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ORIGINAL ARTICLE

The Perspectives of Lagos Healthcare Leaders on Faith-Institution Involvement in Hypertension Health

Les points de vue des responsables de la santé de Lagos sur l'implication des institutions confessionelles dans la santé de l'hypertension

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ABSTRACT

BACKGROUND: Hypertension is an important challenge for the Nigerian healthcare system and multiple stakeholder mitigation is imperative. Faith institution mitigation is evolving but the opinion of healthcare leaders on their involvement in hypertension remains an important gap.

OBJECTIVE: To explore the perspectives of a cross-section of leaders of healthcare institutions in Lagos (Nigeria) on faith institution-facilitated hypertension intervention against the background of current practice.

METHODS: Attempts were made to recruit 152 healthcare institution leaders who were contacted using electronic mails, telephone conversations, institutional social media communication, institutions' web-mails and other contacts. The views of consenting leaders were gathered using an exploratory questionnaire survey, and analysed.

RESULTS: The views of 23 leaders from the variety of institutions were that most (60%) hypertension cases were diagnosed during emergency presentations; and the public's hypertension health knowledge remains generally inadequate. Hypertension information dissemination was mostly verbal rather than in written/print form. Basic resources are deployed in hypertension management. There was majority support for collaboration in hypertension health promotion (90.0%), blood pressure screening (95.7%) and hypertension referral (95.5%). Fewer institutions had the resources to support hypertension health promotion (55.0%) and blood pressure screening (42.1%) compared to hypertension referral (90.9%).

CONCLUSION: There is good support for faith institution involvement in hypertension health, with a particular interest in and capacity for health system referral. Deploying scarce resources to collaborate may be challenging. However, collaboration and better resources could improve hypertension prevention and management. Further work is needed for context specific innovation so faith institutions can contribute to hypertension health.

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KEYWORDS: Hypertension, Lagos, Faith institutions, Healthcare leaders, Intervention

RÉSUMÉ

CONTEXTE: L'hypertension représente un défi majeur pour le système de santé nigérian, et une atténuation impliquant plusieurs parties prenantes est impérative. L'atténuation par les institutions religieuses est en évolution, mais l'opinion des leaders de la santé sur leur implication dans l'hypertension reste une lacune importante.

OBJECTIF: Explorer les perspectives d'un échantillon de leaders d'institutions de santé à Lagos, Nigeria, sur l'intervention contre l'hypertension facilitée par les institutions religieuses, dans le contexte de la pratique actuelle.

MÉTHODES: Des tentatives ont été faites pour recruter 152 dirigeants d'établissements de santé qui ont été contactés par courriels électroniques, conversations téléphoniques, communication sur les médias sociaux institutionnels, courriers électroniques des établissements et autres contacts. Les points de vue des dirigeants consentants ont été recueillis à l'aide d'une enquête par questionnaire exploratoire, puis analysés.

RÉSULTATS: Les opinions de 23 dirigeants provenant de divers établissements indiquaient que la plupart des cas d'hypertension (60%) étaient diagnostiqués lors de présentations aux urgences; et les connaissances du public sur la santé liée à l'hypertension demeurent généralement insuffisantes. La diffusion d'informations sur l'hypertension se faisait principalement de manière verbale plutôt que sous forme écrite/imprimée. Des ressources de base sont utilisées dans la gestion de l'hypertension. Une majorité soutenait la collaboration dans la promotion de la santé liée à l'hypertension (90,0%), le dépistage de la tension artérielle (95,7%) et l'orientation des patients atteints d'hypertension (95,5%). Moins d'institutions avaient les ressources pour soutenir la promotion de la santé liée à l'hypertension (55,0 %) et le dépistage de la pression artérielle (42,1 %) par rapport à l'orientation vers l'hypertension (90,9 %).

CONCLUSION: Il existe un soutien significatif pour l'implication des institutions religieuses dans la santé liée à l'hypertension, avec un intérêt particulier et une capacité à orienter vers le système de santé. Le déploiement de ressources limitées pour la collaboration peut présenter des défis. Cependant, la collaboration et de meilleures ressources pourraient améliorer la prévention et la gestion de l'hypertension. Des travaux supplémentaires sont nécessaires pour des innovations spécifiques au contexte afin que les institutions religieuses puissent contribuer à la santé liée à l'hypertension. **WAJM 2024; 41 (4): 452 - 468.**

MOTS-CLÉS: Hypertension, Lagos, Institutions religieuses, Responsables de la santé, Intervention

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INTRODUCTION

Hypertension, as the leading risk factor for cardiovascular diseases, significantly contributes to high rates of preventable morbidity and mortality worldwide, particularly in low and middle-income countries.[1-6] Globally over 1.13 billion adults had hypertension in 2015.[7,8] The highest global prevalence, 46%, is in the World Health Organisation's Africa region;[6,9,10] and its populations bear the heaviest of the global morbidity and mortality burden.[6,10-12] Nigeria's overall pooled prevalence was estimated to have increased to 30.6% over two decades to 2020 and is projected to worsen[13]

Nigeria's healthcare system has multiple vulnerabilities[14] that means hypertension primary prevention, early detection, and prompt management are fraught,[5-18] health inequalities are widespread,[19] and there is frequent underachievement of health outcomes.[20,21] Others include inadequate multi-sector collaboration in health promotion, lack of coordination between governmental agencies, inadequate resources,[22] corruption, archaic infrastructure, inadequate funding, migration of professionals abroad, adulterated medication, inter-professional disputes and industrial strikes, and ineffective leadership.[23]

A wide range of stakeholders including nongovernmental organisations, faith institutions, and the public, private, and charitable healthcare sectors, has contributed to mitigating these challenges.[24-27] Their continuing relevance is acknowledged in the identification of "partnerships for health" as one of the eight priorities in the country's first strategic health development plan for transparent, collaborative, and accountable healthcare delivery to transform the healthcare system.[28,29] Partnerships for health referred to the direct involvement in healthcare provision of the private sector, non-governmental organisations, donor or development partners, and social and economic sectors. Hence, alongside policymakers, the leaders and administrators of public, private, and charitable healthcare institutions have relevance as potential forefront stakeholders in public health approaches, including novel hypertension interventions that reduce the hypertension burden on the population.

