



Beyond the law: Misoprostol and medical abortion in Dar es Salaam, Tanzania



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ABSTRACT

Misoprostol has during the past few years become an important obstetric drug used for different purposes both within and outside hospitals in Tanzania. In this paper, we analyze how misoprostol is perceived, accessed and used off-label as an abortion drug in the city and region of Dar es Salaam. The study took place in Dar es Salaam's three districts from July to November 2015, and had a qualitative explorative approach. We carried out in-depth interviews (42) with the following main categories of informants: women having undergone medical abortion (15), health care workers with experiences from post abortion care (16) and drug vendors (11). Focus group discussions (10) were carried out with young women. A client simulation study was carried out in 64 drugstores across Dar es Salaam assessing the availability of misoprostol and the advice given concerning its use. In addition, shorter qualitative interviews were carried out with representatives of NGOs and public agencies working with sexual and reproductive health issues (17). Our findings reveal that in Dar es Salaam, misoprostol is well known, available and accessed for abortion purposes through drugstores and health providers. Women tend to prefer misoprostol over other abortion methods since it allows for a private, low-cost, safer and less uncomfortable abortion experience. But, while misoprostol facilitates women's agency in the process of seeking abortion, a series of obstacles shaped by a restrictive abortion law and an unregulated pharmaceutical market hinder its safe use. Central obstacles are profit-seeking providers, suboptimal user instructions and poor provider follow-up. In the discussion of the material we draw upon Van der Geest, Hardon and Whyte's concept of the 'social life of pharmaceuticals' and indicate the ways in which misoprostol acts as an agent of change in the social relations connected to abortion.

1. Introduction

“Because everybody now knows what the pills (misoprostol) do, everybody is selling them, at their own prices, because they know people need them. If you want to have an abortion, you will buy them no matter how much they cost.”

The demand for misoprostol for abortion purposes is increasing globally and the city of Dar es Salaam in Tanzania is no exception. The excerpt above, from a focus group discussion among university students in Dar es Salaam, speaks to the growing demand for and access to misoprostol in the city. This paper seeks to gain a better understanding of the potentials and challenges implied by the presence of an abortion drug within a legally restrictive context such as Tanzania.

When misoprostol was registered as a prescription drug in Tanzania in 2007 its intention was to treat and prevent bleeding after delivery (Bixby center et al., 2011). However, misoprostol has since then reportedly been accessible in pharmacies without prescription, including to women seeking abortion. Tanzanian pharmacies are known to dispense drugs without prescriptions (Kagashe et al., 2011), yet, an abortion drug makes for a special case as pregnancy termination is highly restricted by law in Tanzania. The penal code dictates sentences from three to 14 years for those who in some way or other facilitate an abortion when a pregnancy does not threaten a woman's life (Tanzania Penal Code, 1981). In Tanzania prosecutions related to abortion are considered rare, yet the common idea is that abortion is illegal and abortions are by and large carried out clandestinely (Keogh et al., 2015). While misoprostol has been recognized as a safer abortion

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alternative for women in countries where abortion services are restricted (Zamberlin et al., 2012; Ramos et al., 2015; Dzuba et al., 2013; Barbosa and Arilha, 1993), there is in Tanzania concern about the quality and safety of care provided alongside its sale when not supervised by medical authorities (Kamuhabwa and Ignace, 2015; Cartwright et al., 2013).

1.1. Background

The fact that misoprostol finds its way to Tanzanian women with unwanted pregnancy should not come as a surprise. Already in the 1980s, misoprostol went from being an anti-ulcer medication to a popular abortifacient among Latin-American women in lack of legal abortion services (Barbosa and Arilha, 1993). Over the past few decades misoprostol has become increasingly available globally (Fernandez et al., 2009) and is today a drug that cannot be overlooked when discussing abortion in any country. The drug can be purchased over the internet from pharmaceutical companies without prescription (Murtagh et al., 2018) and international women's rights organizations have found ways of bypassing national regulations using telemedicine to provide information about the drug and securing its distribution (Gomperts et al., 2008). The global spread of misoprostol is an expression of the advancements of medical abortion (abortion by use of drugs) since the introduction of the first abortion drug mifepristone (RU-486) in the 1980s. While still largely limited to first trimester abortions, medical abortion is in a number of countries increasingly replacing conventional surgical procedures as a non-invasive, safe and acceptable abortion method (Raymond et al., 2013; Kulier et al., 2011). The simplicity of administering a pill, rather than performing surgery, has importantly allowed responsibility for safe abortion services to be transferred to lower level health workers (Barnard et al., 2015), and even for women to induce early abortions at home through guidance from health providers (Iyengar et al., 2016; Lokeland et al., 2016). Medical abortion is most efficient when misoprostol is part of a two-drug regimen alongside mifepristone. However, misoprostol - which is a heat stable, cheaper and more available drug than mifepristone - is also 85–90% effective when used correctly as a single drug (Tang et al., 2013; Harper et al., 2007). Acknowledging misoprostol's potential as a global abortion drug, the World Health Organization (WHO) issued guidelines for abortion by the use of misoprostol alone in 2012, all the while stressing the importance of access to PAC (post-abortion care) services for treatment of potential complications, such as incomplete abortion (Tang et al., 2013). In a number of countries, misoprostol-only abortions have been welcomed for their relative safety, effectiveness and convenience compared to other abortion alternatives (Zamberlin et al., 2012; Ramos et al., 2015; Iyengar et al., 2016). Studies from Latin American countries indicate that the incidence of severe complications from unsafe abortion falls when misoprostol replaces other self-induced abortion methods (Dzuba et al., 2013). The much cited case of Uruguay has demonstrated how misoprostol has been successfully applied as a public health tool to reduce harm from unsafe abortion even under strict legal regulations (Briozzo, 2016).

