



Faith-based pharmaceutical supply chains and their role in African pharmaceutical systems: a qualitative systematic review

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Abstract

For the health system to function well, the population must have equitable access to quality, affordable pharmaceutical supplies; however, pharmaceutical systems in Africa are challenged by inadequate funding, drug stock outs and irregular supplies, a shortage of trained pharmacy personnel, and a lack of systems for drug regulation and quality. Faith-based health providers, as private, not-for-profit actors, have long complemented public sector efforts in the supply of pharmaceuticals in Africa. However, the contribution of faith-based health providers in pharmaceutical systems has not been formally studied. This study examines the nature and function of faith-based healthcare providers in improving access to pharmaceutical supplies in Africa. To do so, we conducted an exploratory qualitative systematic review to identify documents that contain information on faith-based involvement in pharmaceutical supply in Africa. The review identified 20 articles for inclusion. These articles were analyzed using thematic, narrative analysis. The analysis revealed a significant evidence gap relating to the contribution of private-not-for-profit, faith-based providers to African pharmaceutical systems. The review suggests that while faith-based drug supply organizations have existed for a long time and contribute significantly to national pharmaceutical systems, there is very little known about the nature of faith-based pharmaceutical providers and how they complement public sector pharmaceutical systems. In many contexts, faith-based involvement in pharmaceutical systems improved access for the general population and increased the supply of pharmaceuticals in national systems. Faith-based drug supply organizations also often provide pharmaceutical supplies to both rural and urban areas, often targeting rural and remote areas particularly. The review also indicates that faith-based drug supply organizations improved access to medicines and related commodities and, despite a lack of regulation in many contexts, have the potential to make a positive contribution to quality assurance of pharmaceuticals. In summary, the analysis confirmed that faith-based involvement in pharmaceutical supply chains contributes to strengthening the national health system by complementing the public pharmaceutical system through improved access to medicines and related commodities in Africa. These conclusions corroborate the need to continually document and acknowledge faith-based healthcare providers' efforts which could guide the formulation of stringent, evidence-based strategies.

Keywords: Health systems, pharmaceutical systems, pharmaceutical supply, drug supply, medicine supply, supply chain, Africa, faith-based

Introduction

Pharmaceutical systems play an important role in healthcare delivery. Limited access to medicines and related commodities in low- and middle-income countries (LMICs) is of great concern.¹⁻⁴ Strengthening the pharmaceutical sector to meet population needs is important to achieving positive health outcomes.^{5,6}

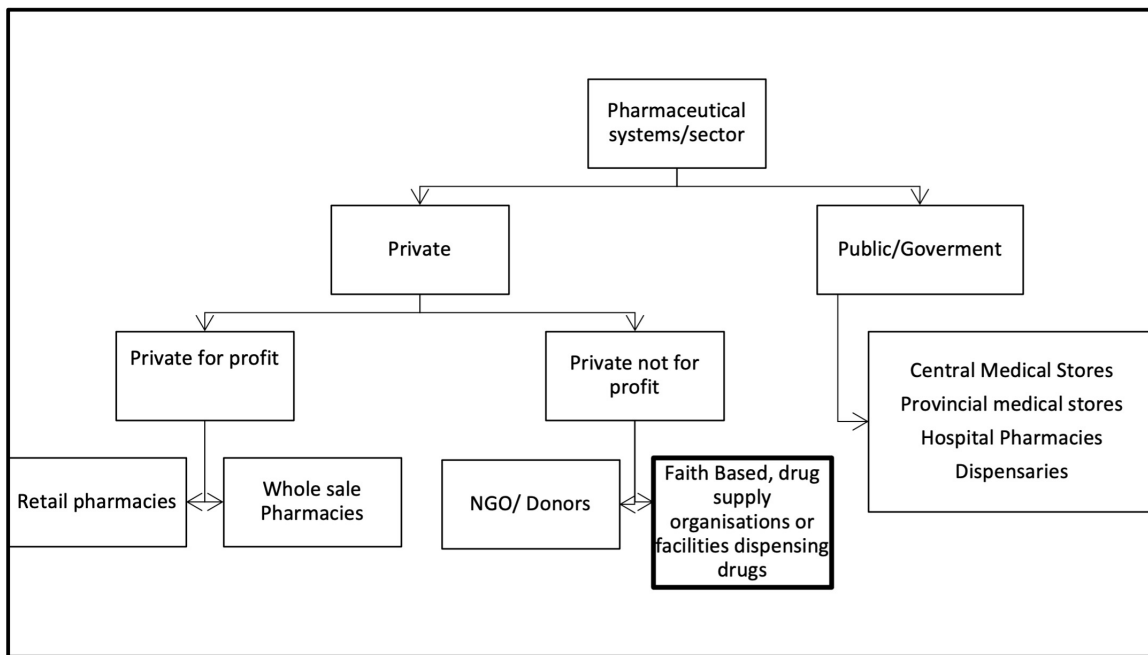
One particularly integral component of overarching health systems, as per the World Health Organization, is the pharmaceutical system.⁷ Its utmost relevance stems from the vital reciprocal relationship it shares with the other pillars of health care. A notable segment bolstering these networks are faith-based healthcare providers (FBHPs)⁸.

Pharmaceutical services can be provided by either public or private providers. In Africa, private providers include a mix of private-for-profit (PFP) and private-not-for-profit (PNFP) actors – the latter includes non-government organizations (NGOs), local and international donors, and faith-based healthcare providers (FBHPs) (see Figure 1 below).⁸ Recently, there has been much discussion on how working with the private pharmaceutical sector and incorporating their services into the national pharmaceutical services can improve access to quality affordable medicines.^{9,10} Isolated reports indicate that the nature and function of FBHPs takes different forms, including drug procurement, distribution,¹¹ dispensing,¹² and quality assurance testing.^{13,14} However, the contribution of FBHPs to pharmaceutical supply chains is not well recognized or well documented.¹⁵⁻¹⁷

Understanding the various ways in which FBHPs are involved in drug supply chains in Africa is important for health systems strengthening. Across all LMICs, FBHPs are predominant in Africa, where about 23 of the 54 African countries are known to have substantial FBHP sectors.¹⁸⁻²¹ It is also in Africa where the most is known and published about FBHPs (in comparison with other LMICs). Within that literature, there is some mention of “faith-based” pharmaceutical services, supply chains, and networks. For example, Banda et al. produced an important report for the World Health Organization (WHO) on supply and distribution of pharmaceuticals by faith-based organizations in Sub-Saharan Africa.¹⁵ Schmid *et al.* have also noted the presence of pharmaceutical networks and stores in many African countries.¹⁷ Others have noted that missionaries were sometimes the first providers of basic pharmaceutical stores and services in the era before modern public health systems.^{13,16} However, initial scoping review shows an alarming absence of any substantive evidence about the current presence and functioning of this particular type of PNFP actor within African health systems (see Part B), although it is commonly assumed they are substantial and important.^{12,22,23} While research on FBHPs in relation to other aspects of healthcare services is growing, their specific role in pharmaceutical supplies is not well understood.²⁴⁻²⁶



Figure 1. Nature of the pharmaceutical system showing the position of faith-based healthcare providers



Note: (Source Author)

In Africa, the public pharmaceutical sector faces significant challenges that often render the sector ill-equipped to meet the needs of the population.^{1,27,28} In many African countries, irregular supply of medicines to government health facilities is a common problem and a major barrier to achieving health equity for its population.^{4,29,30} Specifically, resource-poor settings are undermined by unreliable funding that leads to irregular drug supply, frequent drug stock-outs, lack of infrastructure, inefficient management, and poor regulation of medicines and related commodities.^{1,4,27,31} When these challenges are not addressed, patient drug compliance and adherence drop, negatively impacting health outcomes.³²⁻³⁴

