

WestminsterResearch

<http://www.westminster.ac.uk/westminsterresearch>

**Indigenous Medicine and Biomedical Health Care in Fragile
Settings: Insights from Burundi
Falisse, J-B., Masino, S. and Ngenzebuhoro, R.**

This is a pre-copy edited, author-produced PDF of an article accepted for publication in the Health Policy and Planning, following peer review.

The definitive publisher-authenticated version of Falisse, J-B., Masino, S. and Ngenzebuhoro, R. (2018) Indigenous Medicine and Biomedical Health Care in Fragile Settings: Insights from Burundi, *Health Policy and Planning*. 33 (4), pp. 483-493 0268-1080 is available online at:

<https://dx.doi.org/10.1093/heapol/czy002>

The WestminsterResearch online digital archive at the University of Westminster aims to make the research output of the University available to a wider audience. Copyright and Moral Rights remain with the authors and/or copyright owners.

Whilst further distribution of specific materials from within this archive is forbidden, you may freely distribute the URL of WestminsterResearch: (<http://westminsterresearch.wmin.ac.uk/>).

In case of abuse or copyright appearing without permission e-mail repository@westminster.ac.uk

Indigenous Medicine and Biomedical Health Care in Fragile Settings: Insights from Burundi

Jean-Benoît Falisse¹, Serena Masino², Raymond Ngenzebuhoro³

Abstract. *This study contributes to the health policy debate on medical systems integration by describing and analysing the interactions between health-care users, indigenous healers, and the country's biomedical public health system, in the so far rarely documented case of post-conflict Burundi.*

We adopt a mixed-methods approach combining (i) data from an existing survey on access to health-care, with 6,690 individuals, and (ii) original interviews and focus groups conducted in 2014 with 121 respondents, including indigenous healers, biomedical staff, and health-care users. The findings reveal pluralistic patterns of health-care seeking behaviour, which are not primarily based on economic convenience or level of education. Indigenous healers' diagnosis is shown to revolve around the concept of 'enemy' and the need for protection against it. We suggest ways in which this category may intersect with the widespread experience of trauma following the civil conflict. Finally, we find that, while biomedical staff displays ambivalent attitudes towards healers, cross-referrals occasionally take place between healers and health-centres.

These findings are interpreted in light of the debate on health systems integration in Sub-Saharan Africa. In particular, we discuss policy options regarding healers' accreditation, technical training, management of cross-referrals as well as of herb-drug interactions; and we emphasise healers' psychological support role in helping communities deal with trauma. In this respect, we argue that the experience of conflict, and the experiences and conceptualisations of mental and physical illness, need to be taken into account when devising appropriate public or international health policy responses.

Keywords: Burundi, traditional medicine, health systems, medical pluralism, post-conflict, developing countries, community care, mental health services

Key Messages:

- Qualitative and quantitative evidence that medical pluralism is widespread in Burundi. Use of indigenous medicine linked to patient's perception of illness rather than only economic convenience, and apparently affected by local experiences of state fragility.
- Evidence found of informal cross-referrals between medical systems. Regulation of such interactions may minimize risk of dangerous drugs interactions to patients while enabling useful collaborations. Moreover, training of biomedical staff and healers could help them recognise the existence of opportunities for cross-referrals.
- Conflict trauma point to role of indigenous healers as first line of mental health support provision, raising the question of their place in a poor, fragile, country with extremely limited mental health support.

¹ Centre of African Studies, University of Edinburgh

² Corresponding author: Department of Economics and Quantitative Methods, University of Westminster, 35 Marylebone Road, London, NW1 5LS, United Kingdom. +44 20 7911 5000 ext 64664, S.Masino@westminster.ac.uk

³ Faculté de Médecine, Aix-Marseille Université.

In Sub-Saharan Africa, the use of indigenous medicine (IM) is widespread and co-exists with the use of biomedicine. Such medical pluralism has been, at times, attributed to inequality in health-care access (WHO, 2013); and it also hinges on aetiology of disease classifications which separate illnesses of natural origin from those of spiritual and psycho-social origin (Foster, 1976; Konadu, 2008). The debate on the coexistence of indigenous and biomedical health systems has often revolved around the latter separation and asked the question of whether an integration of the two systems is, in practice, possible or useful. The present article seeks to advance this debate by contextualising it in the socio-politically unstable setting of Burundi.

In recent years, the discussion on health systems integration has often focused on Sub-Saharan African countries that enjoyed relative economic or political stability, such as Tanzania, Ghana or Nigeria (Nxumalo *et al.*, 2011b; Barimah, 2013; Adefolaju, 2014). These are countries that have been able to develop a more advanced regulatory framework for the interactions between IM and biomedicine. Another strand of the literature has explored the connections between IM and the fight against colonial regimes in countries such as Mozambique and Zimbabwe and apartheid in South Africa (Lan, 1985; Freeman and Motsei, 1992; Ashforth, 2005). By focusing on Burundi, the objective of the study is to gain practical insight into the debate on health systems integration and health-service provision in a socio-political setting characterised by high instability, widespread trauma, low interpersonal trust, and low state capacity and income levels. Apart from a few exceptions (Barancira, 1990; Mbonimpa, 2006; Cazenave-Piarrot, 2012), the use and practice of IM in Burundi has rarely been documented. Our ambition is, however, not to provide a full ethnographic account but rather to explore key interactions between the biomedical and IM systems, with a policy perspective in mind.

The study relies on original survey material and qualitative research conducted among biomedical staff (nurses and doctors), health-care users, and indigenous healers. We will use the term ‘healers’ throughout, to refer to practitioners of various types of IM in Burundi. These include herbalists, diviners, rain makers, sorcerers, and priest healers (Cazenave-Piarrot, 2012).

The findings suggest that healers are often attended to because they offer alternative explanatory models for understanding sickness and disease framed in terms of protection against ‘the enemy’. While this framing is not something new, we highlight the policy relevance of indigenous healers’ community support role in a context marked by the experience of violence and conflict. These findings complement the policy recommendations of recent studies by Ventevogel *et al.* (2011, 2013). Further, we discuss a number of policy-relevant dimensions emerging from our data. These include healers’ accreditation as an uncertain regulatory route, and the suggestion that targeted training of both biomedical staff and healers could improve the management of cross-referrals and herb-drug interactions. It emerges from our data that such training could also help to address biomedical staff and health-care users’ concerns on the safety of healers’ practice in the country.

The remaining of the study is structured as follows: the next section traces a historical summary of IM practice and use in Burundi. Subsequently, sections two and three describe our methodological approach and results. Finally, section four discusses the findings against the debate on health-systems integration in Sub-Saharan Africa.

1. Burundi: Context and IM system

The small landlocked Republic of Burundi is one of the poorest countries in the world. It has witnessed recurrent outbreaks of violence since its independence in 1962, including a civil war that killed around 300,000 people and displaced over a million between 1993 and 2005 (Uvin, 2009).

There are few accounts of the current use and practice of IM in Burundi. The research by Zuure (1929) and Rodegem (1971) is dated and refers to a disused pre-independence theoretical paradigms (Cazenave-Piarrot, 2012). The only more recent accounts are found in Barancira (1990) and Mbonimpa (2006), both of which were published locally in Burundi, and in few copies only.

