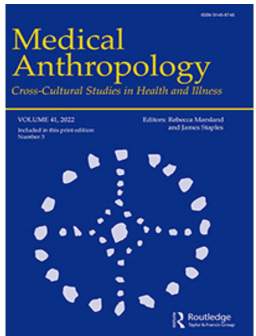

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Antibiotics and the Biopolitics of Sex Work in Zimbabwe

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ABSTRACT
The advent of antibiotics transformed the global public health landscape, dramatically improving health outcomes. Drawing on historical and ethnographic research on sex work in Zimbabwe, we examine the role of antibiotics in the management of sexually transmitted infections among sex workers, from punitive colonial approaches to "empowerment"-based discourses. We illustrate how programs for sex workers, while valued by these women, are narrow, exclusionary, and enact a pharmaceuticalized form of governance that hangs on the efficacy of antibiotics. With antibiotics' efficacy under threat, we consider how latent colonial logics are in danger of being reactivated to control both infections and women.

KEYWORDS
Zimbabwe; sex work; antibiotics; antimicrobial resistance; global health

> We all went to see her; she had been chased away from Magoshto. They did not want her there; they were afraid she would scare off customers. When she came to stay in our street, word traveled very fast that all should go and see "*hure rakaura nesiki*" (a prostitute in agony because of a sexually transmitted infection). Tumi did not care anymore, all shame had disappeared, she was in pain, all she wanted was help . . . She had been taken to the clinic by our peer educator,[1] but the clinic could not treat her. They told her to go to the hospital, but she had no money for the hospital. You cannot do business with a vagina like that, a wound down there kills all work! We united as prostitutes, gathered money, sent Tumi off to the hospital hoping the hospital would give her the solution she wanted. (Mai Fau, Sex Worker)

A central part of the solution alluded to by Mai Fau was antibiotics. Not only would antibiotics help cure Tumi's sexually transmitted infection (STI); they would enable her to go back to work. Mai Fau and other sex workers informed us that, had Tumi moved into the area earlier before her disease had advanced, she would have benefitted from care and antibiotics from a clinic created specifically for sex workers, where treatment for STIs was more easily accessible and free of charge. STIs, viewed as detrimental to productivity by the female sex workers we worked with, were inimical to the levels of productivity demanded in their line of work, and thus access to free antibiotics formed an important part of their ability to make ends meet.

The notion of antibiotics as an enabler of sex work sits uncomfortably with rising concerns over the contribution of the overuse and misuse of antibiotics to the development of antimicrobial resistance (AMR). While AMR encapsulates resistance in a broad range of microbial organisms, of particular significance here is the way AMR threatens to undermine current and future strategies to manage STIs. STIs are caused by pathogens acquired predominantly by sexual contact and differ from sexually transmitted diseases (STDs) in that one can have an STI with no symptom of a disease (WHO 2019). STIs are among the most prevalent infections globally, with more than one million people estimated to become infected with a curable STI daily and at least 357 million new infections of gonorrhea, chlamydia, syphilis, and trichomoniasis annually (WHO 2018). The efficacy of antibiotics to treat STIs is waning, with warnings that soon there may be few medicines left to treat these highly prevalent infections (WHO 2018). Multiple drug-resistant strains of gonorrhea have been found in countries

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Media Teaser: What are the roles of antibiotics in sex work? How do colonial and postcolonial legacies impact on these roles?
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participating in the WHO Gonococcal Antimicrobial Surveillance Program, with ceftriaxone, other cephalosporins and azithromycin having crossed the WHO's threshold for discontinuation (≥5% isolates resistant or treatment failure) (WHO-GASP 2018). This has led gonorrhea to be classified as a high priority antibiotic-resistant pathogen by WHO (2018) and an "urgent threat" by CDC (CDC 2019:4). In Zimbabwe, available evidence suggests that resistance to antibiotic regimens for STIs remains relatively low, but emerging signs of drug resistance in gonorrhea are a cause for concern. The 2016 Zimbabwe situation analysis on AMR warned of mounting AMR among STIs and reported that 4 (6.1%) of 66 gonococci isolated were resistant to fluoroquinolones, although all were susceptible to kanamycin, cefixime, and ceftriaxone. In Zimbabwe, as in many low-resource settings, drug pressure on antibiotics is significant because STIs are generally managed syndromically (that is, on the basis of signs and symptoms rather than diagnostic tests) and thus frequently overtreated (WHO 2019). An older study focusing on AMR in gonococci isolated from patients and from sex workers in Harare suggested that the latter experience significantly higher rates of resistant disease and are thus especially vulnerable to increases in AMR (Mason et al. 1998).

