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Original Article

Institutionalizing linkages between informal healthcare providers and the formal health system in Nigeria: what are the facilitating and constraining contextual influences?

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Abstract

With most households in rapidly urbanizing cities in low- and medium-income countries using private and informal providers for basic healthcare, the need to establish linkages with the formal sector is paramount in the drive for universal health coverage. Successful and effective linkage of informal healthcare providers to the formal health system requires an understanding of prevailing contextual factors and how they can be modulated to support the linkages. Context plays a pivotal role in shaping the nature and success of any integration efforts. This paper, based on a qualitative study, explored the facilitating and constraining contextual influences shaping the linkage of informal healthcare providers into the formal health system in governance, service delivery, and data reporting. The research was conducted in Enugu and Anambra states in southeastern Nigeria. In-depth interviews were held with 12 senior healthcare managers, 16 primary healthcare facility managers, 32 informal providers, and 16 community leaders. Eight sex-disaggregated focus group discussions were held with health service users. Transcripts were coded in NVivo using a pre-defined coding framework comprising facilitators and constraints at the individual, organisational, and environmental levels. Individual factors that influence linkage of informal providers into the formal health system include personal attitudes towards linkage, capacity of informal providers to deliver quality services, nature of existing relationships between formal and informal providers, and trust in the formal health system. Organizational factors include leadership structure, coordination and accountability mechanisms, functional management capacity of the formal health system, and multiple regulatory frameworks. External factors include supportive health policies on integration, sustainable funding for continuous training and supportive supervision, and global agenda/support for integration. This study has provided valuable insights for decision makers and practitioners for harnessing the contextual factors to link informal healthcare providers successfully and effectively to the formal health system in order to improve access to quality health services in urban slums

Keywords: contextual factors; informal healthcare providers; integration; urban health system

Introduction

Informal healthcare providers (IHPs) are widely available and frequently accessed in many low- and medium-income countries (LMICs) countries, particularly by the urban poor (Sudhinaraset et al. 2013a, Fayehun et al. 2022). IHPs are healthcare providers who have not received formally recognized medical training with a defined curriculum from an institution (i.e. government, non-governmental organization, or academic institution (Abimbola et al. 2016, Onwujekwe et al. 2022). They comprise a wide range of practitioners including patent medicine vendors (PMVs), village health workers, traditional birth attendants (TBAs), traditional healers, and itinerant (travelling) drug vendors, many of whom do not have license for the services they provide (Bloom et al. 2011, Sudhinaraset et al. 2013a). However, they may have some level of informal training through apprenticeships, seminars, and workshops, and are typically not mandated by any formal institution (Onwujekwe et al. 2022). These providers, often deeply ingrained in local communities, play a significant role in delivering essential health services, particularly in regions where access to formal healthcare remains limited.

Even though IHPs exist alongside the formal health system in Nigeria and other LMICs, the two health sub-systems have few or no formal linkages and collaborations (Aregbeshola and Khan 2021). Studies have shown that PMVs and formal health facilities depend on one another in providing health services in urban, slum, and rural areas (Sieverding and Beyeler 2016, Hengelaar et al. 2018). This is particularly the case in cities in LMICs where population growth has outstripped the capacity of the limited public primary care system

Key messages

- The success and effectiveness of strategies for linking the informal healthcare providers (IHPs) to the formal health system are influenced by contextual factors that stem from previous experiences within the communities as well as structural weaknesses within the formal health system.
- The overwhelming evidence points to the fact that it is feasible to link IHPs to the formal health system in governance, service delivery (including referral), and data reporting.
- There is significant suspicion on both sides, so small steps to build linkages, e.g. starting with training etc., and then moving to the trickier aspects like referral could be a good approach.
- Linking the IHPs to the formal health system is achievable provided there are organizational structures and health policies that support integration of formal and informal sectors in health service delivery.

(Elsey et al. 2019). In many cases, IHPs are not registered with any government regulatory body and operate outside of the purview of official registration and regulations. They may or may not belong to occupational associations that are primarily focused on networking and business activities (Onwujekwe et al. 2022).

Despite their interdependencies, IHPs are not properly integrated into the health system or even formally linked to the formal health system. Health service data from non-formal service providers are not captured in the national health information system (Dutta et al. 2018), and although clients may be referred from non-formal providers to public health facilities, and vice versa, these referrals are informal and unspecific in nature (Sieverding and Beyeler 2016).

The existence of IHPs operating on the fringes of the formal health system poses a profound challenge in various ways, impacting the overall effectiveness and inclusivity of primary healthcare. IHPs often operate independently, outside the structured frameworks of the formal health system (Sudhinaraset et al. 2013b, Nelissen et al. 2020, Kumah 2022). This can lead to disjointed and uncoordinated care, gaps in treatment, miscommunication, and suboptimal health outcomes for patients (Nelissen et al. 2020, Kumah 2022). The absence of standardized practices and regulatory oversight in the informal health sector can result in variations in the quality of care provided by IHPs and exposure of patients to substandard or unsafe healthcare practices (Kumah 2022). Hence, although IHPs often play a crucial role in areas with limited access to formal healthcare, their presence can inadvertently create barriers to accessing comprehensive services for clients.

A pluralistic healthcare system with institutionalized linkages between the formal and informal health sub-systems has been envisaged (Sieverding and Beyeler 2016, Hengelaar et al. 2018). While such 'people-centred health systems' tend to tap into the vast but unharnessed healthcare potential within the purview of informal providers (Sieverding and Beyeler 2016), it also promises to create synergy and quality improvement in health service delivery, especially for the benefit of the urban poor (Onwujekwe et al. 2022). Furthermore, it could resolve the healthcare disparities that result from uneven distribution of healthcare resources between communities with well-established formal services and those that rely solely on informal providers. Nevertheless, the dichotomy between IHPs and the formal health system is real, and integrating IHPs into the formal health system is a complex and challenging process.