The history of IM in Burundi is also rarely documented, especially for the pre-colonisation period. Bigendako et al. (1995) indicate that German and later Belgian colonial administrations took interest in local medicinal plants but the colonial period is more importantly marked by the missionaries' efforts to equate IM practice with witchcraft, pushing healers to clandestinity (Bigendako *et al.*, 1995; Ministry of Health of Burundi, 2004).

The health authorities of independent Burundi revived interest in indigenous medical knowledge and practice, and, in the 1980s, sought the United Nations Development Programme's support to develop quality control and new research on pharmaceuticals based on medicinal plants. At that time, healers created the Burundi Association of Traditional Practitioners (ATRADIBU), joined governmental efforts in setting up the Centre for Research and Promotion of Traditional Medicine in Burundi (CRPMT), and supported CRPMT's attempt to set up a pilot clinic jointly operated by healers and biomedical doctors (Fumba, 2004).

The start of the civil war in 1993 put a halt to these efforts and the conflict left the public health system in ruins (Wakabi, 2007). Integration efforts resumed when peace returned, with the establishment of private facilities such as the St Michael's Centre and Centre for IM in Buta. Between 2002 and 2004, an IM unit was developed within the Ministry of Health (Ndikubagenzi *et al.*, 2006) and the legal practice of IM was recognised.

In 2014, a decree [100/253/2014] for the regulation of IM and the healer profession in Burundi was promulgated. The decree establishes training and registration conditions for accessing the profession of healer (French: *tradipraticien*) and is mostly concerned with the regulation of medicinal plants use, specifically banning the use of secret remedies or remedies not registered in the national list. The enforcement of the decree is, however, weak, and few organisational and financial measures have been taken to implement its prescriptions.

International aid flows have supported the biomedical public health system but have generally not engaged with IM. The main modality for delivering such support has been, in the recent years, performance-based financing (Falisse et al. 2015). Through this system, some traditional birth attendants (TBAs), a category of traditional health service providers that is not discussed in this paper, were contracted to refer and accompany expecting mothers to health centres (Falisse et al. 2017).

Against this background, our initial research question is about the extent of IM usage in Burundi and the profile of IM users. This then leads to a second research question regarding the contextualisation of current IM practices in a post-conflict setting, as well as the way in which biomedical care and IM are interacting in such context.

2. Methodology

Research Design

The study uses a mixed-methods approach, combining qualitative analysis with insights from an existing quantitative survey. The survey uncovers a series of correlations between the use of IM, socio-economic variables, and the use of biomedical health-care. Our analysis based on this survey tries to describe and typify the IM user profile in Burundi. This answers our first research question. The qualitative analysis describes the use and practice of IM in the Eastern district of Gihofi, Rutana province and helps exploring the second question on integration in a post-conflict context.

Settings, Participants, and Recruitment

For the qualitative part of the research, we adopted a rapid ethnographic assessment approach (Ventevogel et al., 2013), combining individual and focus group interviews. Interviews took place in March-April 2014 and, in total, 12 healers, 36 biomedical professionals (nurses and three medical doctors), and 73 health-care users were interviewed following purposive criteria. The sample of healers was recruited via snowballing, based on healers' indication of their acquaintance with other healers. For the health practitioners and health-care users, we obtained district authorities' permission to recruit participants either at their workplace or within the community, and we were also able to secure the help of local chiefs and health-centre managers to accomplish the task. The interviewed biomedical staff had some knowledge of IM and we made sure we interviewed people of different ages, gender, health centres, and qualification levels. The health-care users were selected within the areas of practice of the interviewed healers, and again we ensured that different ages, gender, and occupations were invited to and represented in the focus groups (see table 1).

The quantitative research is based on a sub-section of a survey conducted in eight of the seventeen provinces of Burundi (Bubanza, Bujumbura rural, Bururi, Makamba, Ruyigi, Rutana, Cankuzo, and Karusi) in September-November 2013. A total of 7,383 people were interviewed, with 30 respondents per health centre and stratifying the sample (gender, location, and 3 categories of age) using information on the population from the 2010 national census (see table 2).

Data Collection

In the case of the qualitative research, the leading themes in the interview guide were: knowledge, opinion, and attitude towards IM; and relationship between IM and biomedicine in Burundi today. The first theme included questions on IM definition and practice, its advantages and disadvantages, and its integration in the public health system or lack thereof. The second theme included questions on differences and similarities between biomedicine and IM, relationship between health systems and the representation of illness and healing in each, legal status and recognition of IM in Burundi. The interviews were based on semi-structured and open questions; and they all lasted between 15 and 60 minutes. This applies to both individual and focus group interviews. The health-care users, specifically, were interviewed during 10 focus groups of five to ten participants each.

The survey included one question about IM: "In the last year, has the use of healers (*abafyitirizi*) by you and people around you been 1) on the rise, 2) declining, 3) stable, 4) do not know" (in Kirundi: *Mu kiringo c'umwaka, mubona gute ingene mwebwe n'abo muri kano karere mwitura abafyitirizi na ba rumenyi ?*). 6,690 people answered the question and the results were weighted to ensure

representativeness in terms of gender, location, and age (*svy* command in Stata 13.0). The survey avoided asking a direct question about personal use of IM given the complex relationship of IM with the Church and the biomedical health system, and to avoid any potential stigma.

Table 1: Basic demographic characteristics of the participants

(all in % except work experience)		interviews and focus groups			survey*
		biomedical staff	healers	population focus groups	general population
	Observations	36	12	73	6,690
Gender	Female	30.56	16.67	57.50	60.79
Age	20-30	33.33	0.00	32.87	57.64
	30-40	22.22	16.67	21.92	15.62
	40-50	30.55	50.00	30.14	16.86
	50+	13.90	33.30	15.07	9.88
Religion	Christians	94.44	75.00	89.04	94.07
	Animist/no religion	5.56	25.00	10.96	5.28
Education	Illiterate	0.00	33.33	27.40	25.90
	Basic literacy	0.00	25.00	10.96	21.27
	Only primary	0.00	41.67	61.64	38.94
	Secondary	80.56	0.00	0.00	13.23
Occupation	Higher education	19.44	0.00	0.00	0.65
	Farming				78.25
	Small business				16.46
Workplace	Civil servant				5.29
	Health Facility	72.22			
	Hospital	22.22			
	District	5.56			
	Originally from the region	16.67			
	Average years of experience (SD)	6.7 (3.1)			

* weighted using gender and age category (18-30; 31-45; 46+) at catchment area level [Stata *svy* command], to ensure representativeness vis-à-vis census data.

Data Analysis

The qualitative data was reviewed using content analysis, following an iterative coding procedure (Strauss and Corbin, 1990). Only items emerging in two or more of the individual and focus groups interviews were included, and responses in each category were ordered according to the following themes: disease, cause and diagnosis, treatment options, treatment providers, relationships between treatment providers (Ventevogel *et al.*, 2013). Such themes were developed deductively, based on the reviewed theoretical background, and they were subsequently revised and confirmed through data analysis.

In the case of the quantitative data, a dummy variable “acquaintance with healers” was created, which takes the value of one for all those who did not answer “do not know” to the question. The

survey is not meant to reflect the complex patterns of medical pluralism existing in Burundi, it rather presents a rare quantification of key trends in terms of acquaintance with IM. It serves as the background of the qualitative analysis. The key limitations of the survey are discussed in section 5.

A Logit model was estimated (using Stata 13.0) to explore the correlation between the described “acquaintance with healers” and the situation of the respondents in terms of socio-economic status and access to health (the variables are described at the bottom of Table 2).