Female sex workers occupy an ambiguous position in public health through intersecting discourses of vulnerability and risk. Sex workers have historically been and continue to be shunned as a deviant population relegated to the bottom of societal stratification for their morally polarizing occupation. Public health and activist communities have long grappled with the problem of how to frame and manage this "high-risk" group, which has taken on particular salience since the emergence of HIV in the 1980s and the framing of sex workers as "vectors" of disease spread and a threat to public health (Nova 2016:196; see also Scott 2011). Literature on sex work indicates tensions in feminist interpretations of gender and sexuality around two opposing paradigms of "oppression and empowerment" (Scott 2011:53). Sylvia Tamale's work with sex workers in Uganda brings to the fore thorny debates around the theorization of sex work as either "work or abuse" (Tamale 2011:148). Tamale draws out distinctions between these narratives, with the major school of thought framing sex work as abuse and sex workers as victims of a patriarchal system that promotes the extension of gender-based violence and slavery, and the opposing school of thought contending that sex work is "real work" (p148) protected by sexual, reproductive, and legal rights, voluntarily engaged in by adults in a context free from coercion and trafficking. Regarding the former, Schulze and colleagues note that since the nineteenth century, abolitionists have advocated for a complete abolition of the trade, while neo-abolitionists today call for governments to penalize the demand for sex work (Schulzeet al. 2014). The latter camp has focused on empowering and protecting sex workers. While recognizing the vulnerable position of many such workers, proponents advocate for the recognition of sex work as legitimate and have strongly contested the stigmatizing terms of "prostitution" and "prostitute", popularized in previous eras, in favor of the more labor-focused terms, "sex work" and "sex workers". This camp calls for a regulatory approach to sex work that includes access to sexual health services in a supportive environment, while promoting safe working conditions, as exemplified by the NGO clinic for sex workers described in the opening vignette.

An expanding body of critical social science scholarship has sought to understand sex work in its historical, social, and political context and to reveal how sex workers grapple with the diverse and often contradictory processes of criminalization and stigmatization, empowerment, and responsibilization (Cruz 2015; Nichter 2001; Scott 2011; Tadesse et al. 2017; Tamale 2011). Responsibilization here refers to the processes through which individuals are rendered responsible for ensuring their own health (Scott 2011). Common across this literature are efforts to expose imperatives to control the bodies of sex workers, not only through punitive measures but also more subtly through the rights- and empowerment-based discourses characteristic of HIV programming, including behavior change initiatives to produce healthy, ordered, and docile working bodies (Cruz 2015; Scott 2011). Immersive ethnographic studies in the context of AMR, meanwhile, have highlighted the centrality of antimicrobial medicines, particularly antibiotics, in enabling the work and productivity of impoverished and marginalized groups (e.g. Denyer-Willis and Chandler 2019), as well as how these groups have been foregrounded and rendered

responsible for mounting resistance (Brown and Nettleton 2017; Chandler and Hutchison 2016; Nichter 2001). Such allocations of responsibility obscure how antibiotic overreliance has been systematically designed-in to health systems in the global south as "quick fixes" for care, for instance through simple syndromic case management approaches mentioned above (Denyer-Willis and Chandler 2019:1; Dixon and Chandler 2019; Dixon et al. 2021). To date, very few anthropological studies have explored the roles and meanings of antibiotics for sex workers in the management of STIs. In one of the few ethnographic studies to date, Mark Nichter (2001) examined the roles of antibiotics in the lives of sex workers in Cebu, Philippines. Nichter found that antibiotics enabled sex workers to take initiative in managing their risk of contracting STIs by using antibiotics as prophylaxis. Nichter's study alludes to the significant role that antibiotics can play in enabling sex work in an analogous way to that documented by anthropologists in relation to other forms of productivity.

In this article, we converge and develop these bodies of critical scholarship on sex work and antibiotics as "quick fixes" through historical and ethnographic research on commercial sex work conducted in Harare, Zimbabwe. We demonstrate that antibiotics have become infrastructural to the management of STIs and, by extension, to the conduct of sex work, as a product of successive regimes, governments, and bureaucracies that have sought to categorize and intervene upon sex workers. We show that sex workers have been caught between two public health logics – colonial discipline and punish models, and the more recent empowerment and rights-based discourses. Importantly however, the overt differences between these two logics obscure deeper historical continuity and interdependencies, with colonial logics of domination and control continuous with neoliberal processes of pharmaceuticalisation and responsibilisation, specifically in enabling the continued bypassing of structural and systemic inequities shaping the demands and risks of sex work. Reflecting on these continuities in light of our historical and ethnographic findings, we go on to consider what will happen if antibiotics continue losing their efficacy. We suggest that public health approaches that more explicitly seek to prohibit and control in the name of population health lie latent and are poised to be reactivated, much like with COVID-19, which could further exacerbate inequities in access to medicines and care.

Approach

Methods

The research on which this article is based occurred within an interdisciplinary study on febrile illness and antimicrobial use in Africa and South-East Asia between 2017 and 2021 called FIEBRE (Hopkins 2020). The Zimbabwean component of the study included ethnographic research in clinics, hospitals, pharmacies, informal markets, and residential settings in Harare; interviews with key stakeholders; documentary and media analysis; and archival history. We draw from across these interconnected data sources but focus here primarily on participant-observation and interviews conducted by SM and NM with 20 sex workers and 5 households in Mbare, Harare, between June and November 2019. This was complemented by historical data from the Zimbabwe National Archives and other relevant online sources. Our focus on sex workers emerged from learning of the existence of a sex workers' zone while conducting ethnographic research with vendors and pharmacies near Mbare's marketplace. Mbare is home to Zimbabwe's largest bus terminus where travelers from rural and urban Zimbabwe congregate. The sex workers' zone and its constituent illegal shacks, we learned, rapidly developed first as temporary structures for those left homeless soon after the 2005 *Murambatsvina* (Operation Clean Up), which destroyed illegal structures, and later turned into hubs for sex work. Sex workers operated in three distinct spaces: home-based in a rented room; based at the illegal shacks made of plastics and sticks; and lastly based at "the base".

