



Hidden costs: The direct and indirect impact of user fees on access to malaria treatment and primary care in Mali

Ari Johnson^{a,b}, Adeline Goss^{a,c}, Jessica Beckerman^{a,b}, Arachu Castro^{d,*}

^a Project Muso Ladamunen, Yirimajo, Mali

^b University of California San Francisco, San Francisco, CA, United States

^c University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, United States

^d Program in Infectious Disease and Social Change, Department of Global Health and Social Medicine, Harvard Medical School, Boston, MA, United States

ARTICLE INFO

Article history:

Available online 1 August 2012

Keywords:

Mali
Health financing
Fee-for-service
Access to health care
Health seeking
Primary health care
Malaria

ABSTRACT

About 20 years after initial calls for the introduction of user fees in health systems in sub-Saharan Africa, a growing coalition is advocating for their removal. Several African countries have abolished user fees for health care for some or all of their citizens. However, fee-for-service health care delivery remains a primary health care funding model in many countries in sub-Saharan Africa. Although the impact of user fees on utilization of health services and household finances has been studied extensively, further research is needed to characterize the multi-faceted health and social problems associated with charging user fees. This ethnographic study aims to identify consequences of user fees on gender inequality, food insecurity, and household decision-making for a group of women living in poverty. Ethnographic life history interviews were conducted with 24 women in Yirimadjo, Mali in 2007. Purposive sampling selected participants across a broad socio-economic spectrum. Semi-structured interviews addressed participants' past medical history, socio-economic status, social and family history, and access to health care. Interview transcripts were coded using the guiding analytical framework of structural violence. Interviews revealed that user fees for health care not only decreased utilization of health services, but also resulted in delayed presentation for care, incomplete or inadequate care, compromised food security and household financial security, and reduced agency for women in health care decision making. The effects of user fees were amplified by conditions of poverty, as well as gender and health inequality; user fees in turn reinforced the inequalities created by those very conditions. The qualitative data reveal multi-faceted health and socioeconomic effects of user fees, and illustrate that user fees for health care may impact quality of care, health outcomes, food insecurity, and gender inequality, in addition to impacting health care utilization and household finances. As many countries consider user fee abolition policies, these findings indicate the need to create a broader evaluation framework—one that can measure the health and socioeconomic impacts of user fee policies and of their removal.

© 2012 Elsevier Ltd. All rights reserved.

Introduction

An increasing number of countries are removing user fees for health services, as part of efforts to improve health outcomes and to make health care access more equitable (Castro, 2008; McPake, Brikci, Cometto, Schmidt, & Araujo, 2011). However, across sub-Saharan Africa, many health systems continue to charge fees paid at the point of care (WHO, 2010; Yates, 2009). Gender inequalities, compromised food security, and lack of access to education have each been associated with health vulnerability and poorer health

outcomes (Anema, Vogenthaler, Frongillo, Kadiyala, & Weiser, 2009; Campbell et al., 2009; Cochrane, Leslie, & O'Hara, 1982; Farmer, Connors, & Simmons, 1996; Gundersen & Kreider, 2009; Hudelson, 1996; Mturi & Curtis, 1995; Tulasidhar, 1993; Weiser, Fernandes et al., 2009; Weiser, Frongillo et al., 2009)—yet the specific association between these structural problems and user fees requires further examination. With more countries across Africa considering removing user fees and development agencies considering broad support for such initiatives, careful consideration is merited to rigorously measure the impact of user fees and their removal.

At the 1978 International Conference in Alma Alta, 134 health ministries signed a commitment to achieve universal access to primary health care, declaring health to be a human right (WHO &

* Corresponding author.

E-mail address: Arachu_Castro@hms.harvard.edu (A. Castro).

UNICEF, 1978). In the following years, however, and in the context of inflation, recession, foreign debt, and structural adjustment programs of the 1980s, African governments faced pressure to reduce public spending on health care while also improving the reach and impact of their primary health care systems (Cueto, 2004; Stanton & Clemens, 1989). To address these competing pressures, the Bamako Initiative of 1987 and a World Bank policy document (Akin, Birdsall, & De Ferranti, 1987) urged countries to adopt user fee policies aimed to improve equity by supporting the development of a decentralized primary care system (Akin et al., 1987), improve efficiency (Musgrove, 1986), enhance quality and sustainability through cost recovery, and encourage community engagement in primary health care delivery (Jarrett & Ofosu-Amaah, 1992; Keshavjee, 2004). Such policies—tagged as ‘cost-sharing,’ ‘cost-recovery,’ or ‘user fee for service’—were adopted by a large number of countries in subsequent years.

Approximately 25 years later, a large body of evidence indicates that the introduction or increase of user fees increases inequalities in access to care, by disproportionately reducing health care utilization by the poorest segments of society (Bennett, 1989; Gertler, Locay, & Sanderson, 1987; Haddad & Fournier, 1995; James et al., 2006; Sauerborn, Nougara, & Latimer, 1994; Sepehri & Chernomas, 2001; Waddington & Enyimayew, 1989, 1990; Yoder, 1989). Studies have also repeatedly shown that user fees lead to delays in health-seeking by patients living in poverty (Jacobs & Price, 2004; Kremer & Miguel, 2007; Lennock, 1994; Weaver, 1995). The World Health Organization has identified point-of-care fees as “the most inequitable method for financing health-care services” (WHO, 2008, p. 28).