In some developing countries, medicine stock-outs have interrupted patient’s access to ARVs and other drugs, and undermined drug adherence.^{27,30,35} For example, in Tanzania, drug adherence and patient health outcomes were negatively affected by the shortage of medicines in public health facilities.^{28,36} Also, in Kenya, patients sometimes buy medicines from drug shops because medicines are unavailable in government facilities, while in other instances

informal drug sellers are the only available source of medicines.²⁹ These medicine stores and informal drug sellers have longer operating hours as compared to government facilities, which are often closed when their services are most needed.²⁹

Other systemic issues also undermine drug availability. For example, the shortage of pharmaceutical professionals in health facilities is also a cause for concern³⁷ and may contribute to long waiting times at facilities, thereby discouraging patients from attending health facilities and increasing the likelihood of drug noncompliance and drug resistance.²⁸ Similarly, some LMICs lack the basic infrastructure necessary to ensure pharmaceutical quality, such as sophisticated laboratories for quality assurance of pharmaceuticals and human resource expertise.³⁷ In some developing countries, inadequate regulation means that medicines leak from the private pharmaceutical sector to the informal market, and this is of great concern as it will likely increase antimicrobial and antiviral resistance.³⁸

The private pharmaceutical sector plays an important role in LMIC drug supply chains.^{39,40}

No pharmaceutical system is a purely public entity because in every pharmaceutical supply chain there is some private entity involvement whether it is pharmaceutical companies producing medicines or logistics companies transporting medicines.^{39,41} In LMICs, it is estimated that 66% of prescribed medicines are sourced from private facilities while 35% are found in the public facilities.² As such, pharmaceutical supply chains can be improved through partnerships between government and the private sector,^{42,43} and such partnerships can increase access to quality medicines at affordable cost.⁴⁴

Among these private sector actors are PNFP pharmaceutical providers that are defined as “faith-based.” It has been argued that “faith-based” PNFP actors are important because they have good access in remote and rural areas where there are few public services⁴⁵ and because they have different drug supply sources (often importing medicines from overseas through international nongovernmental organizations (NGOs) or purchasing medicines from the local manufacturing companies or the central medical stores) – although this claim is not well supported by the available evidence.⁴⁶

In the broader context of health system strengthening (HSS), understanding the interconnectedness of the WHO-proposed six building blocks is key for global health system enhancement. These building blocks encompass health service delivery, health workforce, health information systems, access to essential medicines, financing, and leadership/governance.⁷ Our study emphasizes the “access to essential medicines” block, noting how its strengthening could potentially transcend to other blocks, hence enhancing the entire health system.

Despite the importance of this block, accessibility and affordability of essential drugs, specifically in LMICs, remain challenging due to an array of factors such as imbalanced supply and distribution systems, procurement inefficiencies, and exorbitant costs.⁴⁷

The WHO regards access to essential medicines not as an isolated component but one intertwined with the other five building blocks.⁷

Therefore, improvements in one aspect can induce advancements in others allowing for a more robust, responsive health system.

What is obvious from the literature is that the public pharmaceutical sector cannot provide the needed medicines and medical supplies and associated services for the whole population.^{47,48} Therefore, the public pharmaceutical sector must engage with faith-based drug supply organizations (FB-DSOs) to improve access to quality, affordable medicines.^{22,49} This can be done through tax exemption on medicines or the supply of free or subsidized drugs to faith-based organizations.⁴⁹ However, the shortage of evidence on the extent, nature, and function of FBHPs involved in pharmaceutical supply chains in Africa (noted above) hinders efforts to strengthen national pharmaceutical supply systems through engagement with FBHPs.

The aim of this exploratory, qualitative, systematic, review study is to begin to fill this evidence gap by collating and synthesizing descriptive qualitative and quantitative evidence from the published literature about a) the reach of faith-based pharmaceutical supply chains, b) common characteristics of (diverse types of) faith-based pharmaceutical supply chains, and c) how faith-based actors involved in pharmaceutical supply chains fit within their broader national pharmaceutical systems.

Method

We undertook an exploratory, qualitative, systematic, literature review to explore the available literature on the nature of FB-DSOs and the role they play in pharmaceutical supply chains in Africa. The review included both qualitative and quantitative data, as a synthesis approach was necessary given the exploratory research question. To strengthen this systematic review, an initial scoping review was done to understand the existing pharmaceutical systems in LMICs and the challenges faced by these systems and possible interventions to improve their functioning.

The scoping review also served to inform the development of the search strategy for the systematic review. The search strategy was then



refined based on previous searches. Standardized subject terms and natural language terms were used so that studies of the same concept using different relevant terminology would be included in the results.⁵⁰ Databases searched included PubMed, EBSCOhost (Africa-wide information and Cumulative Index to Nursing and Allied Health Literature (CINAHL)) and Web of Science. These databases were included to minimize bias and to retrieve the full range of available documents. For adequate specificity and sensitivity, search terms were grouped into three categories using Boolean operators.

The documents identified from these databases were then exported to Endnote and citation tracking of all included documents was done to identify any additional relevant documents. Only documents in English and that discussed the nature and function of FB-DSOs in drug supply chains were included (see Table 1 for the inclusion criteria). Both peer-reviewed and grey literature were included.^{51,52} The inclusion of grey literature ensured that documents from non-academic sources were included while also minimizing bias.⁵¹ The geographic area for this study is Africa, and the names of all countries within the African continent were included in the search strategy. Only documents that provided information on financing, access (the availability, cost and stock-level of medicines and related commodities at facilities, dispensaries and warehouses), regulations, human resource, and training of FB-DSOs in pharmaceutical supply chains in Africa were included.

We used thematic analysis to analyze the data, using themes identified in the scoping review to guide the coding process. Thematic analysis is a method widely used and suitable for reviews, using wide range of source of information.⁵³ This method is a good choice for this review since the involvement of FB-DSOs in pharmaceutical supply is not well researched.⁵⁴

