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Care-Seeking Patterns Among Rural Communities In The Republic Of Congo

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Abstract

In 2014, a mobile pharmacy project was launched to provide accessible and affordable medicines to Yaka hunter-gatherer communities in the Likouala and Sangha regions of the Republic of Congo. This mixed methods study describes the use of available health services by the minority Yaka and the majority Bantu served by the mobile pharmacy and to compare the health-care seeking behavior among these different communities. Overall, 178 households were surveyed about their utilization of available health services and the order in which they seek health services in the event of illness. To provide context to these responses, 18 key informants were interviewed about their perceived health needs and the reasoning behind their care-seeking behavior. Informal discussions were also conducted with household respondents. Among 128 Yaka households surveyed, 90.0% of those who sought care in the previous 12 months for an illness or injury reported seeking traditional treatment, compared to 48.3% of the 49 Bantu households surveyed. The percentage that sought care from medical facilities was similar for both Yaka (67.8%) and Bantu (65.5%) households that reported seeking care in the previous year. About 88.3% of Yaka households seeking care in the timeframe that the mobile pharmacy was operational visited the pharmacy, compared to 71.4% of Bantu households. Although some differences exist between Yaka and Bantu communities in their utilization of available health services and their care-seeking behavior, both groups made decisions for seeking care based on considerations of cost, distance, convenience, and quality of care.

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Introduction

In low- and middle-income countries, considerable barriers exist to accessing biomedical services for individuals living in rural areas, from a lack of services to the time cost of travel (World Bank, 2004). Faced with out-of-pocket expenses and difficulty in securing transportation to health facilities, individuals lacking means may turn to self-medication, either through traditional remedies or pharmaceuticals acquired from unlicensed vendors (WHO, 2003; Mphande, 2016). For indigenous peoples, these barriers to care are compounded by the additional burden of discrimination and a greater risk of certain disease (Ohenjo et al., 2006).

In the Republic of Congo (ROC), there are about 20,000 *Yaka* hunter-gatherers living in the tropical forests of the Congo basin (ACHPR & IWGIA, 2005). These semi-nomadic "forest people" are just one of the many so-called Pygmy ethnic groups indigenous to Central Africa and the Great Lakes region. The Yaka are also known as *BaYaka*, the plural form in local Bantu languages, and *Mbendjele*, *Babenzele*, or *Babendjelle*, referring to the Mbendjele language sub-group in ROC (Lewis 2002; Olivero et al., 2016). As a marginalized group, the Yaka have been left out of vaccination campaigns and encounter difficulties in accessing medical care due to discrimination, poverty, and the difficulty of serving a mobile population in remote settings (Lewis, 2002; Ohenjo et al., 2006). Yet, the Yaka are also respected for their healing practices and knowledge of herbal remedies, even by the majority Bantu population (Lewis, 2002).

Previous knowledge of healthcare-seeking behavior among Central Africa hunter-gatherer communities come from anecdotal accounts. Until this study, no surveys of health service utilization and care-seeking patterns had been conducted in any rural or indigenous communities in the Congo Basin to confirm the conventional wisdom. Without this information, local public health organizations may have difficulty determining what kinds of interventions would be most welcome among these groups and which might have the greatest impact.

In late 2014, a mobile pharmacy program called Project Bwanga was launched to make medicines available to Yaka communities in the Likouala and Sangha regions of ROC. The program trains "healers" from the Yaka communities in these areas to identify common ailments (such as headaches, fevers, malaria, respiratory infections, diarrhea, dysentery, intestinal parasites, fungal skin infections, and conjunctivitis) and treat them with generic pharmaceutical tablets and creams (Project Bwanga, 2014). Healers are also taught to dress and disinfect wounds with bandages and antiseptic. Patients pay 500 FCFA, or less than 1 EUR, for one complete course of treatment, regardless of the type of treatment. Of that amount, 200 FCFA is paid to the healer and the rest is used to reimburse the cost of the pharmaceuticals (Project Bwanga, 2014).