Potential challenges to integration include the heterogeneity and informal nature of IHPs, distrust between formal and informal providers, differences in professional ethos, training, and practices between formal and informal providers, resource limitations, regulatory gaps, weak coordination across provider types, quality assurance challenges, and resistance to change. Hence, although integration could potentially enhance healthcare delivery, addressing these challenges requires a comprehensive understanding of the contextual factors influencing their roles and practices. This would ensure that context-specific strategies are designed.

Context plays a pivotal role in shaping the nature and success of any integration efforts (Nsirim et al. 2015, Sieverding and Beyeler 2016, Thapa et al. 2023b). From the values and interests of stakeholders to policy frameworks, regulatory environment, and governance structures, the contextual landscape offers a nuanced lens through which we can comprehend the challenges and opportunities inherent in linking IHPs to the formal health system (Ramani et al. 2019). Understanding and adapting to these contextual factors are essential for developing effective strategies to link informal providers into the formal health system. A contextually sensitive approach will enhance the likelihood of successful integration, ultimately contributing to more inclusive, patient-centred, and sustainable healthcare systems.

This manuscript provides novel insights into the facilitating and constraining factors that may influence the process of linking IHPs into the formal health system. It builds on the work of Onwujekwe *et al.* by drawing from the experiences and perspectives of a wider group of gate keepers and stakeholders in the health sector, including policy makers, formal and IHPs, and community representatives (Onwujekwe et al. 2022). Hence, the manuscript contributes to knowledge that can inform effective strategies for bridging the gap between IHPs and the formal health system, to guide policymakers, practitioners, and researchers dedicated to forging a more inclusive and resilient health infrastructure in underserved urban communities around the world.

Materials and methods

Conceptual framework

This study employed the widely-used multi-level conceptual framework (Wang et al. 2020, Mbachu et al. 2024) to systematically explore and analyse the complex interplay of enabling and constraining factors influencing the institutionalization of linkages between IHPs and the formal health system in Nigeria. Practical examples from LIMCs of attempts at integrating IHPs show the dynamic interactions of individual, organizational, and external factors with integration efforts (Thapa et al. 2023b, 2023b, 2024, Das et al. 2024).

At the individual level, the conceptual framework allowed for the exploration of factors such as knowledge, attitudes, and behaviours of key stakeholders involved in informal health provision and the formal health system. At the organizational level, the framework provided a lens through which to assess organizational factors (structures, processes, and

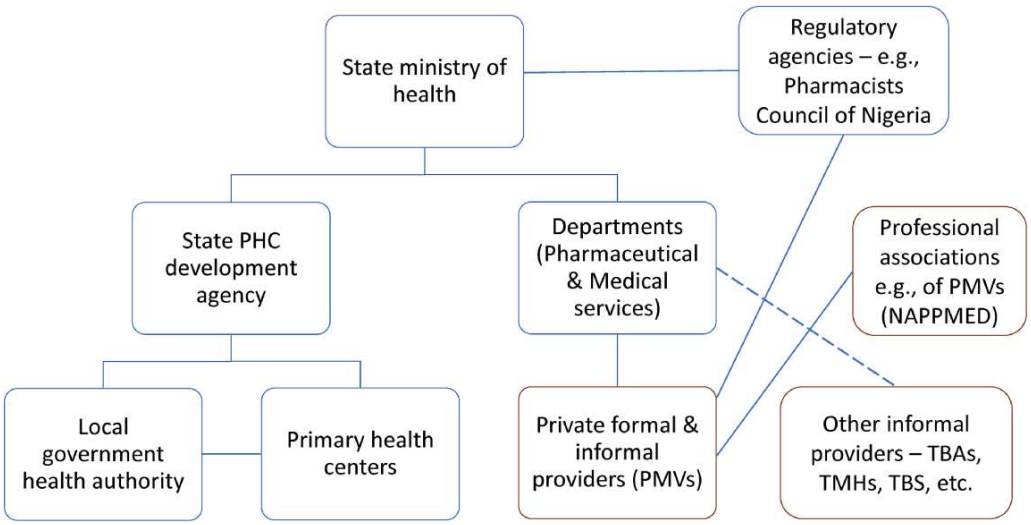

Figure 1. Schema of the urban health system in a typical Nigerian city. (TMH - Traditional Medicine Healers; TBS - Traditional Bone Setters; NAPPMED - National Association of Patent and Prioprietary Medicine Dealers)

dynamics) shaping the potential for linkage institutionalization within both informal health provider settings and formal health institutions. Examples include leadership support, resource allocation, communication channels, and functional referral systems and organizational policies.

For a more holistic understanding, the framework examined external forces shaping the feasibility and sustainability of linkages between informal and formal healthcare sectors. This encompassed factors such as socio-cultural norms, political dynamics, regulatory frameworks, economic incentives, and community dynamics.

The framework also helped to clarify the interconnectedness of factors across levels. For instance, organizational policies of supportive supervision or incentives for referrals can motivate individual IHPs, while a functional referral system can generate trust among individual providers and strengthen integration efforts.

Study area

The study was conducted in urban slums in Onitsha city, Anambra State, and Enugu city, Enugu State, Nigeria. Both cities were purposively selected for their large sizes, high numbers of urban slums, and high numbers and good mix of formal and informal providers. The projected 2022 population of Anambra State and Enugu State are respectively 5 962 596 and 4 663 857 people. These represent 45.4% of the Southeast sub-regional population and 5.3% of the Nigerian population (National Bureau of Statistics 2022).

Both states operate a formal health system with three tiers—primary, secondary, and tertiary level, for which the State Ministry of Health (SMOH) provides oversight and regulation. The Ministry of Health also licenses private (formal) providers (clinics and hospitals) and traditional medicine practitioners to practice in the State. Fig. 1 depicts a simplified visualization of the health system landscape with respect to service providers in the states. It shows that IHPs exist and operate at the fringes of the formal health system.

The actual study sites were slums in the two selected cities. The slums were mostly informal settlements that are either nestled within the cities or located in the outskirts of the cities. The slums are mostly devoid of basic amenities, including formal healthcare providers. The health care needs are predominantly served by IHPs (Onuh et al. 2024).

Study design and population

The study used an exploratory qualitative approach comprising key informant interviews (KIIs), in-depth interviews (IDIs), and focus group discussions (FGDs). It is part of a larger study to co-create and evaluate an intervention to link the formal and IHPs in the two cities.