In Tanzania, a wide range of methods for self-induced abortion have been reported, including concentrated teas, washing detergents, wood ashes, antimicrobial drugs in high doses or uterine insertion of sharp objects (Norris et al., 2016; Brown et al., 2013; Bangser, 2010; Plummer et al., 2008; Rasch and Kipingili, 2009; Rasch et al., 2014). Several of these methods are associated with severe complications (Rasch and Kipingili, 2009). "Traditional" providers have been known to assist women with abortion through various methods, but illegal abortion services have also been accessible through health professionals, most often by the use of surgical procedures such as dilation and curettage (D & C) or manual vacuum aspiration (MVA) (Rasch and Kipingili, 2009). Reliable estimates of induced abortion rates are almost impossible to obtain in East African contexts, but what is available of hospital-based data indicate a rate of 36 induced abortions per 1000 women in

Tanzania (Keogh et al., 2015). This is a relatively similar figure to estimates of the average incidence of abortion in other East-African countries and indeed in the African region as a whole (34 per 1000 women) (Sedgh et al., 2016). It has been suggested that as much as a quarter of the Tanzanian maternal mortality ratio (556 per 100,000 live births) may be abortion related (Sorensen et al., 2010; Mswia et al., 2012; TDHS-MIS, 2016), and that 67,000 hospitalizations annually are caused by complications of unsafe abortions (Sorensen et al., 2010; Mswia et al., 2012; Rasch et al., 2000). Despite the uncertainty related to these figures, there is no doubt that unsafe abortion is a severe threat to women's lives and health in Tanzania and implies an enormous burden on a hard pressed health system. While the Tanzanian authorities have recognized the magnitude of the problem, the response has been both ambiguous and limited. As a response to public health advocacy (backed by international development goals such as the MDGs), a number of programs have been launched to improve universal access to family planning services (UN Foundation/Family Planning 2020, 2018). Non-discriminatory post-abortion care services (PAC) have also been implemented across the country, aiming to offer the same emergency care to women who have terminated their pregnancies intentionally as to the ones who have suffered unintended miscarriages (Keogh et al., 2015). As a response to international human rights advocacy, Tanzania has moreover ratified the Maputo Protocol, an agreement aiming to strengthen African women's rights in general and sexual and reproductive rights in particular, including improved access to safe abortion services ("Protocol to the African Charter on Human and Peoples' Rights on the Rights of Women in Africa, Art. 142c, Adopted July 11, 2003, 2nd African Union Assembly, Maputo, Mozambique ratified Mar. 3," 2007). However, rather than expanding the ground on which abortion may be legally obtained as implied by the Maputo Protocol, the current government has suggested more severe sanctions on doctors performing illegal abortions (Makoye, 2016). In Tanzania, Christian and Muslim institutions operate within strong moral regimes on sexuality and reproduction. The implications are, among others, a lack of contraceptive education in Tanzanian schools and lack of re-entry possibilities for girls who drop out of school due to pregnancy (Center for Reproductive Rights, 2013). As has been shown in studies from other Sub-Saharan contexts, induced abortion is heavily stigmatized as it is closely associated with non-marital sex (Bleek, 1981; Johnson-Hanks, 2002; Rossier, 2007; Stiles et al., 2015) and perceived of as killing an unborn child (Sambaiga et al., 2019). In Tanzania, fertility control - including abortion - is thus a question of moral politics where public health and rights-to-health arguments may fall short. There is a vast number of stakeholders operating with opposite abortion related positions and agendas in Tanzania (Sambaiga et al., 2019). Morgan and Roberts (2012) argue that reproductive governance is an arena that at all time is cramped with actors, such as politicians, religious leaders, international development promoters, public health promoters, industries, activists, health workers, product vendors or women themselves. It is hence a complex and highly ambiguous environment that shape the conditions under which misoprostol is accessed by women in Dar es Salaam.

Van der Geest, Hardon and Whyte have studied medicines as social and cultural phenomena (Van der Geest et al., 1996; Whyte, 1992). Drawing upon Appadurai's notion the "social life of things" (Appadurai, 1986), they argue that studying pharmaceuticals is particularly useful when seeking knowledge about processes of globalization, localization and social transformation (Van der Geest et al., 1996). As an illustrative example, studies from Latin-America have powerfully demonstrated how misoprostol has been a change-maker in women's access to safe abortion, in the process instigating diverse forms of social transformation. This includes both improvements in reproductive health indicators as well as policy changes in access to legal abortion services (Briozzo, 2016; Kulczycki, 2011). While the global spread of misoprostol as an abortion drug may be understood both as a driver and result of globalization, the manner in which the drug is perceived, accessed and

managed is context dependent. In Sub-Saharan Africa, where misoprostol has been available for a far shorter period of time than in Latin America, there are to date few studies about how it is conceptualized and used as an abortion drug. The overall aim of this study was to enhance knowledge about misoprostol and its potential to improve safe abortion care in Tanzania and in similar settings. Clarke and Montini, who have studied the development and globalization of mifepristone (the first official abortion drug), have demonstrated that discourses on new medicines vary significantly depending on the outlook and stakes of the involved actors (Clarke and Montini, 1993). They have called for a focus on actors differently situated in relation to the medicine in question, including ‘downstream users and consumers’ (Clarke and Montini, 1993). Inspired by Van der Geest, Hardon and Whyte’s studies on pharmaceuticals as social phenomena (Van der Geest et al., 1996; Whyte, 1992) and by Clarke and Montini’s call for downstream studies of discourses surrounding medicines, we studied how misoprostol is perceived, accessed and used on the ground in Dar es Salaam. In the process we explored how the use of misoprostol as an abortion drug is shaped by and in turn shape local practices and social relations.