Project Bwanga staff visit the mobile pharmacy sites every 2 to 6 months to supervise the healers, collect funds, check and restock the pharmaceuticals, and provide additional biomedical care to the community. The in-country staff members of Project Bwanga operate out of Pokola, a town of 12,000 in the Sangha region. Pokola is located along the Sangha River and serves as the headquarters of *Congolaise Industrielle des Bois* (CIB), an acquisition of Olam International. CIB is the largest logging company in ROC and the overseer of three forest management concessions in the north of ROC (Olam, 2005).

Project Bwanga's primary aim is to provide access to safe and inexpensive pharmaceuticals to remote areas, with a focus on the marginalized Yaka population (Project Bwanga, 2014). The program operates under three previously untested assumptions: that each mobile pharmacy healer chosen by the Yaka communities would also be a traditional healer, or *nganga*, who would use the pharmaceuticals as a complement to traditional remedies; that the pharmaceuticals of the mobile pharmacy would not replace traditional medicines, but would instead be used as a second-line treatment; and that the Bantu neighbors of the Yaka would also benefit from the mobile pharmacy. Although Project Bwanga staff members ask community members for feedback about the program during their supervision visits, no surveys were conducted to ensure that the mobile pharmacy program was being used or would be used as expected.

This case study seeks to describe the care-seeking behavior of Yaka and Bantu households served by the mobile pharmacy program. Using qualitative and quantitative methods, the study explores the utilization of available health services in these remote communities, especially the mobile pharmacy program. We also examine the reasoning behind care-seeking decisions, with special attention to differences by ethnic group to examine the assertions of differences in access to care between the Yaka and Bantu.

Methodology
Study area
The populations of interest are Yaka and Bantu residents of 4 sites representing 11 villages and settlements in the Sangha and Likouala regions of ROC that are served by the Project Bwanga mobile pharmacy healers. Site 1, which is located in the Sangha region south of Pokola on the Sangha River, includes the villages of Indongo, Ikélemba, and Tokou, all of which are served by one male healer. Site 2 encompasses Mbili, Minganga, Mossombo, Mokenzé, and Attention. This is the only site located in Likouala. Site 2 is served by two teams of healers, with one husband and one wife acting as healers on each team. Both sites 1 and 2 began their mobile pharmacy pilots around December 2014. Site 3 is the village of Gbagbali, which is located in the Sangha region north of Pokola on the Sangha River, near the town of Kabo. There is one male female healer and one male healer working as a team at Site 3, and the mobile pharmacy pilot began in May 2015. Site 4 includes two settlements in the town of Pokola: Sémbola and Ngombe. This site, which began its pilot program in June 2015, is served by a male healer.

Study design and sampling procedures
Concurrent, mixed methods quantitative and qualitative approaches were used. The targeted sample size was 120 adults in the total study area, but ultimately 245 were sampled. In smaller villages, every household was included in the sample. In larger villages like Ikélemba, Tokou, and Minganga, targeted sample sizes were determined based on the number of households and the time available for data collection. In the Ikélemba and Tokou, which had mixed populations, the Yaka and Bantu households were stratified and selected with probability proportional to the population. The village of Attention also had both Yaka and Bantu households, but the two communities were segregated and the mobile pharmacy only served the Yaka community in the village, so the Bantu households were not included. After determining target sample size, households were selected based on a stratified simple random sample. For each household, one adult was asked to participate in the survey interview. Key informant participants were also

recruited from local leaders and health service providers, including the Project Bwanga healers and traditional healers.

Data collection
Quantitative
Data for the quantitative component was collected through 178 structured household interviews administered in Lingala and Mbendjele through hired translators. A simple random sample of the Bantu and Yaka households were interviewed. The 36 skip-pattern questions evaluated the respondent's use of and satisfaction with traditional medicine, health centers, and the mobile pharmacy. They were also asked which available health services they would use as a first, second, third, or last resort if an individual in their household experienced a high fever, a severe cough, or bloody diarrhea. These symptoms were chosen because malaria, respiratory diseases, and diarrheal diseases are the most common causes of death in ROC after HIV/AIDS (WHO, 2012). Demographic information was also gathered, including sex, age, and ethnic identity of the respondent, the size of the household, and ownership of a radio or mobile phone.
Qualitative
Semi-structured interviews were conducted with 18 key informants, including the healers, chiefs, and other prominent members of the community, to identify health needs and to evaluate the mobile pharmacy and other available health services qualitatively. Informal discussions were also conducted with household respondents and other community members. All responses in Lingala, Mbendjele, and other local dialects were translated into French. Key informant interviews were audio-recorded.