The study involved five categories of participants namely, senior healthcare managers (policy makers and programme managers), formal healthcare providers, IHPs, and community representatives. The senior healthcare managers for the KII were drawn from the ministries of health in both states. The participants were purposively selected based on information collected during a stakeholder consultation meeting when they had previously engaged with, or were currently engaging with, IHPs in the areas of governance and/or service delivery. Twelve people participated in the KIIs.

The formal health providers were recruited from primary health centres (PHCs) in the cities. Four PHCs were purposively selected from each city for their proximity to the slums that have been shown to have high concentrations of IHPs. From each PHC, the health facility manager [also known as the officer-in-charge (OIC)] and the assistant facility manager were interviewed.

The IHPs were purposively selected to represent the different types of providers that are not formally trained in a licensed accredited institution but provide health services to clients. The factor underlying the selection of samples for IHPs was the relative sizes of the providers. A reconnaissance of the slum communities showed that there were almost twice as many PMVs as TBAs in the slum communities, and twice as many TBAs as bone setters. Sixteen IHPs were recruited from each state, making a total of 32 IHPs. They comprised 9 PMVs, 4 TBAs, 2 bone setters, and 1 traditional medicine practitioner (TMP). The IHPs offer a wide range of services that are linked to their names. Hence, PMVs sell all types of medicines, and sometimes measure blood pressure and body

Table 1. Summary of the study population

Participant category	Type of qualitative interview	Number of qualitative interviews
1. Senior healthcare managers	KII	12
2. Formal healthcare providers	IDI	16
• Nurse/midwife		2
• Senior community health extension worker (CHEW)/community health officer		6
• Junior CHEW		6
3. Informal healthcare providers	IDI	16
• PMVs		9
• TBAs		4
• Bone setters		2
• Traditional medicine practitioner		1
4. Community representatives	IDI	8
	FGD	8 (4 male and 4 female groups)
• Community leaders		
• Community members		

weight; the TBAs render antenatal care, childbirth, and postnatal care services; the bone setters attend to clients with bone fractures and other bone ailments; whilst the TMPs use herbs and traditional medicines to treat their clients.

Sixteen community leaders (eight per state) were selected from the catchment communities of selected PHCs in both states. The community leaders included: ward councillors who are elected political office holders; leaders of various community structures that engender developments in the communities, such as town-union presidents, chairpersons of ward development committees and leaders of women and youth groups; and leaders of the security outfits or neighbourhood watch. We purposively selected leaders who were resident and had spent >5 years in the communities.

The participants for FGDs included clients of the selected PHCs and clients of the IHPs who participated in the IDIs. The FGD participants were recruited with the help of the providers. A list of potential participants was generated, and participants were screened to ensure that they represented the clients of the formal and informal providers. The selection of clients of IHPs was done to ensure representation of the various categories of IHP. A total of eight sex disaggregated FGDs were carried out. Separate male and female FGDs were held to ensure that men and women could talk openly about their health conditions and experiences. Table 1 shows the categories of participants and the types and numbers of interviews conducted with each category.

Data collection

The interviews were conducted by five pairs of qualitative researchers using semi-structured interview guides that were tailored to the four categories of respondents (policy makers, formal providers, IHPs, and community leaders). Each pair of researchers had one experienced qualitative researcher who was knowledgeable about the research project and who contributed to designing the first drafts of the interview guides. Several meetings were held with the qualitative researchers to discuss and review the interview guides and ensure that everyone had a clear and good understanding of the questions or topics to be explored during the qualitative interviews.

Each qualitative interview was conducted by a pair of researchers. The data collection exercise lasted for ~6 weeks, and the process was guided by standard operating procedure that specified important procedures, safeguarding rules, ethical processes, rules of conduct of qualitative interviews, and security precautions that researchers should take.

The interview guides were structured into three topic areas that explored (i) the nature of the relationships between IHPs and the formal health system, (ii) opportunities for strengthening linkages in governance and service delivery, and (iii) facilitators and barriers to institutionalizing linkages between IHPs and the formal health system. The interviews were conducted in the English language, with some explanations in the local Igbo language where necessary.

All the interviews were audio-recorded (with the permission of the participants) using digital voice recorders. The length of time for the interviews ranged from 45 min for the KIIs and IDIs to 90 min for the FGDs.

Data analysis

Recorded interviews were labelled, organized, and manually transcribed in the English language. The transcripts were edited for punctuation, spelling, and errors in the use of tenses. Minimal edits were made to the transcripts to avoid making any significant changes to respondents' narratives.

The transcripts were coded in NVivo software by the pair of researchers that conducted the interviews. A coding framework of facilitators and constraints at the three levels (individual, organizational, and external/environmental) was applied deductively (Table 2). The framework was uploaded to NVivo for coding.

Word outputs of the coded texts were generated for each code and these outputs were thoroughly read and re-read to make interpretations and identify patterns in the responses. Themes were then generated based on these patterns.

Results

Tables 3 and 4 highlight the themes that emerged for each category of enabling and constraining factors, respectively, and the group(s) of participants from which the factors were identified. However, it should be noted that if a theme did not emerge from a particular participant group, this does not necessarily mean that the group did not concur with the theme, just that it was not mentioned in their interviews.