2. Materials and methods

The material on which this article is based was collected during an ethnographic fieldwork carried out from the middle of July until the end of November 2015. Considering how misoprostol is a relatively recent drug on the market in Tanzania, and likely to be more prevalent in urban than in rural areas, Dar es Salaam region was chosen as the study site. All three districts of the region of Dar es Salaam (Kinondoni, Ilala and Temeke), including urban and suburban areas, were part of the study site. With a population of almost five million inhabitants, Dar es Salaam is Tanzania’s largest city and an economic hub to which young people from all parts of the country come to study and work. While the induced abortion rate for this zone (the Eastern zone) of the country is estimated to be below the national average (at 23.9 per 1000 women), the estimated number of women who perform an abortion and do not seek post abortion care services is suggested to be higher than the national average (Keogh et al., 2015). The reason for lower rates of PAC may be linked either to fewer abortions with complications or to more complications left untreated. Due to their special vulnerability to unsafe abortion, the main focus of our study was placed on the experiences of young women. In an attempt to untangle a variety of experience with misoprostol as an abortive drug, we moreover approached health providers and drug vendors as key categories of informants (Table 1).

Table 1

An overview of the qualitative methods applied and of the study participants.

Method of data collection	Number and categories of participants
42 in-depth interviews (IDIs)	15 women \leq 25 years having had medical abortion after unwanted pregnancy, of whom 8 had sought PAC 16 health workers (3 gynecologists, 6 medical doctors, 4 clinical officers, 3 midwives and 1 nurse) from 12 health facilities (4 dispensaries, 2 clinics, 2 health centers and 4 hospitals) of which 7 were private 11 drug providers (6 pharmacists, 1 clinical officer, 2 laboratory technicians, 1 nurse and 1 nurse assistant) recruited from 7 pharmacies and 4 medical shops
10 focus group discussions (FGDs)	7 groups with a total of 54 young women 15–25 years (recruited from three different low-income areas with age and gender as the only criteria of inclusion) 3 groups with a total of 21 female college and universities students studying and/or residing in Dar es Salaam (recruited with gender as the only criteria of inclusion)
17 (shorter) qualitative interviews	10 representatives from NGOs (of which 6 were INGOs) with a focus on sexual and reproductive health (SRH) 3 representatives of district authorities with a focus on SRH services 4 representatives of ministry authorities with a focus on SRH services and/or drug policies and pharmaceutical practices
Client simulation	64 drugstores (37 pharmacies and 27 medical shops located differently in the city – center/periphery, low-income/high-income areas, close to/far from hospitals.)

2.1. Informants and recruitment

During the fieldwork, the researchers had informal and formal conversations with a large number of individuals both with and without concrete experience with misoprostol.

Young women who had used drugs to induce an abortion (15) were recruited for in-depth interviews (IDIs) by health personnel working with PAC services. To gain a broader and more nuanced perspective on unwanted pregnancy and fertility control including abortion, we also included young women who had not sought PAC after medical abortion (7 out of 15). These women were recruited through personal contacts of the research team and through health workers’ contacts. Although we cannot be certain that it was in fact misoprostol that had been used for abortive purposes, it does seem likely based on reported brand names, dosages and administration routes. In the paper we will use the term ‘misoprostol’ when we are certain about the specific pharmaceutical referred to, otherwise the term ‘medical abortion’ will be used.

A group of young women, recruited on the criteria of gender and age, but irrespective of concrete experience related to abortion, were invited to focus group discussions (10 groups in total). To get in touch with the latter category of women we received help from Street Offices (the most local public offices in Dar es Salaam) and from WhatsApp and Facebook groups.

Health workers (16) with diverse professional backgrounds were also recruited for IDIs. They were identified by the facility administrations and colleagues based on their experience with PAC, and were interviewed at the health facilities. This category of informants provided information on health-related dimensions of medical abortion, including its provision.

Drug vendors (11) with diverse professional backgrounds were recruited for IDIs through direct questions of participation. In addition to more than 200 registered pharmacies in Dar es Salaam, several hundred ‘drug dispensing outlets’ operate without permission to sell prescription drugs, including misoprostol (Kamuhabwa and Ignace, 2015). We refer to these outlets as ‘medical shops’, while ‘drugstores’ include both pharmacies and medical shops. ‘Drug vendor’ refers to anyone working in a drugstore. The vendors interviewed operated in different categories of drugstores at different locations across the city, including busy and peripheral areas, low- and high-income areas. Due to many rejections, recruitment of drug vendors was slow. We thus decided to include a client simulation study, which involved entering pharmacies and medical shops in different areas across Dar es Salaam (64 in total) asking for misoprostol without prescription. The intention was to explore drug vendors’ knowledge about medical abortion as well as to assess the availability and access of misoprostol. As much information as possible was written down after the simulation visits, including the

vendor's response, prices, instructions (if any), products, etc.