Data analysis
The data was analyzed using SAS to provide descriptive statistics. Qualitative data were used to provide context to the quantitative findings.

Ethical considerations
Exemption from institutional review was obtained from the Yale University Institutional Review Board. The research proposal was also approved by the Likouala and Sangha departments of health. All participants gave their informed oral consent.

Results
Socio-demographic description of the sample
Out of 245 households sampled, 178 participated in interviews. Males accounted for 69.1% of respondents and women accounted for 30.9%. The age of respondents ranged from 18 to 85, with a mean of 37.5 (SD = ± 14.0). Households varied in size from 1 to 26 inhabitants, with a mean of 6.6 (SD = ± 14.6).

Of the 128 household respondents who described themselves as Yaka, 123 identified as Mbendjele, 4 as Ngombe, and 1 as Mikaya. The 49 household respondents who identified as Bantu represented at least 17 different ethnic sub-identities. Only one household respondent, an immigrant from West Africa, identified as neither Yaka nor Bantu. Although information for this respondent is included in descriptive statistics of the overall sample, this individual's responses are excluded from the analyses stratified by ethnic group.

Two metrics used to measure economic status were ownership of a phone and ownership of a radio. In the sample overall, respondents were more likely to report owning a radio than owning a phone (Table 1).

Table 1. Description of the sample

Characteristics of primary respondent	N (%)*
Sex	
Female	55 (30.9)
Male	123 (69.1)
Age (years), mean ± SD	37.5 ± 14.0
Ethnic group	
Yaka	128 (71.9)
Bantu	49 (27.5)
Other	1 (0.6)
Characteristics of household	**N (%)***
Inhabitants (number), mean ± SD	6.6 ± 4.6
Location	
Site 1: Indongo, Ikélemba, Tokou	46 (25.8)
Site 2: Mbili, Minganga, Mossombo, Mokenzé, Attention	81 (45.5)
Site 3: Gbagbali	11 (6.2)
Site 4: Sémbola, Ngombe	40 (22.5)
Phone ownership	
Yes	51 (28.7)
No	127 (71.3)
Radio ownership	
Yes	72 (40.4)
No	106 (59.6)

* Percentages may not sum to 100% due to rounding.

Utilization of health services

In addition to the Project Bwanga mobile pharmacy healers, the study sites are also served by four health centers: a private hospital in Pokola run by the logging company CIB, a private clinic in Kabo run by CIB, and state-run clinics in Tokou and Mboa. There are also unlicensed vendors (*boutiques*) that sell pharmaceuticals for self-treatment and healers who administer traditional treatments for a fee. Finally, many individuals treat themselves and their family members with traditional remedies.

Regardless of ethnic group, the majority of respondents reported seeking care when someone in the household experienced an illness or injury (Table 2). Among 128 Yaka households surveyed, 90.0% of those who sought care in the previous 12 months for an illness or injury reported seeking traditional treatment, compared to 48.3% of the 49 Bantu households surveyed.

The percentage that sought care from health center was similar for both Yaka (67.8%) and Bantu (65.5%) households that reported seeking care in the previous year. About 88.3% of Yaka households seeking care in the timeframe that the mobile pharmacy was operational visited the pharmacy compared to 71.4% of Bantu households.

