Review article

Where the lay and the technical meet: Using an anthropology of interfaces to explain persistent reproductive health disparities in West Africa

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A R T I C L E   I N F O

A B S T R A C T

Despite impressive global investment in reproductive health programs in West Africa, maternal mortality remains unacceptably high and obstetric care is often inadequate. Fertility is among the highest in the world, while contraceptive prevalence remains among the lowest. This paper explores the social and technical dimensions of this situation. We argue that effective reproductive health programs require analyzing the interfaces between technical programs and the social logics and behaviors of health professionals and client populations. Significant gaps between health programs' goals and the behaviors of patients and health care professionals have been observed. While public health projects aim to manage reproduction, sexuality, fertility, and professional practices are regulated socially. Such projects may target technical practices, but access to care is greatly influenced by social norms and ethics. This paper shows how an empirical anthropology that investigates the social and technical interfaces of reproduction can contribute to improved global health.

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1. Introduction

Despite significant fiscal and political investment in global reproductive health, maternal mortality remains one of the greatest health disparities between the developed and developing worlds (Ronsmans and Graham, 2006). Since the launching of the global Safe Motherhood Initiative in 1987, government and private donors have pledged millions of dollars to this cause and governments have demonstrated their commitment through Safe Motherhood programs that include family planning, emergency obstetric care (EmOC), and post-abortion care. Although global maternal mortality has reduced by 44% since 1990 (WHO, 2015), outrageous disparities in maternal health remain between developed and developing regions. Approximately 66% of global maternal deaths occur in sub-Saharan Africa (WHO, 2015).

Maternal health experts argue that the technical solutions to this persistent problem are well known. Primary direct obstetric causes of maternal death and disability include hemorrhage, eclampsia, obstructed labor, infection, and abortion complications. Evidence-based interventions to manage these conditions include Caesarean section, magnesium sulphate, availability of blood, use of the partograph, active management of the third phase of labor, and post-abortion care (Corbett and Turner, 2003; PMNCH, 2011; Prual, 2004; Stanton et al., 2009).

There is also an association between high fertility and maternal mortality. With a total fertility rate of 5.2, compared to 1.6 in Europe, African women are disproportionately exposed to the risk of dying during pregnancy or childbirth (Prual, 2009). Reducing fertility through modern contraceptive technology, thus, can contribute to a decline in maternal mortality (McCarthy and Maine, 1992). Programs that aim to reduce fertility by increasing the prevalence of modern contraceptive use, commonly known as "family planning," have been implemented throughout the global South since the late 1960s (Dixon-Mueller, 1993; Takeshita, 2012).

Through the inclusion of plans to reduce maternal mortality and to increase contraceptive prevalence in health mandates such as the 1994 International Conference on Population and Development

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(ICPD) and the 2000 Millennium Development Goals (MDGs), the global community has demonstrated its commitment to improving maternal health. Yet, the meaning and effectiveness of the technical interventions associated with maternal mortality and fertility reduction have generated controversy between health policy-makers, religious leaders, population scientists, medical professionals, and advocates of reproductive health and rights. Hospital-based maternal health interventions such as EmOC may not always take into account the gendered dimensions of health care seeking, or the unequal power dynamics that shape the medical encounter between patient and provider within the facility. Furthermore, a focus on highly technologized interventions may detract attention from primary health care systems that attend to women's basic health care needs, such as the treatment of malaria, that also contribute to complications of pregnancy and childbirth (Behague et al., 2009; Storeng and Béhague, 2014). While training and legitimizing care provision by "traditional birth attendants" is no longer promoted by global health authorities such as the World Health Organization (WHO) (Davis-Floyd and Sargent, 1997; Dilger et al., 2012), the exodus of skilled African health professionals to the global North (Hagopian et al., 2005) suggests that in some places, this cadre of practitioner remains most accessible to rural and low-income populations.

Global population control efforts, with origins in neo-Malthusian logics that aimed to curb the fertility of undesirable populations, resulted in the establishment of family planning programs throughout the global South that prioritized meeting demographic targets over women's individual health needs (Dixon-Mueller, 1993; Hartmann, 1995; Kabeer, 1994). In 1994, at the ICPD in Cairo, a new population paradigm known as "reproductive health" emerged. In contrast to population control, this paradigm argued that gender equality, rather than fertility control, was necessary to improve socio-economic development. Reproductive health entailed not only access to a range of high quality services and technologies within existing health care systems, but also the right to make informed reproductive decisions (Lane, 1994). Around this time, post-abortion care, which includes emergency treatment and contraceptive services, was developed as a compromise on abortion in global health mandates between feminist and conservative delegates to the ICPD (Kulczycki, 1999).

