FP services were relabelled as 'sexual and reproductive health and rights' aiming to respond to individual and couples' preferences and needs, based on autonomous and informed decision. The hegemonic discourse in Burundi nevertheless remained grounded in the 'population problem' that is a barrier to economic growth and a cause of socio-political instability and land conflicts.

We have shown how the hegemonic discourse was constructed in national policies, strategies and international initiatives like FP2020, and how it was relayed in the population through giant billboards, radio talk shows and government agents. The message is: 'Have the number of children you have the means to raise'. Public healthcare services promote modern contraceptives – hormonal injections mostly, but also implants, IUDs, pills – via its FP services, and health providers receive incentives through the performance-based financing scheme for their administration into women's bodies. Modern contraception is promoted as the technical solution to the identified population-land problem. Religious institutions, who are generally not aligned with the politics of Nkurunziza's government,

have aligned with the message of the 'population problem', and the causal link between high fertility and poor economic development. The Catholic Church however only agrees to promote natural methods of FP, and thus the efforts are promoted in both public health facilities distributing incentivised modern contraceptives and faith-based ones teaching standard-days methods.

Conducting in-depth interviews with women and other members of the community, we explored how these discourses were received and how they framed reproductive navigation. We found that preferences aligned with the discourse, through a reported aspiration for reduced fertility, but they did not translate into uptake of modern contraception. Choices and practices were modulated by a web of social and material factors, including local power dynamics, showing a more complex reproductive navigation. Despite the relatively low demand for modern contraception, policies and programmes are continuously deployed and funded by external donors, strategically adapting approaches to reduce 'barriers to uptake', yet not addressing the social and material factors and power dynamics influencing women and couple's choices and practices. The empirical research enabled discussing how the political discourse on FP in Burundi frames the socioeconomic and land issues as a technical problem (population density), for which it promotes a technical, medicalised solution (controlled fertility using modern contraceptives). We have argued that the focus on FP as a depoliticised, technocratic and medical solution to the mentioned issues distracts from their political causes and hence, solutions (Ferguson, 1994; Li, 2007), leaving them unexamined and unaddressed.

In substance, by aligning with FP development frameworks and initiatives such as FP2020, the reproductive governance in Burundi follows a technocratisation process, by which the socioeconomic and land issues are presented as a set of technical problems requiring technical expertise and solutions, rather than as a series of complex political problems that require examining and addressing global and local power dynamics and systemic solutions (Ferguson, 1994; Li, 2007; Potvin, 2018). Technocratisation thus enables a depoliticisation of the serious, yet sensitive and conflict-prone issues of failed management of land tenure, economic hardship and gender inequality in access to land and livelihoods that, we argue, partly explain the relatively low demand for FP. Such global and local discourse on FP eludes

evidence that have shown that 'improvements in living standards and the position of women, via more equitable social and economic development, are the best way to motivate people to want fewer children' (Hartmann, 2016: xxx). However, it enables maintaining particular political systems and power structures in place.

We further discussed how technocratisation and medicalisation of FP are not fully enacted by actors, including health providers, religious leaders and potential users, hinting at resistances to the process. By embedding its FP discourse in the social field - instead of the medical field – the Catholic Church offered a solution closer to the concerns of populations. In post-conflict Burundi where disruptions of family structures and social fabric affect many households (Uvin, 2009), we found that the approach and services offered by the Church were appealing to rural women and couples, as they served the primary purpose of mediating social disorder and uncertainty. They are however limited in access, as we have described. Some health providers did not fully endorse the medicalisation discourse because of the discrepancy they observed in their clinical work between women's bodily experiences (side effects or irregular cycles) and the medical discourse that dismissed these issues. This discrepancy has been described as a *social distance* by Richey who observed the same phenomenon in Tanzania: 'FP service providers are marked or identified at the clinic level by their knowledge of modern methods. These technologies are designed for bodies that are the same, but when they are implemented in the real-world context, bodies are different. Service providers are then in the difficult position of negotiating between the needs of the different bodies and the expectations of the family planning apparatus' (2004: 68).

Socioeconomic situation, including pervasive uncertainty, influences FP preferences

Narratives of rural participants allowed understanding how the socioeconomic situations of individuals and couples influenced reproductive preferences and practices. Our research revealed that land scarcity and poor yield was a serious concern of individuals and households in rural Burundi. Just about all participants liaised their reproductive preferences to their land situation, explaining that they wished to scale their family size to their productivity capacity, which as characterised in the agricultural sector and hampered by climate change, is uncertain and variable. Contrary to neighbouring DRC (Dumbaugh et al., 2018) but similar to Rwanda (Farmer et al., 2015), a shift seems to be taking place in Burundi whereby children are no longer considered as an asset, but rather as a liability.

Uncertainty about the future renders the notion of (family) *planning* quasi impossible. Most participants recited the discourse 'I will have the number of children we have the means to raise'. As these means responded to the uncertain land yield, as well as to the political and economic situation of the country (for cash crops revenues, or supplementary jobs for example), planning the number of children was difficult. The topic of political instability was purposively never discussed in interviews, but as the topic was daily discussed on the radio, or in the community, we hypothesise that the political failures in bringing about institutional changes and measures for better living conditions, such as control over inflation, largely contributed to the feeling of uncertainty for rural households.