Positionality, Consent, and Anonymity

All interviews were conducted in Kirundi by the Burundian co-author (male, 26) of this study, who also transcribed and translated them into French. There was no prior relationship between any of the respondents and the co-author who interviewed them. Participants were, in all instances, informed that their answers would remain anonymous and confidential, and that the person conducting interviews was a researcher from the capital Bujumbura, who was carrying out a study on the use and practice of IM in the country. To further ensure anonymity and confidentiality, both individual and focus group interviews were, whenever possible, conducted indoor and in private. Furthermore, descriptions of respondents in the original transcriptions never allowed the identification of a specific respondent. To minimise group response bias, the interviewer strived to ensure that all members of the focus groups had a chance to speak.

Trained enumerators carried out the survey and informed the participants that their answers would be anonymous, confidential, and used by the researchers to understand people’s relation with their health services.

3. Results

We start with the analysis of the quantitative data, which helps setting the scene by providing insights on the familiarity with IM in Burundi.

i. Survey data analysis

The table below shows the correlation between a set of individual and regional level characteristics and “acquaintance with healers”. Overall, 54% of the respondents indicated a familiarity with IM practices. This is associated with age, social capital, professional activity, attendance of biomedical health facilities, and well-being.

In terms of basic demographic characteristics, age is positively correlated with healer acquaintance, albeit in a low marginally decreasing way. This evidence is similar to that gathered by Pouliot (2011) in Burkina Faso. A possibility is that the association of biomedicine with ‘modernity’ makes younger generations less likely or less willing to use IM and report its use. Social status seems to matter more than economic status, although the boundary between the two categories is not clear-cut. We find that people with higher social capital are more likely to report acquaintance with healers, perhaps because of their large social network or ease of talking openly to enumerators. Importantly, professional occupation is not linked to healer acquaintance, with the sole exception of teachers and civil servants. This might be the result of their wider exposure and access to ideas of biomedical health-care.

Table 2: Association between acquaintance with healers, individual, and regional characteristics

		(1) Logit
Basic demographics	Age (years)	0.039** (0.012)
	Age (years) squared	-0.00003* (0.000)
	Education (0-5)	-0.007 (0.035)
	Female	-0.105+ (0.056)
Social and economic status	Member of an association ¹	0.226** (0.070)
	Ex-combatant	-0.202 (0.168)
	Displaced person or returnee ²	-0.047 (0.114)
	Vulnerable or disabled person	0.002 (0.101)
	Number of meals per day ⁴	0.058 -0.650***
<i>Religion (reference: Catholic)</i>	No religion/animist ³	0.174 (0.133)
	Protestant ³	-0.111 (0.069)
	Muslim ³	0.489 (0.736)
<i>Profession (reference: farmer)</i>	Teacher and civil servant ⁵	-0.650*** (0.134)
Access to biomedical health care	Has visited a health clinic in the last six months	0.359*** (0.103)
	Knows the Health Facility Committee ⁶	0.194* (0.083)
	Has heard of family planning ⁷	0.196+ (0.117)
	Well-being (health -family; 1-5) ⁸	-0.142** (0.047)
	Constant	-0.609 (0.416)
District Fixed Effects		YES
Observations		6690

Standard errors in parentheses + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$ - standard errors were clustered to account for the survey design (svyset on Stata). It is not possible to calculate a pseudo R^2 in the case of weighted survey data. Weighting using gender and age category (18-30; 31-45; 46+).

1. Any (social, religious, sport) proxy for social capital | 2. Accounts for mass displacements during the civil war | 3. Reference category: Catholic (main religious group) | 4. Proxy for wealth | 5. Reference

Consistently with other studies on IM use in West Africa (Tabi *et al.*, 2006; Pouliot, 2011), our main proxy for wealth, that is, the number of meals eaten per day, is not significant. Finally, acquaintance

with healers is not predicted by affiliation to a specific religion, including animistic beliefs. Our qualitative analysis below will confirm that, in Burundi, 90% of the population is Christian and the type of religious affiliation is not necessarily related to the use or practice of IM.

Looking at access to health-care indicators, we find that a negative self-evaluation of one's family health is associated with a higher likelihood of knowing about healers. Furthermore, knowing the local health facility committee (i.e. elected citizens in charge of co-managing health centres) is a measure of familiarity with the health system and it is positively associated with respondents' acquaintance with healers. This, combined with the positive correlation between knowing a healer and having visited a health centre, suggests a pattern of medical pluralism in health-care seeking behaviours. The effect is small (0.08 marginal effect after Logit), but strongly significant.

The results are robust to alternative specifications, such as removing district-level fixed effects, removing some of the covariates, or using a Probit or OLS model.

The data also shows that 43% of the respondents thought that healer attendance in the country was declining, while only 3.5% believed it was rising. Again, we need to remain careful with this data. Regional differences exist: people in the south and south-west of the country are less knowledgeable –or willing to disclose information– about healer attendance (see map below). In Gihofi district, where our qualitative enquiry took place, 53.7% of the respondents had (a relative/friend who) visited a healer during the previous year.

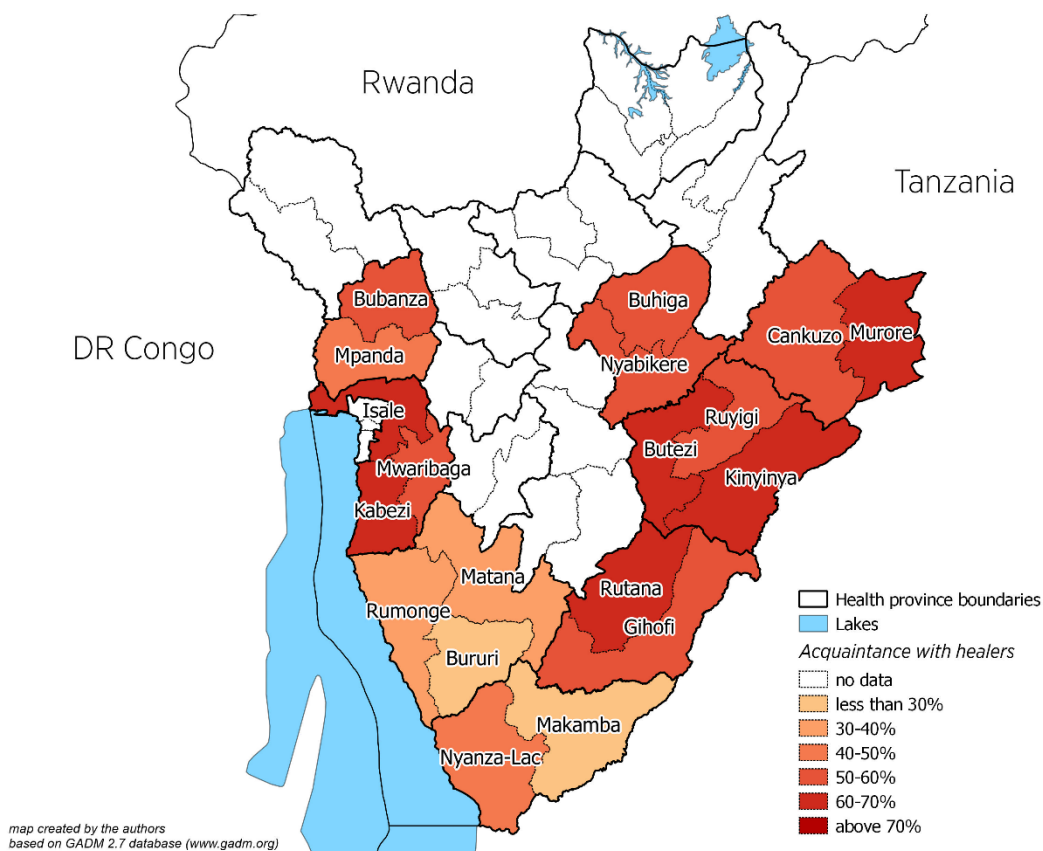


Fig. 1 Declared acquaintance with healers. Weighted average per health district

ii. Qualitative analysis: Traditional Medicine in Gihofi district

This section presents the results of the qualitative study, starting with a profile of practicing healers. It then provides basic information about disease classification and treatment, before reporting key findings on the interactions with the biomedical health system.

