Social Science & Medicine 179 (2017) 1–8

Contents lists available at ScienceDirect

Social Science & Medicine

journal homepage: www.elsevier.com/locate/socscimed

Tinkering toward departure: The limits of improvisation in rural Ethiopian biomedical practices

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ARTICLE INFO

Article history:
Received 20 March 2016
Received in revised form
13 February 2017
Accepted 13 February 2017
Available online 16 February 2017

Keywords:
Ethiopia
Transnational biomedicine
Biomedical imaginary
Global health
Physician departure
Tinkering
Improvisation

ABSTRACT

This paper explores Ethiopian physicians' responses to tensions produced by gaps between ideals of biomedicine and realities of clinical practice in two rural Ethiopian hospitals. Physicians engage in creativity and improvisation, including relying on informal networks and practices and tinkering within diagnoses and procedures, to overcome constraints of lack of resources and limited opportunities to engage in "good medicine." These courageous, but often unsuccessful attempts to mitigate professional and personal conflicts within their medical practices represent improvisation in impossible circumstances. This paper results from ethnographic research conducted in 2013–2014 and includes participant observations and qualitative interviews in two hospitals within the same community. The inherent conflicts among globalized standards, unpredictable transnational medical networks, and innovative practices produce tenuous clinical spaces and practices that rely on a mosaic of techniques and ad hoc connections. Tinkering and improvisation often fail to mediate these conflicts, contributing to physician disenchantment and departure from the community.

"For the person already in medicine in Ethiopia, I would say he is in the middle of the ocean." (Dr. Zerihun, Ethiopian MD)

1. Introduction

Biomedical practices in Africa are defined through improvisation, tinkering, and making do (Livingston, 2012). The highly contextualized and often ad hoc processes that take place are the result of integration of knowledge of sophisticated technological interventions and carefully assembled standards with hospital resources and spaces that are unpredictable and tenuous. Physicians negotiate multiple biomedical knowledges that address the institutional realities and embodied patients of specific clinical contexts, while simultaneously drawing on global imaginaries and discourses of what biomedicine should be. Both are equally necessary. The first seeks to apply medical knowledges across eras and traditions to meet immediate needs of suffering people. The other is future-oriented, allowing physicians to remain committed to ideals of the potential of biomedicine to transform individual bodies and communities. As the distance between these aims is widened, physicians become increasingly creative, making do with what is available and finding alternate possibilities for what is not. What happens, however, when circumstances are beyond the abilities of physicians to tinker or improvise successfully or when the constraints of clinical realities stifle hope in biomedicine; when in the words of one Ethiopian physician, "we just practice medicine for survival"?

Between 1987 and 2006, 73.2% of Ethiopian-trained medical doctors left the public health sector, citing many factors including renumeration, administrative bureaucracy, burn out and lack of recognition, and lack of structure and support from academic and professional organizations (Berhan, 2008). Within the two rural Ethiopian community hospitals represented in this paper, it is not just a lack of compensation or resources that drives Ethiopian physicians from serving the neediest patients, but an inability to practice "good" medicine and ultimately disenchantment with the transformative potential of biomedicine, through positively impacting individual lives and communities. This is the case despite valiant efforts to engage in creative and inventive solutions for overcoming obstacles to patient care and professional satisfaction.

Biomedicine in Ethiopia has a long history characterized by unevenness and instability. In some regards the history of medicine in Ethiopia mirrors that of other East African countries, (Kessaye et el, 2006; Iliffe, 2002; Pankhurst, 1990), but the country's political

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http://dx.doi.org/10.1016/j.socscimed.2017.02.023
0277-9536/

and social history makes it unique in many ways. Ethiopia was never under colonial rule and while development of the health system was inculcated in transnational networks of training, personnel, and policies, Ethiopian sovereignty allowed establishment of a health system somewhat outside of tensions and exploitation discussed in situations of colonial medicine (Anderson, 2006; Hunt, 1999; Iliffe, 2002).

Between 1936 and 1941 the Italians briefly occupied Ethiopia, during which time several hundred Italian physicians arrived to organize rural health services and build 19 hospitals (Berhan, 2012; Slikkerveer, 1990), including Gelel Christian Hospital (GCH), discussed in this study. Following World War II, Emperor Haile Selassie encouraged foreign organizations to become involved in Ethiopian modernization projects. Haile Selassie's reign ended with a Marxist military coup, called "the Derg," in 1974. In subsequent years, health policies incorporated Primary Health Care principles, emphasizing health care as a fundamental human right and introducing large-scale public health measures. International support and funding came primarily from the Soviet Union and Cuba, who sent 300 medical practitioners, including 100 medical doctors to Ethiopia by 1980 (Slikkerveer, 1990). Following the defeat of the "Derg" regime in 1991, an ethnic federalist state was established that remains in place today.