Changing social norms and scripts around family organisation

We have described how rural areas are particularly impacted by the undergoing deep structural changes that affect social structures, including family organisation. Highly dependent on land ownership and exploitation, the family is a central unity of production, consumption and reproduction, as well as of social belonging and organisation in rural Burundi. In the post-war era, households continue to experience inner-and outer-conflicts mostly triggered by land issues, and the general interpersonal trust is low (Uvin, 2009; Kohlhagen, 2012; Falisse et al., 2018). Social norms changes and shifts have been described through the cases of young people, mostly focusing on men and their involvement in the conflict, their lack of economic prospects in a context of land inaccessibility, or their incapacity to find the means to marry (Berckmoes and White, 2014; Berckmoes, 2015; Sommers and Uvin, 2011; Uvin, 2009). Courtois showed the social anomie illustrated by female heads of households that face serious hardship and that are a token of the incapacity of the Burundian society to reproduce the sociocultural system (2016). Vervisch et al described households livelihoods adaptations in contexts of reduced kinship solidarity (2013). This research adds to the body of evidence by observing these changes focusing on reproductive practices in Burundi, allowing shedding light into the gender and generational dynamic shifts at the family, household and community levels.

In Paper 3: Reproductive Life Course, we described how young women and men navigate their transition from 'living at home' as children to 'living with a partner' as adults with great uncertainty, as the possibilities to follow the normative path and to socially reproduce the

expected roles and actions are hindered by the economic situation. Scholars have described how in the past when an unmarried woman became pregnant, her family and her community would put pressure on the man's family to ensure that honour is saved through marriage (Manirakiza, 2008; Hakizimana, 2002). Today, because people marry at later ages and because new practice is that pregnancy leads to marriage, and not the inverse, the phenomenon of single mothers living 'at home' with their biological parents is frequent. Not only has this phenomenon become acceptable in the community, as also found by Uvin (2009), but it also hints towards a disengagement of older generations from social support to young people and new couples, from their role as guardians of normative social reproduction, also reported by Berckmoes (2015). As we found in our data, women tend to suffer from these changes, as living a life of single mother equates living in very poor livelihoods and stigmatised conditions.

We also described how married women navigated their reproductive life-course contingent on their social position within the household, and on their main resource: their productive and reproductive body. We described how land pressure forced families to organise spatially differently, with new couples establishing on land distant to the main patriarchal household, the *rugo*. We found that restructuration and relocation of families induce a shift in generational power dynamics, with young couples having more bargaining power and less control from kin on decisions such as family size, but also less support in case of hardship or conflict. Decisions around FP are taken within couples, thus potentially leaving more bargaining power to women, with again the other consequence of having less support from kin in case of issue. Manirakiza (2008) and Hakizimana (2002) described that decisions on family size and organisation was male-driven in the past. It is unclear if control of fertility was ensured by men through practices of birth control methods that are male-driven such as withdrawal, as it was the case in the European context until modern methods reversed control and responsability (Thomé, 2016), or if the control was symbolic. Our study has shown that not all women discuss reproductive preferences and desires with their partners, but some do, and sometimes strategically to gain approval for the utilisation of modern or natural methods.

One norm that has not changed, through customary nor legal law, is the inheritance law allowing women to access land. Despite promises, lobbying by feminists and a started

political process, the Land Law passing process was stopped in 2011 by the President who argued that such reform would rekindle conflicts. Thus, as we have explored through the narratives of three married women in Paper 3, the bargaining power of women remains constrained by their lack of access to land and to financial resources. This position keeps them subordinate to their fathers, husbands or kin to ensure livelihoods and security. In this frame, taking reproductive responsibility can prove risky for women, contingent on their social position within the household and wider kin. We showed how most women navigate in a context where their own productive and reproductive bodies are their most important resource, providing them access to land. For some women, maintaining their bodily resource led to utilisation of methods of family planning, to avoid health-impacting unspaced pregnancies for example. For others, it meant avoiding utilising modern methods of contraception due to their unpredictable side effects that could affect their productive and reproductive body.

We found that religious institutions that promote family planning, encompassing the topics of social organisation and couple cohesion, appeared more appealing to participants. The Catholic Church promotes natural methods of fertility control that may be less effective, but that are not risky for the body. In addition, because they require collaboration and communication between spouses, they support restoring order in the family institution. Unfortunately however, access to natural methods teachings and contingent social protection and cohesion benefits are limited to religiously married women and men. All newly formed couples that cohabit without formal religious marriage are excluded.