In recent years, the removal of user fees has been associated with increases in service utilization, particularly by the poor (Batungwanayo & Reyntjens, 2006; Deininger & Mpuga, 2004; Masiye, Chitah, & McIntyre, 2010; Meessen, Van Damme, Tashobya, & Tibouti, 2006; Nabyonga et al., 2005; Ridde, Diarra, Heinuller, & Mahaman, 2009; Walton et al., 2004; Xu et al., 2006). A 2011 review examined the relationship between user fees and utilization in 16 studies, finding that utilization decreased with the introduction or rise of health services fees and increased with the removal or reduction of fees in all but two studies that had combined user fee introduction with quality improvement interventions (Lagarde & Palmer, 2011). In a health facility in Rwanda supported by the Ministry of Health and the Millennium Villages Project, the subsidization of public insurance and the suspension of co-payments tripled the utilization of health services within a month (Dhillon, Bonds, Fraden, Ndahiro, & Ruxin, 2012). Removal of user fees has also been associated with improved mortality; preliminary data show that after removal of all user fees at Médecins Sans Frontières clinics in Sierra Leone, mortality decreased from 1.7 deaths per 10,000 persons per day to 0.7; the mortality in children under five decreased from 3.5 to 1.3 (Médecins Sans Frontières, 2008). A study modeling the impact of increased utilization in reducing child mortality estimated that 233,000 [153,000–305,000] deaths of children under five could be prevented annually by removing user fees in 20 African countries (James, Morris, Keith, & Taylor, 2005).

A randomized control trial comparing patients receiving free care to patients paying user fees in Ghana found a modest increase in utilization amongst the group receiving free care, but found no significant difference in their primary outcome measure—the prevalence of malaria-associated anemia among children under five (Ansah et al., 2009). While user fees were removed across all age groups and diagnoses, the study only examined one primary health outcome for one disease in one age group. Thus, it did not provide conclusive evidence regarding the relationship between user fee removal, increases in utilization, and health outcomes

(Ridde & Haddad, 2009). However, the study highlights the limitations of using utilization as the sole indicator of the success of an intervention, particularly when its ultimate objectives relate to improvements in health outcomes. A review of the impact of ill health on impoverishment in poor households in developing countries concludes that households struggling to cope with health care finances in poor countries “adopted unsustainable strategies that damaged asset portfolios and caused or sustained impoverishment” (Russell, 2004, p. 153). It called for further research into the hidden cost of illness at the household level.

As countries consider revisiting or removing user fee financing approaches, it is important to define as comprehensively as possible the impacts of user fees and to assess the potential downstream impact of user fee removal. The current study hypothesizes that user fees may impact not only health care utilization but also the completeness of care, timeliness in access to care, food security, gender inequity, and household decision-making. This ethnographic study is designed to provide a nuanced characterization of how user fees impacted the lives of study participants and, in doing so, to identify domains for further qualitative, quantitative, and applied policy research.

The study was conducted in Yirimadjo, Mali. With a population of 15 million people, Mali ranks 175 out of 187 countries in the United Nations Human Development Index (United Nations Development Program, 2010). Yirimadjo is a rapidly growing peri-urban area located in the municipality of Bamako, the capital of Mali. The National Statistical Office estimates the population of Yirimadjo at just over 45,000 residents. At the time of this study, Yirimadjo was not connected to Bamako’s municipal running water, sanitation, or electricity infrastructure. Local leadership includes the Yirimadjo deputy mayor’s office and a Yirimadjo-wide traditional chief. The area is predominantly Muslim, with a minority Christian population. Polygyny is widely practiced. The infant mortality rate in Mali is estimated at 99 per 1000 live births and the under-five child mortality rate is estimated at 178 per 1000 live births (UNICEF, United Nations Population Division, & United Nations Statistics Division, 2011). In Mali, malaria accounts for 38.4% of reasons for seeking care, with 1,633,423 cases and 2331 fatalities reported in 2009. In Yirimadjo, malaria accounted for 49% of outpatient visits in 2006 (Ministry of Health of Mali, 2007).

Since 2006, many African countries have removed user fees for some or all of their citizens (Government of Sierra Leone, 2009; Yates, 2009). In Mali, the Ministry of Health has adopted policies to provide selected services free of charge, including Caesarian sections, HIV testing, antiretroviral treatment, and artemisinin-based combination therapy for malaria. However, the country’s public sector health system charges fees at point of care for all other consultations, diagnostic testing, medications, and care services. Though Mali hosted the original Bamako Initiative conference that led to widespread adoption of user fee systems, the Malian Ministry of Health is actively examining the possibility of changing its user fee policies, as it convened a conference in 2011 to evaluate the impact of user fees and their potential removal.

Methods

Ethnographic life-history interviews were conducted with 24 female participants, as part of a study approved by the Harvard Medical School Committee on Human Studies (Protocol M14272-101). Enrollment was restricted to adult women to focus on characterizing the impact of user fees on gender inequalities faced by women. Names have been changed to protect participant anonymity. All women interviewed were residents of Yirimadjo and participants in education and microfinance programs as part of Project Muso Ladamunen, run by a non-governmental organization

(NGO). Study participants were selected by purposive sampling. To capture a wide social spectrum, purposive sampling identified and selected participants who: 1) dropped out of the NGO's program or had significant problems with participating, 2) experienced considerable social or economic challenges over the course of a program, or 3) became successful leaders within a program. Through either their leadership or the challenges they faced, these groups had direct experience with and could provide insight upon the process of accessing health care in Yirimadjo. Demographic characteristics of study participants are summarized in Table 1.

