

## Traditional Medicine in Central Africa<sup>†</sup>

By SARA LOWES AND EDUARDO MONTERO\*

In this paper, we examine the historical and present day correlates of knowledge and use of traditional medicine in Central Africa. This is motivated by several observations. First, in many parts of sub-Saharan Africa there is puzzlingly low demand for modern medicine (Dupas 2011, Dupas and Miguel 2017). Second, recent evidence suggests that lack of trust may be an important factor contributing to its underutilization. For example, Lowes and Montero (2018) explore the relationship between colonial medical campaigns conducted by the French military between the 1920s and 1950s and trust in medicine in Cameroon and former French Equatorial Africa (present day Central African Republic, Chad, Republic of Congo, and Gabon). These campaigns were intended to control the spread of sleeping sickness, a lethal disease spread by the tsetse fly. The campaigns involved forced treatment of and prophylaxis for sleeping sickness with medications that had negative side effects, including blindness and death. In Lowes and Montero (2018), we find that greater historical exposure to these campaigns is associated with less willingness to consent to a free and non-invasive blood test for anemia or HIV and lower immunization rates for children. These results suggest that historical exposure to the sleeping sickness campaigns reduces trust in medicine and has important implications for health outcomes.<sup>1</sup>

\* Lowes: Department of Economics, Bocconi University, via Roentgen 1, Milan, IT (email: [sara.lowes@unibocconi.it](mailto:sara.lowes@unibocconi.it)); Montero: Ford School of Public Policy, University of Michigan, 735 S State Street, 4219, Ann Arbor, MI 48109 (email: [emontero@umich.edu](mailto:emontero@umich.edu)). Sara thanks Raissa Fabregas and Nathan Nunn for their feedback.

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<sup>1</sup> This is related to work by Alsan and Wanamaker (2018) who examine how the revelation of the withholding of treatment for syphilis from black men at Tuskegee affects the health and trust of black men in the United States and

In many settings, traditional medicine is a popular, accessible, and affordable alternative to modern medicine. Despite the prevalence of traditional medicine, there is surprisingly little work in economics on what determines traditional medicine use. An exception is Leonard (2003) who suggests that demand for traditional healers is driven by their ability to provide outcome contingent contracts, in which patients only pay if they are cured. Understanding the determinants of the use of traditional medicine is important because its use is widespread and because of the growing evidence of mistrust in modern medicine.

### I. Traditional Medicine

The World Health Organization (WHO) defines traditional medicine as “the knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures . . . used in the maintenance of health and in the prevention, diagnosis, improvement or treatment of . . . illness” (WHO 2013, p. 15). The particular set of knowledge will vary widely across contexts. For many, traditional medicine is the primary source of healthcare.

In sub-Saharan Africa, access to traditional medicine is generally through traditional healers, who are community members trained in the use of traditional medicine. In some cases, traditional healers will also address illnesses of supernatural origin or caused by witchcraft. This is due to a different understanding of the root cause of disease. Even with the recognition that illnesses have physical origins, disease is viewed as “the outcome of imbalances in human society and inimical social relations” (Pearce 2000, p. 4). Therefore, traditional healers’ role differs from conventional doctors, as they are

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Martinez-Bravo and Stegmann (2017) who examine how the revelation that a vaccination campaign was used to find Bin Laden affects vaccination rates in Pakistan.

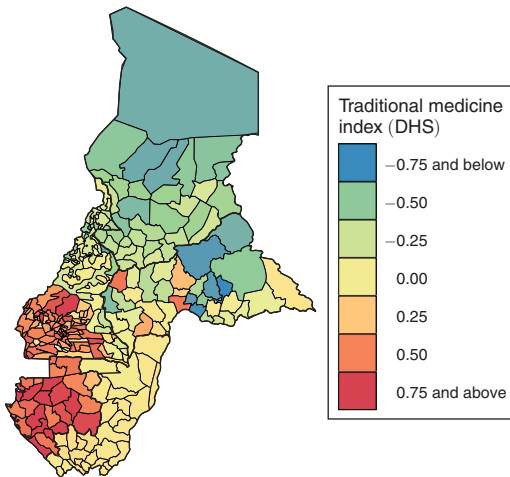


FIGURE 1. TRADITIONAL MEDICINE USE IN CENTRAL AFRICA

*Note:* The *Traditional Medicine Use Index* is the average of three indices of traditional medicine use: traditional medicine for birth control, traditional medicine for pregnancy, and traditional medicine for advice, and is standardized to have mean zero and standard deviation one.

responsible for not only improving the health of the patient, but “re-establishing social and emotional equilibrium based on traditional community rules and relationships” (Hillenbrand 2006, p. 3).