Faith institutions like churches and mosques are culturally and socio-politically influential in many countries.[30-33] They have been acceptable settings for health-related behaviour intervention;[34-43] and faith leaders have specifically been influential in the lifestyle, health-related choices, and behaviours of faith institution users.[44,45] In Sub-Saharan Africa and Nigeria, faith leaders are potential healthcare assets and have been influential in the implementation of a range of programmes from research and housing to healthcare.[40,46-56]

The literature is however evolving on the roles of faith institutions in hypertension interventions, and practically non-existent on the opinion of healthcare leaders on faith institution-facilitated hypertension intervention in Sub Sahara Africa.[57]

Therefore, the objective was to explore the perspectives of the leaders of local healthcare providers in Lagos, Nigeria, on faith institution-facilitated hypertension intervention against the background of current practice, so these could contribute to developing a novel hypertension intervention. The research question is: What are the perspectives of healthcare institution leaders or administrators on faith institution-facilitated hypertension health promotion, hypertension screening, and health system referral?

SUBJECTS, MATERIALS AND METHODS

Methods

An online survey was used to gather the opinions of Lagos (Nigeria) based consenting leaders or administrators of public, private, and other healthcare institutions, including those of charitable or faith organisation-owned healthcare institutions. A leader or administrator was the most senior clinical or nonclinical decision maker of any title or description but with the responsibility for and knowledge of the day-to-day functioning of the institution, and access to data, policies, procedures, and the privilege to grant or deny access to the institution's participation in research or collaborations.

Questionnaire

The online questionnaire was constructed on Qualtrics XM software, pretested on a small sample of seven medical practitioners, and administered online to participants. It collected data on healthcare leaders' genders and roles within the health institutions, and their health institutions' locations, types, kinds of operation, remuneration profiles, staff size, and staff capabilities. In alignment with the research objectives, the questions were designed to address data in several domains: routes of patients' presentations with hypertension, health leaders' preferred hypertension management and information dissemination modalities, their perception of patients' hypertension knowledge, their perspective on faith institution involvement in hypertension health promotion, blood pressure screening and health system referral, their potential collaboration with faith institutions in these areas (hypertension health promotion, blood pressure screening and health system referral), and their views on the capacity of their healthcare institutions to support collaboration with faith institutions in hypertension health. The hypertension presentation question presents the opportunity to explore the distribution of presentations between non-emergency and emergency

presentations, and potentially contextualise emergency presentations, which are more likely to be complicated and have higher risks of complications. This question was explored using healthcare institutions' data on the average yearly diagnoses of hypertension in patients arriving via emergency routes and non-emergency routes. Pooling healthcare institutions' data assisted the determination of the relative percentages of hypertension diagnoses across these different routes.

The hypertension management question uses the types of resources deployed in hypertension management to understand the preferred management modalities and estimate how well-resourced the institutions were. The hypertension information dissemination question explores the distribution of patient education preferences between patient-responsive on-demand information sharing, information sharing on physician discretion, delegation to patients' discretion, or the preference to ignore information sharing. The perception of patients' hypertension knowledge question measures how poorly or well-informed patients were in key aspects of hypertension. The 'absolutely uninformed' response category was patients perceived to have no knowledge at all. The 'poorly informed' category was patients with some knowledge but at a quality or level perceived to be insufficient. The 'vaguely informed' response category was patients whose knowledge was perceived as unclear or uncertain. The 'inadequately informed' response category was patients whose knowledge was perceived insufficient to be deemed as informed to a sufficient level. The 'moderately well' informed response category was patients whose knowledge was good yet fell short of the highest level or quality. The 'very well informed' response category was those patients whose knowledge was perceived as the highest level or quality for a patient. The questions on faith institution involvement in hypertension health promotion, blood pressure screening and health system referral assess attitudes as an indirect measure of potential support healthcare leaders may potentially contribute to future interventions. The 'no involvement' response category refers to an attitude that faith institutions should not participate at all. The 'limited involvement' response refers to an attitude that faith institutions should participate but with restrictions. The 'more than limited involvement' response refers to an attitude that faith institutions should freely participate and have only minimal restrictions. The 'full involvement' response refers to an attitude that faith institution participation should be entirely free and without restrictions or limitations.

The questions on the capacity of healthcare institutions to support collaboration with faith institutions in hypertension health assess attitudes to potential partnerships in hypertension health. The 'agree' response category indicates potential prospects for partnerships, collaborations or opportunities in the specific question domain, while the 'disagree' response category indicates potential hurdles for partnerships in specific question domains.

Participant recruitment

Given that the study was exploratory, to generate valuable insights it was desirable to recruit a sample that was diverse and as close to being representative as possible. A truly random sampling was not feasible due to resources, logistical constraints, and limitations in finding a useable comprehensive sampling frame. A diverse sample would include government-owned and nongovernment-owned, teaching and non-teaching institutions, as well as those delivering primary, secondary, and tertiary care. A sample size calculation was not a strict necessity. As an alternative to random sampling, a combination of convenience sampling and voluntary response sampling strategies was employed. The convenience sampling aspect involved identifying healthcare institutions in Lagos accessible via telephone, email, web-mail, social media, and institutional websites. This approach eliminated the necessity for direct physical visits to access during concurrent COVID-19 restrictions. Efforts were made to incorporate as diverse a range of institutions as possible. The voluntary response sampling aspect involved encouraging healthcare institution leaders to participate in the study voluntarily. This encouragement occurred during communication through the identified channels.

Access attempts were made via multiple channels to recruit 152 healthcare institution leaders over 8 months. The channels included institutional electronic mails, web-mails and Social Media platforms, medical practitioner network WhatsApp groups, and telephone conversations with healthcare institution representatives responding to these attempts. These included 108 electronic mail conversations; 12 enquiries through organisational web-mails; 44 telephone conversations with various gatekeepers to healthcare institutions; 67 conversations with healthcare institution officials via organisational WhatsApp; WhatsApp message circulation within an umbrella medical practitioners' association; and WhatsApp message circulations within network group of private medical practitioners (Table 1).

The best available sampling frame, the online national health facility registry, presented the limitations of incomplete and unusable contact details for healthcare institutions.[58] Similarly, there was no publicly accessible state-level equivalent registry or a register from where non-governmental organisation-administered healthcare institutions

could be identified. Concurrent COVID-19 enforced restrictions meant that the only viable potential recruitment channels available were electronic mail, social media and telephone. It was therefore deemed justifiable not to pursue face-to-face recruitment. Nevertheless, all Lagos healthcare providers across all the local government areas that were publicly or commercially contactable, or with an online or social media presence were approached, and no particular subsection was preferentially targeted.