The role of healers. With the exception of four, who introduced themselves specifically as herbalists (*umuvuzi w'imiti kama akoresha ibiti*), all healers described themselves as *umuvuzi w'imiti kama*, a common and generic term that refers to the profession of healer (see also Cazenave-Piarrot, 2012). This vagueness possibly reflects the fact that healers typically said they drew on multiple practices such as herbalism, divination-herbalism (*abapfumu*), rain-making (*abavurati*), sorcery (*abarozi*) and/or Christian syncretism. Healers were also eager to explain that “what we do, for the good of the population, is recognised by the local territorial administration and community” [Herbalist 1], but only one was a registered member of ATRADIBU. All interviewed healers but two were men; however, healers’ wives were often assisting their husbands’ practice. Three quarters of the interviewed healers identified themselves as Christians.

However, the relationship between IM and the dominant Christian churches is ambivalent: the churches sometimes accuse IM of paganism, but there are often also forms of syncretism. One healer recalls: “Recently, the Catholic Church organised a parade led by a cross of Jesus, the aim was to wipe out healers and their practices. I am surprised. The priest-healer of Bururi, is he not Catholic? And is he not healing people himself?” [Healer 1]. The priest-healer mentioned in the comment is also the head of ATRADIBU.

Healers typically see few patients in a day, on average three in our sample, and often seem to know their patients personally outside of the medical context. Health-care users emphasise that, when compared to visits at health centres, consultations with healers are friendlier and concerned with a broader aspect of well-being, that is, not only physical, but also social, spiritual, and psychological well-being (also see de Sadeleer *et al.*, 2010).

Prices are not fixed and healers establish them based on patients’ living standards or the gravity of the disease. Sometimes, they give free consultations in acknowledgment of friendship or other services, or accept payment in kind (e.g. with bananas or beans), as a healer explains: “... I give antidotes against bad spells. I am not asking for any payment in return. However, if the threat is avoided, people bring me beans to express gratitude. Some colleagues hate me for that” [Healer 2]. The focus groups nevertheless revealed that, as in the case of biomedical care, patients sometimes contract debt or sustain catastrophic expenditures to pay for healer consultations. People also mentioned the danger of being cursed by healers if they failed to pay.

Disease. Healers in our sample were consulted for a variety of conditions, especially for the diseases of children (*iz'abana*) and women (*iz'abayeyi*). A non-exhaustive list includes poliomyelitis, anaemia, diarrhoeal disease, dietary troubles, poisoning, inflammation, venereal diseases, dermatologic conditions, hypertension, back pain, infertility (*ingumba/igicamyara*), and pneumonia. Healers also offered treatment for concerns of psycho-social and spiritual nature, through both physical remedies (see section below) and a combination of singing, discussion, and repetition of specific sentences or gestures.

Most of the biomedical staff we interviewed differentiated three categories of illnesses: those that can only be treated by health centres, those mostly treated by health centres but which IM can also treat, and those that can be treated by IM only. For example, a hospital nurse explains that IM can be effective against chronic diseases such as diabetes, hypertension, and back pain: “We have a tendency to believe that IM does not heal, but it is wrong. For example, I am diabetic, and if I feel a crisis is coming, I go to an indigenous healer in Rumonge. He gives me herbs and I feel better” [Nurse 1]. While the chief-nurse of another health-centre says: “it is clear that there are some diseases we cannot treat [...]. When I arrived here, in Rutana province, 15 years ago, I was the victim of witchcraft myself. I went to an indigenous healer, who gave me charcoal and milk. I vomited and then the poison was destroyed” [Nurse 2].

Healers also believe that some conditions can only be cured by biomedicine, as one explains: “I am totally incompetent for some diseases, such as malaria. If I think I have malaria myself, I rush to the health centre, and I would advise anybody coming to see me to do the same” [Herbalist 2]. At the same time, another healer says: “... if somebody was the victim of poisoning, do you think the health centre is going to cure them? If you have been poisoned and they give you an injection at the health centre you die straight away” [Healer 3]. The powerful symbolism associated with injections is well-known in the literature (Whyte and van der Geest, 1994; Bierlich, 2000).

Diagnosis. The diagnosis relies on a discussion with patients on their social, spiritual, and psychological background, and on their treatment expectations, as well as income related concerns. Direct observation of symptoms with a variety of tools complements this information: “...I put this drug in the patients’ nose, if they do not sneeze, it means they are sick” [Herbalist 3]. Yet, low quality of diagnostic, poor technical knowledge, and absence of dosage remained among the most common complaints emerging in the focus groups with health-care users.

The interviews with healers and health-care users revealed that the basis of diagnosis in Burundian IM is a disturbance coming from an ‘enemy’ (*abansi*). Both described this ‘enemy’ as a malevolent person or supernatural force in the environment. The focus groups exposed a feeling of omnipresence of the *enemy* among the population. Interviewees stated that “it is hard to survive without a protection from the enemies”. A constant protection from the healers –who introduced themselves as the protectors of their community– is required. Healers also help identify enemies, as one explained: “if you organise a party and you do not know who is your friend and who is your enemy [...] you apply these ashes on your arms and when they give their present, if they start shaking, you know they are an enemy” [Healer 5].

The concept of *abansi* was sometimes also referred to as the animal (*igikoko*) or snake (*ikijokai*). Green famously explored the idea of internal snake (*nyoka*) (Green, 1998) in Bantu ethno-medicine, interpreting it as a powerful life force, and noting that, in certain medical cultures, this force has a positive connotation, while in others it is mainly linked to disease.

Treatment. Treatment includes two elements: the cure and some behavioural prescriptions. The remedy is administered orally or via application to skin incisions. In case of incision, a topaz stone (*urwembe*) was said to be used on the skin (*indisango*) of the affected body part, regarded as the point of contact with the ‘enemy’. Psycho-social or spiritual conditions are treated in a similar way: “for the victim of unfounded hate, we give *intumberi* (stone for fortune in business), *urugaru* (plant for enhancing attraction), *umuhamagaro* (incantation for a vocation), which protect the person; for a

fisherman who looks for a good catch, or somebody looking for fortune in trade, we have other remedies” [Healer 6]. Treatment also involves behavioural prescriptions, typically: keeping treatment secret, sexual abstinence, recitation of texts, or walking around the plot of land before using the remedy. Patients, sometimes with family members, may be ‘hospitalised’ at the healer’s premises. During this period, rituals and songs are performed: “CMPK [a hospital in Bujumbura] could not treat the patient [apparently suffering from a mental illness] but I could with my rites and songs” declared a healer [Healer 6]. The efficacy of treatment is judged by whether the problem has disappeared and by whether the patient is satisfied: “if a patient tells us they feel good [...] what more can we ask? Then we have the feeling of having done our work properly” [Healer 3].