Using data from the Demographic and Health Surveys (DHS) for Cameroon, Central African Republic, Chad, the Republic of Congo, and Gabon (ICF 1991–2017), we examine variation in knowledge of and use of traditional medicine. The DHS includes a series of questions on knowledge and use of traditional medicine in the contexts of birth control, health care during pregnancy, and source of advice and aid when sick, which we use to construct indices (see online Appendix A for the definitions of all the variables). The traditional medicine for birth control index combines questions on knowledge and use of traditional methods, including rhythm, withdrawal, and abstinence. Note, this may not be the most ideal measure of use of traditional medicine, since use of non-modern birth control methods may not be the same as seeking health services from a traditional healer.

The other two measures may more closely capture demand for traditional medicine, though may also be confounded by supply issues. The traditional medicine for pregnancy index

combines questions related to use of a traditional birth attendant during child birth. For this question we only use responses reported by women. The traditional medicine for advice index combines questions on seeking advice from a traditional healer when an individual or their child is sick. These measures, however, are unable to account for whether individuals have access to modern medicine or whether traditional practitioners are their only option. Finally, the traditional medicine combined index aggregates these three indices and is standardized to have a mean of zero and standard deviation of one.

Figure 1 presents the combined index of self-reported knowledge and use of traditional medicine for countries in Central Africa. There is substantial variation within and across countries in the extent to which individuals know of and rely on traditional medicine. Northern Chad is the least reliant on traditional medicine. Within Cameroon and Central African Republic there is substantial variation in the use of traditional medicine. Gabon and Southern Cameroon stand out as having a particularly strong use of traditional medicine.

## II. Historical Correlates of Traditional Medicine

We first examine historical correlates of traditional medicine. This is important because anecdotal evidence suggests that colonial governments and missionaries targeted traditional practices. For example, a 1934 French government report to the League of Nations on Cameroon notes that, “The ancient indigenous society, dominated by its sorcerers and by its ritual associations . . . will soon be nothing but a memory, due to [the spread of Christianity] and progress in schooling” (Le Gouvernement Français 1934, p. 117). In fact, in the extreme, traditional medicine was completely banned during the colonial era (e.g., in Cameroon and South Africa) (Hillenbrand 2006, Abdullahi 2011).

In Table 1 we present the relationship between our measures of knowledge and use of traditional medicine and colonial and pre-colonial characteristics. All regressions include geography and climate controls, disease suitability controls, and contemporary controls, as defined in online Appendix A. Several key correlations stand out. First, a consistent predictor

TABLE 1—HISTORICAL CORRELATES OF TRADITIONAL MEDICINE USE

	Traditional medicine index for:			
	Birth control (1)	Pregnancy (2)	Advice (3)	Combined (4)
<i>Colonial medicine exposure:</i>				
Share of years visited (1921–1956)	0.295 (0.0914)	0.0168 (0.0364)	0.153 (0.0830)	0.293 (0.0852)
<i>Colonial variables:</i>				
Atlantic slave exports	−8.140 (11.71)	3.733 (4.130)	17.89 (13.50)	−12.72 (8.466)
Distance to closest colonial mission	0.484 (0.408)	−0.135 (0.139)	−0.601 (0.358)	0.710 (0.306)
Distance to colonial country capital	0.504 (0.223)	−0.0542 (0.134)	−0.401 (0.233)	0.373 (0.168)
Distance to colonial district capital	−0.143 (0.335)	−0.321 (0.213)	0.704 (0.319)	−0.481 (0.324)
<i>Pre-colonial variables:</i>				
Pre-colonial centralization	0.119 (0.0584)	0.0167 (0.0177)	0.0186 (0.0455)	0.111 (0.0476)
Practiced indigenous slavery	0.0042 (0.0714)	−0.0323 (0.0293)	0.0145 (0.0681)	−0.115 (0.0617)
Practiced agriculture	−0.0545 (0.0295)	−0.0022 (0.0107)	0.0016 (0.0235)	−0.0184 (0.0257)
Observations	39,350	34,482	10,213	51,648
Clusters	108	108	108	108
Mean dependent variable	−0.0589	−0.0307	−0.0048	0.133

*Notes:* Data sources and variable definitions are provided in online Appendix A. All regressions control for age, age squared, gender, urban-rural status, and include survey round fixed effects. Additional controls include: geography and climate controls, disease suitability controls, and contemporary controls. Standard errors are clustered at the ethnic-group district level for Cameroon, at the colonial sub-district level for Gabon, Central African Republic, and Chad (2014), and at the district level for Congo and Chad (1996, 2004).

of use of traditional medicine is exposure to the colonial medical campaigns for sleeping sickness examined in Lowes and Montero (2018): greater exposure to the historical campaigns is associated with greater use of traditional medicine. Second, column 4, which aggregates the three previous indices, suggests that being located farther away from a Christian mission is correlated with greater use of traditional medicine. This may be due to efforts by missionaries to discourage traditional medicine practices. Similarly, greater distance from the colonial capital is also positively correlated with traditional medicine use. These results suggest that contact with missionaries and greater proximity to a colonial capital is correlated with less use of traditional medicine, while exposure to medical campaigns against sleeping sickness is

associated with increased use. Thus, the type of colonial contact may have different effects on engagement with traditional medicine.