Gender dynamics and bargaining power

Our finding is that despite these described fragility and poverty induced social changes, asymmetries in bargaining power between men and women have not (yet) fostered gender dynamics changes (Ensminger and Knight, 1997), and acceptable new repertoires for reproductive practices are not yet existent (Bledsoe et al., 1998). In fact, women mostly suffer from these changes, in current circumstances, as Courtois has shown through the case of female-headed households (2016). Gender inequalities in rights, roles and expectations remain pervasive. As shown in Paper 2: Adolescent Pregnancy, the survey conducted among adolescents revealed that these gender inequalities were integrated by

young men and women. Surveyed participants responded in large proportions that with regards to reproductive mishaps (being pregnant outside of marriage), women bore the responsibility and should endorse the shame, and only half the participants (male and female) endorsed the statement that men should support children born outside of marriage.

As discussed in Paper 3: Reproductive Life Course, changes in household organisation foster both potential increasing and decreasing bargaining power for women. Access to education for girls could constitute a hope for change in gendered roles in the labour sphere. For now, we highlighted how the bargaining power of women remains constrained by their lack of access to land and to financial resources. This position keeps them subordinate to their fathers, husbands or kin to ensure livelihoods and security. In this frame, taking reproductive responsibility can prove risky for women, contingent on their social position within the household and wider kin.

Family planning's standardised reproductive body vs local bodily realities

This thesis touched upon the topic of the discrepancy between the standardised medical body and the lived local body, as discussed in Paper 4: The Body is Difficult. Narratives on embodied experiences we analysed were often assessed by the participants against modern medical instructions or definitions of how a body *should be*. Prerequisites of 'being regular' for natural methods, or the absence of bodily-specific instructions about technological methods that in fact produce bodily-varying unpredictable side-effects rely on a definition of the body as a standardised object. With the emergence of modern medicine, a standardised *normal body* was constructed as a universal entity, and the 'internal bodily truth' was sought in the sense of an inner-biological truth – the true materiality of bodies – isolated from external influence (Lock and Nguyen, 2018a). Using contraceptives involves ingesting, injecting or inserting an outer product – *materia medica* – into bodies, creating an unknown about the bodily capacity to reacting to it. To control fertility, women had to delegate their control to a drug (hormonal methods) and to medical staff (for prescription and administration), at the risk of having their bodies modified by the *materia medica* developed in the global North for the standardised normal body (Whyte et al., 2002). Mostly due to a lack of capacity, health providers did not perform the expected reconciliation between the

standardised biomedical body and the individual lived body. FP services are integrated into other services, mostly vaccination, and are provided to groups of mothers who have just delivered (not individually). Health facilities are understaffed, and often only the head nurse has been trained on FP products and counselling. Thus, when women face issues with contraceptives, most often the interpretation comes from women themselves, leading to an embodied response of 'it depends on the body'. Response from the health authorities was a denial of side effects, often labelled as an irrational fear. In other words, as Lock and Nguyen asserted, 'biological facts are 'true', at least to the extent that they offer a reliable and agreed upon way of knowing, but they are also technophenomena that constitute a partial view of reality' (2018a: 332). Biomedical knowledge, they add, dictates how questions are asked or information is passed in FP services for instance, how bodily experiences are interpreted and by whom.

The *material body* we described through the narratives is in fact the product of embodiment situated in a local biology. The body has a history, is a cultural phenomenon and a biological entity at the same time, and is an experiencing agent over the life course (Csordas, 1990: 1). As an embodied experience, reproduction is at the same time a biological phenomenon (pregnancy and delivery, or inversely fertility control for pregnancy avoidance) and a social phenomenon (attaining adulthood, raising the next generation, contributing to the patrilineal system, gaining social status). *Corporeality* and *sociality* in reproductive navigation interplay constantly in located everyday life, and reproductive decisions and practices should be understood as *embodied actions.* Our thesis brings further empirical evidence to the work of Mol and Law (Mol and Law, 2004) on the 'lived body' situated at the interplay between embodied action and enacted bodies. Rural women's body was at the same time an objectified medical body (body they *are* with regards to FP services), a subjective lived body (body they *have* and that reacts to FP methods in an unpredictable way, and to the ecosocial environment), and a body that is enacted in context (body they *do*, combining gendered expected roles and actions with regards to reproduction, production work, sexuality).

Understanding the *lived bodies* of individuals, their embodied actions (such as taking up modern contraceptives) and enacted bodies (choosing to carry to pregnancy or to avoid

one) situated in the ecosocial environment (malnutrition, gender-power dynamics, etc.) is essential to offer quality FP services.