Table 2. Health service utilization by ethnic group*

Household characteristics	Ethnic Group	
	Yaka N = 128 (%)	Bantu N = 49 (%)
I. Someone in household was injured or ill in past 12 months	91/128 (71.1)	31/49 (63.3)
A. Someone in household sought care for illness or injury in past 12 months	90/91 (98.9)	29/31 (93.5)
i. Someone in household received traditional treatment for illness or injury in past 12 months	81/90 (90.0)	14/29 (48.3)
a. Traditional treatment was given by self or family member (rather than paid healer)	77/80 (96.3)	12/14 (85.7)
b. Favorable result from last traditional treatment received by someone in household	75/80 (93.8)	13/14 (92.9)
ii. Someone in household visited medical center in past 12 months	61/90 (67.8)	19/29 (65.5)
a. Well-received during last visit to medical center	60/61 (98.4)	17/19 (89.5)
b. Treatment given during last visit to medical center	59/61 (96.7)	19/19 (100.0)
1. Favorable result from treatment given during last visit at medical center	54/59 (91.5)	17/19 (89.5)
II. Someone in household was injured or ill in timeframe mobile pharmacy was operating	62/90 (68.9)	22/28 (78.6)
A. Someone in household sought care for illness or injury in timeframe	60/62 (96.8)	21/22 (95.5)
i. Someone in household visited mobile pharmacy healer in timeframe	53/60 (88.3)	15/21 (71.4)
a. Someone in household received pharmaceutical medications or care for injuries by mobile pharmacy healer during last visit	51/53 (96.2)	14/15 (93.3)
1. Favorable result from treatment given during last visit to mobile pharmacy healer	49/51 (96.1)	14/14 (100.0)

* Percentages may not sum to 100% due to rounding and numbers may not sum to totals due to missing data.

Care-seeking behavior

Although respondents were asked about which health services they would use in the event of a particular symptom, their answers tended to stay the same regardless of whether they were asked about a high fever, severe cough, or bloody diarrhea. For the purposes of analysis, only the responses for a high fever were used and only the first three resorts were included.

Self-treating using traditional methods was the most often reported first resort (75.8%), but the mobile pharmacy was the second-most cited first resort (18.0%). This was true for both Yaka and Bantu household respondents (Table 4). No respondents said they would see a traditional healer as a first resort. Almost no other services were considered for seeking care after going to a health center, no matter what order of resort going to a health center was reported as (Table 3), indicating that the health center was seen as primarily a last resort, if not an only resort.

Table 3. Order of resort in seeking care*

First resort	N (%)	Second resort	N (%)	Third resort	N (%)
Traditional self-treatment	135 (75.8)	Mobile pharmacy	112/135 (83.0)	Pharmaceutical self-treatment	74/112 (67.0)
				Health center	38/112 (33.9)
		Pharmaceutical self-treatment	13/135 (9.6)	Health center	7/13 (53.8)
				Mobile pharmacy	5/13 (38.5)
				None	1/13 (7.7)
		Health center	8/135 (5.9)	None	8/8 (100.0)
		Traditional healer	2/135 (1.5)	Health center	1/2 (50.0)
				Pharmaceutical self-treatment	1/2 (50.0)
Mobile pharmacy	32 (18.0)	Health center	15/32 (46.9)	None	13/15 (86.7)
				Traditional healer	1/15 (6.7)
				Pharmaceutical self-treatment	1/15 (6.7)
		Pharmaceutical self-treatment	14/32 (43.75)	Health center	8/14 (57.1)
				Traditional self-treatment	6/14 (42.9)
		Traditional self-treatment	3/32 (9.38)	Health center	2/3 (6.67)
				Pharmaceutical self-treatment	1/3 (3.3)
Health center	5 (2.8)	None	5/5 (100.0)	N/A	
Pharmaceutical self-treatment	4 (2.2)	Health center	2/4 (50.0)	None	2/2 (100.0)
		Mobile pharmacy	2/4 (50.0)	Traditional self-treatment	1/2 (50.0)
				Health center	1/2 (50.0)
Traditional healer	2 (1.1)	Mobile pharmacy	1/2 (50.0)	Pharmaceutical self-treatment	1/1 (100.0)
		Health center	1/2 (50.0)	None	1/1 (100.0)

* Percentages may not sum to 100% due to rounding.