Traditional medicine and the official health system. The interviewed biomedical professionals in Gihofi revealed ambivalent attitudes towards IM. Although 55% had consulted a healer themselves and over 75% had used herbal self-medication, they also often discouraged patients from attending healers: “it is hard to prevent people from going to healers. I have been a nurse for 10 years and children often come with thin ropes tied around their waist. At the beginning we were removing them, but people were complaining and asked us to put them back, they needed them for protection against the enemies” [Nurse 3] (see Friend-du Preez *et al.*, 2008 for more discussion on the ropes against childhood ‘abantu illness’).

Transfer of patients from one system to the other happens in an informal manner. As one doctor points out: “one day, a couple came to me because they could not have children, I tried different things in vain, so I told them to see a healer in Tanzania” [Doctor 1]. More often, patients organise this transfer by themselves, as another doctor recalls: “a few days ago, we had twin brothers in the paediatric department, their health was not improving and the parents asked whether they could take them to a healer. Of course, we refused. So, they ran away with the children. I bumped into their father in the street, recently, and he told me his sons are now in good health thanks to the healer” [Doctor 2].

In addition, healers often face hostility from health centres’ citizen committees, community health workers, and schools. As one healer explains: “...nowadays, children go to school and they get taught that IM does not heal. And they have a bad image of IM. But they are wrong.” [Herbalist 1]. Healers indicated that an important problem is the existence of ‘charlatans’, who discredit the whole profession by means of financial abuse of patients or harmful practices.

Healers were found to be strongly in favour of integration between their practice and the official health system, as they believed that this would help limit charlatanism and grant recognition to competent practitioners. Interviewed nurses and doctors see some IM practices as dangerous or even fatal but they generally (91%) support the idea of a collaboration. Some support the idea of proper integration: “...one day I was in Tanzania, I saw that the systems were integrated. Before using the healers, they do medical check-ups to find out the disease, and then they know which medicine to choose” [nurse 4], but this is a clear minority (19%). Users interviewed during the focus groups supported very strongly both collaboration (95%) and integration (93%).

4. Discussion

Before discussing the findings, limitations arising from the methods that we used must be acknowledged. The survey was carried out on a large and representative population of eight of the 17 provinces of Burundi. However, it only included one question on IM, which prevents

triangulation. The question was asked after a few on biomedicine, which might have biased subsequent responses (Nisbett and Wilson, 1977) and, despite the use of indirect questioning, there remains a risk that the use of IM was underreported. No clear evidence in support of such hypotheses was reported by the enumerators. Nevertheless, the survey findings need to be interpreted carefully.

The Burundian co-author, who is from the capital city, collected the qualitative material; this limits biases due to language and culture differences but may influence the way the questions were asked and approached, especially since he is not a user of IM himself. The precise effect of his positionality on the material that was collected is hard to assess. Furthermore, the analysis—carried out by researchers from three different backgrounds—is based exclusively on interviews, as no observation could be conducted. However, as previously stated, the aim of this paper is not to provide a full ethnographic account of healers or disease classification in IM. The enquiry covers one of 43 districts of Burundi, Gihofi, which was an accessible region where the researchers could mobilise access to usually hard-to-reach healers. While the field enquiry in Gihofi was not meant to be representative of the entire country, the quantitative results confirm that exposure to healers in the district stands at around the sample average. It is likely that IM practices in Gihofi do not differ greatly from the rest of the country: Burundi is small, and even remote regions have experienced mass displacement of population, mostly caused by civil conflict, in the last decades.

The discrepancy between the figure on acquaintance with healers and the higher World Health Organisation (WHO) estimate of 80% IM use in Sub-Saharan Africa (WHO, 2003) is puzzling at first sight but can be explained. First, as mentioned above, we have reasons to believe that asking the question on IM after several questions on biomedicine may have led to an underestimation. Second, there is actually no reference data for Burundi and our sample from eight provinces may be significantly different from the national average, as shown by the map in the results section. The particularly low level of acquaintance with IM in the districts of and around Bururi may reflect the higher provision of public health infrastructure: this region received disproportionate attention in terms of biomedical health-care in the decades before the 2000s' return to democracy—as the elite that ruled Burundi between 1965 and 2000 primarily came from this area (Nkurunziza, 2011). It is also a stronghold of the Catholic Church (the location of the *grand séminaire*), whose authorities—as other Christian groups in Burundi—usually discourage their followers to engage with IM practices. Finally, asking about “acquaintance with healers” is simply not the same as documenting the use of IM. In fact, it may also be that our figures overestimate the use of IM, as respondents' perceptions may be biased, for instance, by rumours.

Coming to the findings, the typical profile of a person acquainted with healers (who is not necessarily always the *actual* user) seems that of a middle-aged man who is involved in local social life; is himself, or has somebody in his family, who is ill; has visited a biomedical health centre recently; and is not unfamiliar with the local health committee and preventative care. A central, albeit unsurprising, result of both the qualitative and quantitative analyses is the confirmation of strong patterns of medical pluralism, with people attending, often in parallel, both health centres and indigenous healers.

Medical pluralism has often been at the centre of the research and policy debates on health-care integration in Sub-Saharan Africa. The debate conventionally revolves around a spectrum of policy options for the regulation of the interactions between health systems, which go from the co-

existence of mutually ignoring systems to informal recognition or partial collaboration (Pillsbury, 1982). We use the evidence of this Burundian case study to investigate the appropriateness and feasibility of such policy options in the case of a fragile country that has seen little efforts towards integration throughout its history. This type of analysis can also help to uncover the type of systems collaboration which best provides for health-care users' demand in similar post-colonial fragile settings in sub-Saharan Africa. With this objective in mind, we will interpret our findings against a number of themes that frequently underpin the debate on health systems integration.

Cost and accessibility

The WHO emphasises that integrating IM in the public health system can widen health-care provision in Sub-Saharan Africa, thanks to the financial and physical accessibility of herbs and healers (WHO, 2003). We did find evidence that healers accept more flexible payment modalities than health centres, such as delayed or in-kind payment, which is similar to findings in Ghana, Cameroon, and Burkina Faso (Waddington and Enyimayew, 1998; Hillenbrand, 2006; Pouliot, 2011). However, the advantage of health systems co-existence cannot be convincingly justified by the economic convenience factor in Burundi: we also found evidence that people sometimes sustained catastrophic expenses to attend healers (see Nxumalo *et al.* (2011a) for similar evidence in South-Africa and Barter *et al.* (2012) for a systematic review). In addition, distance and access to health-care facilities in Burundi may be better than in other Sub-Saharan African countries: it was estimated at just over one hour in 2005-2006 (Burundi Ministry of Planning, 2006).

Accreditation

The healers in our study advocated for a public regulation effort against charlatanism to improve their credibility. This finding has already been documented in other contexts: healers often support formal accreditation and collaboration with the official health system as they associate it with increased recognition, reputation, and income (Van der Geest *et al.*, 1990; Ventevogel, 1996; Van der Geest, 1997; Green, 1998; Hillenbrand, 2006). This is, in a sense, close to the findings of Marsland (2007) who discusses the 'intentional hybridity' of healers that try to re-position themselves as modern in Tanzania. The finding may also, however, reflect the local context of fragility, marked by the wounds of civil war and by a general low level of interpersonal trust, resulting from decades of ethnic and political violence (Uvin, 2009; Ventevogel *et al.*, 2011).