Ecosocial dynamic system

Our comparative analysis of the phenomenon of 'fear of contraceptives side effects' in Burundi and DRC allowed contextualising the empirical realities of why enacting on bodies – at once biological organisms and social beings – are for many feared and intolerable in specific ecological and social contexts. We used ecosocial theory developed by Nany Krieger to understand the connections between social and biological processes resulting in *embodiment*. Land overexploitation combined with climate disturbances heavily impact agriculture-reliant households. Malnutrition, increased labour demands to compensate for lower land productivity and resultant poorer health all negatively affect women's fertility as well as the health of their children and families for whom they are often the primary caregivers. Further, in our research side effects emerged as bodily events with potential financial and social consequences, which, in these specific contexts were not tolerable for many individuals and couples. Contingent on ecosocial context and life circumstances, the risk of side effect occurrence often outweighed the risk of a pregnancy. In context, bleeding was more than 'just' bleeding. By framing reproductive events such as side effects within participants' 'ways of living', the ecosocial lens synthesised bodily lived experiences in their social, cultural, historic context. When blood flow is intrinsically linked to fertility, health and, subsequently, social belonging, and infertility incites disorder and dire social consequences especially for women, decisions to modify one's bodily reproductive ability are deeply embedded in the complex ecosocial realities marked by and contingent upon multiple uncertainties (Dumbaugh et al., 2018). Steering reproductive navigation, including weighing risks of unwanted pregnancy or risks of side effects (in pharmaceutical terms: weighing efficacy against methods' safety), is contingent on a multitude of cumulative, socially-embedded, dynamic and uncertain factors that are unequally distributed in the population, as discussed in Paper 5: Contraceptive Side Effects.

Body politics in social disorder

Throughout this dissertation, we have shown how the hegemonic discourse is not very effective in increasing uptake of modern contraceptives. The reproductive *biopower* of the

1990s and today has, to this point, partially failed in inducing *subjectivation* by which individuals embody and enact the valued responsible and disciplined behaviour, considering the low prevalence of utilisation of modern contraception. What *biopower* has however succeeded in doing, is inducing *subjectivation* on what 'normal reproduction patterns' are and how 'normal bodies' are. Narratives of reproductive events have shown how rural Burundians do associate their desired family size to their livelihoods capacity, mostly based on land ownership and yield. Further, the self-control over one's body, for birth spacing for instance, is not only socially valued but perceived as a 'natural capacity' that guarantees social order.

The perception of too fertile, uncontrolled, undocile 'failed body' that brings family and social disorder is a product of body politics. Scheper-Hugues and Lock developed the concept of body politics (in relation to the individual and the social body), suggesting that 'cultures are disciplines that provide codes and social scripts for the domestication of the individual body in conformity to the needs of the social and political order' (1987: 26). Body politics are shaped by the demographic governmentality led by Nkurunziza's regime and international support such as FP2020 initiatives; they are shaped by the medical construction of standardised reproductive bodies; they are relayed by health services and staff that work with conceptions of standardised normal bodies; and in combination they construct social scripts of how reproductive bodies *should be* and *should behave*. The script suggest that reproductive bodies should be able to naturally space births, and if not, technological modern contraception can correct failed bodies to ensure disciplined and morally valued birth spacing and limiting. Reproductive mishaps are no longer viewed as accidental or 'normal' events, but rather are attributed to the individual's failure to behave right, to have the right body (Scheper-Hughes and Lock, 1987: 25).

Women embody body politics. In rural Burundi, women are responsible of family order and social order within the household. They have to provide food to feed the household, they raise children and are responsible of their appropriate behaviour and their good health. For that, they are responsible of spacing births to ensure family order (not having to ask their husband to fetch water and wood) and child health. Our narratives show that women have embodied these gendered roles. Some have support from their partners, and some take on

full responsibility as their partner is either absent, or has resigned from their role and duties as household head (Paper 3: Reproductive Life Course).

Women embody body politics when they express that they first want to test their bodily capacity, for birth spacing for example, and in case of failure will adopt a method to correct it. In perceptions of rural women, bodies are diverse and respond differently to the ecosocial system. Women can have weak bodies that are often 'visited by malaria', or they have strong bodies that allow them ensuring all households chores including farming. They do not embody a self-responsibility for their non-normal, non-docile bodies, but they consider the need to self-discipline using natural methods or modern methods to achieve a publicly valued successful reproductive path that ensure social order, mirroring the hegemonic discourse.

The history of reproduction in Burundi shows how population control acts through individual bodies, generating *normal* and *docile* bodies for the State. During colonisation, a pro-fertility discourse was developed, as agricultural intensification required workforce. The Belgian domestic training programmes taught Burundian women the values of nuclear family, housekeeping, domestic labour and child rearing (Hunt, 1990). Today, the normalised reproductive body that spaces and limits births is valued and promoted as a desirable social script.

In Paper 1: Reproductive Governance, we described how the individual responsibility to control fertility, as promoted by the government, was not endorsed by many women, who reported preferring natural methods and shared responsibility. We interpreted that the endorsement of a reproductive responsibility by women, in a context where gender inequities place them in fragile and dependent configurations, is not desired, even contested. Natural methods appear more desirable perhaps also because they encourage a positive form of masculinity – through positive self-control – that is precisely challenged in post-conflict times (Sommers, 2013; Daley, 2007; Berckmoes and White, 2014). We interpret the relatively low adoption of modern contraceptives not as a rejection of FP altogether, but rather as a resistance to the technical solution proposed that is in inadequacy with the social and material circumstances and power dynamics that frame women and couples' everyday life. We thus argue that the hegemonic FP discourse and

solution promoted by the Burundian State are partly challenged in adoption because they are distant from local realities, knowledge, concerns and embodied social needs.

Methodological approaches

We explored the topic of sexual and reproductive health in rural Burundi using different methods.