Interviews were conducted in June, July and August 2007 in the Bamanankan language, through a translator, in two 2–3 h sessions, in a private space at the participant's home. Interviews employed a structured, open-ended interview guide, with questions addressing participants' past medical history, access to health care services, social and family history, educational background, socio-economic status, household decision-making processes, and participation in the NGO's microfinance and education programs. Interviews examined the impact of direct costs of care—including consultation fees, medication and equipment costs, and diagnostic testing fees—as well as the impact of indirect costs of care. Results pertaining to the impact of the NGO's programs on health care access are beyond the scope of this manuscript and will be reported elsewhere.

Each interview was recorded and transcribed. Qualitative analysis was conducted with NVivo software to code and analyze transcripts according to five categories—access to health care, interactions of poverty and health, women's decision-making power, aspirations for the future, and the NGO—and 31 sub-categories. These categories, which explored interactions between user fees, conditions of poverty, and gender inequality, utilized structural violence (Galtung, 1969) as the guiding analytical framework; that is, a concept that posits inequality in health outcomes as an indirect form of violence created by social structures of inequality that constrict individual agency. The framework of structural violence thus facilitates the characterization of complex bidirectional relationships between social structures, economic conditions, and health policies. After initial coding, these categories were regrouped to capture two themes: 1) user fees leading to delayed and incomplete care and 2) the impact of user fees on food security, financial security, and women's decision making agency.

Results

Women's life histories described multifaceted direct and indirect consequences of Mali's fee-for-service health care system. Health care fees prevented participants from seeking and receiving health care for themselves and their families. However, their

impact on participant health extended beyond decreased utilization. Fee-for-service for health care had indirect consequences on the health of participants and their families, including late treatment initiation, inappropriate or dangerous home-treatment, extended illness without treatment, inability to work, loss of food security, a decline in women's agency, and compromised access to education.

Fee-for-service and delayed or incomplete care

The interviews revealed that three types of costs act as barriers to utilization in Mali's fee-for-service health care system: 1) the indirect costs that constitute "the means to go to the hospital," which include lost work time and transportation costs, 2) the fixed consultation user fee charged at entry, and 3) the cost of medications, diagnostic studies, and services to be prescribed, which is unknown a priori to the patient. Aissata, a 37-year-old mother of five children, explained, "Malaria kills so many people in the neighborhood; not everyone has the means to go to the hospital. You go to the hospital and you have to pay for the consultation and the medicine." Participants also described how the indirect consequences of paying for health care—for example, the potential for compromised food security or indebtedness—led them to delay seeking care at government clinics or hospitals. Nine out of 24 participants described a process of waiting several days before seeking medical care, assessing the severity and the duration of the illness at home first, and weighing the dangers to their family's welfare posed by paying user fees against the perceived danger of the illness.

At the time of interview, Maimouna, a 30-year-old mother of five children, was caring for her young daughter who she said was displaying symptoms of malaria. She explained why she was waiting to bring her to the local government clinic:

You know, we have financial difficulties. Why bring my daughter to the clinic and get a prescription with no money to buy it? That's not necessary. That's why we start with home treatment first. If we're lucky, she'll recover this week. If we're not, we'll take her to the clinic...Maybe she'll recover at home, and the money we'd use for the treatment in the hospital will be used for other things...When [my husband] takes a child to the clinic, I know that the following day he won't give me the complete money for food.

Maimouna weighs the known impact of paying fees for care on her family's food security against two unknown variables. First, after incurring the cost of bringing her daughter to the health center and paying for the consultation, what is the likelihood that her family will be able to afford the prescribed medications needed for a positive treatment outcome? Second, what is the likelihood that her daughter will recover at home without treatment? Conditions of structural violence play a driving role in Maimouna's decision to delay seeking care for her daughter and also suggest that her decision-making power may be limited because it concerns household finances controlled by her husband, who she identifies as holding the power of bringing the child for care and subsequently providing the diminished household food budget.

Ramata, a 35-year-old mother of three children, described the role of cost considerations in deciding whether to bring her son, age five, to the hospital for care:

He said, 'I'm feeling sick.' I showered him and dressed him. He went and lay down. When he got up, he had a very high fever. I had some fever medicine here and gave it to him. A little after he got up, he started throwing up very hard, and his body kept on warming up. In the meantime, his father came home from

Table 1
Descriptive statistics of the study population ($N = 24$ women).

Age (mean \pm standard deviation)	40 \pm 10
Marital status	
Married	88%
Widowed or divorced	12%
Children	
Number of living children (mean \pm standard deviation)	3.6 \pm 2
Reported one or more children that had died	32%
Education	
No formal education	29%
Completed less than 9 years of education	46%
Completed 9 or more years of education	25%
Employment	
Formal employment	30%
Informal sector (such as trade)	52%
No employment, informal income	17%

work. I told him about it. He said, 'Well, this is the situation. I don't have money to take him to the hospital. Give me some time. I'm going to go see the pharmacist around the corner. He's my friend, and I'll ask him if he can help me.' He went and saw the pharmacist, who gave him two medicines. The pharmacist there thought it was malaria and gave us some malaria medicine and another syrup for fever. He came home, we gave [our son] those medicines, but they did not help. As the night went on, my son just kept on getting sicker and sicker. Between eleven and twelve o'clock at night, he was having seizures, jerking up and down on the bed. So we got very scared. My husband called one of his friends who has a car to help us take the boy to the hospital. We went to the community center. Before we left home, my son had already passed out. Like a corpse. His body was all cramped up. You could hardly move his body.