Forms of accreditations are already in place in Burundi through ATRADIBU. The question is whether strengthening the role of such organisation could be useful towards the goal of identifying and excluding 'charlatans', in a context where discriminants such as treatment effectiveness and professional qualifications are inapplicable. In addition, the question is also the extent to which an accreditation will lead to a re-definition of the role of healers. Some traditional birth attendants are *de facto* accredited in certain parts of Burundi in the context of Performance-based Financing schemes. Effectively, however, van der Geest (1985) warns against the risk that this type of interactions might turn into an annexation of IM into biomedicine due to the skewed power dynamics between the two systems.

Technical training and cross-referrals

The study highlighted a general concern with the technical quality of healers' practice, on the part of both health-care users and biomedical staff. This issue has long been debated in the literature. On the one hand, some studies described the benefits of providing healers with training in anatomy, diagnostic methods, infection and germs theory (Warren *et al.*, 1982; Hillenbrand, 2006); and stressed that training in hygienic preparation and conservation methods can enhance herbs' potency and preservation, as well as reduce the risk of toxicity (Essegbey *et al.*, 2014). On the other hand, Tsey (1997) points out that herbal remedies become quickly unaffordable when biomedical standards of practice apply to their preparation. More fundamentally, some studies argue that there are irreconcilable differences in the epistemological tenets of IM and biomedicine (Tsey, 1997; Tangwa, 2007; Konadu, 2008; Omonzejele, 2008; Barter *et al.*, 2012). In this respect, a question that arises is what utility training can have in instances where, for the purpose of healing, the ritual matters more than the actual composition of the remedy (see also Van der Geest, 1997; Taye, 2009).

In the specific context of Burundi, training provision on the use of new preparation, conservation, and administration methods could be justified in light of our findings, which show that health-care users face a diversity of experiences and are indeed concerned about the safety of healers' remedies and the poor quality of diagnostic they offer. Similar complaints were also the reasons biomedical staff sometimes refused to collaborate with healers. In addition to this, recent research on Burundi finds established patterns in the use of herbs for the treatment of a range of microbial diseases (i.e. dermatologic conditions, diarrheal and venereal diseases), poisoning, and for the management of diabetes (Ngezahayo *et al.*, 2015). This contradicts early 1990s' evidence suggesting that healers used plants as a placebo (Baerts and Lehmann, 1989, 1996).

Herbalists can more easily fit into this type of technical training, and an example of such programme is the recent initiative funded by the World Intellectual Property Organisation in Ghana. The initiative even enabled some of the participants to patent their remedies (Essegbey *et al.*, 2014).

Healers' training in diagnostic may also prove beneficial for certain cases of cross-referral, such as acute conditions that require immediate referral from healers to biomedical facilities. In addition, the biomedical staff we interviewed also reported that informal cross-referrals from health centres to healers existed for a variety of conditions. It is unclear how cross-referrals have changed through time, and in particular in the context of performance-based financing where biomedical staff, whose official wage is low and not always paid on time, receive strong (financial) incentives to focus on a given set of primary health-care indicators (mostly maternal and child health). However, given the general scarcity of resources in the public health system, referrals from health centres to healers may be beneficial for those conditions that are known to be effectively managed with herbal preparations and/or psychological support. A possibility is that increasing biomedical staff's exposure to and knowledge of IM might facilitate identification of such useful cross-referrals opportunities (Green, 1998).

Finally, consistently with other studies in Sub-Saharan Africa (Mall, 2005; Peltzer *et al.*, 2011; Yarney *et al.*, 2013), our findings confirm that, in Burundi, patients may hide or misreport their use of IM due to fear of doctors and nurses' disapproval. This carries the risk of dangerous or mutually neutralising herb-drug interactions. Training provided to biomedical staff could help them engage with patients in a non-judgemental way and better manage such occurrences (Ameade *et al.*, 2015).

Community Support

The study also suggests that healers may be supplying important functions of mental health-care provision in post-conflict Burundi. The concept of ‘enemy’ (*abansi*) appeared central in our study. During our focus groups, the threat from the enemy was presented as omnipresent in society, something which echoes the prolonged fear and insecurity the Burundian population has endured (Barancira, 1998; Yeomans *et al.*, 2008; Cazenave-Piarrot, 2012). The idea of enemy is a common trope in ethno-medical discourse in Sub-Saharan Africa (Evans-Pritchard and Gillies, 1976) and certainly pre-dates the civil war in Burundi. However, it did not feature prominently in Barancira’s analysis (1990). More research is needed to assess the extent to which the conflict may have reinforced the utilization of the concept of enemy in diagnosis, due to the population’s encompassing need for protection and psychological support or due the presence of a more physical, human, enemy or threat in a socio-politically fragile, tense, context.

It is interesting to compare these results with the policy recommendations of Ventevogel *et al.* (2011 and 2013) and more recently Irankunda *et al.*, (2017). These studies draw a distinction between severe psychiatric conditions, characterised by behavioural and cognitive impairment, and non-psychotic conditions, characterised by sadness and social withdrawal. They find that, in the first case, people in Burundi felt the need to seek biomedical health-care, but this was often not available. Instead, in the second case, people did not see the conditions as ‘medical’ disorders and thought the support of communities and churches was the most appropriate response in a context where there has been, so far, no true national effort in dealing with the memory and legacy of the atrocities of the civil war.

It is useful to highlight that such community support can take the form of targeted interventions, or it can rely on pre-existing structures. Indeed, on the one hand, sociotherapy, a modern psychotherapeutic approach relying on community support and involvement, was used in Rwanda; in a context that bears resemblance to Burundi in terms of pervasive mistrust due to the destruction of social fabric and extensive psychological trauma (see Scholte *et al.*, 2011 for a discussion of the Rwandan case). On the other hand, our results show that indigenous healers already provide psychological support to their communities in Burundi. They come in parallel to churches, which also play a community support role (e.g. through prayer, bible reading groups, sermons; the differences and compatibility between the two types of support practices need to be further documented). Cultural proximity to their communities and a shared understanding of values and symbolic meaning seem to be at the basis of this engagement (Levi-Strauss, 1963; Green, 1998). A hypothesis is that this important role could be preserved, while providing for those healers, who are willing to engage in collaborations, biomedical knowledge on how to distinguish non-psychotic disorders from psychiatric illness with a strong biological basis (Calabrese and Dorji, 2014). In the latter case, referrals to biomedical facilities would not prevent healers from collaborating with the health centres in the management of the culture-specific psychological manifestations of such psychiatric conditions (Green, 1998; Calabrese and Dorji, 2014).

Read (2012) adds to this argument the idea that community support is also crucial in facilitating treatment compliance when patients take psychiatric medications that carry several side effects and often cannot prevent relapses. Ventevogel *et al.* (2011, 2013) have also emphasised the need to both scale-up public psychiatric health-care capacity and support the engagement of healers, churches, and communities in the management of non-psychotic conditions. They have,

however, warned that such community engagement may only be able to provide a basic level of support. Thus, they suggested that a more specialised level of psychosocial assistance should also be in place, to which community structures can refer for more complicated cases.