Although reproductive health is the dominant global population paradigm, demographic concepts that emerged during the era of population control are still widely used to measure progress in meeting health goals. For example, "contraceptive unmet need" refers to the measurable gap between a woman's desire to space or limit births and her actual use of modern contraception (Murphy, 2012). Such measures may not account for a variety of interrelated factors, such as age, marital and family status, ethnicity, and socio-economic status that shape women's desire and ability to use contraception (Mumtaz and Salway, 2009).

Acceptance of global health mandates in the ICPD and the MDGs at the national level does not immediately translate into widespread acceptance of health interventions at the community level. In fact, technological interventions such as vaccinations have encountered resistance throughout Africa as recently as 2007 because of suspicions that the real purpose of these drugs is to impair fertility (Kaler, 2009). Similarly, the impact of poverty on access to reproductive health care cannot be overlooked (Peters et al., 2008). Low-income women are more likely to give birth without a skilled attendant (WHO, 2008) or experience delays in receiving life-saving care (George et al., 2005). Socioeconomic status also plays a critical role in determining access to safe abortion (WHO, 2011).

Still, these important factors do not adequately explain persistent disparities in reproductive health between the global South and North. In this paper, we use an interdisciplinary approach that we call an "anthropology of interfaces" to grapple with the following questions: why, despite significant financial input, do reproductive health programs in West Africa still struggle to attain their objectives? How should we understand the gap between the epidemiologically and demographically measurable logics of health programs, and the daily practices, beliefs, and experiences of providers and consumers of health care?

Our anthropology of interfaces entails a juxtaposition of existing literature on fertility, birth practices, and reproductive health care in Africa with the research that we have conducted in hospitals throughout West Africa between 1994 and 2011. We aim to explore the hospital as a site of interface between patients' normative understandings and practices of fertility, sexuality, and birth, the professional and organizational factors that influence what health workers do, and the clinical norms and protocols of family planning and obstetric care. We argue that an ethnographic approach is best equipped to identify the ways in which technical logics of care are frequently misaligned with the beliefs and practices of patients as well as the professional complexities of care provision. Only by confronting this gap between evidence-based standards of care and the cultural, structural, and professional aspects of reproductive health will we be able to begin to devise strategies to lower persistently high rates of maternal death in West Africa.

We focus specifically on West Africa for a number of important reasons. First, some of the highest rates of fertility and maternal mortality across the continent, and globally, are found in West Africa. Second, we contend that some of the social, political, and economic factors that have contributed to lower fertility in North African countries like Tunisia have for the most part been absent in West Africa. For example, the availability of both contraception and legal abortion has decreased fertility rates in Tunisia (Marston and Cleland, 2003). In addition, the state abolished polygamy, raised the age of legal marriage for girls, and invested significantly in increasing girls' educational attainment (Gastineau and Sandron, 2000).

1.1. Conducting an anthropology of interfaces

The public health slogan "think globally, act locally" (Ellul, 2007) calls for local implementation of health policies based on globally-derived evidence. For example, a series on maternal health recently published in *The Lancet* offers evidenced-based recommendations, drawing on the experiences of various countries, for improved midwifery and quality of obstetric care (Lancet, 2014). Yet, the real meaning of "act locally" often remains elusive. This question, which is at the core of a global health perspective that aims to bring together medicine and social science (Eisenberg, 1981), is essential for developing programs that effectively improve health outcomes. What are the links between projects developed by national and global experts and micro-level social practices that are embedded within macro-level social structures and processes? We deploy these questions as an analytical perspective to re-interrogate several studies on family planning and obstetric care that we have conducted over the last decade in several countries in West Africa. Although our studies were accomplished separately and during different periods of time, we realized, through productive exchanges at regional conferences on maternal health, that our research collectively constitutes an important reflection on the gaps between the social context of fertility and sexuality and the technical objectives of reproductive health programs. Additionally, the questions posed by our research have been driven by our professional experience and collaborations with health authorities and local and international reproductive health NGOs in West Africa. At the request of UNFPA and UNICEF in several West African countries,

Jaffré assessed the quality of obstetric care, studied various determinants of fertility, and directed maternal mortality reduction programs. He has also taught in various schools of medicine and public health in these countries. In her capacity as a University of Michigan Population Fellow with Management Sciences for Health (MSH) in Senegal in the mid-2000s, Suh collaborated with the Senegalese Ministry of Health in the evaluation of post-abortion care services in several regions of the country.