Individual and interpersonal facilitators

The individual-level factors include: (i) positive personal attitude towards the linkage; (ii) individual capacity or skills to provide expanded services; (iii) compliance with regulations; (iv) past personal experience in a linkage; (v) existing and future cordial relationship between IHPs and formal

Table 2. Coding framework

Name	Description
Facilitators: individual	Individual and interpersonal-level factors that facilitate linkage between informal providers and the formal health system, such as high individual capacity to provide health services, positive personal attitudes toward linkage, communication styles, an individual's experience with collaborating with formal providers, demographics like age or gender, existence of professional working relationships with other providers, or positions in social networks
Facilitators: organizational	Organizational and inter-organizational-level factors that facilitate linkage of informal providers into the formal, such as existence of regular meetings, availability of training, resources dedicated to strengthening linkages, formal structures for referral, data reporting, supportive supervision, and regulation
Facilitators: environmental	Environmental-level factors that facilitate linkage between informal providers and the formal health system, such as health policies that recognize informal providers, funders' policies that recognize and include informal providers, societal norms and cultural practices that recognize informal providers
Constraints: individual	Individual and interpersonal-level factors that constrain linkage between informal providers and the formal health system, such as poor capacity to provide health services, negative personal attitudes toward linkage, communication styles, an individual's lack of experience with collaborating with formal providers, demographics like age or gender, lack of professional working relationships with other providers, or positions in social networks.
Constraints: organizational	Organizational and inter-organizational-level factors that inhibit or could inhibit linkage of informal providers into the formal, such as absence of regular meetings, lack of training, resources not dedicated to strengthening linkages, lack of formal structures for referral, data reporting, supportive supervision, and regulation
Constraints: environmental	Environmental-level factors that constrain linkage between informal providers and the formal health system, such as health policies that do not recognize informal providers, funders' policies that do not recognize or include informal providers, societal norms and cultural practices that do not recognize informal providers

Table 3. Contextual enablers to linking IHPs to the formal health system

Themes		Senior managers	Formal providers	IHPs	Community representatives
Individual and interpersonal facilitators	Positive personal attitude towards the linkage	√		√	
	Individual capacity or skills to provide expanded services	√		√	√
	Compliance with regulations	√			
	Past personal experience in a linkage	√	√		
	Existing and future cordial relationship between IHPs and formal providers		√	√	√
	Monetary and non-monetary incentives to IHPs		√	√	
Organizational facilitators	Availability of organizational leadership at all levels—State, LGA, and zonal	√			
	Availability and enforcement of minimum standard requirements for registration and practice	√			√
	Availability of practice guidelines and tools for informal providers	√	√	√	
	Up-to-date database of informal providers at all levels	√			
	MoU with all parties involved	√		√	
	Strategies that incorporate capacity-building of IHPs through training and provision of job aides		√		
Environmental facilitators	Supportive health policies	√	√		
	Popularization of traditional medical practitioners	√			
	Donor support for the engagement of informal providers in service delivery	√			

providers; and (vi) monetary and non-monetary incentives to IHPs.

Regarding positive personal attitude towards the linkage, it was reported that informal providers who have a good understanding of the purpose and benefits of being linked to the formal health system, based on their past positive experience of being engaged in health system interventions, generally have a positive outlook towards the institutionalization of linkages with the formal health system.

> "Moreover, most of these PMVs are nurses who had worked in different formal hospitals and came out to establish a private chemist. Most times they even accompany health officers to do immunization. So, connecting them to work together will be very good." (Anambra, Community leader, male)

The IHPs that anticipate that being linked to the formal health system will improve their capacity to deliver quality services to clients had a positive outlook.

> "Let me speak from the heart, it will be nice if they can come around and give some teachings and make it clear what is obtainable. They can call us together and give us updates on new ways to approach certain cases and treatment." (Anambra, PMV, male)

Table 4. Contextual barriers to linking IHPs to the formal health system

Themes		Senior managers	Formal providers	IHPs	Community representative
Individual and interpersonal constraints	Negative personal attitude towards the linkage	√	√	√	√
	Lack of capacity and resources to take on additional roles in service delivery and data reporting	√			
	Protection of trade secrets	√			√
	Corruption among regulatory officers	√		√	
	Lack of trust in government policies and formal health system	√	√		
	Fear of increased unaligned demands on practice and quality of care	√		√	√
	Unhealthy competition for clients between formal and informal providers	√	√	√	√
	Unmet expectations of personal—financial—benefits of participation	√	√		
Organizational constraints	Lack of capacity—people and logistics—within the formal health system to supervise informal providers	√	√		
	Weak coordination and accountability within the formal health system	√			√
	Poor data management processes within the formal health system	√			
	Lack of training institutions to build the capacity of informal providers	√			
	Lack of use of feedback for decision making	√			
	Poor quality of care in public hospitals		√		√
Environmental constraints	Lack of funding to support and sustain linkage efforts	√	√		
	External interference on enforcement by regulatory agencies	√			
	Multiple regulators working in silos	√		√	
	Vested and political interests	√			√

> "You will be adding to the knowledge you have and drop the irrelevant ones. As long as there will be no trouble, the linkage will be good." (Anambra, TBA, female)

Participants also noted that some IHPs have received formal training from schools of health technology, and some have worked in the formal health system as service providers and have acquired the knowledge and skills to provide some health services. Our data showed that informal providers that had had some connection with the formal system were more accepting of being linked to the formal health system because they have the qualifications and skills to provide the standards of care that may be required of them.

With respect to compliance with regulations, participants stated that informal providers who have had no problems with adhering to the rules of the formal health system concerning their practice are also more inclined to the institutionalization of linkages.

Senior managers and formal providers who have had past positive experiences of engaging informal providers in service delivery were more inclined to support the institutionalization of linkages between informal providers and the formal health system. Some formal providers who felt that they had benefited from previous collaborations with IHPs supported the formalization of linkages with IHPs.

The existence of a cordial relationship between IHPs and formal providers was also identified as a factor that will enable and sustain linkages in service delivery. This means that those informal providers are already used to working with providers from the formal health system so it may not be a problem if the relationship is formalized.

> "Having a good relationship with them [IHPs] will enable me to have health talks with them. I can give them my number in the event of any case that might need my attention" (Anambra, OIC, female)

Some of the community members (FGD participants) also narrated how they had benefitted from being referred by IHPs to formal providers. This included being attended to quickly by a doctor because the referral was made from a known IHP source (Enugu, FGD, female).

Even in the absence of an existing relationship with providers in the formal health system, community members reported that some informal providers refer them to hospitals.