The community survey allowed quantifying reproductive events and exploring factors associated with sexual and reproductive behaviour. Latent class analysis proved an interesting approach to cluster populations into groups that are alike in terms of social position and values. It enabled suggesting that values and beliefs of adolescents on contraception and their self-rated capacity to negotiate condom use are important factors determining utilisation of contraception at the individual level, more than education. The survey was however limited to adolescent populations, which brings limited arguments to this dissertation.

With the aim to understand decision-making processes and factors influencing at different levels, quantitative methods are however limited. As suggested in the quote from Mol and Law in introduction, methods of epidemiology use variables that are isolated from one another and faces great challenges in articulating links and tensions between them. In topics like health behaviour, epidemiology uses latent variables, the validity of which is often difficult to ensure (are we really measuring what we intend to measure?).

As Mol and Law further suggests, ethnography 'is a more promising technique: it can produce rich stories of lived bodies in which medicine figures as part of daily life' (2004: 58). The qualitative approaches used in this research enabled giving a broad account on the diverse influences that drive reproductive aspirations and practices, and it allowed understanding how dynamics and perceptions evolve over the life course. Field work was restricted and did not permit full ethnographic recounting, as we could not observe daily life activities of participants, including family and household organisation and dynamics. This limitation did not allow gaining a deeper understanding of individuals and couples'

reproductive practices and experiences, which certainly is a weakness of this study and is reflected in the lack of depth of the results sometimes. This limitation was mitigated to an extent by the longitudinal approach, whereby interviewing the same participants several times over the research period allowed time to discuss household organisation a bit more in depth compared to single interviews.

Our sample of participants for the qualitative study was mainly constituted of rural women. The voices of men were collected only in three in-depth interviews and through focus-group discussions. Data on how the lived experiences of reproductive preferences, practices and experiences of men are needed. As household heads, traditionally having the role of being responsible for the whole family, their experiences in theses changing contexts and shifting gender and generational dynamics is of great interest.

Implications for research

This study brings strong arguments that to understand reproductive behaviour – from preferences to practices – qualitative methods are better suited compared to quantitative methods. There are two major limitations with quantitative methods: variables of interest need to be known in advance, to be included in the survey questionnaire; and in analyses variables are isolated and articulating links and tensions between them is impossible (Mol and Law, 2004: 58).

The quantitative survey we conducted was useful to assess the knowledge of young people on sexual and reproductive health questions, and utilisation of contraception (with reserves on the fact that for such sensitive topic, response bias is not negligible). It proved more difficult to identify factors determining utilisation of contraception, especially with regards to couples, family or community levels factors. Latent class analysis proved an interesting approach to attempt at reconstituting think-alike participants with regards to values and beliefs.

To analyse our qualitative study, we have used the reproductive navigation model of van der Sijpt (2014), focusing on aspects of sociality and corporeality. We realised that to fully understand reproductive preferences and practices, the political, institutional and economic

needed inclusion. In the context of Burundi, a State with a fragile governance and weak institutions but yet strong local political presence until the sub-hill heads, widespread poverty and low interpersonal trust, strong gender inequalities especially in the context of land access and use, these aspects are of importance. We have indeed shown how the political, economic, institutional shape the social and the corporeal.

As a 'bio-political space par excellence' (Rabinow and Rose, 2006: 208), human reproduction is influenced through power dynamics that needs to be unearthed to understand driver of change in the subjectivated disciplined behaviour. As we've shown, political regimes – the patriarch in the *rugo*, Belgians colons in need of workforce, or the current government in his lack of land reforms – have produced different knowledge and moral repertoires on preferable reproductive practices. Additionally, as we've shown, biopower has produced a modern medical knowledge on the *normal reproductive body* that influences how women perceive and experience their own bodies in their local biologies. Medical knowledge on 'real side effects of contraception' are constructed as much as the 'irrational fears of local populations'. In fact, research conducted on the topic of 'fear of side effects from contraception' has often taken the position of considering these fears as unproblematic, or irrational and misinterpreted (Campbell et al., 2006; Darroch, 2013; Sedgh and Hussain, 2014; United Nations, 2015). Giving voice to users, in their local biologies and realities allowed understanding how these side effects not only exist, but are problematic in context.

In that frame, there is a need for research and development of improved contraceptive methods that take on the safety and acceptability aspects. Most current contraceptive options are not both efficacious and safe in terms of side effects. Side effects are normalised as the price (women) pay for preventing pregnancy. Global actors should prioritize development of contraception that simultaneously responds to the reproductive rights, needs and health of users, both female and male, including individual's control over the method (Hardon, 2006).