The current government-run biomedical health care system of Ethiopia is three-tiered and primary health care provision is achieved through health posts in each community. Health centers provide basic prevention and treatment services and can refer more complicated patients to district hospitals. District hospitals, including the other study hospital, Gelel Public Hospital (GPH), have 30–50 beds and a catchment population of 100,000. Zonal hospitals and specialized hospitals, located in urban areas, are increasingly sophisticated and serve larger catchment areas (FDR of Ethiopia Ministry of Health, 2012). This infrastructure development has significantly increased the number of facilities per capita, but access to higher tier facilities continues to be limited for many in rural communities. Many district hospitals, including GPH, struggle with inadequate staffing, lack of functional equipment and pharmaceuticals, and medical needs exceeding the hospitals' capacities.

Since 1995, the Ethiopian government has implemented a series of Health Sector Development Programmes (HSDP) to expand biomedical services around the country through infrastructure development and increasing numbers of health care providers. Significant state effort has been invested in training more health care providers at all levels, including increasing enrollment numbers in medical schools by four-fold and opening new medical schools. In 2009 the country had only 2.5 physicians per 100,000 people, a dismal ratio even among sub-Saharan African countries and one of the five lowest in the world. Many of these physicians work in the private sector and urban areas, while 81% of the country's population is rural (WHO, 2015).

To understand these imbalances, we must interrogate the experiences and practices of Ethiopian doctors within underserved rural communities and the reasons many leave these positions despite expressing desire to care for needy patients. Over the course of this eight-month ethnographic study in a rural town in Western Ethiopia, Gelel, not a single physician present at either of two hospitals at the outset remained at the conclusion. While previous researchers have conducted studies to assess factors driving this movement (e.g. Berhan, 2008), physicians in Gelel's hospitals discussed complex dilemmas that confound simple solutions to decrease turnover and speak to central barriers to the practice of biomedicine under extraordinarily difficult circumstances. Ethiopian practitioners at both Gelel's public and private hospitals struggled to construct evidence-based and caring relationships that form the core of an ideal biomedicine. Tensions between globalized standards and technologies that construct biomedical imaginaries and the locally-embedded and structurally-constrained realities of clinical practices create conflicts of personal and professional integrity for Ethiopian physicians. Considering data gathered during interviews and participant observation with these doctors, this analysis takes the notion of departure of physicians as an outcome of what has been referred to as improvisation in impossible circumstances (Livingston, 2012), exploring the limits of tinkering in medical practice.

1.1. Theoretical background

This paper responds to a call within medical sociology and related fields to more fully understand processes and practices of biomedicine beyond the global North (Bell and Figert, 2015; Clarke, 2010) and to analyze the intersection of transnational networks and biomedical imaginaries and practices. The ethnographic data presented here explores these processes within a rural Ethiopian town to understand the conflicted positions of Ethiopian physicians who work in the community's two hospitals. In contrast to biomedical settings often focused on in the sociological literature, the uncertainties and transience of projects and resources within these hospitals contribute to greater instabilities. This results in tenuous and unsettled clinical places that are disconnected from formal networks of resources, training, and technology in important ways. While state health system expansion has created new biomedical infrastructure, many recently constructed state hospitals, including Gelel Public Hospital, remain understaffed and poorly equipped. Non-governmental organization (NGO)-run hospitals, such as Gelel Christian Hospital, struggle to serve needy patients within a fee-for-service structure that makes care cost-prohibitive for many, while also relying on the generosity of unpredictable foreign donors for equipment and supplies.

As national and transnational networks construct biomedical spaces unevenly, physicians' abilities to engage with these changes and processes reflect inequalities of access and connection discussed within analyses of globalization (Brenner et al., 2010; Ferguson, 2006). Ferguson (2006) defines abjection within the African context as the process of being aware of the "first class world" while experiencing increasing social and economic distance from it. The abjection and unsettledness that characterizes these disconnected spaces and the people within them have become normalized and institutionalized, serving as an impetus for novel and creative, though often informal, connections. Within transnational biomedicines, the unsettled and flexible ways in which these networks constitute spaces and practices produce moral and professional crises for those attempting to provide medical services. Ultimately, the disenchantment and marginalization that result contribute to physicians' dissatisfaction and departure from severely underserved communities.

Moral dilemmas within biomedical practices in East Africa result from lack of resources, technology, and support. Dilemmas include difficulties meeting expectations of practicing "good" medicine, defined through universalized biomedical standards, and obtaining intellectual satisfaction from the work of doctoring (DelVecchio Good et al, 1999). Medical imaginaries capture affective dimensions and potentialities of biomedicine and function to promote ideals of moral and scientific practices rooted in globalized networks of medical knowledge and technology (DelVecchio Good, 2007). These imaginaries circulate in a global political economy of hope, impacting medical practitioners as diverse as Boston oncologists (DelVecchio Good et al., 1999) and Malawian medical students (Wendlund, 2010, 2012), and serve to foster commitment to ideals of the transformative possibilities of biomedicine.

Physicians are trained in standardized curricula and adhere to