The inclusion criterion was being a leader or administrator of a healthcare-providing institution in Lagos, Nigeria, and being willing to participate in the survey. The exclusion criterion was unresponsiveness to invitation, or withdrawal from the survey at any time for any reason.

Eligibility screening was integral, with recruited participants being the most senior leaders available. It included reading the research information leaflet, having any clarifications responded to where needed, and then confirming by telephone or electronic mail their responsibility for running their department or the entire healthcare institution, having access to data, policies, procedures, and the privilege to grant or deny access to the institution's participation in research. The information leaflets and link to the survey were supplied via electronic mail, but also via WhatsApp messaging where preferable to the participants. Signed consents and signatures were supplied online through Qualtrics on initiation of the questionnaire.

Data analysis

Data analysis was done with the IBM SPSS Statistics 27 application and Microsoft Excel. For analysis and discussion, the sole healthcare institution owned by a faith-based organisation was assigned as a public provider due to its humanitarian, non-commercial ethos that sharply contrasts with private institutions and its operation as a publicly owned institution. Missing data were excluded from analysis within the parameters for which they were missing. It was necessary to analyse the associations between the opinions of participating public and private healthcare institutions leaders' on agreement with hypertension health collaborations with faith institutions. The null hypothesis tested was that there was no significant relationship between the proportions of participating public and private healthcare institutions leaders' agreement on individual questions on hypertension health collaborations with faith institutions. For this, frequencies and percentages presented in Table 5 were analysed. The chi-squared test for independence was utilised, using the N1 approach with the alpha threshold set at 0.05. Practical constraints had meant a non-random sampling had been employed although efforts were made to ensure that as diverse a representation as possible was sampled within the available resources. The sample size was relatively small, potentially impacting the generalisability of the results. Despite these limitations, the chi-squared test for independence was conducted due to its robustness with categorical data. The degrees of freedom were manually adjusted to accommodate the N1 approach. Additionally, 95% confidence intervals were computed using SPSS syntax to provide insight into true proportion ranges. The MedCalc software package59 was utilised to double-check the results. There had also been the intention for the medians/distribution of public and private healthcare leaders' opinions to be tested using the independent-samples median test / independent-samples Mann-Whitney U tests, but these was precluded by the sample size. Data generated were stored securely on the University of York server.

Ethics

The study complied with and received ethics approvals in Nigeria (Nigerian Institute of Medical Research – IRB-21-049) and the United Kingdom (University of York Health Sciences Research Governance Committee - HSRGC/2021/448/E). There was no use of incentives of any description. All participants were adults who voluntarily gave consent based on their understanding after reading the study information, and full opportunity to satisfy any enquiries about the study

RESULTS

The key characteristics of participating leaders and institutions are outlined in Table 2. Twenty-three healthcare leaders provided full responses: 13 from privately owned institutions, nine from government or public-owned institutions, and one from an institution owned by a faith-based organisation. The healthcare institutions were located in 12 of Lagos State's 20 Local Government Areas, covering 72% of the population of Lagos State (Table 1). There were 16 male (69.6%) and 7 female (30.4%) leaders. Most (78.3%) were clinicians. Most (60.9%) of the institutions had been in operation for over 20 years. The majority were privately owned and managed (13, 56.5%), nine (39.1%) were publicly owned and government managed, while one (4.4%) was faith institution owned. The healthcare institutions provided primary care only (17.4%), secondary care only (39.1%), tertiary care only (21.7%), a combination of primary and secondary care (17.4%), and a combination of primary, secondary and tertiary care (4.4%). Healthcare institutions' services were delivered on inpatient only (26.1%), combined inpatient and outpatient (43.5%), and a combination of critical care, inpatient and outpatient bases (30.4%). The commonest form of health institution remuneration was direct out of pocket

Table 1: Overview of the recruitment

Input		Process	Output	
Duration	**Access attempts to health institution leaders**	**Outcome of Access attempts**	**Healthcare leaders responding to survey**	**Breakdown of full respondents**
8 Months	108 direct electronic mails to healthcare institutions 12 organisational web-mails to healthcare institutions 67 conversations with healthcare institutions via organisational WhatsApp 35 organisational Social Media including Facebook invitations 44 Phone calls with gatekeepers to Healthcare Institutions 1 WhatsApp message to an umbrella medical practitioners' association via a member practitioner 3 WhatsApp messages to 3 network group of private medical practitioners via a member practitioner 6 Phone and WhatsApp conversations with medical practitioners accessed through their personal contacts	Multiple intentions to participate that did not result in participation 1 committee meeting within health institutions to decide on participation 4 meetings and communication between gatekeepers and chief clinicians/administrators within health institutions to decide on participation Informal discussions with relevant gate keepers to healthcare institutions Unqualified decisions not to participate / unwillingness to participate / deflection to further bureaucracy	27 healthcare institution leaders 4 Incomplete responses • 3 Privately owned • 1Government owned 23 Full responses	23 Full responses Type of healthcare institution: 9 Government owned 1 Faith Institution owned 13 Privately owned Healthcare providers Primary role of respondents: 16 - purely clinical roles 3 - clinical and administrative 4 -primarily administrative Gender: 16 Male, 7 Female

payment from patients at an average 82.8%(89.4% Public, 78.0% Private), and surpassed payment by employers at an average of 7.0%(6.9% Public and 6.5% Private) and payment by the state at an average of 3.9% (16.7% Public and 4.3% Private).

All the institutions manage hypertension patients. Emergency presentation with hypertension (30%) and hypertension diagnoses during emergency presentation for other conditions (30%) were the leading source of cases. These were followed by non-emergency diagnosis in new patients (29%), referrals (8%) and planned routine checks of existing patients (3%).

How well-informed healthcare leaders thought patients were in five areas of hypertension knowledge is illustrated in Figure 1. The median opinion on all areas of knowledge was that patients were inadequately informed. On *"the causes of or risk factors of hypertension"* and *"the need to combine non-pharmacological measures and pharmacological treatment"*, the most common opinion was that patients were inadequately informed. On the "potential complications of hypertension", the opinions that patients were poorly informed and moderately well informed were jointly most common. On what to do *"to reduce hypertension risk"*, the most common opinion was that patients *were inadequately informed,* but that opinion was as common as that they were poorly informed. On the *"importance of ongoing blood pressure measurement or hypertension monitoring"*, the most common opinion was that patients were moderately well informed, although this was as common as that they were inadequately informed.