Ramata's son was brought eventually to the district hospital where he received treatment and ultimately recovered. As in Maimouna's story, the impact of user fees in delaying care for Ramata's son is shaped by gender inequality and poverty. The presence of fees limits Ramata's agency regarding health care decisions for her son—she can only access the resources available in her home. Her husband, who holds control of household finances, weighs health care costs with the timing of seeking care and determines whether to take his son to the hospital. The presence of user fees not only delays care but also reinforces pre-existing gender inequalities and limits Ramata's agency to make decisions in the interest of her son's health. In turn, Ramata's husband identifies insufficient financial resources as the key factor in delaying care for their son, whose condition declined precipitously in the interim.

Study participants initially able to access care were not necessarily able to pay for the complete prescribed course of treatment. Within the fee-for-service system, they could access only as many doses or services as they could purchase. Ramata explained that, after repeated incomplete courses of therapy, her own illness remained unsuccessfully treated for six years:

The way the disease started was I was having pain under my stomach, in between my belly button and my private area. It was hurting me a lot and my private parts started itching. When I scratched it, it was hurting me when I peed. It would burn when I peed. My mouth started having sores. I couldn't eat. It was painful. Both my mouth and my private parts were irritated. You know, when I put food in my mouth, it was painful. When I urinated, it was painful. My husband took me to the hospital. We went there, they gave me some medicines, some soaps to clean up with, some medicines to put on, some female suppositories, and some pills. The appointment they gave us, I didn't go, because my husband told me he didn't have enough money to pay for the visit and the medication. He told me, 'Now that you're not in the severe pain you used to be, let's try the traditional medicines.' We went and got some. That gave me a terrible infection. It worsened the situation. Everything was terrible [...] But when I was having the treatment, I was pregnant. It was the early stages of pregnancy. Because I wasn't having adequate treatment, the infection was on the baby too. I had a baby girl who was infected as well. The baby was in pain. It was hard. Both the baby and I went to the hospital. They gave me some treatment. They said, 'You were supposed to come back to continue the next step of the treatment!' I said I couldn't. We didn't have the money. And they said, 'Well, now we have to start out again at ground zero.' My daughter, it's okay, she did well. But for me, I'm still having the problem. Because each time it's time to go for the next step, I don't have the money to afford it. We try the treatment and stop it every time. I'm still having it.

Ramata's case reflects the disconnect between utilizing health care and accessing effective health care. Decisions to seek care are controlled by her husband. He makes a decision that he describes first in financial terms, and second in his own judgment of the severity of his wife's suffering. Traditional medicines, like medicines from the pharmacist in the previous case, are chosen because they are more affordable. Yet her husband implies that treatment at the health center would be more effective than traditional treatment. This decision, shaped by user fees, results in incomplete care, adverse health outcomes, and reinforced gender inequalities.

User-fees, in addition to creating barriers to adequate care, also led participants to seek treatment in unsupervised settings outside of the health care system. Participants described how, because they could not afford to pay user fees and essential medicines, they treated illnesses at home, with traditional medicine and unregulated drugs bought from street vendors. Salimata, a 41-year-old woman who has lost three of her eight children, explained: "I trust modern medicine, modern treatment. If I use traditional medicine, it's because I don't have enough money. Modern medicine costs so much that I cannot bring [my children] to the hospital all the time. But if I have money, I only think of the hospital because the child recovers quickly." Kadia, a local teacher, said that people in her community "are afraid of going to the hospital, to the clinic, because they're expecting expensive prescriptions, and they don't have money. So they go into the bush and cut plants and boil them for treatment." Nana, a 44-year-old mother of seven, recounted:

I remember, right after my father passed away, my brother got really sick. He had some type of growth under his shoulder. It grew so big it was like a fist. And there was no money to take him to the hospital. We couldn't afford it. We had problems eating, moreover going to the hospital, because we knew they would give us a prescription. What's the point of going, getting a prescription that you need to pay over 5000 CFA for [approximately \$10USD]? That's the reason why a lot of children are sick in the streets. They are malnourished and don't get any treatment. Their mothers go to the traditional doctors, take that [medicine] home, cook it, and feed their babies with those medicines, because they don't have a choice.

As in Maimouna's example, in Nana's case there are three factors in her family's decision to seek care: indirect costs of transport, fixed consultation cost, and variable costs of treatment. Her assessment suggests that even if the family could pay for the first and second set of costs, they chose not to pursue medical care because they could not afford medication costs. There are likely to be multiple factors that influence use of traditional medicine, and biomedicine and traditional medicine are not necessarily used in a mutually exclusive manner. Nonetheless, in the absence of resources to pay user fees, participants consistently reported relying upon traditional medicine. Participants also described buying inexpensive medicines from unregulated street vendors when they could not afford to pay user fees or medicines at government health centers, as well as using these street-purchased medications with inconsistent dosing and without consultation from health care providers.