The first study explored the malfunctioning of obstetric services in public hospitals in five capital cities (Abidjan, Bamako, Conakry, Dakar and Niamey) (Jaffré and Olivier de Sardan, 2003). The second aimed to describe the quality of obstetric care in hospitals in Guinea and Togo (Jaffré, 2009). The third focused on fertility practices and was conducted in capital cities and rural zones of four countries (Senegal, Mali, Burkina Faso, Ghana) (Jaffré, 2012a). The fourth explored the treatment of abortion complications in hospitals as well as the management of the national post-abortion care program in Senegal (Suh, 2014a,b, 2015). While Jaffré's studies were conducted prior to the establishment of formal research ethics committees in the countries where he and his co-investigators conducted their work, Suh's research was approved by research ethics committees at the Senegalese Ministry of Health and Columbia University.

In the first two studies, we described interactions between health personnel and pregnant women. In the third, we juxtaposed the logics of fertility practices with technical guidelines related to prescribing contraception. The fourth study situates the daily practices of post-abortion care in Senegal within the context of the national abortion law. The diversity of these studies facilitates an analysis of some of the principal components of reproductive health care: contraception and obstetric care.

In all these studies our methodological approach has two principal features. First, using the model of microhistory (Revel, 1996) or what Geertz called "thick description" (Geertz, 1973), we used a voluntarily reduced scale of observation. Our studies in different social environments and countries of West Africa make it impossible to cover all observable localities, lived situations, and interactions. Data on fertility and reproduction touch upon social logics and moral sensibilities that are challenging to quantify. However, their recurrence, for example, in daily speech or their codification in proverbs constitute a semantic network (Good, 1977) that we aim to reveal. Certainly, this approach attends to structural dimensions such as the impact of economic reforms on healthcare, the links between legal and fiscal systems and access to contraception and abortion, or the correlations between religious spaces and health care. At the same time, we aim to interrogate and describe the discrete moments where these larger social, legal, economic, and political dimensions manifest themselves in some simple practices. It is these decisional moments that we attempt to pin down, these modest yet decisive gestures, or perhaps they are decisive because they are "simple" (Granovetter, 1973). We focus on how social, economic, political, and cultural structures are materialized in the "habitus" (Bourdieu, 1980) of patients and providers, put into action with reflection and at times without, and how these ways of doing constitute a sort of response to the technical logics of health care.

Second, we interrogate the deployment of epidemiological and demographic data in defining and measuring public health objectives as a form of population governance, or what Foucault described as "biopower" (Foucault, 1978). The numeric regulation of populations, both for the purposes of increasing or decreasing fertility, has been well documented in contexts such as China (Greenhalgh, 2005), Cuba (Andaya, 2014), and Romania (Kligman, 1998). At a global level, the identification of goals and targets to reduce maternal mortality ratios or to increase modern contraceptive prevalence also constitutes a form of reproductive governance (Morgan and Roberts, 2012). Our work aims to uncover the relations of power within the realms of family planning and obstetric care, that, while subsumed into mundane statistics, unfold within and beyond the hospital. We unpack the experiences of women and health workers that are aggregated into and subsequently obscured by the very health statistics that purportedly demonstrate progress or are mobilized to advocate for additional resources. The questions raised by this thematic breakdown resemble the multi-sited inquiry approach where the object of study is plural or present in several fields. It must therefore be "followed" or "tracked" (Marcus, 1998) and islands of intelligibilities constructed and linked between global and national policies, health care systems, hospitals, communities, and households.

2. Exploring the interfaces of reproductive health care

We present the results of our studies by successively analyzing two broad themes within the field of reproductive health: fertility practices and interactions between women and health personnel, and access to and quality of obstetric care. For each of these themes, we specify the gaps between the reproductive health logics of health programs and populations, while supporting our observations with social science literature on reproduction and fertility in sub-Saharan Africa.

2.1. Fertility practices and provision of contraception

The use of contraceptive methods depends on wanting, knowing, and being able to use them. Certainly, this is our attempt to summarize a myriad of related and interdependent motivations for contraceptive action. These three verbs in fact involve a complex set of strategies on the part of actors. In this case, they are frequently women actors who must negotiate a degree of decisional freedom that often implies subverting extremely restrictive behavioral norms regarding female sexuality and fertility. Hence, an understanding of people's behavior consists largely of integrating these three dimensions of wanting, knowing, and being capable of doing so in specific socio-cultural contexts.