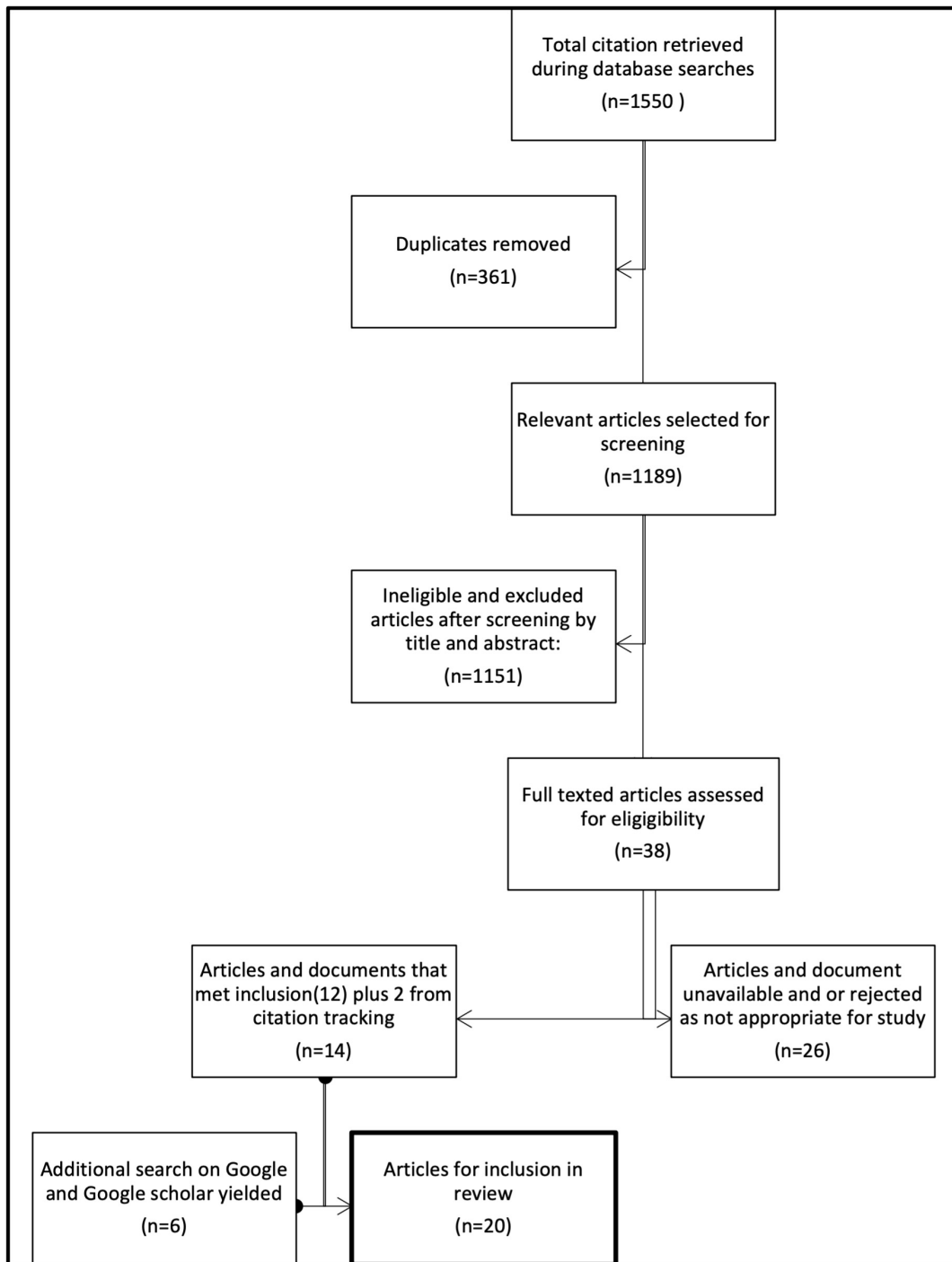
A data extraction table was used to record and synthesize the information extracted from the papers⁵⁵ to minimize bias while ensuring that the process is standardized throughout. All articles that met the inclusion criteria (Table

1) were read and analyzed in the same way to ensure that enough information is extracted to be able to answer the research question as accurately as possible.

Table 1. Research inclusion and exclusions

Inclusion	Exclusion
Discuss the nature and function of FB-DSOs in pharmaceutical supply chain	Discuss FBHPs in healthcare but not pharmaceutical supply chain
Contains information on drug financing, access, regulation, and human resources in FB-DSOs pharmaceutical supply chain	FB-DSOs and government pharmaceutical supply chain considered as one entity
Africa	Outside Africa
English	Non-English

Figure 2. Search flow chart



Note: Source Author

Results

The initial database search yielded 1550 documents in total. When duplicate items were excluded, this was reduced to 1189 documents. When the search was modified to screen citations by title and abstract, 1151 documents

were further excluded. These articles were excluded for lack of relevance to the study, particularly those from non-African countries. A total of 38 articles were finally selected for detailed reading and analysis.

Full texts were available for six of the documents, and 20 were rejected because they were not appropriate for the study. These included studies that mentioned FB-DSOs in general but did not specifically comment on pharmaceutical supply and others that considered faith-based and government drug supply services as a single entity. In total, 12 articles and documents met the inclusion criteria, and two additional documents were retrieved from citation tracking resulting in a total of 14 documents. Further searches on Google and Google Scholar yielded six extra documents from grey literature, bringing the overall total to 20 documents included in this review (Figure 2). A full presentation of each of these is provided in Table 3.

Geographic distribution of articles

The review found a good representation of studies in Africa – with included studies ranging across 14 countries (Burkina Faso, Cameroon, Ivory Coast, Mali, Malawi, Nigeria, Ghana, Zambia, Tanzania, Kenya, Uganda, Democratic Republic of Congo (DRC), Rwanda and South Africa). Ghana has the highest number of studies (6), followed by Malawi and Uganda (4), Cameroon (3), DRC and Nigeria (2) (Table 3). Two articles reported on multi-country studies: Banda et al.¹⁵ reported on Cameroon, DRC, Ghana, Kenya, Malawi, Nigeria, Rwanda, South Africa, Tanzania, Uganda, Zambia; and Petersen et al.¹⁴ reported on Cameroon, DRC, Nigeria, Kenya, Uganda, Ghana. One study reported on a case study in Kenya and Uganda,¹³ while two others reported on Africa in general.^{56,57} Another study considered developing countries in general.¹² The geographic location of the studies according to region is shown in Table 2.

Table 2. Geographic distribution of included studies (Source: Author)

Region	Number	Distribution within region
West Africa	11	Burkina Faso (1), Ghana (6), Ivory coast (1), Mali (1), Nigeria (2),
Southern Africa	7	Malawi (4), South Africa (1), Zambia (2)
East Africa	4	Kenya (1), Uganda (4), Rwanda (1), Tanzania (1)
Central Africa	5	Cameroon (3), Democratic Republic of Congo (2)

Note. Some studies reported on more than once country, hence the disparity in number.

Year, religion and research types

In this review, the selected studies range from 1984 to 2017, with similar findings and minimal differences in methodologies (Table 3). The results demonstrate that the bulk of the research was completed recently, indicating that this topic is increasingly being focused on and that there is a growing interest in faith-based programmes at the community level. All the FB-DSOs in the review were of the Christian faith, with no information on organizations affiliated with Islam or other religions identified. Both qualitative and quantitative studies were identified for inclusion, with methods including case studies, reports, surveys, laboratory testing, questionnaires, interviews, and observations.

However, it's important to note the temporal gap since the earliest used studies go back 39 years. While these older studies provide valuable historical contexts and baselines for understanding the development and role of FB-DSOs in healthcare, it's essential to confirm that the organizations cited in studies prior to 2000 still exist today and that their information remains pertinent to the current discussions in 2023. This could be perceived as a potential weakness, as dated information might have undergone numerous transformations due to changes in local contexts, demographic shifts, policy changes, or emerging medical discoveries, thereby potentially reducing the value of these older studies.

Despite this, these older papers still provide a historical perspective, basic principles, and foundational understanding which are crucial in tracing the evolution and impact of the FB-DSOs. Therefore, even with potential changes or shifts, the insights provided by these papers over time fundamentally enable a deeper understanding of the research topic under consideration. Therefore, their inclusion, despite potential weaknesses, is justified.

Characteristics of faith-based drug supply organizations

FB-DSOs are organizations affiliated to a Christian Health Association (CHA) and involved in the pharmaceutical sector, such as procurement, supply, human resource training, or quality assurance.¹³ CHAs are national networks of FBHPs and are common in Africa.

The supply of pharmaceuticals is part of the services that are provided by CHAs.