User-fees compromising food security, financial security, and women's agency

Among those who sought care at government health centers amidst financial hardship, fees charged at point of care compromised food security for patients and their families. Djeneba, a mother of seven children who sells fish in the market, recounted that after paying for prescriptions and medical care for a family member, her family was forced to reduce their food budget, eating

one meal per day over the course of the subsequent two years. This vulnerability was not limited to the unemployed or to those whose income came through informal trade. Kadia, a local teacher whose husband is also employed, explained: “There is a time of recuperation [after paying for medical care]. When I tell my husband that a certain food is finished, he says ‘No, I’ve just finished with the medical expenses, so please, let me breathe.’” Oukroka, a 28-year-old wood seller whose husband is a bus company employee, recounted a time when buying medication for her son’s respiratory infection affected the amount of money her husband gave her to buy food:

It happened one day that I was obliged to cook porridge for the whole family, because it was difficult for him.... That happened for only three days and that’s all... I hid it from everybody. Outside of this interview, I’ve never told anyone that I made porridge... I’d be ashamed if people knew that we had no food at home... If my husband doesn’t have it, I have to get something for the family. If I myself don’t have it, it’s a big shame in the society... My husband paid for the prescription with the money we’d otherwise be using for food.

Oukroka expresses impact of medication costs both in terms of her family’s food security and of resulting stigma, anticipating the potential for food insecurity to precipitate further vulnerability and social isolation for her family. Many participants described this period of undernourishment immediately following payment for medical care and continuing through the patient’s illness. In addition to using money from their food budget, participants described other ways in which user fees destabilized the household’s financial security. In the absence of sufficient financial resources, respondents sold assets such as clothing and took out loans in order to pay for care and essential medicines

Participant stories also revealed indirect consequences of untreated illnesses on income. One participant, unable to afford to pay for an operation, described the impact of her continued illness: “Now I cannot wash clothes. I cannot do anything, just sit... Since the pain started, I’ve stopped with everything... I cannot make money now because of that pain.” Nana recounted the changes in her life following the death of her father, the primary income earner of her family:

My father died and left four wives and 13 children. It was tough. He was the only breadwinner in the house. Even though he was retired, he had some pension money, and the combination of that and the farm helped us live. But when he was gone, we had too many problems. And that was the reason why I left school in the 4th grade. My mothers, none of them worked. So it made us go back to zero. I remember, after school, I had to come home. After I ate, I needed to do the dishes and go sell yams for my mom so that I could bring in a little money. It was so much for me that I needed to quit school to help my mothers... At that time, my biggest fear was to get sick. I didn’t want to get sick, and I didn’t want anyone in the family to get sick, because there was no money. You get sick, you have no money, you die. That was my fear.

The death of Nana’s father led the family deeper into poverty, rendering Nana unable to continue her education and rendering her family less able to pay user fees. This reinforced her family’s vulnerability to untreated illness

Women interviewed explained that user fees rendered them dependent upon their husbands for making treatment decisions for themselves and their children. Maimouna, whose daughter had symptoms of malaria at the time of the interview, explained that her husband would later perform a ‘medical-financial diagnosis’ to

determine whether they would take the child to the government health center or treat her at home with pills they had purchased without a prescription: “I’m waiting for my husband. When he’ll be here, he’ll do the diagnosis and see if it’s necessary to take her to the clinic. And if he doesn’t have money, I think we’ll keep her here and give her the pills we have. We’ll keep her at home and continue with the pills.” Oukroka explained that her husband decided when she left the house and when to provide her with financial resources to pay for health care. In the context of a fee-for-service system, her husband’s control of household finances affected her access to health care: during her pregnancy, her husband decided what prenatal testing she would get based on which user fees he could pay.

Discussion

The current study explores the complex effects of user fees on the lives of women and families living in poverty, to inform how to best evaluate the impact of changes in user fee policies. The United States Institute of Medicine proposed a definition of health care access as “the timely use of personal health services to achieve the best possible health outcomes” (Millman, 1993, p. 4), which focuses on well-timed utilization. The WHO has proposed an additional access measure that encompasses need, utilization, and quality of care termed “effective coverage,” defined as the proportion of a population that needs a procedure that actually receives it (WHO, 2001). Other commonly employed utilization measures capture neither the timing of care nor the quality and completeness of care. The results of the current study indicate that fee-for service health care financing, by affecting the use, timing, and completeness of health care, is a key social determinant of health. Participant accounts identify the impact of fees 1) on the timing, completeness, and quality of care, and 2) on food security, access to education, women’s agency, and household financial security.

Consistent with the existing literature, participants in this study described avoiding or delaying care for themselves or their family members at public facilities due to an inability to pay user fees. Thaddeus and Maine describe three categories contributing to delayed treatment: delay in the decision to seek care, delay in arrival at the health facility, and delay in adequate care provision (Thaddeus & Maine, 1994)—all of which played a central role in participant narratives. Difficult choices between essential expenses such as food, school fees, and medical care led patients to wait until illnesses had reached severe stages before seeking care. Participant arrival at health care facilities was also delayed by efforts to access resources to pay fees, through their husbands or through loans. Participants described only paying for parts of prescriptions and not returning for subsequent appointments due to lack of funds. As in the case of Ramata’s son, presentation at later stages can increase morbidity and mortality, and lead to further transmission of communicable diseases such as malaria, tuberculosis, and HIV. This form of care rationing may endanger patients and populations and impact health outcomes even among patients who are recorded as having attended health facilities for services (Castro, 2008; Keshavjee, 2004).