Forms of individual wanting are influenced by everyday language conveying sundry norms and even continual rumors that may in turn influence careseeking behavior for services such as vaccinations (Feldman-Savelsberg et al., 2000) or cataract surgery (Briesen et al., 2010). Language may also serve as a form of "legislation" (Barthes, 1978), classifying and arranging all that is valorized or depreciated, thus creating, if not strict obligations, at least inclinations towards all that is replicated through a thousand mouths and finally ends up seeming natural and obvious. Ethnolinguistic studies suggest that in pronatalist societies in West Africa, both in ordinary language and in formal wishes articulated during important events such as marriage or baptism, fertility is praised while remaining childless is disparaged (Calame-Griaule, 1966; Héritier, 1996). For example, the Bambara language in Mali designates pregnancy in greetings or ordinary daily chats, as "hérébana," the "illness of happiness" and the sterile woman as "borogé," a "fattened animal who doesn't beget young." In this situation, the wish "may God produce legs and arms (from marriage)" is quite commonplace (translated from Bambara to English by Jaffré).

But more is at stake here than a matter of words. In more concrete terms, the status of mother allows the woman to enter the cycle of gift and debt towards the family (entrusting the child to one's own parents or parents-in-law, participating in baptism groups, building alliances by marriage), guaranteeing one's matrimonial status and eventually maintaining one's place in the

inevitable rivalries between co-spouses (Fainzang and Journet, 1998; Foley, 2007). For men, the fertility of female partners, even if this category is plural and calls for further qualification according to situations and interactions (Broqua and Doquet, 2013), allows them to display their virility.

The socio-economic dimensions of fertility also complicate the efforts of health programs to reduce the number of births. The term "family planning" signifies various fertility practices from voluntary "birth spacing" to "limiting" births (Cleland et al., 2006), and the social response to these options may vary (Moulin, 2013). That reproductive health programs promote the idea that life can be "planned" is often forgotten. This implies anticipating one's life, making forecasts, and wagering on the effectiveness of certain corporal practices just as one would save or invest money in the hope of future profits. Such planning is far removed from practices generated by the worlds of precariousness. In fact, poverty is characterized by a certain way of life where one may not really know what tomorrow will hold. These situations of assorted improvisations (De Certeau, 1980) make for an uncertain present and no monetary, professional or relational power can reasonably hold out the promise that personal projects will fashion one's own or one's family's future.

In these situations of economic and social fragility, and radically contrary to family planning programs, the principle of anticipation centers around having several children and staking on a certain stability of kinship ties to ensure some degree of care in old age (Dodoo and Frost, 2008). A Bambara proverb states: "Old age gives a right to rest only if there is someone to depend upon" (translated from Bambara to English by Jaffré). Far from reflecting simple misunderstandings of or resistance to family planning messages, fertility choices provide for generational insurance. In rural Gambia, women used modern contraception to protect their fertility against recurrent "reproductive mishaps" such as miscarriage or stillbirth, rather than to space or limit births (Bledsoe et al., 1998). Family planning choices thus correspond to "rational end" actions (Weber, 1971) in which fertility is embedded in broader social and economic structures and processes.

Situations change with rural to urban shifts, leading to a retreat of polygamy, the growth of single parenthood, the birth of new associative networks, and increased schooling, particularly of girls (Tabutin, 1995). Nonetheless, in many circles the child still remains the best "investment" or a "low cost investment" since in the case of big families the cost of education is often shared by relatives and sometimes delegated to those who succeeded in the city (Marie, 1997). Moreover, the presence of multiple children may allow families to consider them more like tender distractions than persons perceived according to modern, neoliberal modalities of a life project focused on the self or a single or limited number of children, who will become the focus of strong emotional and financial investment (Zelizer, 1985).

Alongside these attitudes, a second set of causes having an impact on fertility is naturally linked to knowledge. Knowing, or not knowing how one's own body works, is decisive. But here again, it is important to describe the negotiation of such knowledge within the context of gender relations.

Expressions evoking sexuality are omnipresent and vary according to context. For example, in polygamous societies, on days when women's conjugal duties of sexual relations and food preparation coincide, a certain isomorphism between table manners and bedroom etiquette may emerge, transforming the ingredients and sauces — often perceived as aphrodisiacal — into erotic messages, nourishing a humor composed of terms with double meaning (Pouillon, 1972). Clothing specifically evokes, builds, and stages gender differences. For example, in Niger, a form-fitting dress style is commonly known as "the husband will not sleep outside

tonight." Women's clothing that exposes part of the back is known as "Darling, look at my back (p. 108–111)" (Jaffré and Moussa, 2013).

But alluding to sexuality is not equivalent to possessing a specific knowledge about reproduction and contraception. On the contrary, allusions play with norms of modesty — they evoke without actually stating openly — and laughter precisely marks the limits of what can be said depending on the speakers. For example, during our studies in Mali, teenagers joked comfortably about how to sleep with a girl, but immediately became silent when an adult joined the group. Similarly, married women excused themselves, laughing sheepishly, when the discussion turned to the topic of sexual pleasure (Jaffré, 2012a).