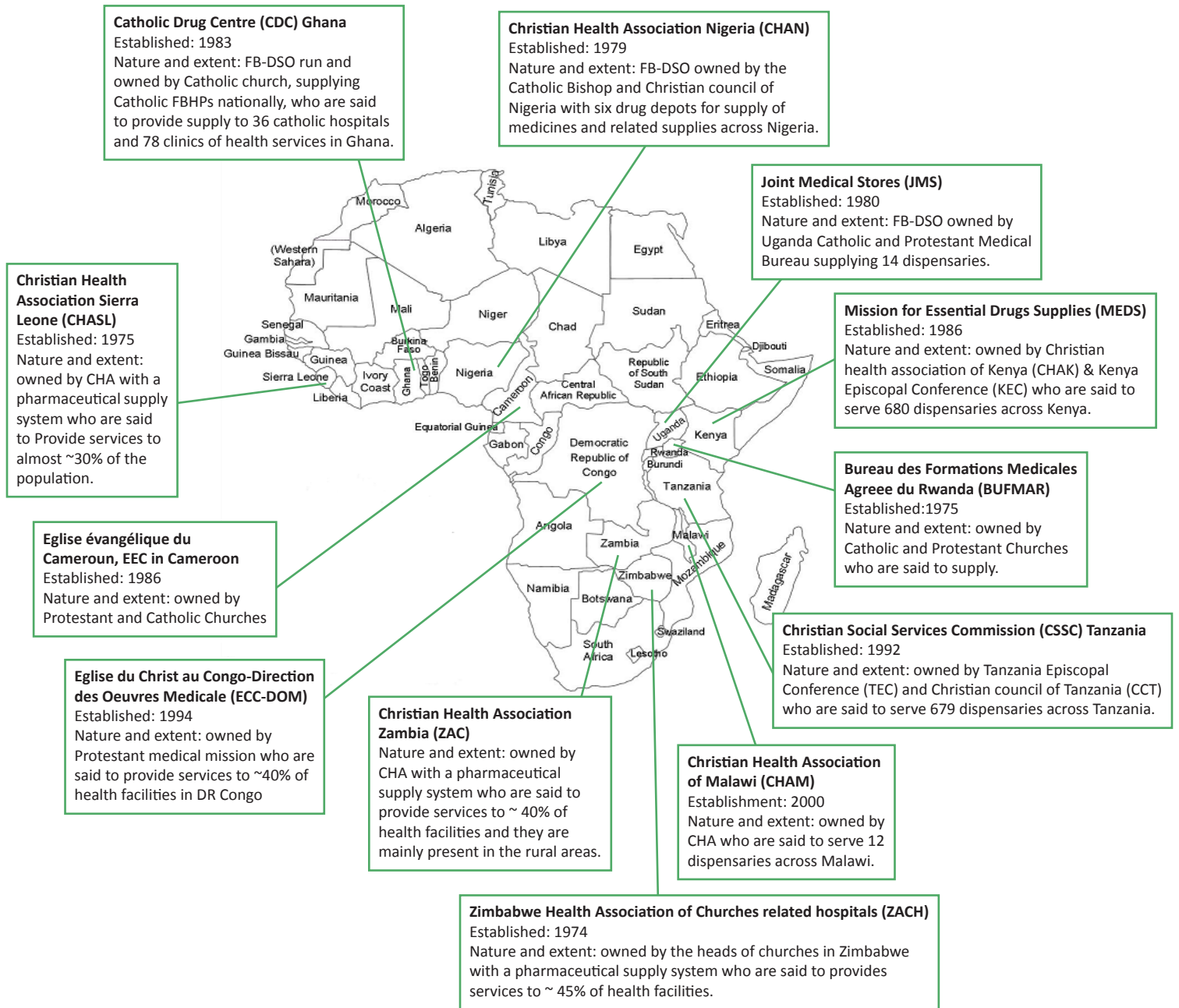
The FB-DSOs identified in the review include Joint Medical Stores (JMS) in Uganda, Mission for Essential Drugs and Supplies (MEDS) in Kenya, Christian Social Services Commission (CSSC) in Tanzania, Catholic Drug Centre (CDC) in Ghana, Christian Health Association Malawi (CHAM), Christian Health Association Nigeria (CHAN), Christian Health Association Zambia (CHAZ), Christian Health Association Sierra Leone (CHASL), Bureau des Formations Médicales Agréées du Rwanda (BUFMAR), Eglise du Christ au Congo - Direction des Oeuvres Médicales (ECC-DOM), Eglise *évangélique* du Cameroun (EEC) and Zimbabwe Association of Churches related Hospitals (ZACH) (Table 4 and Figure 3).

Table 3. Summary of included studies (N=20)

Reference	Country / region	Role/position in pharmaceutical supply chain	Themes Financing	Access, affordability, and availability	Regulation and quality assurance	Human resource and training	Stock outs
Lambert et al. 1984	Ghana	Dispensing, procurement	Donor funding, drug sales	Supply in rural areas			
Asenso-Okyere 1995	Ghana	Medicines supplied in rural areas	Poor do not pay for medicines				
Gilson et al 1995	Tanzania	Dispensing	Not specified	High stock levels of medicines and medical supplies, no contraceptives		Understaffed	Irregular supply of vaccines
Grimaud 1998	Ivory Coast	Dispensing	Consultation fees, drug sales, reduced government support donor support	Decrease in patient turn out due to high cost			Drug shortages
Aids action 1999	Burkina Faso	Procurement dispensing	Donor funding	ARVs and related medicines dispensed for free			
Kawasaki et al. 2002	Kenya, Uganda	Procurement, supply	Donor funding, medicines sales	Good stock level, better access, expensive		Training by MEDS	
Andrews 2004	Ghana	Procurement, dispensing		Dispense for free for poor, dispense at affordable cost	Adheres to prescribing regulation		
Banda et al. 2006	Multi-country	Supplied in rural areas	Donor funding, medicine sales	Medicines dispensed at affordable cost or free	Non-compliance with drug regulatory body		

Reference	Country / region	Role/position in pharmaceutical supply chain	Themes Financing	Access, affordability, and availability	Regulation and quality assurance	Human resource and training	Stock outs
Lum et al. 2007	Nigeria	ART, related medicines supply, home care visit	Donor funding	Medicines supplied for free			
Ballou Allou -Aeres et al. 2008	Ghana, Zambia	Dispensing	Donor funding, Government support, medicines sale	Medicines supply in rural areas at no cost			
Carlucci et al. 2008	Zambia	Dispensing	Government support, donor funding	Supply ART free			
Njazing et al. 2010	Cameroon	Dispensing	Medicines sale	Supply ART and Cotrimoxazole			
Rookes 2010	Developing countries	Dispensing	Donor funding, government support, medicines sale	Medicines supplied at no cost			Irregularity of medicines supply
McCabe et al. 2011	Ghana, Malawi, Mali	Procurement, dispensing	Donor funding, government, medicines sale	Supply drugs free, co-payment by medical insurance schemes			
EPN 2016	Africa	Capacity building, advocacy		Supply medicines and related commodities to faith-based and public facilities at affordable cost	Quality assurance testing, on adherence to treatment guidelines	Training of pharmacy staff	
Kareem Shawa-Durand 2017	Africa	Training		Improved access to medicines due to increase trained personnel		Training of pharmacy personnel	
Khuluza et al. 2017	Malawi	Procurement, dispensing	Donor funding, medicines sales	High stock level, free medicines for poor, drug costly	Pass quality assurance test		Low stock of antibiotics, stocks out of quinine injection
Khuluza et al. 2017	Malawi	Quality assurance testing			Pass quality assurance test		
Kibira et al. 2017	Uganda	Stock level	Medicines sales	Medicines are supplied at a lower price than in government facilities			High number of stock outs
Petersen et al. 2017	LMIC/ multi-County	Quality assurance testing	Donor funding		Falsified and substandard antimalarial medicines found in Cameroon, DRC and Nigeria private sectors	Training of pharmacy personnel	

Figure 3. Mapping of DSOs in Africa



Some of these organizations are members of the Ecumenical Pharmaceutical Network (EPN), a Christian organization supporting churches and church health systems in improving access to quality, affordable pharmaceuticals while promoting the use of medicines rationally.⁵⁶ EPN is reported to be involved in lobbying and advocacy, increasing access to ARVs, human resource empowerment, and fighting against antimicrobial resistance through rational drug use and consumer education.^{56,57} EPN has wide coverage of members including 32 CHAs and 18 FB-DSOs.⁵⁶ The oldest FB-DSO identified was ECC-DOM, which was established in 1971. Newer FB-DSOs were established as recently as 2000.^{15,17} Table 4 presents the FB-DSOs identified for this study.