5. Conclusion

This study highlighted the specific nature of health systems co-existence and medical pluralism in the fragile post-conflict context of Burundi, characterised by low levels of interpersonal trust and high socio-political instability. We argued that the experience of conflict in the country intersects with the use and practice of IM and its pre-existing conceptualisation of illness and danger. This needs to be taken into account when devising appropriate public or international health policy responses.

We discussed our findings in light of the debate on health systems integration in Sub-Saharan Africa and identified some practical policy implications. Specifically, we argued that indigenous healers' practice may have a particular relevance in Burundi given the recent experience of civil war and the weakness of the public health system. This allowed us to explore the policy relevance of a psychological support community role for healers. We also presented considerations on healers' accreditation, given the pervasive lack of trust prevailing among the population, and we described it as an uncertain regulatory route. Furthermore, we explored the potential of targeted training for biomedical staff and healers, and suggested this could improve the management of cross-referrals and herb-drug interactions; and address concerns regarding the safety and quality of healers' herbal practice. While these policy implications are not new in the broad literature on IM, this study sheds new light on the way they intersect with a post-conflict context such as that of Burundi, characterised by widespread trauma and great scarcity of biomedical personnel and facilities. In this sense, such policy implications could also be relevant for the discussion on health systems co-existence and health-care provision in other post-conflict realities in Sub-Saharan Africa.

Further in-depth investigation is needed to build a more comprehensive ethno-medical research base in Burundi, which can describe medical practices and illness conceptualisations in a much more thorough manner than we did. In addition, more research is necessary to determine which circumstances need to be in place to ensure a successful implementation of the policy options suggested in this study.

Acknowledgments and Funding

This research was realised thanks to research grants from the projects *Inama N'amagara*, funded by Cordaid and the European Union, and *Ivuriro Ryacu*, funded by Cordaid. Both these projects focused on community participation and were implemented by the local NGO, COPED. All inaccuracies and errors remain our own.

Authors are listed in alphabetical order. Each contributed equally to data analysis and writing. Qualitative data was collected by RN. JBF oversaw quantitative data collection and analysis. SM reviewed the literature.

Bibliography

- Adefolaju T. 2014. Traditional and Orthodox Medical Systems in Nigeria: The Imperative of a Synthesis. *American Journal of Health Research* **2**: 118.
- Ameade E, Amalba A, Helegbe G, Mohammed B (2015). 2015. Herbal Medicine: a survey on the knowledge and attitude of medical students in Tamale, Ghana. *Peak Journal of Medicinal Plant Research* **3**: 1–8.
- Ashforth A. 2005. Witchcraft, violence, and democracy in South Africa.
- Baerts M, Lehmann J. 1989. *Guerisseurs et plantes médicinales de la région des cretes Zaire–Nil au Burundi*. Musée Royal de l’Afrique Centrale: Tervuren, Belgium.
- Baerts M, Lehmann J. 1996. Plantes médicinales à effet placebo au Burundi. In: *Actes du deuxième colloque européen d’Ethnopharmacologie*. Heidelberg
- Barancira S. 1990. *Possession par les esprits. Baganza et rituel thérapeutique du Kubandwa au Burundi*. Bujumbura.
- Barancira S. 1998. ‘Aspect psychiatrique en situation de catastrophe au Burundi□; cas de la crise d’octobre 1993’. *Leçon inaugurale de l’ouverture de l’Année Académique*. Université du Burundi: Bujumbura.
- Barimah K. 2013. Traditional healers as service providers in Ghana’s National Health Insurance Scheme: The wrong way forward? *Global public health* **8**: 37–41.
- Barter D, Agboola S, Murray M. 2012. Tuberculosis and poverty: the contribution of patient costs in sub-Saharan Africa – a systematic review. *BMC Public Health* **12**.
- Bierlich B. 2000. Injections and the fear of death: An essay on the limits of biomedicine among the Dagomba of northern Ghana. *Social Science & Medicine* **50**: 703–13.
- Bigendako JM, Bukuru J, Meri C. 1995. Bilan d’enquêtes ethnobotaniques et ethnopharmacologique sur les plantes médicinales du Burundi. *Pharmacopée et Médecine Traditionnelle Africaine*: 61–2.
- Burundi Ministry of Planning. 2006. *Enquête QUIBB 2006*. Ministère de la planification, du développement et de la reconstruction nationale: Bujumbura.
- Calabrese J, Dorji. 2014. Traditional and modern understandings of mental illness in Bhutan: preserving the benefits of each to support gross national happiness. *Journal of Bhutan Studies* **30**.
- Cazenave-Piarrot A. 2012. Pratiques sorcellaires et crises politiques au Burundi. *Unpublished working paper*.
- Essegbey G, Awuni S, Essegbey I, Akuffobe M, Micah B. 2014. Country study on innovation, intellectual property and the informal economy: traditional herbal medicine in Ghana. In: *Report prepared for the Thirteenth Session of the Committee on Development and Intellectual Property (CDIP)*. Geneva, Switzerland
- Evans-Pritchard E, Gillies E. 1976. Witchcraft, oracles and magic among the Azande.
- Falisse, J.B., Ndayishimiye, J., Kamenyero, V. and Bossuyt, M., 2014. Performance-based financing in the context of selective free health-care: an evaluation of its effects on the use of primary health-care services in Burundi using routine data. *Health policy and*

planning, 30(10), pp.1251-1260.

- Falisse, J.B., Vergeer, P., Gebre Medhin, J., Juquois, M., Akpamoli, A., Robyn, J., Shu, W., Zabiti, M., Hassan, R., Jallow, B., Loum, M., Ndizeye, C., Muvudi, M., Booto, B., Taptue Fotso, J.C., Sokegbe, S., Magazi, I., Shapiro, G. 2017. Community Results-Based Financing in Health Practice: Reflections on Implementation from Experiences in Six Countries. *Health, Nutrition and Population Knowledge Brief*. World Bank, Washington, DC.
- Foster G. 1976. Disease etiologies in non-Western medical systems. *American Anthropologist* **78**: 773–82.
- Freeman M, Motsei M. 1992. Planning health-care in South Africa—is there a role for traditional healers? *Social Science & Medicine*.
- Friend-du Preez N, Cameron N, Griffiths P. 2008. Stuijs, sputis and prophet ropes: The treatment of abantu childhood illnesses in urban South Africa. *Social Science & Medicine* **68**: 343–51.
- Fumba G. 2004. *Présentation des réalisations du Centre de Recherche et de Promotion de la Médecine Traditionnelle au Burundi*. Ministry of Health: Bujumbura, Burundi.
- van der Geest S. 1985. Integration or fatal embrace? The uneasy relationship between indigenous and Western medicine. *Curare* **8**: 9–14.
- Van der Geest S. 1997. Is there a role for traditional medicine in basic health services in Africa? A plea for a community perspective. *Tropical Medicine and International Health* **2**: 903–11.
- Van der Geest S, Speckman J, Streefland P. 1990. Primary Health-care is a multilevel perspective: towards a research agenda. *Social Science & Medicine* **30**: 1025–34.
- Glaser B, Strauss A. 1967. *The discovery of grounded theory: strategies for qualitative research*. Aldine DeGrueter: New York.
- Green E. 1998. *Indigenous theories of contagious disease*. Sage: Walnut Creek, CA.
- Hillenbrand E. 2006. Improving traditional-conventional medicine collaboration: perspectives from Cameroonian traditional practitioners. *Nordic Journal of African Studies*.
- Irakunda P, Heatherington L, Fitts J. 2017. Local terms and understandings of mental health problems in Burundi. *Transcultural Psychiatry*: 136346151668900.
- Kenneth L. 2001. African Traditional Healers: The Economics of Healing. *IK Notes*.
- Konadu K. 2008. Medicine and anthropology in twentieth century Africa: Akan medicine and encounters with (medical) anthropology. *African Studies Quarterly* **10**: 45–69.
- Lan D. 1985. *Guns & rain: Guerrillas & spirit mediums in Zimbabwe*.
- Landy D. 1977. The Healers: Statuses and Roles. In: *Culture, Disease and Healing*. Macmillan: New York
- Levi-Strauss C. 1963. *Structural Anthropology*.
- Mall S. 2005. Attitudes of health-care professionals in South Africa to the use of traditional medicine by their patients on antiretroviral treatment: A research note. *Social Dynamics* **31**: 118–25.