These humorous circumlocutions are thus quite different from the knowledge required to express oneself in precise and explicit language. The questions linking sexuality to reproduction are only rarely handled in understandable and direct discourse between parents, educators, and children. Such socio-linguistic evasions account for the fact that despite the numerous sensitization campaigns about AIDS, often including cursory physiological descriptions and demonstrations of sexuality and an exclusive promotion of the condom, young girls have gained little knowledge of fertility, often relying on a certain widespread intuitive physiology (Jaffré, 2012a). For example, in response to our question "Do you ever apply the method of calculation (fertility awareness or rhythm method)?" a young woman in Mali, echoing other similar answers, replied: " Yes, seven days after the end of your period you can resume sexual relations because your uterus will have closed (p.26)" (Jaffré, 2012a). Some women, having noted the abortive effects of malaria prophylaxis, relied on the regular ingestion of drugs such as Nivaquine as a form of family planning (Coulibaly, 2012).

Finally, even when knowledge is acquired, lopsided gender relations influence the application of this knowledge to protect oneself from unwanted pregnancy or disease. In Senegal, for example, nearly all men and women know of at least one modern contraceptive method. Yet, contraceptive prevalence among women in union is only 12% (ANSD, 2012). Where employment and educational opportunities for women remain scarce, high fertility may be the most logical reproductive strategy for many women, especially within the context of polygamous unions (Foley, 2007).

Certainly, nothing is as strict or dichotomous in these fields where gender relations, emotions, and social reproduction are inextricably intertwined. Divorces are numerous in African cities (Thiriat and Locoh, 1995) and beauty, youth, and seduction are formidable counter powers (Cole and Thomas, 2009; Laurent, 2010). Nonetheless, statutory asymmetries between men and women lead to very different definitions of self and autonomy. Men expect women to be dependent on their husbands and women affirm their lack of authority over their own person. "It's my husband who decides for me. If he tells me to do something, that's enough for me (p. 67)" explained a young woman from the countryside around Bamako, Mali (Jaffré, 2012a). Submissiveness towards husbands, as well as modesty, shame, patience, and self-control are valorized as by religious leaders as socially appropriate behaviors for women (Schulz, 2010).

A woman may obtain the right to use contraceptives by asking her husband, sometimes begging or softening him. If all negotiation fails, the woman may collude with health personnel to hide her use of contraception (Jaffré, 2012a). Such strategies allow women to act in their own interests in spite of everything. However, these circumventions do not question men's statutory right to refuse or grant permission.

Men's position on contraception is equally complex. While many of them may favor having less children, they may still refuse to let their wives use contraception. The paradox is obvious. They

control their wives' sexuality by controlling their fertility, imagining that the fear of extramarital pregnancy will keep them placidly at home. While family planning programs aim to help people control their fertility, men act above all to control *through* fertility and this is sometimes accompanied by real violence on their partner's body and sexuality (Dumestre and Touré, 1998). A midwife at a health clinic in Senegal described a situation in which a man angrily confronted her for giving contraception to his wife without his consent and threatened to divorce the woman (Suh, 2014b). The potential for discord resulting in violence or divorce may at least partly explain what demographers call "contraceptive unmet need."

Once the woman or the couple decides to use contraception, physical access to family planning services remains necessary. Pursuing contraception presents difficulty because the social meaning of these products is not simply limited to their medical definition or pharmacological content. Contraceptive use separates sexuality from reproduction, thus affirming that sexuality can also be a "simple pleasure" (Corbin, 2008). Certainly, this dimension of desire is far from being absent from contemporary African societies. But the culinary and bedroom games of seduction (Etienne, 1975), or the roles of sexuality diffused through music videos or soap operas on television, clash with ideal sexual behavior. The latter is drawn from local values of respectability sustained by various religious instructions, which valorize, at least in the social presentation of the self (Goffman, 1959), a control of one's urges, whether they be linguistic, alimentary or sexual, as evoked above. For example, the periods of Lent or Ramadan, which include fasting and chastity, present themselves as exercises of self-control (Flandrin, 1983).

For couples and even more for women whose health is at stake, the use of contraception on the contrary implies the wish to cede to one's desires. To some extent, using contraception always comes down to admitting that one cannot master oneself. This social condemnation — sometimes direct and sometimes diffuse —reinforces the rules of propriety for those who "forget themselves" or deviate from these norms linking discretion with civility. For instance, post-natal sexual relations are considered inappropriate in some societies until the child is weaned. Among the Bambara, closely spaced children are designated by the Bambara term "séré," much to the shame of parents (Roger-Petitjean, 1996). In Hausa communities, the term "sonti" pokes fun at those who abandon themselves to greed by talking too much about the dish (Jaffré, 1996). Similarly, among the Mandingue, a woman who is perceived as displaying a certain wantonness will be described by the very derogatory term "jato," meaning "she's tipsy" (all phrases have been translated into English by Jaffré).