The FB-DSOs identified in this review were owned by various religious organizations, including: Catholic and Protestant Churches of Malawi, Rwanda and Cameroon; Catholic Bishop, Christian Council of Nigeria and the North Medical Advisory Council of Nigeria; Ghana Catholic Bishops Conference, Christian council of Ghana and Ghana Pentecostal Council; Council of Churches in Sierra Leone; Medical Committee of the Christian Council and the health department of Zambia Episcopal

Conference of Zambia; Tanzania Episcopal Conference and Christian council of Tanzania; Catholic and Protestant Medical Bureau of Uganda; Christian Health Association of Kenya and Kenya Episcopal Conference; Protestant medical mission of Democratic Republic of Congo; and Head of Christian Denomination in Zimbabwe.^{13,17,58} Some FB-DSOs are owned by collaborations between different denominations.¹⁶ For example, CDC is owned by the Catholic Health Service of Ghana and supplies medicines to the hospitals and clinics owned by the Catholic denomination.^{19,59}

Financial donations from (local and international) funders is a major source of funding for FBHPs in Africa.¹⁶ This is also true for FB-DSOs as most of them benefit from donations (Table 4). In addition to donations some FB-DSOs have financed their supply chain through medicines sales^{13,20} and mark ups.⁵⁹ However, many FB-DSOs also receive support from national government to improve access to medicines and related commodities (Table 4).^{13,16,60} Of the FB-DSOs outlined in Table 4 and Figure 3, nine were supported entirely through donor funds, while five also received national government funding, and a further nine used sales of medicines as an additional revenue stream.

Table 4. Faith-based drug supply organizations in Africa

Name of network/ organization and country	Date of establishment	Ownership	Known pharma supply (default self-estimated market share of linked facilities)	Funding sources (all partial)	References
Eglise du Christ au Congo - Direction des Oeuvres Médicales (ECC-DOM) DRC	1971	Protestant medical mission	40% health services in DRC	Not specified	Aembe et al 2017
Zimbabwe Association of Churches related Hospitals (ZACH) Zimbabwe	1974	Head of Christian denominations	Provides 45% of healthcare services	Donations, user fees and sale of medicines	Gwati 2015
Bureau des Formations Médicales Agréées du Rwanda (BUFMAR) Rwanda	1975	Catholic and Protestant Churches	Provides ~35% of healthcare in Rwanda	Donations, government	Mustapha et al 2009 Schmid et al 2008

Christian Health Association of Sierra Leone (CHASL) Sierra Leone	1975	Head of Churches in Sierra Leone	<i>Provides 30% of healthcare services</i>	Donations, drug sales	Witter et al 2012
Christian Health Association of Nigeria (CHAN Pharm) Nigeria	1979	Catholic Bishop's Conference, Christian Council of Nigeria, Northern Christian Medical Advisory Council	6 drug depots <i>[400 mission hospitals, 4000 PHC facilities]</i>	Donations, wholesales of essential medicines & supplies	Odumosu et al 2009 Larbi et al 2004
Joint Medical Stores (JMS) Uganda	1980	Uganda Catholic Medical Bureau (UCMB) & Uganda Protestant Medical Bureau (UPMB)	44 dispensaries	Donations, government, drug sale	Reinikka et al 2010 Kawasaki et al 2002
Catholic Drug Centre (CDC) Ghana	1983	Ghana Catholic Bishops Conference, Christian Council of Ghana Ghana Pentecostal Council	Supply medicines to 36 hospitals and 78 clinics	Donations, drug sales, mark-ups	Dimmock et al 2017 Gilson et al 1995 McCabe et al 2011
Mission for Essential Drugs and Supplies (MEDS) Kenya	1986	Christian health association of Kenya (CHAK) & Kenya Episcopal Conference (KEC)	680 dispensaries	Donations, government, drug sales	Kawasaki et al 2002 Blevins et al 2014
Christian Social Services Commission (CSSC) Tanzania	1992	Tanzania Episcopal Conference (TEC) and Christian council of Tanzania (CCT)	697 dispensaries	Donations, drug sales	Häfele-Abah & Neuhann 2010, Samwel 2015
Eglise évangélique du Cameroun, (EEC) Cameroon	1994	Evangelical Church of Cameroon	Serve 39 dispensaries	Not specified	Yadav et al 2011
Affordable medicines for Africa (AMFA) South Africa	1997	No evidence	AMFA work in partnership with RTT in providing medicines and related services for communities and townships outside cape town		Owens et al 2009
Christian Health Association of Zambia (CHAZ) Zambia	1999	Medical Committee of the Christian Council of Zambia and the health department of the Zambia Episcopal Conference	<i>[40% of healthcare in Zambia]</i>	Donations, drug sales	Yadav 2007 Ballou-Aaares et al 2008
Christian Health Association of Malawi (CHAM) Malawi	2000	Catholic and Protestant Churches in Malawi	12 dispensaries	Donations, In-country resource mobilization, drug sale	Khuluza et al 2017 Gilson et al 1995

Note. The text in italics are estimates based on facility coverage. Due to limited data, we were unable retrieve validated data on actual coverage for some FB-DSOs.



Certain FB-DSOs run a pharmaceutical supply chain mainly for FBHP facilities in a country, such as Malawi;^{12,23} while others perform the functions of central medical stores, procurement organizations, and suppliers to public and private non-faith organizations.^{13,58} For example, JMS and MEDS (in Uganda and Kenya respectively) are FB-DSOs with a wide customer coverage¹³ and CHAN Pharm in Nigeria supplies pharmaceuticals not only to FBHPs facilities but also to the public and the PFP pharmaceutical sector.⁵⁸

The services of these FB-DSOs are present in both urban and rural areas,^{12,15} but they mainly target remote and hard-to-reach areas¹⁵ and are therefore located in rural and remote areas where government services are not readily available.^{15,61} FB-DSOs are generally known to supply medicines and related commodities at no cost or at no cost to the poor and at affordable prices for the rest of their patients.^{12,60,62} The review identified six FB-DSOs that supplied medicines at no cost, while five provided medicines free of charge only to the poor. However, the cost of pharmaceuticals supplied by some FB-DSO were reported to be higher than normal market price.^{13,63}

Common characteristics of faith-based drug supply organizations

This section discusses the findings with respect to access, availability and affordability, and regulation, and human resources and training in relation to the nature and function of FB-DSOs in Africa.

Access, availability, and affordability

Both JMS and MEDS are described as having better access to medicines than other pharmaceutical organizations since they usually have good stock-levels of medicines and related commodities.¹³ In some cases, the poor receive free supplies, and a minimal amount is paid by the rest of the population.^{12,56,62,64-67} For example, in Malawi, CHAM facilities dispense medicines for free to the poor and those who can afford to pay are charged less than what PFP facilities charge.^{12,23,60} Similarly, Rookes'

2010 study on FBHPs in developing countries revealed that:

*Treatment in (church health services) CHS facilities was in the past generally free for everyone, because the bulk of the funds came from overseas' churches.*¹²

In addition, some FB-DSOs worked hard to improve the provision of ART and related commodities to HIV-positive patients. For instance, in Burkina Faso, a small Christian organization worked with government and donors to provide ARVs and other medicines used to treat opportunistic infections (which occur more frequently and are more severe in people with weak or depressed immune systems) for HIV-positive patients.⁶⁴ Another study in Zambia reported on FB-DSOs providing ARVs for HIV-positive patients whose drug adherence was tested on non-ART medicines.⁶⁶ These patients were found to be compliant to follow-up appointments and adherent to ART, irrespective of the distance they had to cover.⁶⁶ For example, based on the study on ART adherence in Zambia, Carlucci et al (2008) observed:

*Most patients travelled 3 or more hours each way, often on foot; yet, most were able to achieve optimal adherence in their first months of therapy.*⁶⁶

Access to medicines and related commodities is critical in the vision of FB-DSOs and was found to be superior to most government facilities.^{60,68}