- Marsland R. 2007. The Modern Traditional Healer: Locating ‘Hybridity’ in Modern Traditional Medicine, Southern Tanzania. *Journal of Southern African Studies* **33**: 751–65.
- Mbonimpa M. 2006. *Léopold Mvukiye, Prêtre et guérisseur/ L’aventure du Centre de médecine traditionnelle de Buta*. Presses Lavigerie: Bujumbura.
- Ministry of Health of Burundi. 2004. *Rapport sur la stratégie de développement du rôle de la médecine traditionnelle dans le système de santé du Burundi*. Ministry of Health: Bujumbura, Burundi.
- Ndikubagenzi J, Nsablyumva F, Niyokwzogirwa S. 2006. Problématique liée à l’usage des médicaments traditionnels au Burundi: enquête menée en mairie de Bujumbura (Burundi). *Pharmacopée et Médecine Traditionnelle Africaine* **XIV**: 201–6.
- Ngezahayo J, Havyarimana F, Hari L, Stévigny C, Duez P. 2015. Medicinal plants used by Burundian traditional healers for the treatment of microbial diseases. *Journal of Ethnopharmacology*.
- Nisbett RE, Wilson TD. 1977. The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology* **35**: 250–6.
- Nkurunziza J. 2011. Inequalities and Post-Conflict Policies in Burundi. In: Stewart F, Langer A, Venugopal R (eds). *Horizontal Inequalities and Post-Conflict Development*. Palgrave Mcmillan: London, 209–29.
- Nxumalo N, Alaba O, Harris B, Chersich M. 2011a. Utilization of traditional healers in South Africa and costs to patients: findings from a national household survey. *Journal of Public Health and Policy* **32**: 134–6.
- Nxumalo N, Alaba O, Harris B, Chersich M, Goudge J. 2011b. Utilization of traditional healers in South Africa and costs to patients: findings from a national household survey. *Journal of public health policy* **32 Suppl 1**: S124-36.
- Omonzejele P. 2008. African concepts of health, disease, and treatment: an ethical inquiry. *Explore: The Journal of Science and Healing*.
- Peltzer K, Friend-du Preez N, Ramlagan S, Fomundam H, Anderson J, Chanetsa L. 2011. Antiretrovirals and the use of traditional, complementary and alternative medicine by HIV patients in KwaZulu-Natal, South Africa: a longitudinal study. *African Journal of Traditional, Complementary and Alternative Medicines* **8**: 337–47.
- Pillsbury BL. 1982. Policy and evaluation perspectives on traditional health practitioners in national health-care systems. *Social Science & Medicine* **16**: 1825–34.
- Pouliot M. 2011. Relying on nature’s pharmacy in rural Burkina Faso: Empirical evidence of the determinants of traditional medicine consumption. *Social Science and Medicine* **73**: 1498–507.
- Read U. 2012. ‘I want the one that will heal me completely so it won’t come back again’: The limits of antipsychotic medication in rural Ghana. *Transcultural Psychiatry* **49**: 438–60.
- Rodegem F. 1971. La motivation du culte initiatique au Burundi. *Revue d’anthropologie* **66**: 863–930.
- de Sadeleer S, Deheneffe J-C, Nibimenya A. 2010. *Enquête socio-anthropologique dans la province de Kirundo (Burundi)*. HERA Consulting - Belgian Technical Cooperation: Bujumbura.
- Scholte W, Verduin F, Kamperman A, Rutayisire, T Zwinderman A, Stronks K. 2011. The Effect

- on Mental Health of a Large Scale Psychosocial Intervention for Survivors of Mass Violence: A Quasi-Experimental Study in Rwanda. *PLoS one* **6**.
- Strauss A., Corbin J. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Sage: Thousand Oaks, CA
- Tabi M, Powell M, Hodnicki D. 2006. Use of traditional healers and modern medicine in Ghana. *International Nursing Review* **53**: 52–8.
- Tangwa G. 2007. How not to compare Western scientific medicine with African traditional medicine. *Developing World Bioethics* **7**: 41–4.
- Taye O. 2009. Yoruba traditional medicine and the challenge of integration. *The Journal of Pan African Studies* **3**: 73–90.
- Tsey K. 1997. Traditional medicine in contemporary Ghana: A public policy analysis. *Social Science and Medicine* **45**: 1065–74.
- Uvin P. 2009. *Life after violence a people's story of Burundi*. Zed Books: London.
- Ventevogel P. 1996. *Whiteman's things: training and detrainning healers in Ghana*. Het spinhuis: Amsterdam.
- Ventevogel P, Jordans M, Reis R, de Jong J. 2013. Madness or sadness? Local concepts of mental illness in four conflict-affected African communities. *Conflict and health* **7**: 3.
- Ventevogel P, Ndayisaba H, van de Put W. 2011. Psychosocial assistance and decentralised mental health-care in Burundi in post-conflict Burundi 2000-2008. *Intervention* **9**: 315–31.
- Waddington C, Enyimayew K. 1998. A Price to Pay: the impact of user charges in Ashanti-Akim District, Ghana. *International Journal of Health Planning and Management* **4**: 17–47.
- Wakabi W. 2007. Ethnic war leaves Burundi's health sector in ruins. *Lancet* **369**: 1847–8.
- Warren M, Bova S, Tregonin M, Kliewer M. 1982. Ghanaian National Policy Toward healers Indigenous the Case of the Primary Health for Indigenous healers (PRHETIH). *Social Science & Medicine* **16**: 1873–81.
- WHO. 2003. *Traditional Medicine Our Culture, Our Future*. World Health Organisation: Geneva, Switzerland.
- WHO. 2013. *WHO Traditional Medicine Strategy 2014-2023*. World Health Organization: Geneva, Switzerland.
- Whyte S, van der Geest S. 1994. Injections: issues and methods for anthropological research. In: Etkin N, Tam M. (eds). *Medicines: meanings and contents*
- Yarney J, Donkor A, Opoku SY, et al. 2013. Characteristics of users and implications for the use of complementary and alternative medicine in Ghanaian cancer patients undergoing radiotherapy and chemotherapy: a cross-sectional study. .
- Yeomans PD, Herbert JD, Forman EM. 2008. Symptom comparison across multiple solicitation methods among Burundians with traumatic event histories. *Journal of Traumatic Stress* **21**: 231–4.
- Zuure B. 1929. *Croyances et pratiques religieuses des Barundi*. L'Essorial: Brussels.