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In comparison to the Bantu respondents, there was a greater difference in the percentage of Yaka respondents reporting traditional self-treatment as a first resort (88.3%) compared to those reporting the mobile pharmacy as a first resort (11.7%). For those identifying as Bantu, this difference was not as dramatic (44.9% compared to 32.7%).

Table 4. First and second resort in seeking care by ethnic group*

	Ethnic groups	
First resort	**Yaka**	**Bantu**
	N = 128 (%)	**N = 49 (%)**
Traditional self-treatment	113/128 (88.3)	22/49 (44.9)
Mobile pharmacy	15/128 (11.7)	16/49 (32.7)
Health center	0/128 (0.0)	5/49 (10.2)
Pharmaceutical self-treatment	0/128 (0.0)	4/49 (8.2)
Traditional healer	0/128 (0.0)	2/49 (4.1)
Second resort	**Yaka**	**Bantu**
	N = 128 (%)	**N = 49 (%)**
Mobile pharmacy	97/128 (75.8)	18/49 (36.7)
Health center	12/128 (9.4)	14/49 (28.6)
Pharmaceutical self-treatment	14/128 (10.9)	12/49 (24.5)
Traditional self-treatment	3/128 (2.3)	0/49 (0.0)
Traditional healer	2/128 (1.6)	0/49 (0.0)

* Percentages may not sum to 100% due to rounding.

Influence of cost, convenience, distance, and quality of care

Both Yaka and Bantu respondents talked about weighing cost, distance, convenience, and quality of care in determining which services they would seek and in what order. Most of the respondents considered traditional treatments to be the least costly source of care that, depending on the ailment, could be just as effective as, or even more effective than, pharmaceutical treatments. However, some respondents (primarily Bantu) preferred pharmaceutical treatments because of the more accurate dosage.

There were discussions that some ailments could only be treated with biomedical methods or were better treated with pharmaceuticals. Respondents also mentioned they might not use a traditional treatment if acquiring that particular forest product would be too difficult or if they were unfamiliar with the treatment for that particular ailment. However, it is worth noting that traditional treatments were not always less costly than pharmaceutical treatments. The traditional healers who were interviewed charged comparatively high prices for their services, ranging from 1,000 FCFA from a Yaka healer to over 20,000 FCFA from a Bantu healer.

Some key informants and many of those who indicated they would seek pharmaceuticals from a mobile pharmacy healer rather than, or before, self-treating with similar products from an unlicensed vendor shared a belief that the quality of the drugs at the mobile pharmacy was superior to those that could be purchased from unlicensed vendor. Some were concerned that the drugs sold by unlicensed vendors could be expired or improperly stored. A few Yaka respondents also discussed the advantage of having the mobile pharmacy healer explain the dosing instructions. On the other hand, a number of respondents who indicated they would self-treat with medication from an unlicensed vendor before, or instead of, visiting the mobile

pharmacy healer cited cost as the main reason. Unlike the mobile pharmacy, unlicensed vendors are able to price their products by the pill and can differentiate prices depending on the type of drug, meaning that the cost of some treatments may be lower than the price charged by the mobile pharmacy.

In informal discussions, many household respondents, both Yaka and Bantu, reported preferring the CIB hospital in Pokola over other health centers due to the quality of the care. Some complained that the state-run health centers did not have the proper diagnostic equipment, while others expressed dissatisfaction with the stock-outs at the state-run pharmacies. There were no such complaints about the CIB hospital. None of the household respondents mentioned using the CIB clinic in Kabo, possibly because this clinic reportedly only serves CIB employees, unlike the CIB hospital in Pokola which also serves non-employees.

Informal discussions also revealed that one reason Yaka respondents seemed to prefer the CIB hospital in Pokola over other health centers is due to their perception that treatment would be provided for free at the CIB hospital. While it is true that a local foundation does cover the cost of health care at the CIB hospital for Yaka patients, those involved with the foundation and the CIB hospital reported that the aid is meant for Yaka residents of Pokola only. However, respondents from other villages in the Sangha region were also under the impression that they would be treated free of charge. According to one of the CIB doctors, some Yaka patients who do not qualify for financial assistance from the foundation may be covered by the CIB hospital's "social fund" for indigent patients or by the generosity of the CIB doctors themselves. The CIB doctors also sometimes voluntarily pay for patient costs out of their own salaries.