No significant difference was found between the perceptions of the leaders of public and private institutions on patient knowledge in each of the five areas of hypertension knowledge (Table 3).

Healthcare institutions used a variety of methods to disseminate hypertension information (Table 4). The most frequently used method was answers to individual patient's direct questions (73.9%). Routine verbal information and advice were more frequently used at private institutions (84.6% v 33.3%), where such advice was more frequently adapted to patients' hypertension (69.2% v 55.6%). Otherwise, public and private institutions were identical. Never or rarely giving patients printed hypertension information was more common practice at public compared to private institutions (61.5% vs. 38.5%); and never or rarely giving patients copies of hypertension guidelines was more common practice at private compared to public institutions (55.6% vs. 44.4%). Never or rarely telling patients to read hypertension information displayed in clinics was more common at private compared to public institutions (66.7% vs. 33.3%). Rare use of posters to give information and advice was more common practice at private compared to public institutions (62.5% vs. 37.5%). Rarely referring patients to websites or internet resources of information was a more common practice at private compared to public institutions (66.7% vs. 33.3%).

Public and private institutions were similar in the resources they deployed in routine hypertension management, but private institutions deployed slightly more of every type of resource compared to public institutions. Due to the small numbers, the significance of the differences was not assessed (Figure 2). Policies and treatment protocols were less popular resources compared to individual clinicians' knowledge, familiarity with hypertension, and hypertension guidelines.

The opinions on faith institution involvement in hypertension health were

Table 2: Characteristics of healthcare leaders and their institutions

Healthcare institution leaders (n=23)		**Healthcare institutions (n=23)**					
Gender Number (%)	**Roles** Number (%)	**Type by ownership** Number (%)	**Duration of existence** Number (%)	**Type / Level of services** Number (%)	**Remuneration**	**Clinical Staff** Number (%)	**Nonclinical Staff** Number (%)
Male: 16(69.6%) **Female**: 7(30.4%)	**Clinical** : 18 (78.3%) **Clinical & administrative** : 3 (13%) **Administrative** : 2 (8.7%)	**Private**: 13 (56.5%) **Public / Government**: 9 (39.1%) **Faith institution** : 1 (4.4%)	**Over 20 years** : 14 (60.9%) **16 to 20 years** : 3 (13%) **11 to 15 years** : 1 (4.4%) **5 to 10 years** : 3 (13%) **1 to 5 years** : 1 (4.4%) **Unanswered**: 1 (4.4%)	**Type** Outpatient & in-patient care: 11 (47.8%) In-patient care: 6 (26.1%) Outpatient, In-patient & Critical Care: 6 (26.1%) **Level** Primary care: 4 (17.4%) Secondary care: 8 (34.8%) Tertiary care: 5 (21.7%) Primary & Secondary care: 5 (21.7%) Primary, Secondary & Tertiary care: 1 (4.4%)	**Out of patients' pocket**: 83% **Private insurance**: 10.2% **The State**: 9.8% **Employers**: 9%	**Over 100**: 7 (30.4%) **21 to 50** : 4 (17.4%) **11 to 20** : 4 (17.4%) **6 to 10** : 6 (26.1%) **Fewer than 5**: 1 (4.4%)	**Over 100**: 5 (21.7%) **51 to 100** : 2 (8.7%) **21 to 50**: 1 (4.4%) **11 to 20**: 5 (21.7%) **6 to 10**: 3 (13%) **Fewer than 5**: 6 (26.1%)
Faith organization owned institutions (n=1)* classed as public for analysis							
Gender (of informant)	**Role(s)** (of informant)	**Duration of existence**	**Type of Care**	**Level of services**	**Remuneration**	**Clinical Staff (number)**	**Nonclinical Staff (number)**
Male	Administrator	Over 20 years	Outpatient & in-patient care	Secondary care	Out of patients' pocket – 100%; Private insurance - 20%; The State – 0%; Employers - 40%	21 – 50	6 -10
Government owned institutions (n=9)							
Gender (of informant)	**Role(s)** (of informant)	**Duration of existence**	**Type of service**	**Level of service**	**Remuneration**	**Number of Clinical Staff**	**Number of Nonclinical Staff**
Male	Clinical & administrative	Over 20 years	Outpatient & in-patient care	Secondary care	Out of patients' pocket – 90%; Private insurance- 0%; The State – 10%; Employers - 0%	Over 100	Over 100
Female	Clinical	Over 20 years	Outpatient, In-patient & Critical Care	Tertiary	Out of patients' pocket – 90%; Private insurance- 5%; The State – 0%; Employers - 5%	Over 100	Over 100
Male	Clinical	Over 20 years	Outpatient, In-patient	Tertiary	Out of patients' pocket – 80%; Private insurance- 10%; The State – No data	21 – 50	21 – 50
Female	Clinical	Over 20 years	Outpatient, In-patient & Critical Care	Tertiary	Out of patients' pocket – 85%; Private insurance- 2.5%; The State – 10%; Employers - 3%	Over 100	Over 100
Male	Clinical	Over 20 years	Outpatient, In-patient	Secondary	Out of patients' pocket – 90%; Private insurance- 0%; The State – 40%; Employers 0%	Over 100	Over 100