The base was a house owned by Mai Fau (narrator of the opening vignette), with three rooms each subdivided by curtains to create 12 units in which sex work was conducted. We obtained consent to work with sex workers in each of these three workspaces.

During the 6 months of research with sex workers, SM rented a room within the sex workers' zone and immersed herself within their networks. She purposively included sex workers working in the three aforementioned spaces and spent considerable time observing, socializing and talking with participants, who were very welcoming and open to discussing their work. Observations focused on the day-to-day lives of sex workers. We were able to gain an in-depth understanding of how they sought care for STIs and the roles of antibiotics. Interviews were conducted in rooms/homes used for sex work and focused on their experiences of sex work, the identification and management of STIs, and roles of antibiotics. Except for one 18-year-old, most sex workers we came into contact with were in their thirties. They had many years' experience in sex work and managing STIs and possessed a wealth of accumulated expertise and insight to share. While we were able to generate valuable insights into the roles of antibiotics in sex work through this iterative approach, one limitation was that our sample was concentrated on Mbare, limiting the generalizability of our findings.

Field notes were captured during the process of participant-observation. Recordings from interviews were transcribed verbatim in Shona and translated into English. English transcripts and field notes were analyzed by SM with periodic analysis meetings during the project with other authors and the broader FIEBRE study team. Themes were identified through an iterative analytic approach using qualitative data analysis software NVivo 12, through which codes of progressively higher orders of abstraction were generated to explain and theorize observed social phenomena. Ethical approval was obtained from the Medical Research Council of Zimbabwe (MRCZ/A/2288) and the London School of Hygiene and Tropical Medicine Ethics Committee (Ref: 14616). Permission and written consent were sought from all participants engaged in the study. To protect their identities, all participants' names are anonymized.

Theoretical framework

Across both historical and ethnographic data presented in this article, we apply a biopolitical analytical lens to the topic of antibiotics, STIs, and sex work. Developed by Michel Foucault, biopolitics refers to the administration of life at the level of populations, central to which is the use of quantitative measures, statistical techniques, and interventions aimed at knowing the whole social body and constituent groups (Foucault 1978). Of the scholars who have built on Foucault's theories, we draw first upon Ian Hacking's observation that categories of people, including "deviant" populations such as the mad, criminal, and prostitutes, are "made up" in the process of coming to know them (Hacking 1982:168). This attentiveness to categories has been applied to epidemiology by David Reubi (2020), who has shown how epidemiological imaginings, in his example the "African smoker," have historically trained attention on individual lifestyles and behavior at the expense of wider structural processes, contributing to the reproduction of racial stereotypes and colonial logics. Developing the insights of Hacking and Reubi, in the first part of this article, we offer a brief history of the category of "prostitute" as it features in public health discourses in colonial Rhodesia. In doing so, we pay attention to the emergent role of antibiotics in STI management and the novel possibilities and problems these substances brought about, ambiguities and tensions which we will go on to show have endured through to current formations around global public health in present-day Zimbabwe.

In the second part of this article, we explore ethnographically how sex workers in our study sought medicines and care for STIs, which included how they engaged with the category of "sex worker" as deployed by an NGO anonymized as Sex Workers' Clinic (SWC). In doing so, we draw secondly on the concept of "therapeutic citizenship" as developed by Vinh-Kim Nguyen (Nguyen 2005:126). This is one among several concepts, including "biological citizenship" (Petryna 2004:263), developed to capture forms of belonging mediated by biological categories. Our use of therapeutic citizenship refers

to a precarious form of citizenship in which northern-funded NGOs – in this case SWC and the categories in which they trade – become points of access to the only stable sources of medicines and care available for this vulnerable group. As such, we illustrate how the historically conditioned construct of the sex worker has become absorbed within the lexicon of global health, and how antibiotics have taken on a central but ambiguous role as both care and vehicle for the extension of power over the sex worker's body.

Venereal disease and prostitution in Rhodesia

In the 1920s, concern rose among British colonial administrators in Africa about the rise in STIs, then known as venereal disease (VD), in the "native" African population (Callahan 2002:30). Gonorrhea and syphilis were the most common VDs and, while gonorrhea was generally less serious and by the 1930s was treatable with sulfonamides, the treatment of syphilis remained a long, toxic, and painful procedure until the advent of antibiotics. It entailed treatment with heavy metal (salvarsan or neosalvarsan injections), which was costly and required hospitalization to deal with toxicity and to assist in the completion of a full dose of 20 injections (Callahan 2002). The Wasserman blood test was introduced in 1906 for syphilis, but in practice resource constraints meant that diagnosis of VD was restricted to visual and physical checks of sexual organs for symptoms associated with a particular infection. The challenges inherent in the diagnosis and treatment of VD and its alleged rapid spread in the African population led VD to be deemed a "serious threat" to the colonies (Havik 2018:492). In this first section, we describe the epidemiological imaginary (Reubi 2020) of the Rhodesian colonial administration regarding VD, which focused narrowly on behavior and moral failing rather than rapid urbanization, extractive labor, and racial discrimination, in ways that legitimized intrusive, segregatory, and punitive measures (Callahan 2002; Steele 1972). We then hone in on how prostitutes were configured as particular moral and health threats and thus a key focus of moral and physical policing. Finally, we show how antibiotics entered and inflected the control of VD and prostitutes, presenting both solutions and new problems for colonial administrators, traces of which we continue to see in contemporary Harare.