Additionally, there are indirect effects of reduced utilization, as participants attempted treatment with medicinal plants or other home treatment without accompaniment of a trained professional. The use of drugs purchased in the *pharmacie par terre*—Mali’s unregulated informal sector—poses dangers to the patient through treatments that may lack efficacy or have dangerous adverse effects due to improper formulation, dosing, handling, or preservation (Goel, Ross-Degnan, Berman, & Soumerai, 1996; Goodman et al., 2004).

Participant interviews reveal that user fees not only operate as a barrier to seeking care, but also, in cases where the patient succeeds in crossing that barrier, may contribute to food and

economic insecurity. The study suggests that paying user fees may have immediate health consequences, contributing to malnutrition during and after periods of illness. The impoverishing effects of user fees have been highlighted elsewhere: fees for medications and care may create or deepen poverty, by increasing indebtedness, compromising financial security, and contributing to untreated illness with lost work time (Keshavjee, 2004; McIntyre, Thiede, Dahlgren, & Whitehead, 2006; Russell, 1996). The WHO has estimated that each year health care costs push 100 million people into poverty (Mullan & Frehywot, 2007). Further study could assess the relationship between use fees and changes in nutritional status at a population level.

The lived experiences of Maimouna, Ramata, Kadia, and Oukoukia are marked by a lack of agency in making health decisions independently of their husbands in the context of fee-for-service health care. Existing studies have shown that women's ability to pay for health care is influenced by their often-limited control over resources and decision-making (Nanda, 2002). In situations where the female participants in this study lacked personal income to pay fees for care for themselves or their children, they described waiting for their husbands to decide whether to provide the resources necessary for seeking care. The impact of user fees in this study traveled along gradients of structural violence, most severely affecting families living in poverty and women with limited decision-making power in their relationships, which in turn reinforced those very conditions of structural violence: food insecurity, gender inequality, and household financial insecurity. These narratives describe the role of user fees in trapping women and their families in cycles of poverty, disease, and powerlessness. The UN Secretary General's recent Global Strategy for Women's and Children's Health (Ki-Moon, 2010) aimed to address this problem, advocating for the provision of free essential health services for women and children.

This ethnographic study is designed to characterize consequences that user fees can have on the lives of women, identifying potential impacts of user fees or their removal that have been insufficiently examined to date. The study has several limitations that are important to consider. The study explored one part of the user fee issue: how women reported fees influenced their behaviors. Responses provided by women in this study may have been tailored to push for the abolition of user fees, and there is no way to control for this. Given small sample size, the study is not designed or intended to quantify or generalize the impact of user fees in each of these domains, but rather to identify and characterize consequences of user fees that require further study and merit inclusion in evaluation frameworks for user fee policy changes. By more comprehensively measuring how user fees and their removal impact household food security, the timing and completeness of care, gender inequality, and household decision making, policy makers will be better placed to understand the implications of continuation or removal of user fee policies.

The purpose of this study was to identify and characterize potential direct and indirect consequences of user fees for health care. While changes in utilization of health services and effects on household finances should continue to play a central role in evaluating the impact of changes in health care financing policy, the findings in the current study characterized an array of consequences of fees that are not sufficiently captured by these measures. As a result, increases in health service utilization with the removal of fees are likely to underestimate the impact of this change on the health and well being of individuals and communities. Future evaluations could better capture the impacts of user fees by measuring changes in nutritional status and food security, health outcome indicators (child and maternal mortality, malaria prevalence), women's decision-making power, and household

poverty level. Such further studies are necessary to better capture the effects of user fee removal and, in turn, inform future health care financing policy decisions.

Acknowledgments

The authors would like to acknowledge and thank Fatouma Bah and Madougou Niambele for their contributions translating interviews for this study. The first author thanks the Harvard Medical School Scholars in Medicine Office for financial support of the study.