Household respondents at all sites, even those within a 20-minute walk of the CIB hospital, indicated during informal discussions that they believed health centers were located too far away. In an informal discussion, one respondent from site 4 explained that, although the CIB hospital is nearby, a serious illness may mean that a patient is unable to reach the health center by foot and acquiring a taxi or moto-taxi would be considered costly.

The problem of distance to health centers was frequently tied to cost and convenience. In order to travel from their home to the health center, individuals often needed to find a means of transportation. Since so few individuals own a means of transportation, they must rent or buy a seat on a motorbike, bus, car, commercial truck, motorized boat, or pirogue. This process can be slow and the timing is often unreliable, resulting in delays that may prove dangerous or even fatal, according to participants in informal discussions. If an inpatient stay is anticipated, or if the health center is especially far, the individual seeking care may need to bring their entire family. As a result, they must also consider where their family members will stay and the cost of feeding their family away from home. Bringing more people also increases transportation costs unless they own the vehicle.

Distance could also be an issue when seeking treatment from the mobile pharmacy. Some of the Project Bwanga healers travel to different villages with their wares, allowing them to reach more people. However, since there is often no way of knowing where the healers will be on any particular day, individuals who do not live near the same village as a healer may not be able to

rely on the availability of the mobile pharmacy healer. As a result, they may always not consider the mobile pharmacy when seeking care.

Discussion

Due to limited time and funding, the sample size obtained was not sufficient to provide the statistical power necessary to detect differences between Yaka and Bantu respondents. Yet there are clear differences in the reported use of traditional medicines, since less than half of Bantu households who sought care for an illness or injury reported receiving traditional treatment, compared to 90.0% of Yaka. However, it is unclear whether this is a true difference or because the use of traditional treatments may be perceived as less socially desirable by Bantu respondents. It is also possible that Bantu individuals are not as well-versed in traditional treatments as the Yaka or are more reluctant to search for the forest products needed for the remedies, as suggested by prior ethnographic study (Lewis, 2002).

In contrast to the assumptions of Project Bwanga, the use of traditional healers seems fairly uncommon in comparison to self-treatment by traditional methods. Based on the informal discussions, it seems that the paid traditional healers may be a last resort for illnesses or injuries that cannot be satisfactorily resolved by any of the other methods. Spiritually-based remedies were not reported by any respondents, although one respondent did mention the use of prayer.

Although Project Bwanga operated under the expectation that the mobile pharmacy healers chosen by the Yaka would themselves be traditional healers, and thus be able to provide both traditional remedies and pharmaceuticals, this was observed to not be the case. Since most individuals were knowledgeable about common traditional remedies or had family members with that knowledge, they tended to only seek a mobile pharmacy healer for the purpose of buying pharmaceutical treatments. Furthermore, most of the mobile pharmacy healers did not previously provide paid traditional healing services.

However, it seems that Project Bwanga was correct in anticipating that the mobile pharmacy would not displace the use of traditional medicines as a first resort. Among the Yaka communities especially, self-treatment by traditional means was still the most commonly reported first resort in care-seeking. While a few key informants (none of whom were health professionals) expressed concern that the reliance on traditional remedies as a first-line treatment results in delayed biomedical intervention and poorer treatment outcomes, it is unclear whether the population of interest would seek biomedical treatment or facilities more rapidly even if they did not use traditional remedies, since these individuals must still factor in the cost, convenience, and distance. Furthermore, the respondents seemed similarly satisfied with the results of traditional treatments and biomedical ones.

There is insufficient data to determine if the Yaka and Bantu households have equal access to the mobile pharmacy, but the utilization of the mobile pharmacy was not considerably different between the two groups and almost all respondents from households that had received treatment from the mobile pharmacy reported satisfactory outcomes. However, since the study area was determined based on the communities served by the Yaka mobile pharmacy healers, it is possible that the healers are preferentially visiting Yaka communities, and thus the Bantu communities in the same geographical area may be underrepresented in this sample.