In response to the public health threat posed by VD, between 1924 and 1930 the Rhodesian government imposed a "draconian venereal disease surveillance and treatment system" (Callahan 2002: 230) pursued under the framework of social hygiene: a movement to study and address problems of basic social relations that influence the welfare of families and homes, including divorce, illegitimacy, prostitution, and other forms of sex-delinquency (Everett 1923). Social hygiene was championed by Andrew Milroy Fleming, a medical doctor from the University of Edinburgh with a Diploma in Public Health from Cambridge, who was Rhodesia's longest serving Medical Director from 1897 to 1931. Fleming's engagement with VD in Rhodesia began in 1907 following a syphilis outbreak that called his office into action. His investigation resulted in a detailed report, which pronounced the etiology of venereal syphilis as a disease imported by miners from South Africa "after contracting the disease via sexual contacts with prostitutes on the Johannesburg mines" (Callahan 2002:30). To Fleming, these diseased miners had infected their spouses with VD upon their return home. He further noted that the appalling unhygienic communal practices of Africans had enabled venereal syphilis to adapt into a non-venereal disease leading to its transmission to other family members (Callahan 2002). This, for Fleming, legitimized the imposition of what he called social hygiene, made possible through the country's first Public Health Act in 1924 (Callahan 2002; Steele 1972). This system entailed the forcible examination of Africans for VD, accompanied by mandatory hospitalizations and treatment in locked hospitals operating as lazaretto quarantine stations (Callahan 2002). The Public Health Act criminalized any attempt to conceal VD and enabled colonial authorities to investigate cases of VD in urban locations like Salisbury (now Harare). Section 52 of the Act empowered the colonial secretary to impose quarantine in areas deemed to be VD-infested and for medical officers to conduct genital examinations on all persons

within the quarantined zone. Fleming further warned the white community to practice segregation from the African community and to employ only healthy Africans in possession of a "clean bill of health" (Jackson 2002:200).

Africans, especially African women, are documented to have resisted forced medical examinations, gaining the name *chibeura* which, according to Lynette Jackson (2002:192), meant "to open something, often with force," and in this context referred to the way women were forced to open their legs for inspection. In her article on chibeura practices, Jackson notes how "raids" on African women were made, and how these raids were resented especially by the "respectable" married women, giving rise to protests (Jackson 2002:201). Martha Ngano, leader of Rhodesian Bantu Women's Association, is noted for leading a protest against the medical examination of African women in May 1925 (Callahan 2002; Jackson 2002). Growing protests made Fleming revise his position on "native wives", exempting them from medical inspections (Callahan 2002:201). As observed by Hungwe, these women were dignified, married, and fitted into the category of "respectable" within the colonial social strata, in contrast to unattached single women, who were pathologized as deviant "unrespectable" prostitutes (Hungwe 2006:38). Directing his attention toward the emergent corollary of the respectable native wife, the unrespectable prostitute, Fleming targeted the "travelling native prostitute" as deserving VD inspection (Barnes 1992:600). Colonial labor policies had resulted in a separation of men from their families, who remained in the rural areas, creating a gender imbalance in urban spaces skewed toward men (Jeater 2010). The "travelling native prostitute" gained the Shona name *pfambi*, which meant a "woman who walks around" (Nzenza 2015:1). The term pfambi was a demeaning word aimed at "unruly women," (Jackson 2002:199) unattached to men, who exhibited male-like behavior by wandering into urban spaces like men.

This category of pfambi in which women were, to use Douglas' (1966:415) terminology, "matter out of place," was "made up" (Hacking 1982:168) and pathologized through the discourses and technologies of biomedicine and public health. Jackson (2005:117), for instance, has observed how "stray, wandering and loitering" women were often labeled as mad and sent to mental asylums. In the context of infectious disease, meanwhile, the "travelling native prostitute" was in Fleming's epidemiological imaginary a primary source of VD among native Africans (Barnes 1992; Callahan 2002; Jackson 2002). This was perpetuated by colonial officials and missionaries who blamed African women for adultery and was later borne out in Holland's (1976) survey on STIs in Salisbury, which revealed high incidences of VD in which "80% of male infections were contracted from prostitutes" (Holland 1976:218). Such findings detracted attention away from the exploitative practices of the colonial enterprise onto the behaviors and moral failings of this classification of women. The meaning of VD itself came to be associated with prostitution. VD gained the Shona name *chirwere chepfambi/chechihure*, which means "prostitute's disease" (Chipfakacha 1993:40). Following Fleming's exemption of "native wives" from forced inspections, prostitutes were made to bear the brunt of the colonial administration's authoritarian chibeura practices. Mandatory travel passes were introduced, empowering police officers with the right to deny entry of women suspected of prostitution into the locations (Barnes 1992). Fleming further promoted contact tracing, which largely targeted prostitutes as sources of contagion, and arrest warrants were issued to prostitutes who evaded medical examinations. Prostitutes became the primary object of the framework of social hygiene and for defining the boundaries between "good" and "bad" African women.