> "What they do is that in most severe cases they will only refer you to a doctor that is more learned and more experienced than they are." (Anambra, FGD, female)

Individual and interpersonal constraints

The individual level constraints include: (i) negative personal attitude towards the linkage; (ii) lack of capacity or skills to take on additional roles in service delivery and data reporting; (iii) unwillingness of informal providers to share information about their clients; (iv) protection of trade secrets; (v) corruption among regulatory officers—demand for informal payments; (vi) inability to afford licensing fees; (vii) lack of trust in government policies; (viii) fear of the consequences of the linkage on quality of care demands; (ix) negative attitudes of formal providers; (x) unhealthy competition between formal and informal providers; and (xi) unmet expectations of personal—financial—benefits of participation.

Some stakeholders in the formal health system do not believe that informal providers should be recognized in the health system because their services are below the acceptable standards of healthcare, whereas the traditional healers (IHPs) do not believe that they will benefit from a linkage to the formal health system because their practice is based on inherited traits and preternatural means. They feel they should be teaching the formal health system, not the reverse.

> "We don't go for any kind of training, but if there should be any form of training, we are the ones to be training others as what we do is inherited — which is handed down to us by our forefathers. If we should embark on a linkage, what are we going to learn that will be more than what was handed down to us by our ancestors?" (Anambra, Bone setter, male)

FGD participants also expressed that formal health providers may be unwilling to work with IHPs because they are more educated than the IHPs. Therefore, formal providers may feel that informal providers have nothing to offer the formal health system and as such would not be open to working with them.

> "There is a saying that goes 'two can't work together unless they agree' and that 'birds of the same feathers flock together' for me, this linkage will be difficult to happen because they feel they know it all, while the informal feel that they don't need to go through school to know what the formal knows about health care." (Anambra, FGD, female)

Many informal providers do not have the capacity (skills) or resources (personnel/staff and training) to take on additional roles in service delivery and data reporting. Most PMVs employ one person (many do not), and traditional practitioners (TBAs and TMPs) usually work alone or have a family member who assists.

TMPs do not normally disclose the contents (ingredients) of their herbal medications to other colleagues and the public. Hence, data reporting from them may not go beyond client information and clinical diagnosis. The male FGD participants in Enugu recounted the story of a traditional healer who has refused to collaborate with formal providers for this reason (Enugu, FGD, male).

IHPs are concerned that demands from government officials for informal payments may increase if their relationship with the formal health system goes beyond the current state of regulation. Also, IHPs do not trust the government and the formal health system. Some IHPs believe that government policies are always unfavourable to the private sector, and they perceive the formal health system as being too meddlesome in their relationship with IHPs.

> "There is a TBA that I learnt is good at delivery, I called her and asked her if I can be coming to her maternity to give immunization to newborns and be present at antenatal days, she refused that she uses her expertise to buy the vaccines to inject her patients, I tried to find out the nurse or LGA [local government area] that supplies her with these vaccines because she can't buy them directly, she was wary of me, so I did not bother her again." (Anambra, OIC, female)

Some informal providers fear that they may not be able to meet the demands on practice standards and quality of care that is associated with formal providers, such as medicines, improved infrastructure, and basic amenities. FGD participants from the communities stated that informal providers and formal providers are unique in their methods and treatment of diseases. TMPs and TBAs use unorthodox plants or herbal remedies that are unfamiliar and may be 'unacceptable' to formal providers.

A traditional medicine practitioner explained that the inability to meet standards of care may not be due to outright disregard for the standards, rather it could be because of the inherent differences in orthodox and unorthodox medical practices (Anambra, TMP, male).

Both the formal and informal healthcare providers felt that unhealthy competition for clients prevents referral from IHPs to formal providers. Also, informal providers do not believe that PHC workers are higher than them in the hierarchy of service providers.

> "Maybe tomorrow your clients will not come, they will take your clients. Why I have that fear is because anyone that opens a business, did so to be taking care of themselves and their children. You know when your clients are taken from you, you will have nothing to do, and that is why most people do not refer to PHCs." (Anambra, PMV, male)

> "You know that sometimes, [….] especially those that delivers at the home [referring to TBAs], you might go there, they will not welcome you well, and they will feel that these people have come to take their clients, that they have come to take their job." (Enugu, OIC, female)

FGD participants also reported that some informal providers are unwilling to refer their patients even when the patients are no longer responding to their treatments. The refusal to refer was perceived to be for two reasons, (i) pride and (ii) monetary gains. Participants felt that some informal providers express a sense of pride in the way they provide services to clients. So the decision to refer could be seen as a weakness or failure on their part. Informal providers may not want to lose the financial compensation that comes with delivering healthcare services.

Some respondents alluded to the fact that informal providers expect to receive financial compensation from government for any 'service' that does not generate personal income to them, such as referral, data reporting, distribution of commodities, and service delivery. One of the PMV respondents said that he would participate in data reporting, "If they [government] would bring books [registers] for record keeping and pay transport money for submitting data to the PHC or LGA." (Anambra, PMV, male)

A formal provider corroborated that money for transportation has been used in the past by implementing partners to attract IHPs into previous linkage interventions on service delivery task sharing, "What has actually helped us to work well […] is to provide transport fare, which has attracted them [IHPs]." (Enugu, OIC, female)

Organizational facilitators

Organizational level facilitators identified were: (i) availability of organizational leadership for informal providers at all

levels—State, LGA, and zonal; (ii) availability of minimum standard requirements for registration of informal providers; (iii) availability of practice guidelines; (iv) up-to-date database of informal providers at all levels; and (v) memorandum of understanding (MoU) for all parties involved.

Availability of leadership structures of informal providers at all levels enables communication with the group and makes it easier to manage groups. Also, the desire to be recognized as a professional group by the leadership enhances their cooperation with government officials to enforce regulations. All the IHPs have their 'professional' associations, that are more commonly seen as trade unions, that they use to self-regulate and protect their interests. They also interact with the Ministry of Health through their associations.

One of the senior healthcare managers recounted that the availability of minimum standard requirement for TMPs in Enugu State Ministry of Health, specifically, has enabled the screening of TMPs and the identification of eligible and ineligible practitioners for registration with the desk office in the Ministry.