Implication for policy, practice and intervention

First and foremost, as depicted in introduction, family planning refers to people's rights to be informed about and to have access to voluntary methods for the regulation of fertility. FP also refers to services that are generally integrated into primary healthcare services where trained professionals provide information on existing and available methods and adiminster the methods. Last, FP refer to policies, strategies, programmes and initiatives at the national or global levels that define aims and targets to be implemented at the services level, to reach individuals and couples. Since the 1994 ICPD conference, all three dimensions should be aligned to the objective of the provision of sexual and reproductive health and rights, guaranteeing autonomous decision and informed choices, distant from past population control policies and experiences. However, as we have shown through this case study on Burundi, the political dimension of family planning is very present. It is present in international initiatives like FP2020, where targets are set by governments, international organisations and the private sector, from their armchairs in the North, on how women should behave and control their fertility. It is present in national policies and strategies of the Burundian government, funded by external donors, where the same targets are set focusing on the demand side (uptake of modern methods), rather than the supply side (thinking of the best venues to offer individual information and counselling). It is present in rural health facilities where FP services are integrated, and where health providers see their meagre income increase with the performance-based financing scheme based on the number of contraceptives injected, implanted, inserted.

The main implication of this research for policy, practice and intervention is therefore straightforward. Family planning needs to be designed and provided as a service to meet the needs of women (and men) and not the other way around. FP allows spacing or limiting pregnancies that are not wanted for social or health reasons. We have indeed found in our study women who used injections to get better health between pregnancies. Others used them to wait until the right social time to have another birth. Many other women preferd risking a pregnancy rather than experiencing physical contraceptive side effects and their social and financial consequences. Women have different social and corporeal realities and needs and FP services should serve these needs.

One finding of this study is that women were not well informed on contraceptive methods, apart from their name. Very little was known on how they function, and on why side effects may appear. Women explained that in health facilities, they were told which methods were available, and they chose. No participant in Burundi ever mentioned counselling based on her health status or social situation. The latest DHS showed that very few women using a modern method had been informed about possible side effects due to their contraceptive, or about what to do in case of side effects With this in mind, a simple implication for health services is the need to improve FP services in terms of information and counselling. In rural Burundi, where health personal is scarce and utilisation of healthcare high, provision of FP services in primary care facilities is challenging.

Expanding reproductive rights and possibilities – by offering a choice of methods – would improve acceptability and adequacy of family planning programmes. Above all, in cases like Burundi, it is primarily by improving the situation of women and reducing inequalities, especially in their access to land so they do not have to rely solely on their productive and reproductive bodies as the only resources, that positive change in the demographic equation may settle in.

In short, the recommendations we set forward are (Paper 5: Contraceptive Side Effects):

- *Rethink supply-side FP strategies:* incentivizing health providers to deliver contraceptives (PBF) and internationally set coverage targets (mCPR) may motivate providers to only promote prioritized methods and discourage discussions of alternative FP options based on users' contextualized situation and needs. This is particularly problematic in poor contexts where large proportions of providers' income emanate from incentives and user fees (Magrath and Nichter, 2012; Paul et al., 2018).

- *Frame contraceptive use and method choice as a process*: personalized SE counseling and adequate follow-up care should be integrated from the beginning of provider interactions with potential users, including a variety of methods including non-hormonal; and follow-up care in the case of experienced SE should be accessible (i.e. removal of user fees for SE treatment).

- *Consider individual suitability and risks, not only efficacy, of contraception in FP promotion and distribution:* by prioritizing promotion of long-acting modern contraceptives for their efficacy, the health system fails to legitimize alternative methods (barrier, natural) that may be preferred by or safer for women in certain contexts for their absent/lower SE risk. FP services should integrate 'cultural factors that impact contraceptive risk assessment' (Geampana, 2016: 9) for informed, supportive and safe use.

- *Understand, legitimize and integrate local representations of health, fertility and pregnancy*: understanding and integrating local representations, such as the central importance of blood flow, and sources of knowledge, like older women, that women and men use to frame experienced and feared SE and contraceptive use, especially from an ecosocial perspective, into FP promotion and counseling could 'reduce the social distance' between potential users/their social networks and providers (Aubel, 2012; Rutenberg and Watkins, 1997: 303) thereby expanding informed contraceptive choice and facilitating individuals' and couples' realization of fertility preferences.

- *Male involvement for gender transformation*: given the interplay between 'fears of SE' and gendered power dynamics, male involvement in reproduction decision making may improve FP but should be embedded in broader gender transformative strategies. Male involvement interventions should ensure that women are not inadvertently disempowered by male inclusion (Barker et al., 2010) or that male involvement is not interpreted as simply soliciting men's 'approval' for women's contraceptive use thereby reinforcing the feminization of contraception (Kimport, 2018).

General lessons learned on family planning

> *La contraception moderne, malgré sa remarquable efficacité théorique, n'apparaît donc pas comme une panacée. Les méthodes ne se renouvellent guère et le partage de la responsabilité des hommes et des femmes devant le risque d'une grossesse non désirée reste encore trop inégalitaire. Bien du chemin reste à faire du côté de la contraception masculine. En outre, la médicalisation extrême de la contraception moderne, liée à l'insuffisance de formation des médecins en la matière, apparaît comme un facteur d'échec, par la non-prise en compte de la réalité des pratiques concrètes des femmes. Une réflexion sur la médicalisation de la contraception, mais aussi de l'avortement médicamenteux, est d'ailleurs souhaitable. Ce constat, ponctuellement pessimiste, ne doit pourtant jamais laisser oublier la fantastique avancée que représente la maîtrise de la fécondité pour l'émancipation des femmes. La recherche doit continuer, les innovations doivent être diffusées largement pour permettre aux femmes de se les approprier de manière à ce qu'elles parviennent à mieux gérer leur vie selon leurs désirs et leurs attentes.* (Bajos and Ferrand, 2005: 120)