The advent of antibiotics served to unsettle such sanitationist modes of public health. The discovery of penicillin in 1928 and its introduction into colonial medical practices in Rhodesia in the 1940s (Palanco Lopez and Chandler 2020) enabled an unprecedented cheap, rapid, and outpatient curative approach to the problem of VD (Stokes 1950; Willcox 1950). This approach enabled to a certain degree the displacement of more authoritarian social hygienist approaches. Sharing his experiences as a medical practitioner when antibiotics were introduced, Stokes (1950) observed that the advent of antibiotics provided a simple and rapid treatment of VD, yet in refocusing VD from a public health lens to the immediacy of the clinical encounter, the importance of minimizing transmission fell to the background, making reinfection commonplace (Stokes 1950). While antibiotics proved a reliable cure

for VD, the colonial regime did not wish to subsidize this, leading to the question of how antibiotic therapy could be embedded within a broader public health approach that incorporated curative and preventative approaches to VD.

As antibiotics became increasingly prominent in colonial health care, several approaches were devised and variously implemented during the 1940s and 1950s. Stokes regarded VD as a problem springing from man's social conduct and strongly called for the need to pay attention to "the development of human idealism, self-control and responsibility in the sexual life" (Stokes 1950:13). Another approach advocated by Fleming was that employed Africans should partly pay to get treatment instead of signing off all costs to their departments (Steele 1972). A further intervention which deployed antibiotics to perform the public health work of reducing the VD burden was mass administration of a single sterilizing dose of penicillin, an intervention that begs further elaboration because of the ways in which it revealed the moral undertones and tensions over how best to use limited antibiotic stock to intervene. Willcox, a British physician, was commissioned by the Rhodesian government in 1949 "to determine how new methods of treatment could, consistent with cost and local conditions, advise on the best therapy" (Willcox 1952:107) for VD management. Rhodesian health administrators had endorsed the use of neoarsphenamine, instead of penicillin, in treating early syphilis and chancroid as this was believed to be a cheaper option than using penicillin. Willcox's experiments proved that this was inefficient in treating syphilis and chancroid. He experimented on numerous antibiotic therapeutics, noting that though most doctors were confident and comfortable with using a single dose of penicillin with aluminum monostearate (PAM), single dosing was not the best therapy and could only be recommended for rural African clinics lacking doctors. This prophylactic use of antibiotics was aimed at reducing the "common infectious pool" and not at curing the individual (Willcox 1950:256, 1952). He recommended eight injections of 600,000 units of PAM taken daily as a more effective therapy than the single dose (Willcox 1952). Jackson (2002:200) sadly notes Willcox's lack of concern over the raids and chibeura practices on African women, as he like Fleming singled out women as carriers of VD, citing in his report that "girls on the move frequent the road camps and infect the transport drivers while in transit." The moral construction of the prostitute as the "diseased body" and the central but ambiguous role of antibiotics in its management persisted through the 1960s and 1970s into independent Zimbabwe (from 1980), as we demonstrate in the next section.

STIs, sex work, and antibiotics in Zimbabwe

In contemporary Zimbabwe, sex work is commonly practiced, particularly in urban areas such as Harare, yet remains illegal. While Women's Action Groups have successfully battled against a police tendency to arrest women suspected of loitering for purposes of prostitution, sex workers remain highly scorned and stigmatized, as they were in the colonial era, and are perceived by much of society, particularly church organizations, as a breach of society's moral, and spiritual standards (Mahamba 2018). In an article entitled "Prostitution: what an insult to our people," former liberation struggle heroine Ireene Mahamba denounces "sex work" as "an anathema to our culture" (Mahamba 2018:1). Mahamba rejects the term "sex worker" – that has gained prominence globally – as a term that "does not originate from among our people," noting that "it is borrowed from Western capitalists who reduce the human to a commodity that can be bought and sold" (Mahamba 2018:1). She calls for "mankind to be human and not objects" and decries the selling of one's own body as reductionist and as a move away from God's design for a woman. The way Mahamba denounces sex work as an "insult to our people" reflects our experiences of the way sex workers are perceived by a large proportion of Zimbabwean society and the stigma that remains attached to sex work.

The landscape of health care and development in Zimbabwe today, like many low- to middle-income countries (LMICs) in Africa, is hybrid and fragmented, with a great diversity of local and international governments, research institutions, and NGOs active in the country (Dixon et al. 2021; Ndori-Mharadze et al. 2018; Prince and Marsland 2013). Thus, in practice, a variety of moral economies, legal frameworks, and governmentalities coalesce uneasily upon this "high-risk" group.

Public polyclinics tend to reflect discipline, punish, and abolitionist logics, whereas NGOs and transnational actors represent the empowerment approach. Reflecting the growing influence of the latter approach in Zimbabwe, several academics in Zimbabwe have argued for the need to provide HIV/AIDS, sexual and reproductive health services through "sex worker friendly" clinics (Ndori-Mharadze et al. 2018:95). The rationale for separate facilities for sex workers is that they have historically been criminalized and stigmatized, making them vulnerable to ill-treatment in public health facilities, thereby compromising their uptake of vital sexual and reproductive health care. Since 2009, rights-based discourses aimed at protecting and empowering sex workers have emerged and are particularly evident in the work of NGOs, including one in particular that we became aware of during our fieldwork. This NGO runs a free clinic to provide sexual and reproductive health services to sex workers with the aim of achieving a stigma-free, friendly, and non-judgmental environment. In the following sections, we illustrate ethnographically how individuals categorized as "sex workers" navigated fragmented landscapes of NGO and state health care in the face of regular occupational exposure to STIs. At the same time, we suggest how older colonial governmentalities have endured within these biopolitical configurations, partially substituting explicitly punitive public health approaches for pharmaceuticals and the responsibilization of working women, while continuing to neglect structural and systemic inequities. This provokes unsettling questions about how and by whom sex work will be governed if the antibiotics that are so central to current pharmaceuticalized regimes continue to lose their efficacy.