Decisions regarding "modern" or "traditional" forms of contraception may draw on the social importance of sexual self-control in ways that do not always align with demographic concepts such as "contraceptive un-met need." In Cameroon, "traditional" forms of contraception such as periodic abstinence were preferred over "modern" methods such as the pill even among educated, middle class women. Periodic abstinence was better suited to broader moral and ideological frameworks regarding honor, discipline, and respectability for women. Artificial contraception was perceived as a sign of sexual debauchery, backwardness, and lack of self-control (Johnson-Hanks, 2002a).

This moral posture also surfaces at the heart of health care in the violent speech of midwives who manage women's deliveries but insult these same women about their sexuality. Women who make noise or complain of pain during delivery are frequently shamed or scolded by health providers for having sex in the first place (d'Oliveira et al., 2002). Such verbal abuse establishes a certain symmetry of sin between the pains and complaints of childbirth versus the pleasure and cries during intercourse.

It would be absurd to conclude from these examples that social norms linking sexual behavior to the moral evaluation of persons prevent the use of family planning services. Nevertheless, material access to contraception involves a shift from a regime of sexual discretion, to a certain unmasking, not only of one's own sexuality, but above all of a desire that is difficult to claim legitimately.

In urbanizing societies that still remain largely interconnected, these socio-emotional norms lead, at the very least, to hesitation and encourage circumventions. This explains why, along with the power of husbands evoked above, women may approach health care workers for contraceptives discreetly, even outside designated family planning services. They prefer contraceptive injections that can be hidden. The use of often ineffective products obtained from itinerant hawkers who hide them amongst beauty products (Baxerres, 2013; Jaffré, 1999) may lead to unwanted pregnancies.

This same configuration also explains why it is sometimes simpler, especially for young, unmarried women, to abort rather than seek contraceptives. Even in places where it is legally restricted, the act of abortion masks evidence of inappropriate sexuality, whereas seeking contraception forces young women to claim sexual desires that transgress reproductive norms. Anthropological studies in Cameroon and Ghana suggest that while abortion is shameful, the shame of pregnancy outside or before marriage is even greater. Discreet abortions are preferable to parenthood outside of marriage, even if they risk the woman's health (Bleek, 1981; Johnson-Hanks, 2002b). In Senegal, young, unmarried women presenting at the hospital with complications of abortion are often immediately suspected of having procured an illegal abortion (Suh, 2014a). Abortion may be perceived as a fault that must be regretted, or that is paid for by the health risks involved in procuring the abortion itself (Rance, 1997), whilst contraception can be perceived as the anticipation of a premeditated moral failure.

2.2. Access to and quality of obstetric care

Subsequent to these fertility choices, maternal death and morbidity result as a consequence of certain modalities of obstetric care, including delivery, post-partum, and post-abortion care. Malfunctioning reproductive health care services have been documented in numerous studies in sub-Saharan Africa since the early 1990s (Behague et al., 2008; Gobatto, 1999; Gruénais, 1996; Jaffré and Prual, 1994; Jewkes et al., 1998; Mebtoul, 2001; Vangeenderhuysen et al., 1995). These studies, in addition to our research, document and highlight the differences between program ideals and the experiences of health personnel and patients. They call for reflection on the persistence of certain problems in obstetric care. Although these studies were conducted across a variety of countries and in different types of health facilities, they concur on three primary factors that influence quality of and access to obstetric care: precariousness of access to care, inadequately organized services, and professional ethics of care.

First of all, the burden of economic and social dimensions of access to care is constant. For example, in situations of great precariousness, the cost of a taxi to reach the hospital, or the purchase of simple medical gloves that midwives require during childbirth can lead to delays in care and prove fatal to a parturient (Jaffré, 2009). Poverty may place an additional burden on women seeking care for abortion complications. The inability to pay for post-abortion care treatment, especially among young, unmarried women, may raise suspicion among health workers that the patient has illegally attempted to terminate pregnancy. In a context where women's health care seeking practices and eventual costs may be negotiated and paid for by family members, including in-laws,

women who are unable to pay or are unaccompanied by family members who can pay for services, may raise concerns among health providers that they have engaged in pre- or extramarital sexual relations that resulted in an unwanted pregnancy (Suh, 2014a).