Family planning is integrated into the health domain because it can be based on utilisation of hormonal methods that require medical advice, attention and prescription. This thesis investigated the 'demand-side', that is, users and non-users of family planning, aiming to understand their preferences, practices and experiences. The research took us to horizons much wider than individual decision-making and experiences with providers in the primary healthcare facilities where FP is integrated. To understand preferences and practices of FP, it is essential to set the frame and specific context at the political, institutional, economic levels, to help situating the socialites and corporeality of individuals and couples.

This thesis looked into how a discourse and knowledge on family planning is constructed and thus situated in time and place. FP services are framed by a wider reproductive governance, a biopower to use Foucault's term. And reproductive bodies are thought of in medical terms as standardised medical bodies, that often show discrepancy with the lived local bodies, experiencing side effects for instance (Lock and Nguyen, 2018a).

Many parallels could be drawn with contraception and family planning services in Northern contexts, where little space is given in medical consultations to sociality and corporeality, of

individuals, and where influences of the political, the institutional and the economic are seldom raised. This may however be changing with the new feminist impulses resurfacing since October 2017.

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13. APPENDICES

Appendix 1 : Consent form (French and Kirundi)

Formulaire de consentement

Vous êtes invité à participer à ma recherche sur le sujet de la santé sexuelle et reproductive des jeunes au Burundi. Ma recherche se fait dans le cadre du projet « Génération future » mis en œuvre par Cordaid au Burundi, en partenariat avec des associations locales, et pour l'Université de Bâle en Suisse. Les résultats visent à orienter de futurs projets dans ce domaine. Les informations que vous fournirez sont et resteront anonymes.

Vous comprenez que votre participation à cette étude ne vous profitera pas directement, mais elle pourra profiter à d'autres dans le futur.

Vous comprenez que votre participation à cette étude est volontaire. Vous êtes libre de refuser si vous le souhaitez. Si vous acceptez de participer, vous pouvez refuser de répondre à certaines questions et interrompre l'entretien à tout moment.

Déclaration de consentement et signature

OUI, j'ai lu entièrement ce formulaire de consentement ou on me l'a lu.

OUI, j'ai été informé par la chercheur sous forme orale sur les objectifs de cette étude, et sur les façons dont l'information que je vais donner peut être utilisée. J'ai eu assez de temps pour prendre ma décision. Toutes les questions que j'ai concernant l'étude ont reçu une réponse satisfaisante.

OUI, je confirme ma participation à cette étude de ma propre volonté. Je sais que je peux retirer mon consentement à tout temps. Le contact du chercheur m'a été donné et je peux la joindre pour toute question supplémentaire.

Consentement

Etes-vous d'accord de participer à cette étude ?

☐ Oui
☐ Non

_____

Titre de l'étude :	« Mieux comprendre les besoins des jeunes en relation avec la santé sexuelle et reproductive au Burundi »
Lieu d'étude:	Burundi
Participant à l'étude : Nom et Signature: Date de naissance ou Age estimé :	_____ _____
Sexe	☐ masculin ☐ féminin

Ikiganiro n'Urwaruka rw'i Burundi | **2016**

Uwurongoye ikiganiro: | | | | |

Ndabaramukije ,muratumiwe kwishura ku bibazo vyo muri kino cigwa gifatiye kw'irondoka rijanye n'amagara meza ku rwaruka rwo mu Burundi : Iki cigwa categuwe na Cordaid mu Burundi ifadikanije n'amashirahamwe yo ku mitumba kubw'ishule Kaminuza Bâle ryo mu Buswise.

Urupapuro rw'ukwemera

Uratahuye y'uko kwishura ku bibazo vyo mur' ubu bushakashatsi ata turusho uronkera aho nyene mugabo ko bizogirira akamaro abandi muri kazoza.

Uratahuye y'uko kwishura ku bibazo vyo mur' ubu bushakashatsi biva ku gushaka kwawe. Uranarekuriwe kwanka ubishatse. N'aho wokwemera kukijamwo, urarekuriwe kwanka kwishura ibibazo canke urarekuriwe gucira hagati ikiganiro umwanya uwari wo wose.
Wamenyeshejwe ibintu ngendegwako vy'ubu bushakashatsi biciye mu nyandiko canke biciye ku wurongoye ubwo bushakashatsi yabigusomeye.

Ego ☐ Oya ☐

Ukwemera n'ukubishirako umukono

EGO, nasomye urwo rupapuro rwose rw'ukwemera canke narusomewe, n'ibibazo vyose vyishuwe mu buryo bushimishije.