Finally, we carried out qualitative (shorter) interviews with representatives of governmental agencies and national and international organizations concerned with reproductive health (17) in an attempt to increase our understanding of how the presence of misoprostol and medical abortion play into politics, activism and public health work in Tanzania.

2.2. Research and ethical approvals

The study was granted ethical approval by the Norwegian Committees for Medical and Health Research Ethics (2015/79d) and from the National Health Research Ethics Sub-Committee in Tanzania (NIMR/HQ/R.8a/Vol.IX/1970). Research permit was further granted by the Tanzanian Commission of Science and Technology (2015-203-NA-2015-191), from district medical officers in the three districts of Dar es Salaam region, as well as from all recruitment site administrations. Oral and written informed consent was sought from all participants except during the client simulation. All IDI- and FGD participants received a compensation for time and transport of between 5000 and 15,000 Tanzanian shillings/TSH (approx. 2.5–10 USD) depending on the time and inconvenience of their participation.

2.3. Data collection

The large majority of the interviews with health professionals, drug providers and organization representatives were carried out in English by the first author. The FGDs were mediated in Swahili by one of the research assistants. The IDIs with the young women were similarly carried out by a research assistant in Swahili in a location chosen by the participant. Two of these interviews were carried out by telephone. Except for the women who were recruited through PAC services who seemed shy and reluctant to speak at length, the study participants eagerly engaged in the conversations about unwanted pregnancy and medical abortion. All interviews and focus group discussions were audio recorded. The questions in the interview guides and the questions raised in the client simulation study flexibly guided the conversations, and evolved during the course of the fieldwork, allowing central emerging issues to be further explored. Approximately half of the client simulations were performed by the first author and the other half by two local assistants. Although the first author is of European origin and speaks rudimentary Swahili, no systematic differences in response were noted from the pharmacy staff. Three young Tanzanian female research assistants assisted the first author in the collection, transcription and interpretation of the data.

2.4. Analysis

The analysis of the material took place continuously while in the field, implying a reflection on emerging findings and new questions arising. The translation from Swahili transcripts or audio tapes to English took place during and after the closing of the fieldwork. After a thorough read-through of all the data, we performed a post-fieldwork Content Analysis as defined by Patton (2015). Using NVIVO software, we inductively coded the full material, and systematically categorized the coded material in themes related to the process of either needing, choosing, seeking and carrying out a medical abortion. The triangulation of data collected through the use of different data collection methods (informal conversation, IDIs, FGDs and the simulation study) and from the different categories of informants implied that a substantial material was available for cross checking and to detect emerging themes and patterns as well as ambiguities and contradictions. For instance, the accounts from the young women, the drug vendors, the health workers, the NGO employees and from the simulation study provided diverse perspectives on the question of access to medical abortion and simultaneously led to a more comprehensive

understanding of the access situation of abortion in Dar es Salaam.

2.5. Methodological reflections

Abortion is both sensitive and illegal in Tanzania, and a study into this issue will thus necessarily have shortcomings. It is likely that some information presented to the researchers was censored, skewed or exaggerated. We should be particularly aware of the possibility of under-reporting among drug vendors and health workers engaged in illegal provision of medical abortion. It is moreover likely that the data collection and analysis was influenced by the main researcher's background as a European medical student. Considering the sensitivity of the research topic - and our query into clandestine activity - we positioned ourselves as an 'international, university-based team' detached from the Tanzanian authorities and control apparatus. While we were obviously not able to level out the differences between ourselves and the study participants, we believe it may have aided the research process with the young women that all the interviewers - including the first author - were young female students, and that to the extent possible the interviews with the women took place removed from health facilities and academic offices. In addition, our approach to avoid distorted interpretations was to include participants differently situated vis-à-vis the study topic (source triangulation), to use different methodological approaches (methods triangulation) and to stay for an extended period of time in the field while trying to meet our informants as openly as possible.

3. Findings

We have grouped the study findings into three main themes: How misoprostol was considered a commonly known, accessible and much sought-after drug in Dar es Salaam; how the medicine was perceived of as a relatively private, simple, natural and safe abortion method; and finally, how accessing misoprostol was seen to involve a risk of having to deal with opportunistic vendors, poor instructions, limited follow-up and uncertain access to emergency care in case of an incomplete abortion.

3.1. "Miso is common" - known, accessible and in demand

The majority of our study participants considered misoprostol a commonly known drug for abortion in Dar es Salaam. Most of the women participating in focus group discussions reported knowing someone, directly or indirectly, who had aborted using 'miso' - the common term used to refer to the drug. They believed that 'miso' was today the most common abortion method in their community and had considerable knowledge about access locations, prices and doses typically used. Most had learned about the drugs from friends, others from doctors, pharmacists, organizations or from web pages or social media. Some had even learned about it overhearing discussions in the street or in hair saloons: "*Sundays, when we're in a hair dressing saloon - that's where you find topics like that one.*" (Woman, 24 years, IDI) Both health- and pharmacy workers commented on how not only clients, but friends, family or other acquaintances were addressing them personally with questions about medical abortion. An FGD participant explained: "*When it comes to these drugs for abortion, it is not that people are fighting it. You can (even) find some places that teach about these drugs. They have seen that if they do not teach, then ... There are more complications when people use 'neem' (a herb) or other drugs.*"