References

- Akin, J. S., Birdsall, N., & De Ferranti, D. M. (1987). *Financing health services in developing countries: An agenda for reform*. Washington, DC: World Bank.
- Anema, A., Vogenthaler, N., Frongillo, E. A., Kadiyala, S., & Weiser, S. D. (2009). Food insecurity and HIV/AIDS: current knowledge, gaps, and research priorities. *Current HIV/AIDS Reports*, 6, 224–231.
- Ansah, E. K., Narh-Bana, S., Asiamah, S., Dzordzordzi, V., Biantey, K., Dickson, K., et al. (2009). Effect of removing direct payment for health care on utilisation and health outcomes in Ghanaian children: a randomised controlled trial. *PLoS Medicine*, 6, e1000007.
- Batungwanayo, C., & Reyntjens, L. (2006). *Impact of the presidential decree for free care on the quality of health care in Burundi*. Bujumbura: Ministry of Public Health of Burundi.
- Bennett, S. (1989). The impact of the increase in user fees: a preliminary investigation. *Lesotho Epidemiological Bulletin*, 4, 29–37.
- Campbell, A., de Pee, S., Sun, K., Kraemer, K., Thorne-Lyman, A., Moench-Pfanner, R., et al. (2009). Relationship of household food insecurity to neonatal, infant, and under-five child mortality among families in rural Indonesia. *Food and Nutrition Bulletin*, 30, 112–119.
- Castro, A. (2008). In and out: user fees and other unfortunate events during hospital admission and discharge. *Cadernos de Saúde Pública*, 24, 1174–1178.
- Cochrane, S. H., Leslie, J., & O'Hara, D. J. (1982). Parental education and child health: intracountry evidence. *Health Policy and Education*, 2, 213–250.
- Cueto, M. (2004). The origins of primary health care and selective primary health care. *American Journal of Public Health*, 94, 1864–1874.
- Deininger, K., & Mpuga, P. (2004). *Economic and welfare effects of the abolition of health user fees: Evidence from Uganda*. World Bank Policy Research Working Paper. Washington, DC: World Bank.
- Dhillon, R. S., Bonds, M. H., Fraden, M., Ndauro, D., & Ruxin, J. (2012). The impact of reducing financial barriers on utilisation of a primary health care facility in Rwanda. *Global Public Health*, 7, 71–86.
- Farmer, P., Connors, M., & Simmons, J. (1996). *Women, poverty, and AIDS: Sex, drugs, and structural violence*. Monroe, ME: Common Courage Press.
- Galtung, J. (1969). Violence, peace, and peace research. *Journal of Peace Research*, 6, 67–88.
- Gertler, P., Locay, L., & Sanderson, W. (1987). Are user fees regressive? The welfare implications of health care financing proposals in Peru. *Journal of Econometrics*, 36, 67–88.
- Goel, P., Ross-Degnan, D., Berman, P., & Soumerai, S. (1996). Retail pharmacies in developing countries: a behavior and intervention framework. *Social Science & Medicine*, 42, 1155–1161.
- Goodman, C., Kachur, S. P., Abdulla, S., Mwageni, E., Nyoni, J., Schellenberg, J. A., et al. (2004). Retail supply of malaria-related drugs in rural Tanzania: risks and opportunities. *Tropical Medicine & International Health*, 9, 655–663.
- Government of Sierra Leone. (2009). *Free healthcare services for pregnant and lactating women and young children in Sierra Leone*. Freetown: Government of Sierra Leone.
- Gundersen, C., & Kreider, B. (2009). Bounding the effects of food insecurity on children's health outcomes. *Journal of Health Economics*, 28, 971–983.
- Haddad, S., & Fournier, P. (1995). Quality, cost and utilization of health services in developing countries. A longitudinal study in Zaire. *Social Science & Medicine*, 40, 743–753.
- Hudelson, P. (1996). Gender differentials in tuberculosis: the role of socio-economic and cultural factors. *Tubercle and Lung Disease*, 77, 391–400.
- Jacobs, B., & Price, N. (2004). The impact of the introduction of user fees at a district hospital in Cambodia. *Health Policy and Planning*, 19, 310–321.
- James, C., Hanson, K., McPake, B., Balabanova, D., Gwatkin, D., Hopwood, I., et al. (2006). To retain or remove user fees? Reflections on the current debate in low- and middle-income countries. *Applied Health Economics and Health Policy*, 5, 137–153.
- James, C., Morris, S. S., Keith, R., & Taylor, A. (2005). Impact on child mortality of removing user fees: simulation model. *British Medical Journal*, 331, 747–749.
- Jarrett, S., & Ofosu-Amaah, S. (1992). Strengthening health services for MCH in Africa: the first four years of the 'Bamako Initiative'. *Health Policy and Planning*, 7, 164–176.
- Keshavjee, S. (2004). The contradictions of a revolving drug fund in post-Soviet Tajikistan: selling medicines to starving patients. In A. Castro, & M. Singer (Eds.), *Unhealthy health policy: A critical anthropological examination* (pp. 97–113). Walnut Creek, CA: AltaMira Press.