Sex work and the inevitability of STIs

The reality of sex work we encountered in Harare was a diverse and vibrant sphere of informal economic activity, with several business models operational in different spaces where we conducted research: "the base" (run by Mai Fau); homes within the sex zone; and the Magoshto shacks, which were open to business 24 hours a day, enabling sex workers to capitalize on the high demand for sex work. Common across the business models was the high volume of clients that sex workers would typically see during each shift: this could be as many as 50 clients per day/night, charging for a short time only. "Short time" was sex for at least two minutes, and in this process, sex workers were regularly exposed to STIs. In theory, sex workers could choose to engage only in protected sex. However, this was an "empty choice" for most, due to the significant difference in price between protected and unprotected sex. Engagement in unprotected sex fetched a higher income of ZWL400 (USD20) in one encounter compared to sex using a condom, which raised between ZWL5-10 (USD0.25–0.50). Fadzi, a sex worker at the Magoshto shacks explained the rationale behind this choice:

> I get 5 or 7 bond for one customer using a condom, imagine the hard work involved to get 100bond per night? If you get someone who wants to spend the night with you, the cost for the whole night is 100 bond, but the person can ask for sex without a condom, and you tell him he must top up the money to 400 bond and you get a lot of money in one night. Why not get better money pay my bills and feed my children? Only those with less responsibilities have the luxury to play it safe. (Fadzi, Sex Worker 32 years)

Sex workers were aware of the risks associated with unprotected sex and engaged in meticulous acts of bodily surveillance to identify signs and symptoms. Yet ultimately, given this harsh reality, STIs were reported by the sex workers we engaged with as a regular occupational hazard. When this occurred, the most common first point of health care was SWC, as described by Mai Fau:

> Most of my girls do not keep STIs in hiding. If l see that one of them is not well, I ask is there any pain anywhere in you and tell them when you are not well, go to [SWC]. If one cannot walk, I will accompany them to [SWC].

Contestations over "our clinic"

The sex worker's program run by SWC was situated within a public health facility in Mbare. The program provided free clinical and preventative services exclusively to sex workers and their clients. When asking about the outcome of the thrice-yearly STI episodes, most sex workers reported having received – and been successfully treated with – antibiotics. Sex workers had a keen familiarity with different kinds of antibiotics, including "doxy" (doxycycline), "cipro" (ciprofloxacin), "metro" (metronidazole) and rocephin (ceftriaxone) – all commonly used in the treatment of STIs. These were the preferred mode of treatment because they enabled healing with minimal disruption to their work.

Services available at SWC contrasted starkly with services at the public polyclinic. This was both in terms of services provided – usual clinic attendees had to pay a user fee and for any medicines prescribed – and the mode of care provided by the NGO staff, who were perceived as friendly, understanding, and tolerant of the plight of sex workers:

> [SWC] was made for us, they saw that in our job, people were suffering, we had no money for medicine, and the nurses at the clinics were treating us like we were not human, so [SWC] provides us with medicine and care for free. (Fadzi, Sex Worker 32 years)

> Whenever we feel like we need care, here we just think of [SWC], we don't really bother about the polyclinic. My most recent visit to [SWC] was two months ago. I was given an injection and tablets. (Judy, Sex Worker 36 years).

Perceptions of better treatment in NGO clinics that were well resourced in comparison to overstretched government health-care facilities has been well documented in critical global health literature (Geissler et al. 2008). The sense of belonging created and its associated resources, entry to which required fitting the category of "sex worker," is characteristic of "therapeutic citizenship" documented in the context of HIV. A key difference here is that antibiotics (rather than antiretrovirals) lay at the center of this emergent citizenship, which helped to sustain the legitimacy and sustainability of the social category that one was required to fit into to gain access. Belonging to SWC exposed sex workers to particular forms of subjectification, in which they were recast as responsibilized health seekers in ways analogous to the lifestyle changes that have been associated with antiretrovirals (Nguyen 2005).

Knowledge of the existence of free health care for sex workers generated strong feelings, both because of the exclusionary nature of this citizenship, as well as whether sex workers deserved free care. That sex workers proudly called themselves "sisters" was to the dismay of some community members, who felt that this was an "evil" sisterhood. MaMoyo, a resident whose house is situated near the Magoshto, said:

> This clinic for prostitutes is evil, it condones the evil work of prostitutes, freely dishing medicine for their *siki* [STI] allowing them to continue polluting our area with their evil work.