Male	Clinical	16 to 20 years	Outpatient, In-patient & Critical Care	Secondary	Out of patients' pocket – 90%; Private insurance-0%; The State – 40%; Employers - 0%	Over 100	51 – 100
Male	Clinical	16 to 20 years	Outpatient, In-patient & Critical Care	Tertiary	Out of patients' pocket – 100%; Private insurance-No data; The State – No data; Employers – No data	Over 100	Over 100
Male	Clinical	Over 20 years	Outpatient, In-patient	Secondary	Out of patients' pocket – No data; Private insurance-No data; The State – No data; Employers – No data	Over 100	51 – 100
Male	Clinical	No Response	In patient care	Secondary	Out of patients' pocket – No data; Private insurance-No data; The State – No data; Employers – No data	No response	No response
Privately owned institutions (n=13)							
Gender (of informant)	**Role(s)** (of informant)	**Duration of existence**	**Type of services**	**Level of services**	**Remuneration**	**Number of Clinical Staff**	**Number of Nonclinical Staff**
Male	Clinical	Over 20 years	Outpatient, In-patient	Primary and Secondary care	Out of patients' pocket – 90%; Private insurance-4%; The State – No data; Employers - 6%	21 – 50	11 – 20
Female	Clinical	6 to 10 years	In patient care	Primary care	Out of patients' pocket – 20%; Private insurance-30%; The State – 30% Employers - 20%	11 – 20	6 – 10
Female	Clinical	Over 20 years	Outpatient, In-patient	Primary and Secondary care	Out of patients' pocket – 90%; Private insurance-2%; The State – 1%; Employers - 7%	21 – 50	11 – 20
Male	Clinical	Over 20 years	Outpatient, In-patient & Critical Care	Tertiary	Out of patients' pocket – 60%; Private insurance-15%; The State – 5% Employers - 20%	11 – 20	11 – 20
Female	Clinical	16 to 20 years	In patient care	Primary care	Out of patients' pocket – 100%; Private insurance-No data; The State – 0% Employers - 0%	6 – 10	6 – 10
Male	Clinical	Over 20 years	Outpatient, In-patient & Critical Care	Primary, Secondary and Tertiary care	Out of patients' pocket – No data; Private insurance-No data; The State – No data; Employers – No data	6 – 10	5 or fewer
Female	Clinical & administrator	Over 20 years	Outpatient, In-patient & Critical Care	Primary and Secondary care	Out of patients' pocket – No data; Private insurance-No data; The State – No data; Employers – No data	6 – 10	5 or fewer
Male	Clinical	11 to 15 years	In patient care	Secondary care	Out of patients' pocket – 45%; Private insurance-50%; The State – 2% Employers 3%	11 – 20	11 – 20

Male	Clinical & administrator	Over 20 years	In patient care	Primary and Secondary care	Out of patients' pocket – 80%; Private insurance- 10%; The State – 0%; Employers - 10%	11 – 20	11 – 20
Female	Clinical	Over 20 years	Outpatient, In-patient	Primary and Secondary care	Out of patients' pocket – 80%; Private insurance- 0%; The State – 0%; Employers -5%	6 – 10	5 or fewer
Male	Clinical	1 to 5 years	In patient care	Secondary care	Out of patients' pocket – 100%; Private insurance- 0%; The State – 0%; Employers - 0%	5 or fewer	5 or fewer
Male	Administrator	6 to 10 years	Outpatient, In-patient	Primary care	Out of patients' pocket – 93%; Private insurance- 2% The State – 5%; Employers - 0%	6 – 10	5 or fewer
Male	Clinical	6 to 10 years	Outpatient, In-patient	Primary care	Out of patients' pocket – 100%; Private insurance- 0% The State – 0%; Employers - 0%	6 – 10	5 or fewer

Table 3: Overview of independent samples median test on how well informed health leaders thought patients were

Null Hypothesis	Total number	Median	Test statistic	Fisher Exact Significance (2 - sided test) [a]	Significance (Decision)
The median opinions on **"How well informed patients were about the causes or risk factors of hypertension"** are the same across Public and Private institution leaders	21	4.000	.103[a,b]	1.000[c]	**Non-significant** (Retain null hypothesis)
The median opinions on **"How well informed patients were about the potential complications of hypertension"** are the same across Public and Private institution leaders	21	4.000	2.738	.184[c]	**Non-significant** (Retain null hypothesis)
The median opinions on **"How well informed patients were about what to do to reduce hypertension risk"** are the same across Public and Private institution leaders	20	4.000	.051	1.000[c]	**Non-significant** (Retain null hypothesis)
The median opinions on **"How well informed patients were about the importance of ongoing BP measurement or HTN monitoring"** are the same across Public and Private institution leaders	21	4.000	4.073	.080[c]	**Non-significant** (Retain null hypothesis)
The median opinions on **"How well informed patients were about the need to combine non - pharmacological measures and pharmacological treatment**" are the same across Public and Private institution leaders	21	4.000	2.738	.184[c]	**Non-significant** (Retain null hypothesis)

a. The significance level is .050; c. Exact significance for test

favourable (Figure 3). Strong support is reflected in the most frequent opinion in each of hypertension health promotion, screening, and healthcare system referrals being "full involvement". The highest proportion of support for "full involvement" was in hypertension referral to the health system (80.9%). Only significantly small minorities (4.6% health promotion and 4.8% screening) thought faith institutions should not be involved at all.

There was a large majority of support for hypertension collaborations with faith institutions including hypertension health promotion (90.0%), blood pressure screening (95.7%) and hypertension referral (95.5%) (Table 5). There were no significant differences in support between private and public

Table 4: How hypertension information was disseminated

	Every clinical interaction			Clinician's discretion			Infrequently done			On patients' request			Rarely or never done		
	All	Public	Private	All	Public	Private	All	Public	Private	All	Public	Private	All	Public	Private
Answers are given to patients' direct questions	17	8	9	2	-	2	2	-	2	1	1	-	-	-	-
Routine verbal information and advice is given to patients	14	3	11	3	2	1	4	3	1	1	1	-	-	-	-
Routine verbal information and advice is tailored to patients' individual hypertension problem	14	5	9	5	2	3	3	2	1	-	-	-	-	-	-
Printed information about hypertension is handed to patients	-	-	-	1	1	-	6	2	4	1	1	-	13	8	5
Copy of printed hypertension guideline used by doctor is handed to patients	-	-	-	2	-	2	-	-	-	1	1	-	18	8	10
Patients told to read hypertension information displayed in clinic	1	-	1	6	2	4	11	6	5	-	-	-	3	1	2
Hypertension information posters are used to give information & advice to patients	4	1	3	4	2	2	4	3	1	1	-	1	8	3	5
Patients are referred to websites or internet resources	1	1	-	3	3	-	5	-	5	2	2	-	9	3	6

healthcare leaders. Public and private healthcare leaders similarly supported faith institution hypertension health promotion (Public 90.0% and Private 84.6%) and most agreed their institutions were competent to support them to promote hypertension health (Public 80.0% and Private 69.2%); but fewer (Public 40.0% and Private 53.9%) thought their institutions had the staff and material resources to give the needed support. There was similar support for hypertension screening (Public 100% and Private 92.3%), but fewer agreed that their institutions had the resources to support such (Public 30.0% and Private 38.5%).