- Ki-Moon, B. (2010). *Global strategy for women's and children's health*. New York: United Nations.
- Kremer, M., & Miguel, E. (2007). The illusion of sustainability. *Quarterly Journal of Economics*, 122, 1007–1065.
- Lagarde, M., & Palmer, N. (2011). The impact of user fees on access to health services in low- and middle-income countries. *Cochrane Database of Systematic Reviews*, CD009094.
- Lennox, J. (1994). *Paying for health: Poverty and structural adjustment in Zimbabwe*. Oxford, UK: Oxfam Publications.
- Masiye, F., Chitah, B. M., & McIntyre, D. (2010). From targeted exemptions to user fee abolition in health care: experience from rural Zambia. *Social Science & Medicine*, 71, 743–750.
- McIntyre, D., Thiede, M., Dahlgren, G., & Whitehead, M. (2006). What are the economic consequences for households of illness and of paying for health care in low- and middle-income country contexts? *Social Science & Medicine*, 62, 858–865.
- McPake, B., Brikci, N., Cometto, G., Schmidt, A., & Araujo, E. (2011). Removing user fees: learning from international experience to support the process. *Health Policy and Planning*, 26, ii104–ii117.
- Médecins Sans Frontières. (2008). *Full prescription: Better malaria treatment for more people, MSF's experience*. Brussels: Médecins Sans Frontières.
- Meessen, B., Van Damme, W., Tashobya, C. K., & Tibouti, A. (2006). Poverty and user fees for public health care in low-income countries: lessons from Uganda and Cambodia. *Lancet*, 368, 2253–2257.
- Millman, M. L. (Ed.). (1993). *Access to health care in America*. Institute of medicine. Washington, DC: National Academy Press.
- Ministry of Health of Mali. (2007). *National health information systems*. Bamako: Ministry of Health.
- Mturi, A. J., & Curtis, S. L. (1995). The determinants of infant and child mortality in Tanzania. *Health Policy and Planning*, 10, 384–394.
- Mullan, F., & Frehywot, S. (2007). Non-physician clinicians in 47 sub-Saharan African countries. *Lancet*, 370, 2158–2163.
- Musgrove, P. (1986). What should consumers in poor countries pay for publicly-provided health services? *Social Science & Medicine*, 22, 329–333.
- Nabyonga, J., Desmet, M., Karamagi, H., Kadama, P. Y., Omaswa, F. G., & Walker, O. (2005). Abolition of cost-sharing is pro-poor: evidence from Uganda. *Health Policy and Planning*, 20, 100–108.
- Nanda, P. (2002). Gender dimensions of user fees: implications for women's utilization of health care. *Reproductive Health Matters*, 10, 127–134.
- Ridde, V., Diarra, A., Heinuller, R., & Mahaman, M. (2009). *Analyse de la mise en oeuvre et des effets sur l'utilisation des services de l'exemption du paiement direct*. Districts de Keïta et Abalak-Niger. Paris: Médecins du Monde, France.
- Ridde, V., & Haddad, S. (2009). Abolishing user fees in Africa. *PLoS Medicine*, 6, e1000008.
- Russell, S. (1996). Ability to pay for health care: concepts and evidence. *Health Policy and Planning*, 11, 219–237.
- Russell, S. (2004). The economic burden of illness for households in developing countries: a review of studies focusing on malaria, tuberculosis, and human immunodeficiency virus/acquired immunodeficiency syndrome. *American Journal of Tropical Medicine and Hygiene*, 71, 147–155.
- Sauerborn, R., Nougara, A., & Latimer, E. (1994). The elasticity of demand for health care in Burkina Faso: differences across age and income groups. *Health Policy and Planning*, 9, 185–192.
- Sepehri, A., & Chernomas, R. (2001). Are user charges efficiency and equity-enhancing? A critical review of economic literature with particular reference to experience from developing countries. *Journal of International Development*, 13, 183–209.
- Stanton, B., & Clemens, J. (1989). User fees for health care in developing countries: a case study of Bangladesh. *Social Science & Medicine*, 29, 1199–1205.
- Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. *Social Science & Medicine*, 38, 1091–1110.
- Tulasidhar, V. B. (1993). Maternal education, female labour force participation and child mortality: evidence from the Indian census. *Health Transition Review: The Cultural, Social, and Behavioural Determinants of Health*, 3, 177–190.
- UNICEF, United Nations Population Division, & United Nations Statistics Division. (2011). *Statistics*. New York: United Nations. http://www.unicef.org/infoycountry/mali_statistics.html Last accessed 13.05.11.
- United Nations Development Program. (2010). *Human development report 2010. The real wealth of nations: Pathways to human development*. New York: United Nations.
- Waddington, C., & Enyimayew, K. (1989). A price to pay, part 1: the impact of user charges in Ashanti-Akim District, Ghana. *International Journal of Health Planning and Management*, 4, 17–47.
- Waddington, C., & Enyimayew, K. (1990). A price to pay, part 2: the impact of user charges in the Volta region of Ghana International. *Journal of Health Planning and Management*, 5, 287–312.
- Walton, D. A., Farmer, P. E., Lambert, W., Leandre, F., Koenig, S. P., & Mukherjee, J. S. (2004). Integrated HIV prevention and care strengthens primary health care: lessons from rural Haiti. *Journal of Public Health Policy*, 25, 137–158.
- Weaver, M. (1995). User fees and patient behaviour: evidence from Niamey National Hospital. *Health Policy and Planning*, 10, 350–361.
- Weiser, S. D., Fernandes, K. A., Brandson, E. K., Lima, V. D., Anema, A., Bangsberg, D. R., et al. (2009). The association between food insecurity and mortality among HIV-infected individuals on HAART. *Journal of Acquired Immune Deficiency Syndromes*, 52, 342–349.
- Weiser, S. D., Frongillo, E. A., Ragland, K., Hogg, R. S., Riley, E. D., & Bangsberg, D. R. (2009). Food insecurity is associated with incomplete HIV RNA suppression among homeless and marginally housed HIV-infected individuals in San Francisco. *Journal of General Internal Medicine*, 24, 14–20.
- WHO. (2001). *Background paper for the technical consultation on effective coverage of health systems*. Geneva: World Health Organization.
- WHO. (2008). *The world health report 2008: Primary health care now more than ever*. Geneva: World Health Organization.
- WHO. (2010). *The world health report 2010: Health systems financing: The path to universal coverage*. Geneva: World Health Organization.
- WHO, & UNICEF. (1978). *Declaration of Alma Ata: International conference on primary health care, Alma Ata, USSR, 6–12 September 1978*. Geneva: World Health Organization.
- Xu, K., Evans, D. B., Kadama, P., Nabyonga, J., Ogwal, P. O., Nabukhonzo, P., et al. (2006). Understanding the impact of eliminating user fees: utilization and catastrophic health expenditures in Uganda. *Social Science & Medicine*, 62, 866–876.
- Yates, R. (2009). Universal health care and the removal of user fees. *Lancet*, 373, 2078–2081.
- Yoder, R. A. (1989). Are people willing and able to pay for health services? *Social Science & Medicine*, 29, 35–42.