The women participating in our study shared the impression that these abortion drugs could be obtained in some way or other - either through pharmacies, medical shops or health facilities. The client simulation confirmed that misoprostol could be purchased across Dar es Salaam. In 37 of the 64 visited drugstores vendors were willing to sell misoprostol without prescription. A few stores also sold combinations of misoprostol and mifepristone. The drugstore workers we interviewed

had clearly noticed a demand for medical abortion drugs. A clinical officer running his own medical shop just outside the city reportedly received misoprostol customers four to ten times a week: “They know misoprostol nowadays. They now announce that: Eh, a woman, somebody, she used a drug known as misoprostol. Do you have it?” Customers would often come without prescriptions, and some vendors would admit to dispensing the drug in such cases - mostly for the sake of business, but also because customers could be familiar locals or that they presented challenges that the vendor could relate to. A nurse working in a medical shop put it like this: “I sell the drug. Firstly, I know that it's a sin, I'm Christian and I know that. Secondly, I know that it's against the law. But, I sell the drug because I'm a mother and I know how it is when you have a young child and then you have a pregnancy again. I feel sorry for them. I wouldn't want that to happen to me either. And for the young girls, they have parents at home. Sometimes I give them (the drug) because I wouldn't want them to have problems where (the place) they will go to terminate the pregnancy.” According to drug vendors, most misoprostol customers were young women, typically in their teens or early twenties, but there was some variation. While all drug vendors that we interviewed had at some point been approached by customers in search of medical abortion, demand was reported more frequent in drugstores located in what was considered low-income areas.

Young women generally considered misoprostol relatively affordable when accessed through drugstores: “It's cheap. It's different from the hospital. So more people use tablets!” (Woman, 20 years, IDI) The price for misoprostol (per abortion) typically ranged between 15,000 and 35,000 TZS (approximately 5–12 USD). While this was considered more expensive than other self-induced methods (like teas or detergents), a doctor performing surgical abortion might ask for anything from 30,000 to 250,000 TZS (approximately 10–85 USD), depending on the facility. However, according to our participants, a range of health workers: “doctors, nurses, even medical attendants and laboratory technicians” had also started to offer medical abortion. Though reportedly most accessible in private facilities, medical abortion could also be facilitated through public hospitals and dispensaries. This was confirmed during interviews with health workers, who either explained that they were providing medical abortions themselves or knew colleagues who did. Some doctors preferred providing medical abortion because it was the method preferred by women and could be done privately. Other doctors explained that they still preferred the conventional surgical methods, primarily for economic reasons, as they earned more from such procedures. Secondly, the risk of an incomplete abortion was perceived as higher by the use of drugs than surgery. Despite the fact that we encountered clinicians who carried out abortion both in private and public facilities, women commented that it was difficult to identify these health providers when in need without prior knowledge or connection due to the secrecy surrounding the procedure. In colleges and universities, students explained that they would at times serve as links between patients and doctors or they would even provide misoprostol to co-students themselves: “Once you get pregnant you will know all of those places and the ones who are selling those drugs. You will have their contacts as well as doctor's contacts. You can even find students who are agents for these doctors and they will direct you to them as they know who are good at this job.” (Student, 21 years, FGD).

3.2. “It's your secret” – more private, simple and safe

Privacy was considered key when seeking abortion. Pharmacists explained that customers often approached them only showing a note or a mobile screen reading ‘miso’. Others would quietly explain their situation in hope of awaking the vendor's sympathy, while others again would send friends or boyfriends to negotiate on their behalf. “It's different if I go to the pharmacy and talk to the pharmacists. They will understand what I need, unlike going to the hospital and telling the doctor. Then it won't be my secret anymore.” (Student, 22 years) Some women pointed out how doctors might try to convince you to keep the baby,

causing a sense of guilt and uncertainty, as exemplified by a student's comment: “You find you can go to the doctor and instead of being given that medicine you start being counselled to keep it and people don't like counselling. They will ask you if you will keep the pregnancy. ‘Are you ready?’ Those are questions some girls are avoiding”. Going to the hospital moreover often involved waiting time during which ‘someone you know might see you’. Thus, buying misoprostol in pharmacies, using it alone at home, one was more likely to avoid difficult confrontations and questions.

While seeing a doctor was by most women considered the safest option when terminating a pregnancy, many feared the methods that were typically known to be used by doctors, especially the ‘metal instruments’ (the sharp curettage, sometimes called the ‘shovel’, *makoleo*), and the procedure known as ‘flashing’ (manual vacuum aspiration). Some women perceived surgical procedures to be both quick and certain, yet they were concerned about pain, as these were known to often be performed without anesthesia. The insertions of instruments also caused worries about potential damage to the uterus, infertility, infections, cancer and even death. Some informants retold stories about surgical abortions performed outside of hospitals, at the back of pharmacies, in small unregistered clinics or in guesthouses. “In the past years our parents used to say that surgical abortion is dangerous because they use sharp instruments, and the action of using metals will be in her mind. And it is a sin, so she finds it better to use pills for abortion rather than surgical abortion.” (Student, 22 years, FGD) In this context, misoprostol emerged less like the scary abortion procedures women had often heard about and pictured. It was pointed out that using misoprostol was more like “starting a period”, a more “natural way” of having an abortion, which also meant it was easier to cover up the symptoms. A student explained “If I try to compare them with these other methods I see, the pills are better because I don't see them unsettled like in the past. In the past if someone had an abortion you would know, but nowadays you can't know. So I think it's better.” (Student, 22 years).