*Church facilities had significantly higher scores than other groups for drug availability. Thus, for example, there was a 90% chance of their having chloroquine, and a 70% chance of having penicillin constantly available.*⁶⁸

We noted minimal variations in the services provided by FBHPs. Given that FBHPs have funding support from multiple donors and national governments, they appear to offer better access to medicines and related commodities than the government sector.^{23,66,67} In Nigeria, for example, FBHPs were able to provide medicines

and related HIV-services to patients as a result of the support from the President's Emergency Plan for AIDS Relief (PEPFAR) and other funding organizations.⁶⁷ Again, in Malawi, CHAM facilities are sometimes supported by international donors or government, resulting in them being able to dispense medicines and related commodities for free to the poor or at a minimal cost.²³

However, the review revealed evidence of challenges faced by some FB-DSOs in providing accessible and affordable pharmaceuticals. For example, a reduction in support from government and donor organizations was found to result in patients paying for medicines and related commodities at FBHPs.^{12,63,69} A study in Burkina Faso found that the medicines dispensed and services provided by some FBHPs were unaffordable for some categories of patients, especially the poor.⁶⁹ Similarly, patients seeking services at FB-DSOs in Malawi and Uganda were required to pay as a result of fluctuations in donor funding and irregular and insufficient support from government.^{12,63} In another example, in the Ivory Coast, services provided by FBHPs were found to be negatively affected by dwindling donor support and irregular drug supply from governments.⁶⁹

Regulation

FBHPs are involved in quality assurance for pharmaceuticals in their facilities and elsewhere.^{13,14,70} For example, a study that conducted testing for falsified medicines (containing the wrong pharmaceutical ingredients) and substandard medicines (containing the correct pharmaceutical ingredients but not in the correct quantity) in the pharmaceutical market in Malawi, found that all the medicines in selected facilities of FBHPs in the were of acceptable quality.⁷⁰ In another study, the FBHPs were involved in quality assurance testing of medicines in the pharmaceutical market in a few African countries.¹⁴

Human resource and training

The review also suggests that FB-DSOs are involved in training for human resources

for health. For example, MEDS has worked with EPN to train pharmacy staff involved in the handling of medicines and related commodities.¹³ The EPN reported involvement in pharmaceutical capacity building processes to improve access to quality medicines and services and improved health outcomes.⁵⁶ For example, it is reported that EPN promotes the empowerment of pharmacy personnel and other prescribers in improving rational drug use and addressing the issue of antibiotic misuse and antimicrobial resistance.^{56,57}

Between 2011 and 2017 a total of 56 candidates from 9 countries, South Sudan, DRC, Cameroon, Kenya, Uganda, Tanzania, Ghana, Chad, and Zambia, have been supported by the ESP initiative. To date, over 90% of candidates from hospitals in disadvantaged areas were enrolled for training that led to successful completion and awarded a recognized pharmacy qualification.⁵⁷

Discussion

Our systematic review of the role of FB-DSOs in pharmaceutical supply chains in Africa identified both strengths and limitations of FB-DSOs. While published data on the role of FB-DSOs in pharmaceutical supplies in Africa is scarce, available evidence suggests that FB-DSOs in the pharmaceutical sector better serve poor and vulnerable populations and improve availability of pharmaceutical supplies in difficult-to-reach areas. Our review indicated that FB-DSOs, as a component of the private pharmaceutical sector, play a key role in health service delivery through improved access to medicines and related commodities, thereby contributing to health systems strengthening. This section describes the ways in which FB-DSOs can and do contribute to strengthening national health systems – particularly regarding access, availability and affordability, human resources, and reach – as well as some of the issues faced by FB-DSOs and their users. In addition, this section suggests some ways in which FB-DSOs can be better harnessed to strengthen national pharmaceutical systems.



One major issue that impacts drug supply and affordability in LMICs is patent conflicts with manufacturers, most of whom are non-native to African nations. Here, a landmark development in global health policy - the 2001 Doha Declaration on the TRIPS Agreement - plays a significant role. This international legal instrument allows countries the flexibility to bypass patents, under the clause of compulsory licensing, when it's indispensable for public health purposes.⁷¹ This provision can greatly enhance the accessibility and reduce the costs of crucial pharmaceuticals in Africa.⁷¹

Our findings also fit into the larger global health system and agenda as established by the Sustainable Development Goals (SDGs). Particularly relevant are Goal 3.8, advocating for universal health access including accessibility to medications, and 3.b, which prioritizes Research and Development on medications crucial for LMICs.⁷² Consequently, FB-DSOs act as strategic tools in driving towards the realization of these health-centered SDGs on the global scale.⁷²

Access, affordability, and availability

As discussed above, FB-DSOs embody unique strengths with respect to access, affordability, and availability which can help to strengthen national pharmaceutical supply systems. Many authors have highlighted that the public health sector in LMICs face numerous challenges including poor financing, inadequate resources, and a lack of infrastructure, which contribute to unreliable pharmaceutical stock-levels in health facilities and irregularities in pharmaceutical supplies in health facilities.^{2-4,29} The review showed that access to medicines and related commodities is critical in the vision of FB-DSOs. and much of the evidence suggests that the faith-based sector provides better access than most government facilities.^{60,62,64,68}

Furthermore, the services of FBHPs have been found to be in full operation when the public pharmaceutical supply chain is challenged with stock-outs. For example, a CHAM facility in Malawi decided to buy medicines from the PFP pharmaceutical sector when they could

not receive their supply from the CMS in time to have medicines to dispense to patients.²² In Rwanda, in times of supply stockouts at the CMS, BUFMAR is viewed as the source of supply for the public pharmaceutical supply chain, thereby complementing the national pharmaceutical supply system.⁷³ As a result, community members may be compelled to seek healthcare from FB-DSOs, rather than government facilities.^{4,28,30}

In LMICs, patients often must pay for medicines and pharmaceutical supplies when other services in the facilities are provided at no cost⁷⁴ because medicines are being purchased from the local PFP pharmaceutical sector^{39,74} due to stock out of supplies at government facilities.²⁷ Significantly, the review found that while FB-DSOs do also purchase medicines and related commodities from the local PFP pharmaceutical sector, they often exempt the poor patients from paying for drug supplies.^{12,60} For example, in Malawi and Ghana, medicines and related commodities are purchased from the local private pharmaceutical sector when there is delay or interruption in supply, and in such situations, the poor receive the medicines for free while the rest of the population pay for their medicine supply.^{11,12,60,75} This is important in achieving the desired health outcomes as existing evidence from LMICs have shown that improving access to medicines through fees exemption improves patient drug adherence and strengthens the health system.^{76,77} It also suggests that FBHPs are also making an important contribution to improving equity, and some studies found that the poor are benefiting from the FBHPs more than rich who can afford to go to the PFP sector.^{78,79} FB-DSOs are working toward making medicines and related commodities accessible to the poor and marginalized populations.^{16,17}

Furthermore, FB-DSOs are resilient and continue to provide services in the face of health system shocks. For example, in Ghana, CHAG facilities are usually in operation when the national health system is on strike because they believe in providing a non-stop service for populations in need.⁸⁰ In another instance

in Ghana, patients were referred to CHAG facilities by government stakeholders when government-employed pharmacists were on strike.⁸⁰ This indicates that FB-DSOs can continue to provide services when the public sector is on strike.