Some community members also reported that the desire of the government to see a working health system may facilitate the linkage between IHPs and the formal health system. They reported that sometimes government sends a task force to monitor the activities of informal providers. For illustration:

> "I think the government cares because sometimes, you see all these chemists, herbal sellers, and other centres lock-up their shops and run away [from the task force]. I don't know whether the people that normally come around are from the state council or local government." (Enugu, FGD, female)

The formal providers expressed that linkage interventions in service delivery that incorporate capacity building for IHPs will make the IHPs more accepting of a linkage with the formal health system, as this will contribute to boosting their confidence to work with the more skilled formal providers.

The availability of practice guidelines such as an official medicines list for PMVs has contributed to ensuring they are constantly aware of the limits of their practice regarding the medicines they can stock and sell. The formal providers recounted that IHPs that were previously engaged in case finding for some diseases were able to keep health records of clients because they were trained and given data-collection tools for record keeping.

> "If I am working very well with them (formal heath system), they should bring registers, and I will refer people. They should compensate us like free drugs, mama kits, pampers *etc*. In the past, an NGO [non-governmental organization] gave me drugs, sanitary pads, pampers, mosquito nets, and cord clamps last year." (Anambra, TBA, female)

The SMOH has databases of registered and licensed PMVs and TMPs in the State. These databases are constantly being updated to ensure they are comprehensive. The database enables monitoring and supervision.

> "We now have a database of all the practitioners. [….] Our intention is to get all their activities under the regulatory eye of the [State] Ministry of Health. Now, as we speak, I have a database of all the traditional medicine practitioners in the State and last week, coincidentally, Federal Ministry of Health sent delegate of committee who are working on formalizing the recognition of the traditional health practitioners in the country." (Enugu, Policymaker, male)

Previous engagements of informal providers in service delivery were made easier by the signing of a MoU. The MoU is a contract that clearly outlines the responsibilities and rights of all the parties involved.

> "Before I became the State Reproductive Health Coordinator, I was working in […] a faith-based hospital and they had a memorandum of understanding with a TBA at xxx, who had more patients in antenatal care than any other hospital in this State. So, [the hospital] had a memorandum with her [the TBA] and she was using [the hospital] as a referral hospital. (Anambra, Programme manager, female)

The relevance of a MoU was reiterated by a bone setter. "We should have a memorandum of understanding, to avoid conflict of interest." (Anambra, Bone setter, male)

Organizational constraints

Organizational-level inhibitors of the linkage include: (i) lack of capacity—people and logistics—within the formal health system to supervise informal providers; (ii) weak coordination structures within the formal health system; (iii) poor data management processes within the formal health system; (iv) lack of training facilities or institutions to build the capacity of informal providers; (v) non-use of feedback and recommendations for decision making; and (vi) poor quality of care in PHCs and public hospitals.

The formal health system (specifically the SMOH and its agencies) lacks the human resources capacity and funds to holistically supervise IHPs. Previous linkages in service delivery between PHCs and IHPs were constrained by the inadequacy of PHC staff (in terms of number) to effectively supervise and support the IHPs.

> "…but the issue now in healthcare is lacking human resources, if this process starts and I am told to go for supportive supervision, it will be difficult because I will have no time for that, I won't go on my personal time. I am the only one at the Marine centre, I will find it difficult." (Anambra, OIC, female)

The departments and agencies of the SMOH are unable to effectively coordinate their internal activities. Hence, it would be even more challenging for it to take on the additional tasks of coordinating informal providers with regard to service delivery and data reporting. For instance, it was noted that health data management processes (collection, collation, analysis, reporting, and feedback) in the SMOH are poor, and the challenges could be amplified if the SMOH also tried to capture the data of informal providers.

Community leaders also highlighted that weak accountability impedes trust in PHCs. One participant shared his experience of how free bed nets that were supplied to PHCs from the government were mismanaged.

> "They brought treated bed nets here in big vehicles from the local government and the quantity of these nets filled one room. Eventually these nets all got lost… All the nets brought here were sold off." (Anambra, Community leader, male)

There are no training institutions for IHPs, particularly the traditional medicine practitioners. Hence, there are no standards for defining best/acceptable practice in traditional medicine. The feedback or recommendations from supervisory visits of informal (and formal) providers are not utilized by the SMOH for decision making. This could discourage supervisors in the formal and informal sector.

The poor quality of care in PHCs discourages informal providers from referring their clients to PHCs. This appeared to be a major concern for the community leaders and the IHPs.

> "Well, I will like the linkage to start working and we start working hand to hand. So, when we have cases beyond us, we bring the patients to them, but sometimes, the problem is that doctors are not available. I wish the doctors can be coming at least twice a week, then one will be confident and sure of the days that doctors are available on scheduled days." (Anambra, TBA, female)

Community leaders expressed their concerns that the communities' negative perceptions about PHCs and lack of trust in the PHCs could hinder their support for a linkage with IHPs. A community leader in Onitsha shared a mixed picture of what the PHC in his community represents to people,

> "…Some don't come to the health center because they feel it is for the poor while some don't come because the feel it is for the rich…" (Anambra, Community leader, male)

In addition to inadequate health infrastructure and equipment in PHCs, absenteeism of health workers and their negative attitudes towards clients discouraged people from using public hospitals. One community leader recounted his personal experience of delays in the public hospital that cost him his son's life,

> "My son was misdiagnosed in [a public hospital] … and he died… I now have a well-experienced private doctor in New Haven, where I go to if I have serious health issues." (Enugu, Community leader, male)

A community leader in Enugu was optimistic that a functional PHC would improve trust in the public health system, suggesting that the non-functional and inefficient nature of some PHCs and the ready availability of IHPs are driving the high patronage of informal providers.

> "My strong belief is that there is no way people will keep patronizing TBAs for instance if the health centre here starts working efficiently." (Enugu, Community leader, female)

Environmental facilitators

Environmental-level factors that could facilitate the linkage between informal providers and the formal health system include: (i) the existence of supportive national policies such as the Task Shifting and Task Sharing policy, and the policy for formalization of TMPs; (ii) global popularization of traditional medicine practice; and (iii) donor support and funding for programmes that include informal providers.