Although some of the women disliked the idea of medical abortion as it was known to at times cause a long process with pain and bleeding, most expressed that when effective, it was known to cause few problems: “Those pills are very good, they have no side effects, and once you use it, it cleans everything, all the dirt comes out. You do not suffer, no pain, no nothing.” (Woman, 22 years, IDI) Meanwhile, many of the health workers that we interviewed in different facilities believed that over the last few years there had been a drop in critically ill patients seeking care after abortion, along with a change in the commonly admitted complications. This study did not provide numerical evidence, but health workers with years of experience noted that compared to earlier, fewer women were admitted with uterine perforations, infections or sepsis after abortion. Instead, more were currently presenting with prolonged bleeding from incomplete abortions or simply with normal symptoms of an ongoing abortion, such as abdominal cramps and heavy but self-limiting bleeding. They related these changes to the recent shift towards medical abortion: “I think complications of abortions are getting better now, especially in towns, because they don't use the unsterile instruments, they use the medical way. I think the medical method is reducing complications. The bleeding complications, they can be controlled. But sepsis - it's minimal. I don't see a lot of sepsis now” (Health worker, IDI).

3.3. “It's a business” – opportunistic stakeholders, poor information and incomplete abortions

Despite misoprostol's many perceived advantages, the process of obtaining an effective and safe medical abortion was not perceived to be without risks. In Dar es Salaam, misoprostol had opened up for new stakeholders in the provision of abortion. Though not legally authorized to sell misoprostol, smaller medical shops provided an alternative to pharmacies. Some women explained that they preferred this option, as they were less likely to be asked questions or demanded prescriptions. However, some worried about low-quality or fake drugs: “The large

pharmacies are where they have the original drugs and where you can get instructions, but I have seen people avoid going to those. They go to the small ones because they are very careful. They know it's illegal so they go there and then google how to use them (the drugs)." (Student, 23 years, FGD) Some drug vendors as well as health workers insisted that certain misoprostol brands were effective while others were not. Moreover, misoprostol was typically sold uncontained by boxes and without instruction sheets, sometimes even without blisters. Without this basic packaging, misoprostol is known to degrade and lose effect (Berard et al., 2014). A pharmacist also commented that some vendors had kept on selling batches of misoprostol past its expiration by simply remarking its dates, and health workers were concerned that women could end up with drugs that were in fact not misoprostol. Many women only knew misoprostol as "abortion pills", and even if they knew the name of the drug, would they be able to differentiate misoprostol from other tablets? Group discussions added substance to this concern as there was sometimes confusion between misoprostol and other strong drugs (such as antibiotics) or contraceptive pills that were at times used to self-induce abortion. Another worrisome problem with misoprostol was that the pills were known to not work for everyone: "Some pregnancies are hard to remove by pills. It doesn't matter how many pills you take, they don't come off." (Woman, 24 years, FGD) This caused uncertainty among women. While some were aware of the drug's inherent failure rate, others blamed opportunistic vendors: "I heard there are fake ones and original ones, and everybody is selling them at their own price because they know this is the deal nowadays. Everybody is looking for them." (Student, 23 years, FGD).

Another point of confusion was that of correct use. Knowledge shared about misoprostol seemed largely based on trial and error. While most drug vendors would not advise misoprostol if the pregnancy was more advanced than nine weeks, among the ones we interviewed (pharmacists included) only a minority had in-depth knowledge about the usage of misoprostol. The most recent international guidelines for safe interruption of pregnancy by the use of misoprostol advise 800 µg vaginally or sublingually every 3 h (maximum three times within 12 h) for first trimester pregnancies (Tang et al., 2013). In our study we found that drug vendors most commonly recommended four pills (each of 200 µg) in a single dose with no repetition (usually two pills sublingually and two vaginally), and sometimes only one or two pills. A few vendors were aware of the twelve-pill regimen described above, but some nonetheless recommended a lower dose, insisting that from experience fewer pills had proved effective without unnecessary pain and bleeding. It was common to advise painkillers and a regimen of antibiotics after taking misoprostol to "clean up" the uterus. While the latter does not correlate with WHO guidelines, it was perceived as a precaution against infection arising in case of incomplete abortion.

Having experienced women seeking help late in the process of incomplete abortions, health workers were concerned about the amount and quality of instructions women would get from drug vendors. A clinical officer complained: "Because they're not qualified (the drug vendors), they sell it like rice: "Take this and use it!" No more explanations." Another well-known problem was the shortage of pharmacists, who often rotated between several pharmacies, and rarely met customers. In some of our interviews, women explained their concern of not receiving enough information about the procedure, especially about what to expect, how much one would bleed and for how long. Indeed, some drug vendors explained that they preferred not to provide any instructions at all, because they felt uncomfortable contributing more than necessary to the abortion due to its illegality. A young pharmacist was instructed by his employer: "She told us to not direct them on how to use it. You know, it's illegal. (...) Someone might come and trick you. So, if they asked me 'How do I use this medicine?' I would tell them 'I don't know'. We just gave them the medicine."

Virtually all our participants were familiar with stories from their communities about women who had suffered illness or death either from self-performed abortions or from abortions performed by quacks.