In addition, FBHPs have been recognized for their contribution to the management of HIV/AIDS in Africa, especially about the drug supply system.^{16,81} Although this review did not focus on HIV/AIDS, a few studies in the review concentrated on FB-DSOs involvement in the supply of ARVs.^{64,66,67,82} From broader literature, we also know that 42.5% of all ARVs, 15.6% for malaria services, and 64.3% for TB services provided by FBHPs is funded by Global Fund.⁸³ FBHPs also provide a significant and well-coordinated programme for HIV positive patients that are on treatment in African countries facing a high HIV burden.⁸⁴ This shows that FB-DSOs play an important role in providing ARVs during a time in which the African continent faces a high burden of disease because of the HIV/AIDS epidemic.⁸⁵

On the other hand, in this review, we found that some patients would have to pay for medicines in some FB-DSOs facilities.^{63,69} For example, patients seeking healthcare at FB-DSOs in Burkina Faso and Uganda paid for medicines because donor funding and government support were insufficient to cover the running cost of the facilities.^{63,69} The review also found evidence of medicines being sold at higher prices in FB-DSOs. While a study from Malawi found medicine prices at FB-DSOs were lower than the international reference price,⁶⁰ the cost of medicines at faith-based facilities in Uganda was found to be higher than the international reference price.^{13,63} This is likely to hinder the contribution of FB-DSOs to the national health system because the cost of medicines will serve as a barrier to access.

In addition, some FB-DSOs charge for medicines even though medicines are provided for free at government facilities.^{79,86,87} For example, in Uganda, FB-DSOs charge for medicines⁶³ while medicines are dispensed for free in public health facilities.⁷⁹ This can be

problematic when patients cannot afford to pay, and FB-DSOs are the only form of healthcare service available, thereby limiting access to medicines for (mainly) poor patients.^{20,49}

Another challenge is that while many FBHPs contribute to improved access to maternal health medicines and related commodities, some health facilities had a very small or an irregular supply of medicines and related commodities for reproductive health,⁶³ while others did not stock contraceptive medicines or provide family planning services.⁶⁸ This can be attributed to religious views concerning contraception and the association of certain contraceptives with risky behaviors.^{56,88} Given that access to contraceptives is an important function of any health system, the failure of some FB-DSOs to ensure this, is a significant shortcoming.

Human resources

This review also suggests that there is space to improve the contribution of FBHPs to human resource training. As noted above, EPN is working with FB-DSOs to empower pharmacy personnel through training programmes in a number of African countries.^{13,56} This is a significant contribution, as a lack of trained pharmacy professionals contributes to the issue of irrational drug use and incorrect drug dispensing.⁵⁷ Zimbabwe has 14 mission hospitals for training nurses,⁸⁹ while in Malawi, CHAM has well-established training institutions for healthcare providers, which account for approximately 80% of the human resource for health training in Malawi.⁹⁰

However, in general, we found little information on human resource management, which is surprising because we know from other literature that this is an important issue.^{37,43,91-93} In LMICs, the pharmaceutical supply chain is mostly managed by non-pharmacy professionals,³⁷ and this sometimes results in the wrong medicines being dispensed with errors in drug dosages and administration times.⁹⁴ Evidence shows that training in pharmacy enables them to follow standard prescribing and dispensing patterns of pharmaceuticals to promote better



service delivery.^{91,92} However, only five of the 20 included papers referred to the training of pharmacy personnel.^{13,14,56,57,68} Some papers had very little information on training, for example, a study on Tanzanian primary healthcare only made mention of supportive supervision and training being provided for pharmacy personnel annually.⁶⁸

Reach of faith-based drug supply organizations

It is commonly assumed that FB-DSOs make a significant contribution to overcoming national pharmaceutical system challenges because they are responsible for a large proportion of drug dispensing facilities. There is also evidence from the grey literature that there are dispensaries, mostly in rural areas, across the different countries in Africa served by FB-DSOs.^{90,95,96} In addition, broader grey literature (not included in this review) provides evidence of the extent of FB-DSOs activity. For example, we know that in Kenya and Tanzania 15.8% and 11% of dispensaries are served by FB-DSOs, respectively.^{84,97}

However, while some information in the review supports this claim, the information on the extent or “reach” of FB-DSOs in the included articles is relatively limited.^{63,66,69} Most articles reported on the general services provided by FB-DSOs and did not provide in-depth detail on medicine supply.⁶⁶ It was also often unclear whether FB-DSOs were affiliated with or owned by other religious organizations.^{64,66,69,82} Furthermore, the validated data for dispensaries served by FB-DSOs for some countries was unavailable because some countries use ‘primary healthcare’ to comprise of health centers, dispensaries, and health posts, and at the end a single figure is given for all of them.^{19,73} In Rwanda, for example, it is reported that BUFMAR provides 35% of primary care service.¹⁹ Also, in Ghana, it was evident that CDC contributed greatly to the pharmaceutical supply chain.^{19,59,80} Therefore, while the extent of FB-DSOs is not verifiable in complete detail, the broader literature suggests that FB-DSOs are making a substantial contribution to improving

access to medicines and related commodities and strengthening the pharmaceutical sub-system and the health system.

Table 5. Dispensaries served by public and FB-DSOs

Country	FB-DSOs dispensaries
Kenya	680
Malawi	12
Rwanda	39
Tanzania	680

Source. Blevins et al 2014,⁸⁴ Häfele-Abah & Neuhaus 2010,⁹⁷ CHAM 2019.⁹⁰

Note. Researchers could not find validated data for other

countries

This paper has shown that FB-DSOs have the capacity to overcome the significant challenges faced by national pharmaceutical systems. In the following section, we present a few mechanisms through which this capacity can be better harnessed by national health systems – public private partnerships (PPP)s and improved regulation.

The need for public private partnership

Partnership between government and the private pharmaceutical sector (PPF and PNFP) is key in improving the pharmaceutical, supply chain and strengthening the health system in LMICs.^{39,42,48,49,98} Evidence from this review and wider literature shows that the collaboration between government and NGOs has been successful in several countries.^{48,49,99} For example, in Bangladesh, improved access and compliance to tuberculosis medicines was achieved through collaboration between government and an NGO.⁹⁹

There is also evidence that partnerships between government and FBHPs helps to strengthen the pharmaceutical supply chains of FBHPs. For example, many PNFP pharmaceutical organizations buy medicines from government at subsidized rates, some PNFP organizations benefit from duty-free entry on importation of medicines,^{49,100} and

others receive medicines and other support from the ministry of health to provide services to poor and vulnerable populations.²²

This review suggests that partnerships between government and FB-DSOs are crucial because FB-DSOs provide services to the poor and vulnerable by filling in the gap, where there are inefficiencies on the side of the public sector.¹⁵ It is also evident from the review that most of the FB-DSOs receive support from government, and in most instances, this is in the form of medicines and pharmaceutical supplies. In other words, it is the partnership between the FB-DSOs and government that enables FB-DSOs to supply medicines for free.^{64,66,67} For example, in Malawi, CHAM facilities dispense medicines received from government at no cost to the patient, while patients must pay for medicines procured from the private sector, except for the poor.⁶⁰ The review also found that in Ghana, FBHPs procure medicines from the CMS,^{23,65} enabling them to dispense these medicines to populations in need.

Available literature has shown that the informal sector is highly utilized by the poor, either because they are cheaper or the only available source of medicines that supply rural remote areas and operate for longer hours.³ Partnerships between FB-DSOs and government may also address the issue of the informal sector by ensuring that the services of FB-DSOs are available in rural and hard-to-reach areas as supported by this review.^{62,66}

Evidence from several studies found that in LMICs the private pharmaceutical sector is the main source of pharmaceuticals and preferred by most patients over the public pharmaceutical sector.^{8,48,92} Furthermore, as noted, drug stock-outs are prominent in the public sector in LMICs with less than 35% of the prescribed medicines available in public facilities, while the rest is sourced from the private pharmaceutical sector,² and this review shows that FBHPs have better stock of pharmaceuticals.^{60,68} Therefore, partnerships between government and FB-DSOs could improve access to pharmaceuticals,

strengthen pharmaceutical systems and improve health outcomes.