EGO, Nabwiwe n'uwurongoye ikiganiro mu mvugo canke mu nyandiko ku vyekeye intumbero y'ico cigwa no ku buryo amakuru ntanga ashobora gukoreshwa. Naronse umwanya ukwiye kugira nfate icemezo. Ibibazo vyose vyerekeye ico cigwa vyaronse inyishu ihagije.

EGO, Ndemeye ko abashakashatsi babijejwe n'abaserukira umugwi wihweza itunganywa ryiza ry'ico cigwa ko bashobora kubona amakuru natanze, mugabo mw'ibanga ntangere.

EGO, Ndemeye kwishura ku bibazo vyo muri ico kiganiro ku gushaka kwanje. Ndazi ko nshobora gukura icemezo niyemeje umwanya uwo ariwo wose, ndashobora kugumya ikopi y'urupapuro rwo kwemera

Icemezo
Ndemeye kwishura ku bibazo vyo muri ico cigwa

☐ Oya
☐ Ego
☐ Nkeneye uwundi mwanya wo gufata icemezo, uwundi mwanya w'umubonano twawumvikanye

Icigwa :	Kumenya neza ivyo urwaruka rukenera mw' irondoka rijanye n'amagara meza mu Burundi.
Ikibanza caho icigwa kibereye :	karusi ☐ Rutana ☐
Uwishura ku bibazo vyo mu cigwa:	
Izina n'unukono:	_____
Italiki y'amavuko canke kugereranya imyaka:	_____
Igitsina	☐ umugabo ☐ umugore

Appendix 2: Paper 1: Fixed-effect logistic regression odds ratios of non-utilisation of contraception, including condoms, at last sex (latent class)

		Model 1	Model 2 controlling for school attendance	Model 3 controlling for values on contraception	Model 4 controlling for sex	Model 5 controlling for age	Model 6 controlling for SRH knowledge	Model 7 controlling for sexuality education
		OR [CI, 95%]	OR [CI, 95%]	OR [CI, 95%]	OR [CI, 95%]	OR [CI, 95%]	OR [CI, 95%]	OR [CI, 95%]
Interaction Class # Country								
DRC	Class1 (ref)	1	1	1	1	1	1	1
	Class2	3.039 [0.848,10.90]	2.392 [0.654,8.744]	2.432 [0.665,8.893]	2.995 [0.832,10.78]	2.32 [0.624,8.623]	2.873 [0.785,10.51]	2.849 [0.790,10.28]
	Class3	**2.316* [1.019,5.263]**	**4.828** [1.683,13.85]**	2.091 [0.911,4.798]	2.052 [0.892,4.719]	2.229 [0.976,5.087]	**2.310* [1.002,5.328]**	2.218 [0.972,5.062]
	Class4	**4.197** [1.649,10.69]**	**8.575*** [2.748,26.76]**	**3.990** [1.558,10.22]**	**2.995* [1.097,8.178]**	**4.747** [1.843,12.23]**	**4.205** [1.640,10.78]**	**4.006** [1.567,10.24]**
Burundi	Class1 (ref)	1	1	1	1	1	1	1
	Class2	1.500 [0.238,9.441]	1.424 [0.225,8.990]	1.367 [0.213,8.782]	1.638 [0.257,10.43]	1.100 [0.169,7.171]	1.459 [0.227,9.369]	1.384 [0.218,8.783]
	Class3	1.286 [0.255,6.492]	3.079 [0.506,18.75]	1.168 [0.227,6.010]	1.345 [0.264,6.866]	1.439 [0.282,7.340]	1.254 [0.244,6.449]	0.945 [0.177,5.043]
	Class4	1.000 [0.259,3.867]	2.395 [0.497,11.53]	0.890 [0.226,3.507]	0.808 [0.203,3.211]	1.152 [0.294,4.513]	0.987 [0.254,3.841]	0.894 [0.227,3.517]
Rwanda	Class1 (ref)	1	1	1	1	1	1	1
	Class2	1.000 [0.0815,12.27]	0.831 [0.0671,10.30]	1.142 [0.0927,14.06]	1.228 [0.0991,15.22]	0.872 [0.0696,10.92]	0.974 [0.0783,12.11]	0.967 [0.0784,11.93]
	Class3	0.444 [0.165,1.194]	0.932 [0.281,3.096]	0.449 [0.166,1.220]	0.435 [0.161,1.179]	0.405 [0.149,1.102]	0.442 [0.164,1.190]	0.405 [0.148,1.107]
	Class4	1.667 [0.380,7.317]	3.496 [0.686,17.81]	1.808 [0.409,7.997]	1.229 [0.269,5.616]	1.875 [0.423,8.314]	1.682 [0.382,7.404]	1.626 [0.369,7.156]
Being in-school			**2.523* [1.083,5.881]**					
Values (contraception is a sin)				**2.313** [1.239,4.319]**				
Sex (female)					1.666 [0.967,2.869]			
Age (<18 years)						0.609 [0.358,1.036]		
SRH knowledge							0.95 [0.576,1.567]	
Received sexuality education								0.752 [0.445,1.272]
	N	398	397	385	398	398	383	383

*Confidence intervals in parenthesis (at 95%); * p<0.05, ** p<0.01, *** p<0.001*