Even if it meant borrowing money from family or friends, some were therefore willing and able to get the extra amount for a doctor to assist them with a medical abortion. Medical abortion through private health facilities reportedly cost several hundred thousand TZS. In the end, the provider had power over the service and the price would "depend on his greed", as one young woman put it: "Because everybody now knows what the pills do, everybody is selling them, at their own prices, because they know people need them. If you want to have an abortion, you will buy them no matter how much they cost." (Student, 22 years, FGD) There were however also examples of lower costs when approaching public doctors. One of our participants had approached a public dispensary and paid no more than the regular consultation fee - less than a dollar - leaving with a prescription for misoprostol, and was consequently able to purchase misoprostol for 10,000 TZS (approximately 3 USD).

While medical assistance was perceived to be the safer option, we found that even among health workers there was inconsistency about the correct use of misoprostol. Reported doses at times seemed to be confused with those for other uses of misoprostol (post-delivery bleeding, induction of labor, incomplete abortion). A few select health workers who reported having received formal medical abortion training usually followed international recommendations. However, the same health workers dispiritedly reported how their patients would return to them having used only a fraction of the recommended dose, either because the full dose was too expensive, or because friends or drug vendors had advised them differently. Several clinicians also underlined the difficulty of a proper follow-up. Because of the restrictive law, most ended up merely handing out or prescribing the drugs. "Everyone who is using it is practicing it secretly. That's why everyone will end up using what he thinks is right, and what he thinks his patients will be safe with. But, if it was legal - like when we are using misoprostol for missed abortion (incomplete miscarriage) - when you make sure you follow the protocols well - then it is a safe drug." (MD, private hospital) Another health worker similarly referred to the implications of the restrictive legal system saying: "What I can say is that our government regulations are also hindering the women to be open, and the sellers of drugs to give wide explanation on how to practice safe abortion." Adding to these challenges, true access to post-abortion care was not always the case, as exemplified in our study by participants who had suffered incomplete abortions. One woman explained how, despite severe bleeding, she had been denied treatment until she contacted family members who upon arrival paid the doctor a sum several times that of the official PAC costs. Another study participant had been sent from facility to facility without receiving care until she finally ended up in a hospital with large expenses that she could not cover without help from her family who until then had known nothing about her pregnancy.

4. Discussion

What we encountered in Dar es Salaam indicates an increasing availability of misoprostol and medical abortion within a context of a highly restrictive but not strictly implemented law. We will argue that access to misoprostol is shaped by already existing local and social conditions, but that the drug simultaneously shapes new power relations and shifts control over fertility and abortion from legal, governmental and medical bodies to abortion seeking women.

4.1. Self-help culture and social transformation

Our study found that misoprostol is a commonly known drug in Dar es Salaam and is available in pharmacies and drug stores across the city. While never intended for self-induced abortion by the Tanzanian authorities, women and health workers in our study associated misoprostol with abortion more than with any of its other particular uses. In line with Van der Geest, Hardon and Whyte's approach to pharmaceuticals as 'social things' (Van der Geest et al., 1996; Whyte, 1992), our material exemplifies how misoprostol takes on 'a life of its own',

regardless of the intentions from higher regulatory levels who introduced misoprostol for other purposes. In a similar manner, without legal approval or medical guidance, Brazilian women rebranded misoprostol in the 80s from what was then officially an anti-ulcer drug to an efficient abortion drug (Zordo, 2016). Zordo et al. argue that the globalization of medical abortion is first and foremost rooted in initiatives from women themselves as well as from drug vendors in countries with restrictive abortion laws (Zordo, 2016). This suggests how a drug is made relevant, also on a global scale, primarily by particular local and social conditions.

In our study we found that the exchange of misoprostol has established networks and social relations that facilitate access to abortion while circumventing the control and discretion of health workers in the formal health care institutions set to implement the restrictive law. What seems to be particularly revealing in our material is the tacit alliance that has been formed between women in search of a safe and undisclosed abortion procedure and drug vendors supplying misoprostol. Whether the motive of the latter is economic gain, conviction of women's right to abortion or sympathy, they share with the abortion seeker a clear interest in keeping the transaction secret. This emerges as a revealing example of how pharmaceuticals and their appropriation by communities may be socially transformative, and indeed of how misoprostol as an abortion drug is in essence a social phenomenon (Van der Geest et al., 1996).

Informal medicine markets and 'self-help cultures' have commonly been linked to states that fail to make services accessible to their citizens or fail to pay their health workers sufficient wages to prevent supplementary income-related activity (Van der Geest et al., 1996; Whyte et al., 1991; Van der Geest, 1982). However, within the frames of such informal private markets, agency may be detected and made manifest through the possibility of negotiating as a customer, rather than as a patient (Whyte et al., 1991; Reeler, 1996). Our material indicates that misoprostol's many access points and reasonable prices facilitate an increased potential for the avoidance of the 'gate-keeping' power of doctors, and in the process enhanced opportunities for women's abortion related agency. At the same time the gate-keeping position of drug vendors should not be underestimated, as emphasized by Chiarello (2013). In her study on how organizational conditions shape pharmacists' bioethical decision-making, she points out how retail pharmacists interact with patients in a different manner than physicians and other clinic-based health workers. While in one way acting as state agents, they are often located socially closer to their patients, being more familiar with their patients' economic needs and social situation (Chiarello, 2013). In our material the vendors were known to assist women in need of medical abortion by ensuring access to misoprostol among other through adjusting prices according to the wealth of the customer and keeping the information secret.