DISCUSSION

The nature of the enquiry demanded an exploratory survey design to gather preliminary insights of healthcare institution leaders, generate understanding, and inform research on faith institution-placed hypertension interventions. Therefore comprehensive descriptions and firm statistical generalisations typically achieved with descriptive surveys are outside the scope of this study.

The leaders and administrators of healthcare institutions in Lagos, Nigeria, appear to be supportive of the idea of faith institutions' involvement in hypertension health. This is further indicated in their openness to collaborating with them in hypertension health promotion, hypertension screening, and hypertension referrals to the health system, albeit cautiously.

Presentation of most hypertension cases via emergency routes may suggest that well-organised mechanisms for anticipating, assessing, and managing hypertension for at least sections of the health system are either not functioning as intended or completely non-existent. This means that early hypertension detection to initiate prompt management is potentially an area of unmet need in the health system and maybe the gap that novel interventions need to address. Therefore, in contemplating interventions, activities or mechanisms that trigger early hypertension detection while fitting with or complementing existing systems may be the most contextually appropriate. This suggestion of the need for reliable early detection strategies is corroborated by ample literature showing that emergency presentation is the predominant form of hypertension presentation in Black populations, and is associated with higher prevalence trends and more aggressive development of complications.[60-64]

Unfortunately, it remains a common practice in Lagos and Nigeria at large that treatment is initiated late after complications have fully established.[65-71]

The perspective that both the private and

Table 5: Hypertension health collaboration with faith institutions

	All institutions (N = 23)			Public (n=10)	Private (n=13)			
Opinion question statement	No answer	Disagree	Agree	Agree Number (%)	Agree Number (%)	Difference (95% Confidence interval)	P - value	Chi Squared test statistic
Faith institutions should be encouraged to deliver competent hypertension health promotion	1	2	20	9 (90.0)	11 (84.6)	5.4% (-28.9 to 35.9)	0.727	0.121
Healthcare institutions should support faith institutions to deliver hypertension health promotion	1	2	20	9 (90.0)	11 (84.6)	5.4% (-28.9 to 35.9)	0.727	0.121
My healthcare institution is competent to support faith institutions with hypertension health promotion	1	5	17	8 (80.0)	9 (69.2)	10.8% (-29.2 to 45.8)	0.622	0.243
My healthcare institution has the manpower and material resources to support selected faith institutions to deliver hypertension health promotion	3	9	11	4 (40.0)	7 (53.9)	13.9% (-36.4 to 54.9)	0.672	0.179
Faith institutions should be encouraged to competently deliver hypertension screening	-	1	22	10 (100.0)	12 (92.3)	7.7% (-20.8 to 34.6)	0.381	0.767
Healthcare institutions should support faith institutions to competently deliver hypertension screening	1	-	22	9 (90.0)	13 (100.0)	10.0% (-14.3 to 42.3)	0.255	1.294
My healthcare institution is competent to support faith institutions to competently deliver hypertension screening	1	3	19	8 (90.0)	11 (84.6)	5.4% (-30.9 to 35.9)	0.738	0.112
My healthcare institution has the manpower and material resources to support selected faith institutions competently deliver hypertension screening	4	11	8	3 (30.0)	5 (38.5)	8.5% (-46.3 to 53.5)	0.819	0.052
Faith institutions interested in appropriately referring suspected hypertension cases to healthcare institutions should be given the support to do so	1	1	21	9 (90.0)	12 (92.3)	2.3% (-25.9 to 35.2)	0.857	0.033
My institution could get involved in giving the support needed so interested faith institutions can appropriately refer suspected hypertension cases	1	2	20	8 (80.0)	12 (92.3)	12.3% (-18.5 to 47.4)	0.429	0.626

Note: N1 approach taken. Alpha level set at 0.05. Degrees of freedom for each question manually adjusted to 1. Computation of 95% Confidence intervals using SPSS syntax. Validated with MedCalc software. P-value > 0.05 means failure to reject null hypothesis (i.e. insufficient evidence to support a significant difference between opinions of private and public health institution leaders on each question).

public sector patients were inadequately well informed in the most important areas of hypertension knowledge may indicate a potentially widespread need for hypertension health education and hypertension health advocacy. In other words, improved hypertension health education is probably required not only at the lower socioeconomic status strata where healthcare is likely to be more heavily reliant on public provision than private healthcare but across the range of socioeconomic strata of the society. Therefore, part of the novelty of interventions could be hypertension education customised to cultural circumstances and innovative culturally guided dissemination. This is especially important since inadequate hypertension knowledge among the general public in Nigeria has been linked to the generally unsatisfactory healthcare and public health resources.[72-75]

In the public and private sector alike, information dissemination during hypertension management heavily relies on patients remembering important information, and less on printed, electronic or trusted and recommended internet based information sources. This hypothetically exposes patients to suboptimal or inefficient care customisation, potentially widening inequalities in hypertension outcomes. Therefore, interventions that simplify care customisation, are flexible, and increase access to reliable information resources may be more acceptable as