The Task Shifting and Task Sharing policy provides a legal framework for shifting basic health services to lower cadres of health workers and service providers. The National Health Act legitimizes TMPs as service providers and recommends their integration into the health system. This informed the creation of TMP desks in the Federal and State Ministries of Health. The Community Health Management Information System promotes community-level collection and reporting of health data through community volunteers.

There are some externally funded health programmes that approved the engagement of informal providers in service delivery. Examples include the World Bank-funded Roll Back Malaria and Saving One Million Lives programmes. Some of the programmes adopted monetary and non-monetary rewards as strategies to incentivize IHPs for good compliance and performance.

> "If I am working very well with them (formal heath system), they should bring registers and I will refer people. They should compensate us like free drugs, mama kits, pampers *etc*. In the past, an NGO gave me drugs, sanitary pads, pampers, mosquito nets, and cord clamps last year". (Anambra, TBA, female)

> "What has helped us to work well [with IHPs] are those implementing partners that have been helping to provide some small packs and even transport fare, food, and other incentives that have attracted them [IHPs]." (Enugu, OIC, female)

Environmental and sustainability constraints

Environmental factors that inhibit the linkage of informal providers into the formal health system include: (i) lack of funding to support and sustain supportive supervision; (ii) external interference by the justice system on the enforcement efforts of regulatory agencies; (iii) multiple regulators working in silos; and (iv) vested political interests that undermine policy making and implementation.

Respondents in Enugu, where previous interventions to involve IHPs in service delivery were supported by donors, decried the lack of sustainability due to the failure of government to continue funding the interventions that enabled the IHPs to be linked to the formal health system in delivering some health services when donors exited.

> "Our problems are many but the most important of it is funding of the activities. We need support and we have been scouting for donors, but we haven't been successful. Most of the people that come around, apparently, are not interested in what we are doing, they have other areas they are interested in funding". (Enugu, Policymaker, male)

> "In as much as we [government officials/regulators] want to bring them [informal providers—PMVs] to compliance, they try to resist inspection and at times they put all sorts of wedges, and they try to obtain frivolous court injunctions and the rest of it which undermine our activities". (Enugu, Policymaker, male)

Community struggles may stifle efforts towards health goals. In Onitsha, a community leader narrated how leadership struggles put everything on hold in his community for more than 5 years (Anambra, Community leader, male).

Discussion

Findings show there are constraining and facilitating contextual factors that will determine the level of success and effectiveness of strategies for linking the IHPs to the formal system. These factors are discussed for each level—individual and interpersonal, organizational, and environmental.

Individual- and interpersonal-level influences on integration of IHPs to the formal health system

Personal attitudes of both formal and informal providers can either facilitate or constrain the integration of informal providers into the formal health system through referrals and supervision. This finding resonates with existing literature on healthcare integration, health systems strengthening, and provider collaboration (Nsirim et al. 2015, Fasawe et al. 2020, Thapa et al. 2023b). Studies have highlighted that positive attitudes, shared values, and mutual respect among providers can foster effective collaboration (Thapa et al. 2023b). A supportive and respectful attitude between formal and informal providers enhances communication and trust (Fasawe et al. 2020). Conversely, negative attitudes, resistance to change, or perceived threats to professional autonomy breed distrust and suspicion which can impede integration efforts (Nsirim et al. 2015, Thapa et al. 2023b). This underscores the need for interventions and strategies that target individual attitudes, such as training programmes on the roles of different providers, as well as those that promote a positive organizational culture that values collaboration and innovation. Leadership support and advocacy for integration are also needed, i.e. strong leadership that communicates the benefits of integration and advocates for a collaborative culture.

The capacity of informal providers to deliver quality services and meet required standards of care was reported in this study as a facilitator and a constraint to two-way referral between IHPs and formal providers. The capacity of informal providers to collaborate with formal healthcare structures and establish effective referral networks is a recurrent theme in the literature (Chukwuma et al. 2017, 2019, Thapa et al. 2023b). Informal providers who possess the skills and resources to communicate and coordinate with formal healthcare entities are better positioned to contribute to a cohesive and integrated healthcare system.

Existing literature on healthcare integration, quality of care, and the role of informal providers highlights the need for capacity building initiatives for informal providers to ensure the delivery of high-quality and safe healthcare services (Thapa et al. 2023a, 2023b). Training and skills enhancement programmes that focus on clinical skills, adherence to best practices, and familiarity with evidence-based guidelines contribute to improving the quality of care provided by informal providers and prepares them for potential integration into the formal health systems (Das et al. 2016, Mustapha et al. 2020). It is also important to make resources (such as essential supplies, record keeping tools, and clinical guidelines) available to informal providers, as this will enhance their capacity to meet established standards of care. Similarly, PHCs should be better resourced as this will build trust in PHC services and enable effective referral.

Training IHPs and providing them with essential supplies and clinical guidelines can have significant impact on the health outcomes of communities, particularly in contexts where IHPs are a primary source of care for underserved populations. Training equips IHPs with knowledge and skills to correctly diagnose and manage common illnesses, reducing misdiagnosis and inappropriate treatments. A study in Bangladesh found that training IHPs reduced inappropriate antibiotic use by 25%, leading to better client outcomes (Hanson et al. 2024).

The nature of the existing relationship between informal providers and the formal health system influences willingness to refer or co-manage clients. This finding aligns with and extends existing literature on the dynamics of informal/formal provider relationships and collaboration in service delivery (Nsirim et al. 2015). Existing collaborations, whether formalized or informal, can serve as a foundation for successful integration efforts. Positive historical interactions may foster trust, facilitate communication, and create a conducive environment for building more formal linkages. Trust in the government and the formal health system was identified in this study as fundamental to the success of linkage interventions in governance, service delivery, and data reporting. It is considered a key factor in overcoming challenges and facilitating successful linkage. Trust is a central theme in literature exploring collaborative relationships between different healthcare providers (Kumah 2022). A positive existing relationship characterized by mutual respect, understanding, and effective communication can enhance the willingness of both informal and formal providers to engage in collaborative efforts.