4.2. Social applicability and empowerment

The centrality of social networks in access to abortion has been well described in previous studies, including from Sub-Saharan Africa (Rossier, 2007; Suh, 2014; Coast and Murray, 2016). Women's pragmatism and agency in the face of at times severe obstacles have been described. In their study on stigma and abortion in Kenya, Izugbara et al. found that women consider a *safe* abortion a procedure that protects them from poor social outcomes. In practice, this implies services found through dependable networks, services that shield women from the law and conceal their abortions from others (Izugbara et al., 2015). These findings resonate with the way our participants emphasized the importance of secrecy and privacy as key concerns when seeking abortion. To the women interviewed in Dar es Salaam, misoprostol clearly represented an improved possibility of avoiding public exposure and abortion related social stigma while obtaining an abortion at an affordable cost. Women's strategies to keep socially contended pregnancies secret, and to perform abortion without detection has been

described in several African studies (Bleek, 1981; Johnson-Hanks, 2002; Schuster, 2005; Kebede et al., 2012). With a readily available, far less invasive and less costly procedure through the use of misoprostol, the prospect of avoiding public exposure and hence poor social outcomes is enhanced. In this transition also lies the enhancement of women's possibility of being in charge of the abortion process itself; securing the drug, ensuring secrecy and privately handling the abortion procedure. Less interference by outsiders, and a stronger sense of being in control was located at the core of the stories communicated in the present study. These processes in turn indicate misoprostol's social applicability or adaptability. Two recent studies have in a similar manner indicated that despite the restrictive abortion law and the continued social stigma that surrounds abortion in Tanzania, it is possible to pragmatically share information about safe use of misoprostol (Coeytaux et al., 2014; Kahabuka et al., 2017). Our study adds to this evidence and suggests that misoprostol has transformed the social arrangements surrounding the access to abortion in Tanzania.

4.3. Barriers, risks and standards of care

While acknowledging misoprostol's transformative implications for abortion access in Dar es Salaam, our study simultaneously reveals how experiences related to the use of misoprostol are shaped within existing social arrangements and hierarchies and indicates a persisting vulnerability of women in pursuit of abortion. As was seen above, the highly restrictive abortion law generates fear of both asking for and providing comprehensive instructions for the correct use of misoprostol, which in turn may lead to suboptimal information and thus higher risk of incomplete abortions. At the same time, we found that without any regulation or training, information shared about misoprostol was often incomplete or erroneous. Moreover, while restrictive policies tie the hands of the drug providers who wish to assist their customers, it simultaneously unties the hands of individuals who see an opportunity of exploiting an illegal market with substantial demand. For instance, the circulation of substandard or counterfeit drugs in Tanzania is well known (Almuzaini et al., 2013) and to our study participants "fake" pills was an element of uncertainty to both women and health workers.

It is important to stress that for women without access to legal and safe abortion services, the uncertainties involved in entering unregulated business with misoprostol providers is *forced* upon them. The generally weak position of women in Tanzanian communities, and being poor and unmarried in particular, only adds to their vulnerability in an abortion context. Our study demonstrates how fear of stigma makes it difficult for women to access reliable sources of information about misoprostol. The literature also shows how informal costs and social barriers (such as health provider stigma) prevent true access also to PAC services (Coast and Murray, 2016; Aantjes et al., 2018). This vulnerability is part of a larger picture of structural violence that women in our study are subject to. As an example, Silberschmidt and Rasch have problematized the vulnerability that accompanies female sexual agency in Dar es Salaam. Within a system of poor access to sexual and reproductive health services, adolescent's agency puts girls often unknowingly at risk of exploitation and need for abortion (Silberschmidt and Rasch, 2001). In line with the thinking of critical medical anthropologists like Farmer (2004) and Scheper-Hughes (2004), it is important to consider the lack of influence marginalized and stigmatized individuals have on the systems that surround them, despite elements of agency and empowerment. As stressed by Takeshita (Takeshita et al., 2011), we should be careful not to employ the rhetoric of 'choice' without due consideration of the inequities inherent in women's positions, be it social, economic or geographic. Bendix et al. furthermore remind us that sexual and reproductive technologies, such as misoprostol, ultimately are products linked to larger capitalist economic interests as well as to international ideas of social development and modernization (Bendix et al., 2019). This work reminds us that in discussions of misoprostol, we need to caution against generalizations

of user conditions, including standards and safety of care.

5. Conclusion

This study has examined the ways in which misoprostol - a prescription drug officially intended for post-delivery bleeding - is illegally sold and widely adopted for medical abortion in Dar es Salaam, Tanzania. The accessibility and common usage of misoprostol may be an expression of a restrictive law that is not strictly implemented but which serves important symbolic purposes in a nation where religious and cultural normative sentiments against abortion are powerful. The increased availability of the drug may also be seen as an expression of a silent agreement between women, drug vendors and health workers that enables women to take increased control over their bodies and fertility, and reduces inequalities in access to safe abortion among women. Our study indicates that in Dar es Salaam medical abortion by the use of misoprostol is a hopeful step forward for women's access and empowerment in the abortion seeking process. It shows how misoprostol acts as an agent of change in the social relations of abortion - with implications for the articulation between the power inherent in the law text, the governmental position, health personnel and drug vendors on the one hand, and abortion seekers on the other. Yet, our study shows how misoprostol sold and used illegally compromises the safety and standardization of the medical procedure, and thus simultaneously demonstrates the continued vulnerability of abortion seekers within restrictive social and legal contexts.

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