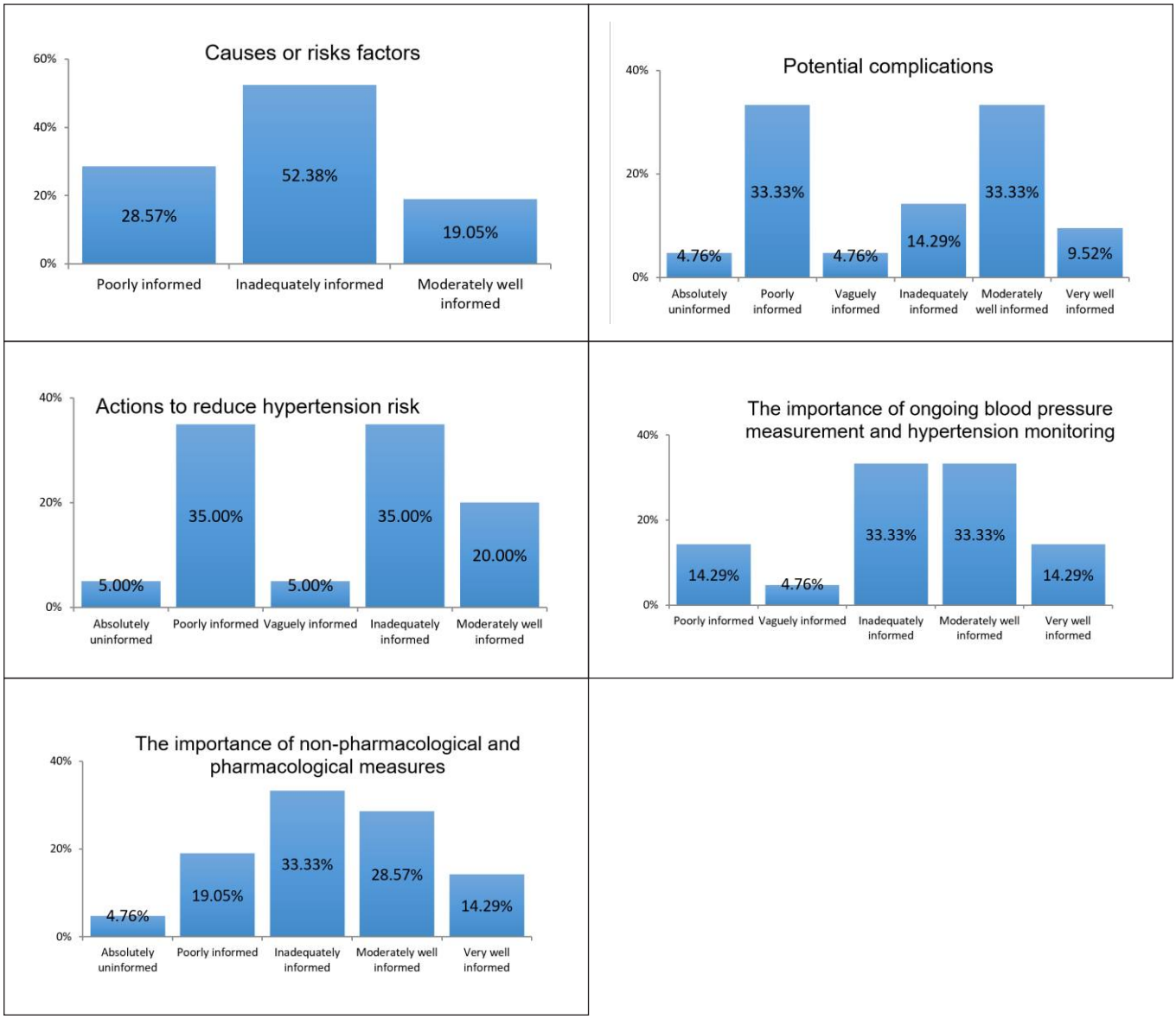

Figure 1: Perceptions of patients' knowledge...

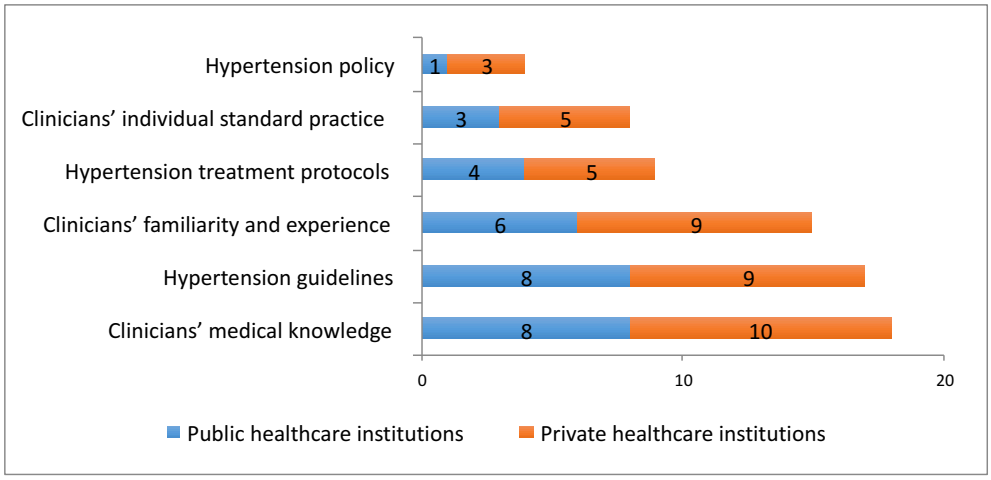

Figure 2: Resources deployed in routine hypertension management

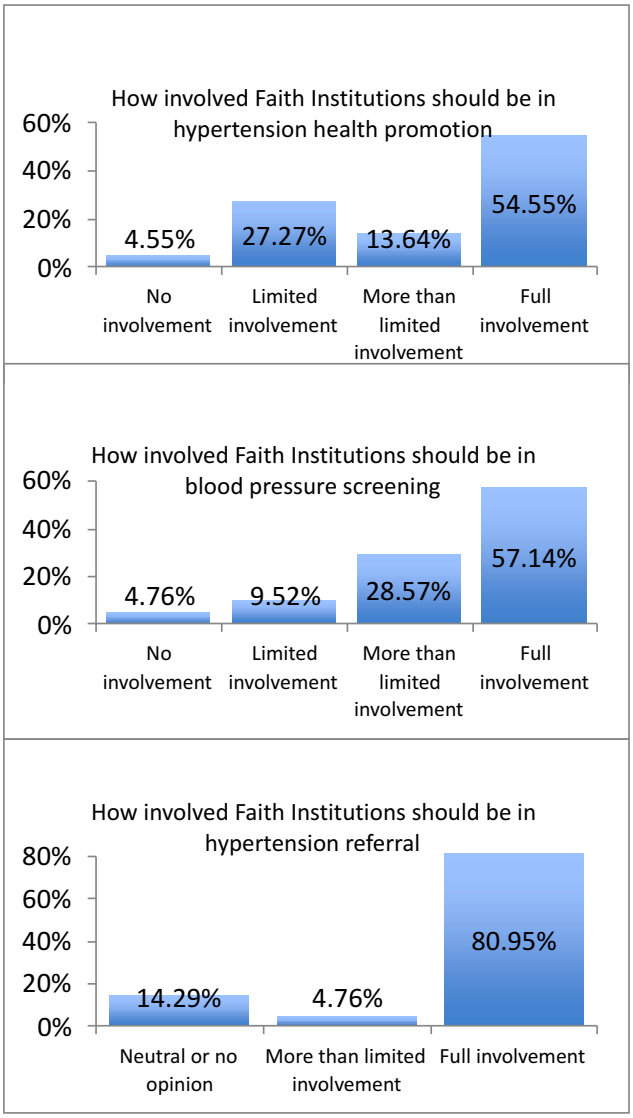

Figure 3: Views on involvement of faith institutions in hypertension health

novel and potentially feasible to incorporate into existing systems. This is important as many complex factors, including deficient guideline adherence, and optimisation of clinical interactions through avoidance of resource-intensive methods, already impede quality care delivery in low-resource settings.[76-78]