The need for improved regulation

Regulatory standards can improve quality of care and efficiency.⁴¹ In some LMICs, however, the regulatory system for pharmaceuticals is challenged by a lack of basic infrastructure, a shortage of expertise or training facilities, and a scarcity of high-quality, standard laboratories for quality assurance of pharmaceuticals.³⁷ Evidence collected in this review indicates that the faith-based pharmaceutical sector can help national systems to overcome these challenges. For example, MEDS was involved in quality assurance of medicines and other pharmaceutical products supplied to their customers and patients.¹³ In another study in the review, FBHPs participated in quality assurance of medicines in the local, private pharmaceutical sector in a few African countries with support from international donors.¹⁴

Evidence from the broader literature has also shown that regulating the private pharmaceutical sector is a huge task,¹⁰¹ and this review showed that FB-DSOs have similar weaknesses in record keeping, quality assurance of medicines and compliance with drug regulatory bodies.^{15,82} The review also found that none of the FBHPs dispensing pharmaceuticals reported that these products were tested for quality assurance before being dispensed to the patients, which is particularly problematic for facilities that source their pharmaceutical supplies directly from international donors.^{11,64} Strengthening government monitoring and regulatory systems to ensure that essential drug lists are adhered to, medicines are quality assured and resources received by healthcare providers are accounted for, is vital.^{100,102-105} Detailed quality assessment of medicines supplied at FBHPs facilities is essential and will help policy makers and other stakeholders to provide the required support to maintain and improve the drug supply chain.

Finally, memoranda of understanding are an important mechanism to regulate the relationship



between partners. However, none of the studies in the review reported on the existence of a memorandum of understanding or contract between government and FB-DSOs or between FB-DSOs and international donors. This is problematic because the presence of a contract usually specifies the duties and expectations of both parties, and this makes it possible to keep track of implementation processes.¹²

Weaknesses

The paper identifies several weaknesses in the current literature regarding faith-based health providers (FBHPs) and pharmaceutical supplies. Firstly, many of the studies used in the research are outdated, which makes it difficult to assess the current situation. Secondly, there is limited literature available on the engagement of FBHPs in drugs and pharmaceutical supplies. This is concerning, given the significant role that FBHPs play in healthcare provision in low- and middle-income countries. The study also notes that research on the patient experience in healthcare and pharmaceutical service settings is lacking. This is a crucial area for research as it has been shown that patient satisfaction influences health-seeking behaviour and healthcare outcomes. Therefore, it is essential to understand how the patient experience in these settings affects healthcare-seeking behaviour and health outcomes. Furthermore, the focus of the study on Africa excludes literature on FBHPs involved in pharmaceutical supply systems in other contexts, making it challenging to generalize the findings outside Africa. As such, it is crucial to conduct research in other regions to ensure comparability of findings.

Future research

There are several areas in which future research is needed regarding FB-DSOs and their contribution to healthcare. Firstly, there is a need to focus on African countries that have functioning faith-based healthcare organizations and look at the role that FB-DSOs play in these settings. This research could examine patient experience in healthcare and pharmaceutical service settings. Research in this area could

reveal insights into how patients perceive and interact with health systems, as well as how this affects healthcare-seeking behaviour and health outcomes. This research could identify gaps in care delivery and highlight opportunities to improve the delivery of healthcare services. Lastly, to ensure comparability of findings, there is a need for more research in other regions beyond Africa. This could provide valuable insights into the role of FBHPs in healthcare in different settings and help to identify best practices that could be applied more broadly. Overall, future research in these areas can provide important insights into the role of faith-based pharmaceutical organizations in healthcare provision and facilitate the development of evidence-based policies and strategies that could help to improve healthcare outcomes for millions of people across the globe.

Conclusion

Pharmaceutical systems play an important role in health systems strengthening. The pharmaceutical supply chains in Africa are challenged with inadequate financial resources, stock of pharmaceutical supplies, shortage of trained pharmacy personnel, and lack of infrastructures and a system for the proper functioning of the drug regulatory system.

It is clear that FB-DSOs play a key role in the provision of pharmaceutical supplies and related healthcare services.^{6,15,17} However, very little evidence is available on their involvement in pharmaceutical supplies. This review identified a limited number of studies in countries known to have well-functioning FB-DSOs working in the pharmaceutical supply chain in Africa. The data describing the role and function of FB-DSOs in the pharmaceutical supply chain in Africa is particularly limited, an indication that further research is needed on how the engagement with FB-DSOs can contribute to health system strengthening in Africa.

Nonetheless, this review suggests that pharmaceutical supply chains in LMICs in Africa can be strengthened through partnership between FB-DSOs and public sector actors. FB-DSOs cover both urban and rural areas and



often have better reach in rural and hard-to-reach areas. Also, the supply of pharmaceuticals is not limited to faith-based facilities but extends to the public and private pharmaceutical sectors as well. FB-DSOs tend to have good drug stock-levels with improved access to pharmaceutical supplies when compared to that of government facilities. They are, therefore, often able to supply pharmaceuticals at no cost, making their services well-trusted by a large proportion of the population.

However, some FB-DSOs involved in the pharmaceutical sector are faced with challenges – including financial constraints from the global recession and dwindling support from international donors – compelling facilities to introduce fees for service with significant implications for availability, affordability, and accessibility of pharmaceutical supplies. Further research on funding is required to look at the specific funding interests of donors and to outline factors leading to donor fatigue and the impact of this on beneficiaries, particularly in the context of pharmaceutical supplies in Africa.

FB-DSOs working in the pharmaceutical sector also play an important role in training pharmacy personnel to improve access to medicines through proper prescribing, dispensing, and promoting rational drug use. However, this review found limited evidence on human resource management involving FB-DSOs and suggests the need for more research in this area.

Some FB-DSOs play a key role in quality assurance testing of medicines in the PFP pharmaceutical market in Africa. However, others were found to be deficient in record keeping, quality assurance of medicines and compliance with medicine regulatory bodies especially for the medicines dispensed by FB-DSOs, which are mostly received from international donors. Improved monitoring and regulation by government through partnerships with FB-DSOs and promoting rational drug use to ensure equitable and affordable access to quality medicines is critical. There is also a need for further research into the quality of medicines dispensed to patients by FB-DSOs in Africa.

While the focus of this review was on Africa, and therefore cannot be generalized to other contexts, the review confirms the important role FB-DSOs play in African pharmaceutical supply chains and their capacity to complement the national pharmaceutical system by improving access to medicines and related commodities thereby contributing to national health system strengthening.

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Appendix 1: List of acronyms

AIDS	Acquired Immune Deficiency Syndrome
AMFA	Affordable Medicine for Africa
ART	Antiretroviral therapy
BUFMAR	Bureau des Formations Médicales Agréées du Rwanda
CCT	Christian council of Tanzania
CDC	Catholic drug centre
CHA	Christian Health Association
CHAG	Christian Health Association of Ghana
CHAK	Christian Health Association Kenya
CHAM	Christian Health Association of Malawi
CHAN	Christian Health Association of Nigeria
CHASL	Christian Health Association of Sierra Leone
CHAZ	Christian Health Association of Zambia
KEC	Kenya Episcopal Conference
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CSSC	Christian Social Services Commission
DRC	Democratic Republic of Congo
ECC-DOM	Eglise du Christ au Congo - Direction des Oeuvres Médicales
EEC	Eglise évangélique du Cameroun
EPN	Ecumenical Pharmaceutical Network
FBHPs	Faith-based health care providers
FB-DSO	Faith-based Drug Supply Organization
HIV	Human immunodeficiency virus
JMS	Joint medical stores
LMIC	Low and middle-income countries
MEDS	Mission for essential drugs and supplies
NGO	Non-governmental organisation
PFP	Private-for-profit
PNFP	Private-not-for-profit
SDG	Sustainable Development Goal
TEC	Tanzania Episcopal Conference
TRIPS	Trade Related Aspects of Intellectual Property
WHO	World Health Organisation
ZACH	Zimbabwe Association of Churches Health Services



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