### III. Present Day Correlates of Traditional Medicine

We now turn to the individual level correlates of knowledge and use of traditional medicine in panel A of Table 2. In column 1 we find that older individuals are more likely to use traditional methods to avoid pregnancy. Relative to men, women are less likely to rely on traditional medicine for birth control, though this may be due to the relative lack of options for men. Surprisingly, more educated individuals rely more on traditional methods for birth control relative to those with no education. In columns

TABLE 2—PRESENT DAY CORRELATES OF TRADITIONAL MEDICINE USE

<i>Panel A. Traditional medicine index for:</i>				
	Birth control (1)	Pregnancy (2)	Advice (3)	Combined (4)
Age	0.0413 (0.00392)	0.00722 (0.00181)	0.00216 (0.00304)	0.0339 (0.00350)
Female	−0.246 (0.0236)		0.0446 (0.0524)	−0.0867 (0.0340)
Rural	−0.0220 (0.0219)	0.0733 (0.00828)	0.0558 (0.0234)	0.0159 (0.0229)
Primary school only	0.188 (0.0224)	−0.0307 (0.00993)	−0.0408 (0.0167)	0.195 (0.0222)
Secondary school only	0.425 (0.0305)	−0.0398 (0.0102)	−0.0683 (0.0169)	0.413 (0.0323)
Higher than secondary	0.564 (0.0378)	−0.0171 (0.0185)	−0.146 (0.0257)	0.590 (0.0450)
Observations	85,273	82,186	23,840	121,293
Clusters	219	219	219	219
Mean dependent variable	−0.152	−0.0108	−0.0067	−0.0008
<i>Panel B. Traditional medicine index for:</i>				
	Birth control (1)	Pregnancy (2)	Advice (3)	Combined (4)
Witchcraft cause for HIV	0.0356 (0.00915)	0.00303 (0.00468)	0.0342 (0.0171)	0.0389 (0.0104)
Observations	85,394	82,216	23,859	121,405
Clusters	219	219	219	219
Mean dependent variable	−0.152	−0.011	−0.006	−0.0001

*Notes:* Data sources and variable definitions are provided in online Appendix A. Controls include: geography and climate controls, disease suitability controls, colonial controls, and contemporary controls. Standard errors are clustered at the ethnic-group district level for Cameroon, at the colonial sub-district level for Gabon, Central African Republic, and Chad (2014), and at the district level for Congo and Chad (1996, 2004).

2 and 3, rural individuals are more likely to use traditional practitioners during childbirth and are more likely to seek advice from them when sick. This reliance on traditional practitioners during pregnancy or when sick decreases with level of schooling.

Finally, we examine the relationship between traditional medicine use and traditional beliefs in panel B of Table 2. This is motivated by the observation that traditional medicine historically was associated with belief in the supernatural. Additionally, traditional healers will often treat illnesses believed to be caused by witchcraft. While the DHS does not explicitly ask about traditional beliefs, the DHS has a potential proxy for strength of traditional beliefs: whether a respondent believes that HIV can be

caused by witchcraft. We find a positive association between the belief that witchcraft can cause HIV and the use of traditional medicine for birth control and for seeking advice when sick, though no significant correlation with using a traditional birth attendant during child birth.

#### IV. Leveraging Traditional Medicine

We propose several avenues for future research. First, types of colonial contact seem to matter for traditional medicine use. Future work could explore what determines this heterogeneity in response. Second, it is important to understand whether traditional and modern medicine serve as substitutes or complements. Anecdotal evidence from our own field research

in the Democratic Republic of Congo suggests that they may actually serve as complements, with traditional healers providing health care in specific health domains that are either too expensive or unavailable in rural areas. In fact, traditional healers often report cooperating with and referring patients to local health clinics when they are unable to treat their patients. Finally, it is important to explore how traditional healers can productively interact with the modern medical sector. As well-integrated community members, traditional healers may be able to serve an important role in rebuilding trust in medicine in places where historical experiences have undermined views of modern medicine. Given the prevalence of traditional healers and their important role as primary care providers for many individuals, there may be great scope for leveraging these community members to improve health access and outcomes.

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