The second factor concerns the organization of care and services. This is evinced by the contrast between institutional health guidelines and practical logics implemented by the health facility and its personnel within a context of infrastructural constraints. Diverging logics govern the different technical segments of medical services — for instance, the blood bank that conserves its stocks while a maternity ward needs blood products urgently, or ultrasound services that depend on one single doctor or midwife which makes a continuous examination impossible. Similarly, relatively modest factors may determine health outcomes. For example, absent or unreplaced bottles of oxygen can lead to maternal or newborn death (Jaffré, 2009). Faced with high patient caseloads, midwives and physicians may delegate tasks to health workers who are not medically skilled. In such situations, *matrons* (unskilled birth attendants) manage delivery and nurses diagnose patients and issue prescriptions with little or no supervision (Jaffré and Olivier de Sardan, 2003).

In some Senegalese hospitals, anxieties regarding the capacity of manual vacuum aspiration (MVA) syringes to illegally terminate pregnancy have led to policies that restrict their utilization and circulation for post-abortion care. Consequently, women are treated with methods such as digital evacuation, which is not recognized by the WHO as an effective abortion care method, and dilation and curettage (D&C), which is more expensive and carries a greater risk of complications than MVA. In one hospital, MVA was permitted only during the day on weekdays when senior gynecologists were at the hospital. Women who arrived on weekends or at night were subsequently treated with methods such as D&C or digital evacuation (Suh, 2015). National policies restricting MVA use to midwives and physicians at district and regional hospitals also constrain rural women's access to safe, effective, and affordable obstetric care. Midwives and nurses at health clinics are not authorized to use this device, but must instead refer women to hospitals for such care, often at great cost to the patient and her family (Suh, 2014b).

Where institutional guidelines may call for standardizing certain technical gestures, personnel may engage in practices, which eventually develop into habits, that are more or less empirically adapted to the particularities of service organization. Examples include monitoring childbirth without a blood pressure meter, or using the same gloves for multiple patients (De Brouwere and Leberghe, 1998; Jaffré, 2009). In fact, except when the immediate perception of an obstetric emergency serves as a reminder of a return to clinical protocols, the interactions of care are governed more by routines than by references to norms and protocols for obstetric care. For example, midwives often delegate clinical tasks prior to the actual time of delivery to student midwives. In some cases, junior practitioners accomplish technical activities such as the administration of injections through on-the-job learning (Olivier-de-Sardan, 2001). Even in hospitals where the MVA device is available for post-abortion care, midwives may prefer to use digital evacuation because it is "easier" and "faster" than assembling the syringe, which itself may have become unwieldy from overuse (Suh, 2015).

Cognitive tools (Vinck, 2009) like partographs allow health workers to anticipate and subsequently act upon obstetric risks. In some hospitals, such tools are not systematically used to monitor labor, or are uselessly completed after delivery (Jaffré, 2012b). Contrary to the principle of precaution in the public health

imperative of avoidable maternal mortality (although some complications cannot be predicted) (Rosenfield and Maine, 1985), midwives evaluate the efficiency of their practices in relation to regular childbirths. Fortunately, most of the deliveries managed by such midwives do not experience complications. Global health experts estimate that 15% of pregnancies will develop complications (UNFPA, 2004). But this naively optimistic perspective—that most deliveries will proceed uneventfully—neglects the necessity of exercising precaution, which would for instance institutionalize the use of a partograph during all deliveries.

Third, the professional ethics of care, shaped by the complexity of relationships binding or separating social and professional identities, also influence quality of and access to care. Caught between infinite demand and limited resources (including time, trained personnel, and infrastructure), health providers practice relational ethics. Where one can't do everything for everyone, everything is done for a chosen few and nothing for others. Parents, friends, and acquaintances have priority, then the affluent who may be expected to pay and last of all everyone else (Jaffré, 2003). Consequently, quality of care is exercised according to social ties between provider and patient rather than standard norms and uniform skills. For example, a midwife in a district hospital chose to conduct an exam on her friend (who prepared meals in the hospital cafeteria) before she attended to a patient who had arrived earlier with complications of abortion. Only when the patient collapsed from her chair in the midwife's office, bleeding profusely, did the midwife halt her friend's exam and prepare the patient for uterine evacuation (Suh, 2014b). Fortunately, this patient survived, but other women and infants may die because they are not socially recognized in the technical space of maternity, and their obstetric care is consequently neglected. At a hospital in Niger, a midwife delegated a woman's delivery to a student midwife. Labor lasted a long time and the infant nearly suffocated to death. Afterwards, the head midwife simply said: "You were lucky … if it was me who managed your delivery, I would have torn (this refers to episiotomy) you from the start! (p. 150)" (Jaffré and Olivier de Sardan, 2003).