Respondents preferring pharmaceuticals from the mobile pharmacy over those from unlicensed vendors frequently cited the perceived higher quality of the drugs sold by the mobile pharmacy as the reason for their partiality. The sale of counterfeit and substandard medications is a demonstrated problem in many parts of Sub-Saharan Africa, and the use of these drugs without medical supervision can lead to antimicrobial resistance as well as negative health outcomes (Atemnkeng et al., 2007; Bate et al., 2008; Mphande, 2016). Although determining the quality of these medications is beyond the scope of this study, the mobile pharmacy program could be a way to provide better quality pharmaceuticals to these remote areas. Additional research is needed to determine if the mobile pharmacy healers are diagnosing and administering treatments appropriately.

Several Bantu respondents expressed a desire for Project Bwanga to train Bantu healers for the mobile pharmacy program. The Project Bwanga team explained that training Bantu healers would not be possible due to the power imbalance between the Yaka and Bantu. Two mobile pharmacy pilot programs (neither included in this study) were discontinued in the Likouala region in 2015. Project Bwanga suspected that Bantu individuals at those sites were interfering in the operation of the mobile pharmacies by seizing or controlling access to the drugs. In both these situations, it was unclear whether the mobile pharmacy healers were complicit or coerced into cooperating.

Evidence of ethnic tensions was observed throughout the study, but the most serious incident occurred during field work at site 2. Threats of physical violence were reportedly made against Yaka individuals, including the hired translator and one of the mobile pharmacy healers, due to their cooperation with the study. Interviews with Bantu households had to be suspended until the situation was resolved with the local Bantu village chief, who was vocally supportive of the program and the study. This site also had noticeably more individuals refuse to cooperate. When approached, some stated that they did not see a benefit in participating in the study. The residents of site 2 were reportedly the subjects of at least four previous studies (all anthropological), so community research fatigue is a likely explanation for their reticence to participate. Research fatigue may have also contributed to the ethnic tensions in this situation, especially since the translators and mobile pharmacy healers identified as Yaka.

In general, conducting research in this context was immensely challenging, both logistically and due to differences in language and cultural understanding. As a result of the low levels of literacy in the Yaka community and the relatively small number of people who speak Yaka languages, there were few options for hiring translators. Different individuals provided translation services at different sites due to issues with translator availability. Consequently, there may be discrepancies in translation and interpretation that affect the results. Furthermore, due to different standards of privacy and a tendency for neighbors to congregate, interviews frequently took place in the presence of other individuals. It is possible that some respondents may not have answered honestly or were influenced by their observations of earlier interviews.

Conclusions

Although some differences exist between Yaka and Bantu communities in their utilization of available health services and care-seeking behavior, both groups made decisions for seeking care based on considerations of cost, distance, convenience, and quality of care. Due to the remote setting and lack of transportation, the necessity of travel presents a special challenge to accessing health services.

Even after the establishment of the mobile pharmacy project, self-treatment through traditional means remains the most commonly reported first resort in seeking care for both Yaka and Bantu, and biomedical treatments are more often later resorts. However, the mobile pharmacy was the second-most commonly reported first resort as well as the most commonly reported second resort for both Yaka and Bantu respondents. In contrast, visiting a health center was infrequently reported as a first resort and tended to be a last resort. This information, in combination with qualitative responses, suggests that the mobile pharmacy program is expanding access to high-quality pharmaceutical treatments while not displacing traditional remedies.

Most Yaka and Bantu households in the communities served by the mobile pharmacy program reported receiving treatment from a Project Bwanga healer if they sought care during the timeframe that the project was in operation, and almost all those who received treatment reported favorable results. Although these data are not conclusive, they help bolster the idea that this mobile pharmacy model may help expand access to medicines in remote locations for marginalized groups while also providing services to the members of other groups living in the same area. However, challenges still exist in ensuring that these populations are able to benefit from the mobile pharmacy program and other available health services.

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