Such ill-feelings and resentment were compounded by the fact that, while male clients of sex workers could receive free care, other women, including the wives of said men, had to attend the public services for treatment. Interviews with community members indicated that seeking STI care at the public clinic subjected them to shame. "Walking into the clinic to report that you have a disease for prostitutes makes you feel like a common prostitute," said Mai Tonde, a married woman who had contracted an STI from her husband. Though there were other ways people had got STIs that were not from prostitution (e.g. casual unprotected sex with an infected partner), Mai Tonde's framing of STIs as a "prostitute's disease" suggests the enduring legacy of older colonial era framings of VD and prostitutes. While women feared being accused of being a prostitute, SWC was an attractive option they could not access: SWC only admitted "sisters" and their partners. Women not fitting into this category felt they also deserved free treatment since they too were prone to STIs, which they identified as originating from sex workers who contaminated their husbands. Mai Shane, a community health

worker, noted that there was something deeply problematic about dividing women who required sexual health services, noting that they had rescued sex workers only from shame associated with siki (STIs) at the polyclinic:

> This clinic for sisters turns a blind eye on wives who gets siki from their husbands saying we want sisters only. What about those wives infected by husbands who have been infected by sisters? Who will rescue them from the shame they suffer at the clinic and who will assist them to buy treatment? Who is their helper? The clinic does not care. (Mai Shane, Community Health Worker)

The exclusions of the sex worker's program described by Mai Shane are the necessary corollary of such siloed approaches to global health. As critical global health scholars have observed, northern-funded programs tend to narrowly focus on priority pathogens and "high-risk" groups through narrow technological solutions – in this case, sex workers and antibiotics – at the expense of broader structural challenges. Such problems are pushed onto government services and, while we have no doubt that practices of shaming and scolding occurred, this was certainly exacerbated by the chronic under-funding of the public sector not only by governments but also northern donors.

Bodily surveillance and responsibilization

While sex workers were not subjected to punitive and stigmatizing treatment that many other women received at government facilities, we observed subtler ways in which power was extended over sex workers through SWC's curative and preventative interventions. Of significance was a network of community peer educators hired by SWC to educate sex workers to become responsibilized workers and health seekers. These peer educators invested their time in teaching sex workers about the values of safe sex (which, as described above, was often financially damaging), to identify signs and symptoms of common STIs (as exhibited both by themselves and by clients), to seek early treatment upon finding signs and symptoms, and to adhere to antibiotic regimens and other treatment like antiretroviral therapy provided by SWC and other health providers.

In practice, we observed how these routines, techniques, and values were taken up and embedded within a broader regime of inspections, cleaning, and maintenance centered on genital hygiene. Sex workers related how their vaginal areas were required to be forever shaved, daily cleaned, and inspected for unusual odors, lice, bruising, and growths. Regular checks for STI symptoms on the self and on clients were done, in the event of which the first step was to seek treatment, convince clients of the need for treatment and inform them where to obtain treatment (i.e. SWC). If a customer refused to go for treatment, the whistle would be blown: the sex worker would alert others not to entertain this client as he had potential to spread disease. Keeping the work environment sanitized was thus made possible by regular inspection, early identification, and cutting off services to customers refusing to go for treatment.

Sex workers indicated the existence of two local classifications of STIs, the first "*siki yedrop*" (an STI called "drop" that likely referred to vaginal discharge syndrome/gonorrhea) and "*siki yemaronda*" (meaning "STI of the wound," which likely referred to syphilis). The latter was feared, as indicated by several sex workers who expressed that wounds on the vaginal area were a major "killer" of work. Mai Fau, for example, explained:

> It starts off as a very small wound, but I will neglect the small wound thinking this small wound would heal on its own but no, this thing develops into a big wound or wounds. You then realise you have very painful wounds. Now working with painful wounds, it is no longer possible for you to work, how can you work, with this kind of work, not even a small wound is wanted down there, when you are in this business your work just dies. When your work dies, it may take you time before you are able to use your vagina again.

Prompt treatment with antibiotics may have been able to prevent the condition from getting too severe. However, with the imperative to make money often taking precedence over longer-term health interests, this was not always the case, leading to situations such as that described in this article's opening vignette.

Tumi had recently moved from the city into the Mbare area to conduct sex work at the Magoshto. All the sex workers we spoke to characterise the big, odorous warts resembling cauliflowers which had developed on her vagina as a product of delayed treatment. We attended a meeting at the Magoshtos where other workers decided to chase out Tumi to protect their workspace. Reasons for this were laid down: customers were recycled and Tumi risked spreading her disease onward to other customers and back to them. She was identified as a threat to business, and two women were selected to evict Tumi. Evicted, she found comfort at her friend's home in the sex zone. Word spread very fast about her STI: community members laughed, calling this a good example of the evils of "prostitution," while the community peer educator saw this as an opportunity to teach other sex workers the dangers of noncompliance. The educator called for all sex workers in the area to witness Tumi's wound to show to them the "wages" of having sex with no condoms and the dangers of not seeking treatment early, as taught by SWC. Tumi was escorted to SWC and, because of the severity of her condition, was referred onwards to the hospital. Tumi's case demonstrates how techniques of surveillance and control not dissimilar from the chibeura practices of the British colonial regime form a key part of the regulation of sex work in the present day, although now shifted from the remit of a central government or public health body and onto individual and collective bodies of practicing sex workers.