Quality of care is also conditioned by health workers' assessment of the socio-demographic profile of their patients, and the expectations and actions that emerge from such judgments. Poor women who arrive at the hospital without sanitary pads or clean bed sheets may be scolded harshly by health workers who see them as unfit mothers (Geurts, 2001; Jewkes et al., 1998). In Senegalese hospitals, health workers may subject unmarried women and young students seeking post-abortion care to intense questioning, and at times threats to withhold services, because they are suspicious that such women have attempted to procure an illegal abortion (Suh, 2014a). Young women who fail to comply with providers' instructions for labor and delivery may be perceived as irresponsible and subsequently punished with unnecessary interventions. In a hospital in Niger, a midwife instructed her assistants to conduct an episiotomy and use forceps on a laboring woman: "She's a "primi," no ? It's these lazy women who refuse to push, they like pleasure but not suffering. Tear her and use forceps as necessary (p. 137)" (Jaffré and Olivier de Sardan, 2003).

In some facilities, the high rate of maternal and infant death renders such events commonplace from a social and emotional point of view. The banalization of the worst possible outcome, combined with the anonymity of most patients, offers health personnel an emotional distance from obstetric dramas. Such neglectful indifference towards patients, coupled with a standardization of habits rather than clinical protocols such as partograph use during all deliveries, may lead to a repetitive acquittal of errors within the facility even when these are admitted.

3. Discussion

By offering a glimpse of the social significance of sexuality and fertility, as well as the daily realities of reproductive health care in health facilities throughout West Africa, we join other social scientists in questioning the empirical basis and relevance of evidence-based policymaking in global health (Adams, 2013; Behague et al., 2009; Feierman et al., 2010; Lambert, 2013; Pfeiffer and Nichter, 2008; Storeng and Mishra, 2014). Using a localized, empirical approach that explains the behaviors and practices of health workers and patients within a broader social, economic, and professional context, we illustrate how poor maternal health outcomes may result at the interface of material realities and the evidence-based logics of health programs.

Our anthropology of interfaces highlights the gaps between reproductive health program objectives and measures and the socially embedded practices and meanings of fertility. Where health programs are concerned with spacing or limiting fertility, men and women aspire to exercise a socially appropriate and discreet sexuality. Where institutional guidelines define functional gestures and relations of obstetric care, health professionals' practices are governed not only by resource constraints, but also by selective ethics linked to various scales of recognition of the patient.

Reproductive health programs may thus have little relation with the real situations they are supposed to be improving. Consequently, the link between evidence-based reproductive programs and the localities of their implementation exists largely on paper: its repository is formed by a kind of intertextuality constructed by countless seminars that are guided by a litany of evidence-based recommendations rather than empirical descriptions and analyses of professional and popular practices (Jaffré, 2007). It is precisely these locally observed practices that, in tandem with "thinking globally," should guide the formulation of reproductive health policies and programs regarding health worker training, health system strengthening, and community organization and sensitization.

Underlying our anthropology of interfaces is the question of biopower. Family planning and obstetric care interventions are part of a long and plural history of struggles to control the reproductive body in Africa. The regulation of fertility and sexuality held considerable socio-political significance in West African colonial regimes. For example, during the 1930s, French authorities in Dakar promoted marriage between Senegalese midwives and teachers in order to form "Westernized elites" (Barthélémy, 2010). Racial dominance hinged upon the policing of sexuality through policies related not only to marriage and inheritance, but also concubinage, prostitution, immigration, and segregation (Stoler, 2002; Stoler and Cooper, 2013). More recently, the capacity of contraception and abortion to separate fertility from sexuality has raised the possibility of altered gender relations. Consequently, contraception and legal abortion are often critiqued as extensions of "Western" norms that corrupt "traditional" standards. Resistance to these transformations has been codified in the rejection of secular family laws and the retreat of women's rights that accompanied them (Camara, 2007; Famanta, 2012; Villalòn, 1996).

Certainly, we join many scholars in exploring how public health institutions govern individual bodies through normalization (Canguilhem, 1966; Scheper-Hughes and Lock, 1987). But we remain attentive to other forms of power related to religion, gender, and social status that influence women's health outcomes. The risk of maternal death is inextricably intertwined with the social significance of fertility. Women are also vulnerable to death and injury in hospitals when, for a variety of social and economic reasons, clinical protocols are not followed. If we are serious about reducing global disparities in maternal death, we must address the social processes and relations that restrict the choices women make regarding their bodies and their lives.

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