Organizational-level influences on integration of IHPs into the formal health system

The effects of organizational factors, including leadership structure, coordination mechanisms, and accountability mechanisms, on linkage between formal and informal providers are reported in the literature (Thapa et al. 2024). Leadership plays a pivotal role in healthcare integration. Effective leadership structures and coordination mechanisms within formal health systems can set the tone for collaborative efforts (Thapa et al. 2023b). Leadership that champions integration and fosters a collaborative culture is associated with successful initiatives. Similarly, well-established coordination systems with clear lines of communication, regular meetings, and feedback mechanisms between formal and informal providers enhance collaboration and facilitate the sharing of information and resources (Thapa et al. 2023b).

The lack of resources (human and financial) within the public health system to manage linkage with informal providers was a recurrent theme among the senior healthcare managers and formal providers in the study. Existing literature underscores the significance of organizational capacity, including infrastructure, and workforce readiness, in facilitating successful integration efforts (Thapa et al. 2023b). Funding availability is critical for the sustainability of linkage programmes to maintain training programmes, coordinate efforts, and monitor the impact of integration on healthcare outcomes (Thapa et al. 2023b). Financial incentives motivate stakeholders to engage in collaborative efforts to cover costs associated

with training, supervision, and coordination (Chukwuma et al. 2019, Thapa et al. 2023b).

Environmental-level influences on integration of IHPs into the formal health system

The regulatory environment and policy frameworks play a critical role in shaping organizational responses to integration. This study found that there are supportive policies for integrating informal providers into the formal health system. Supportive policies that provide clarity on the roles of different providers and promote collaboration are associated with successful linkage in service delivery (Thapa et al. 2023b, 2024). This study also found that there are multiple regulatory agencies for informal providers. Regulatory frameworks that facilitate rather than hinder collaboration contribute to a conducive environment. However, fragmentation of regulators can give rise to inconsistent regulations, weak oversight and enforcement, increased administrative burden and costs on informal providers (ultimately borne by patients), and resistance and poor compliance to regulations (Oyeyemi et al. 2020, Thapa et al. 2023b). These challenges need to be addressed through strategic coordination, community engagement, and ongoing efforts to streamline and harmonize regulations.

Effective regulation of IHPs is needed to ensure safety and improve the quality of services provided to clients. For instance, regulations that mandate regular training and certification of IHPs will ensure the provision of safer and more effective care. Regulations that require IHPs to refer complex cases to formal health facilities will ensure that clients receive timely and appropriate care for severe conditions. Moreover, regulatory frameworks that establish mechanisms for community monitoring of IHPs can strengthen accountability and ensure that clients are protected from negligence.

The strength of this study lies in its comprehensive approach, incorporating a diverse range of perspectives from key stakeholders involved in healthcare delivery. The inclusion of participants representing different facets of the healthcare system, coupled with the exploration of contextual factors in two distinct states, enhances the relevance and applicability of the findings to the broader Nigerian healthcare context. However, the study is not without limitations. The findings, while illuminating within the context of the two states studied, may not be entirely generalizable to other regions or countries. The unique contextual factors of these states may not fully represent the diversity of healthcare contexts in Nigeria or other global settings.

Evidence from the study shows that linking IHPs to the formal health system is desired by healthcare consumers, the IHPs, and major formal health system stakeholders. Such a linkage is seen as a win–win situation for the health sector that will enable access to appropriate healthcare services and improve the health status of residents of underserved areas such as urban slums. This study also provides valuable insights into the contextual influences on linking informal healthcare providers into the formal health system within the Nigerian health system. These insights are critical for policymakers, healthcare managers, and practitioners seeking to navigate the intricate dynamics of linking informal providers to the formal health system. Hence, the lessons from previous short-lived similar linkages that were not sustained because of a paucity of funds and trust issues should provide guidance for future linkages to ensure their effectiveness and sustainability over time.

It is envisaged that the general interventions that will be used in linking the IHPs to the formal health system include integrated two-way referral systems between the IHPs and primary healthcare centres and vice versa, and data collection from the IHPs with the integration of such data into the National Health Management Information System. In addition, there will be a system for oversight, continuous training of IHPs to improve their quality of services, and supportive supervision of the IHPs by the formal health system. However, part of the suite of interventions will be tailored to the different IHPs to improve their capacity to provide quality health services to their particular clients (e.g. TBAs will be trained to provide quality maternal and newborn care services) and for linking them to the formal health system. Altogether, the overall impact of the linkage will be enhanced provision of appropriate health services by the IHPs, leading to elimination of some of their harmful practices and ultimately a significant improvement in the health status of urban dwellers.

Author contributions

Conception and design of the work, data collection, and drafting of the article: O.O. and C.O.M. Data analysis and interpretation: C.O.M. and H.E. Critical revision of the article: H.E. and I.A. All authors approved of the version of the article to be submitted.

Reflexivity statement

Our paper, written by one man and three women at various career stages, exemplifies inclusivity. The lead and corresponding authors, from the country where the research was implemented, ensured culturally relevant insights. The outsider perspectives of the last two authors, who are not from the country where the research was implemented, brought valuable, unbiased insights that significantly enriched the analysis, resulting in a more impactful and credible paper.

Ethical approval

Ethical approval for the study was obtained from University of Leeds School of Medicine Research Ethics Committee (MREC 21–009) and the Health Research Ethics Committee of University of Nigeria Teaching Hospital Enugu (NHREC/05/01/2008B-FWA00002458-1RB00002323).

Written informed consent to participate in the study was obtained from all participants before the interviews. Participation was voluntary, and all participants were informed of the purpose of the study and their roles and rights, including that they could withdraw their participation at any time during data collection and before commencement of data analysis.

Conflict of interest

None declared.

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Data availability

The data generated or analysed for this study are included in this published article.

Abbreviations

FGD Focus group discussion
IDI In-depth interview
IHP Informal health provider
KII Key informant interview
LGA LMIC Low- and medium-income country
MoU Memorandum of understanding
NGO Non-governmental organizations
OIC Officer-in-charge
PHC Primary healthcare centre
PMV Patent medicine vendor
SMOH State Ministry of Health
TBA Traditional birth attendant
TMP Traditional medicine practitioner

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