Conclusion: future pasts of STI control

In this article, we have brought anthropological and social science scholarship on sex work into conversation with that on antibiotics as "quick fixes" for care and productivity through a rare ethnographic and historical investigation into the roles of antibiotics in STI management among sex workers in Zimbabwe. Deploying a biopolitical theoretical lens, our aim has been to demonstrate how antibiotics have become increasingly central to the rationalities and technologies of public health and in turn the framing and governance of the category of the prostitute/ sex worker. Our key finding is that, although there have been clear and applaudable reasons for working to destigmatize and legitimize sex work, provide such women with strategies to mitigate harms including STIs and improve access to medicines and care, the ways in which these advancements have been pursued have been premised on the availability and continued efficacy of antibiotics. As other critical global health scholarship has similarly noted (Packard 2016; Prince and Marsland 2013), such substances have enabled a subtle bypassing of the question of wider structural and systemic vulnerabilities responsible for gendered inequalities that make women's options for paid work extremely limited (i.e. leading women into sex work and regular exposure to STIs) in favor of governance through antimicrobial "quick fixes." Not only is the architecture of contemporary global health today fragmented, erratic and tunnel-visioned; as we showed, many women fell outside of SWC's classifications. Moreover, the sanitized neoliberal lexicon of empowerment and responsibility inculcated in those falling within SWC's remit belies a subtle reality of monitoring, surveillance, and control. Although many of these practices were appropriated by sex workers precisely to gain a measure of control over the challenging circumstances in which they worked, they nonetheless remained focused on the policing of bodies and behavior in ways not so dissimilar from the technologies of "social hygiene" deployed in colonial Rhodesia.

The unsustainability of this systemic reliance on antibiotics has, however, been thrown into relief by the phenomenon of AMR. It has previously been argued, building on the theories of Bowker and Star (Bowker and Star 1999), that antibiotics have become "infrastructural" to our ways of thinking about and intervening upon ill health (Chandler 2020:9). Such is their centrality to health care and indeed modern life that they have, until recently, become almost invisible. We previously demonstrated how antibiotics have become subtly and cumulatively written into the architecture of global health and LMIC health systems such as Zimbabwe's (Dixon et al. 2021). In the present article, we have specifically honed in on how antibiotics have become caught up in

the "making up" and governance of sex workers – exposing how these substances have subtly come to shape the ways in which this sub-population has been intervened upon through successive regimes of public and global health. Antibiotics, characteristically of infrastructure, are becoming increasingly visible again as their ability to fight bacteria weakens. This is palpable in the context of STIs, with many organisms such as gonorrhea – or "STI of the drop" – having been reported as resistant to first- and second-line drugs (WHO-GASP 2009–2018). AMR, in other words, presents a moment of "infrastructural inversion" (Bowker and Star 1999:33) that compels us to recognize the myriad ways we have come to depend on antibiotics and how we might think and act moving forward from here.

However, the ways in which AMR has been framed as a policy object suggest that there is cause for concern. As Hutchinson argues, AMR discourse has paradoxically only reinforced the centrality of antibiotics to modern living and, as this discussion of medicines expands, "vulnerable people seem to disappear, and instead vulnerable medicines take their place" (Hutchinson et al. 2016:22). While imperfect, the laudable successes in expanding access to medicines and care in the twenty-first century for historically disadvantaged populations are already being undone through discourses of irrational use that place responsibility and blame for the dwindling efficacy of antibiotics on Other people in Other places. We suggest that this is no more the case than the historically scorned category of the prostitute/sex worker, which with a long history of being the symbol of moral decay is likely to be among the first to be blamed for AMR and last to gain access to the scant number of new antibiotics. The COVID-19 pandemic demonstrated how fast imperatives of access and equity have been superseded by securitized concerns around containment and control, with drastic and detrimental effects in LMICs (Leach et al. 2021). As we have shown here, for all the progressive discourses around rights and empowerment of sex workers (Cowan et al. 2013), public health only partially engaged with the structural and systemic determinants of sex work because of the advent of antimicrobial "quick fixes." Such approaches contain latent fragments of colonial governmentality calibrated toward surveying and policing behavior, morality, and hygiene, which we propose stand to be reactivated by those assuming authority and responsibility for protecting medicines were STI superbugs to become a greater threat.

Ethnographic and historical approaches, such as those we have taken in this article, are well placed to shed light on the cumulative processes forming the grooves within which we currently work, and in doing so reveal their historical contingency and how things could have been otherwise. We have previously argued that what are needed are bold, reflexive attempts to design-out antibiotics from the architecture of global health (Dixon et al. 2021; Tompson and Chandler 2021), an argument we might usefully extend to the pharmaceuticalized approach to the management of STIs enacted by SWC and similar organizations. In this context, this means greater engagement in public health circles with those structural and systemic issues surrounding sex work that have been allowed to fade from view through substitution with antibiotics. Neither the draconian techniques of colonial public health, the "empowerment" logics of contemporary global health nor the "abolitionist" stance enacted by Zimbabwean public clinics have anything close to a sustainable, equitable solution. Perhaps indeed all hold clues; yet any lessons need to be carefully disentangled from the moralizing, individualized framings that lead to all-too-easy targeting of vulnerable women. What are needed are systems-level approaches that consider the ways in which STIs move within wider networks where sex work constitutes connective tissue. Any narrow focus on sex workers – whether empowering or abolishing – obscures the sociological, economic, and epidemiological connections between sex workers, wives, husbands, health systems, and society at large that have been co-constituted with substances that can no longer be relied upon. It is these networks, not a reified category of "sex worker," that require attention and intervention moving forward.

Note

1. Peer educators are frontline healthcare workers with a good understanding of the sex worker community's needs and priorities who help in building acceptance and service uptake in the community.

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