In routine hypertension management, the same resources were deployed across institution types, although private institutions deployed more of every type of resource. Across institution types, however, individual clinicians' aptitudes and experiences appeared to be prioritised over guidelines, protocols, or policies. This means that existing resource levels may potentially introduce subtle inequalities and opportunities for standardisation in hypertension management. Therefore, as part of interventions, tools that harmonise guidelines and protocols into routine hypertension management, thus simplifying communication and decisions may be acceptable to both clinicians and patients and contribute to mitigating resource deficits. Such tools could borrow or adapt elements from existing evidence-based resources for non-communicable disease prevention and management, like the World Health Organisation package of essential non-communicable (PEN) disease interventions for primary health, the Practical Approach to Care kit, and similar tools and models.[79-81] Such tools would be important not only because of existing heavy reliance on individual clinician knowledge, experience, and preferences in hypertension management but also because of inadequate awareness and use of guidelines,[82,83] and the longstanding practice and policy inadequacies in Sub-Sahara Africa in general.[84,85]

Although healthcare leaders appeared to be primarily interested in hypertension referral to the health system, their support for the full involvement of faith institutions in all aspects of hypertension health is potentially an asset for innovation and collaboration. There may be a lot of scope for innovation and collaborative shaping of hypertension health promotion, blood pressure screening, and hypertension referral by faith institutions in Lagos. Therefore, the novelty of potential collaborations may lie in how well jointly shaped hypertension interventions not only serve healthcare institutions with hypertension referrals, but also how successfully they confer a sense of partnership and tangible, permanent gains on faith institutions. These could be, for example, training and resources to expand faith institution capabilities for hypertension health promotion and blood pressure screening, as well as religious faith-based social infrastructure that directly benefits faith institution users. Such benefits and healthcare institution resource sharing partnerships with faith institutions could facilitate full involvement of faith institutions in hypertension health, and contribute to alleviating some of the longstanding inequitable healthcare resources distribution in Lagos and the region.[86,87]

Healthcare leaders' enthusiasm could likewise generate opportunities for co-producing and validating health education content; developing frameworks and processes for hypertension screening and referral;

training, recognition, and regulation of personnel to deploy such; and framing their accountability, responsibilities, and scope of practice.

Finally, despite broad agreement that healthcare institutions should collaborate with faith institutions in hypertension health and that healthcare institutions had the technical competence for such collaborations, there was less agreement that they had the resources to deliver the required support. This highlights the pivotal role of resources in potential collaborations. Therefore, novel interventions may have to be flexible and pragmatically focus on activities the healthcare system or sections of it can support based on resources availability, and that faith institutions, their patrons, and users are willing to engage in. Although the literature is still evolving there are notable exemplars of how faith institutions have benefited from training and collaboration with healthcare systems and academia to address obstacles hypertension health faces.[38,88-90]

RECOMMENDATIONS

Recommendations are presented in three broad areas. Innovation is recommended in designing culturally informed hypertension health education that target hypertension knowledge deficits and misconceptions, taking faith institutions as the basic unit of society. Culturally guided and context specific dissemination of these are also recommended. Complete democratisation of hypertension measurement within and outside the healthcare system is recommended to facilitate early hypertension detection across all socioeconomic backgrounds. This is required to make factors like the ability to pay, education, social status and existing access to healthcare irrelevant to accessing high quality, routine, not-for-fee blood pressure measurement. Implementation research collaboration is recommended between healthcare institutions and faith institutions to co-develop strategies and tools that harmonise hypertension management guidelines and protocols into clinical decision and communication tools. This could potentially contribute to mitigating resource deficits by simplifying hypertension management workflow and patient communication for clinicians, demystifying hypertension management for patients, improving transparency surrounding hypertension management, and improving the motivation of faith institution users. Further studies taking the qualitative approach could focus on potential strategies to bridge the gap between the apparent willingness to support and the resources healthcare leaders could commit to faith institution participation in hypertension health.

Limitations

A smaller sample size than potentially achievable was recruited because the national health facility registry could not be successfully used as a sampling frame. Participation relied mostly on the interest, availability and judgment of individual healthcare leaders.

Lack of random sampling means the findings may not be more widely generalisable to the entire population of healthcare institutions in Lagos. The results may be susceptible to inherent biases associated with convenience and voluntary response sampling methods. There was limited control over the eventual sample composition. Potential sampling bias is acknowledged in the under-representation of institutions for which the invitation strategies were not ideal. Similarly, these results would not be able to explain any potential differences between institutions whose leaders elected to participate and those that could not participate due to inherent self–selection biases.

Also, the survey was administered online during a difficult time involving COVID-19-imposed healthcare personnel shortages and re-deployment. This might have impacted on the availability of healthcare leaders for recruitment or the completeness of their responses. The opinions of healthcare leaders on patients' knowledge are subjective, affected by unequal power dynamics in favour of healthcare leaders, and may be prone to inaccuracies. They nevertheless add the value of insight, which can be utilised to understand and contribute to shaping interventions.

Strengths

The healthcare leaders who participated were individually interested and saw the relevance to their institutions. This was potentially helpful for extracting representative or relevant data to their true practice.

Implications

These findings have multiple intertwined research, practice, and policy implications. Customisation of hypertension health promotion and optimisation of their deployment within faith settings requires research. Similarly, research is needed on the development, acceptability, feasibility, and effectiveness of faith institution-based hypertension screening, and the integration of such with the healthcare system. Research is also needed on the development, acceptability, feasibility, and effectiveness of hypertension clinical decision and communication tools that serve healthcare givers and faith institution users. Finally, long term collaborations between academia, healthcare providers, and faith institutions in hypertension health have the potential implication to lead to greater incorporation of evidence into clinical practice, and eventually shaping policy. The policy implications are likely to become clearer over time, and may partly depend on the implementation

and dissemination of these recommendations and further research. The evidence could impact the understanding of policymakers, and their appreciation of the resource implications of addressing hypertension in Lagos.

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Duality of Interest

None of the authors have relevant interests to declare, and have not received any incentives, including financial, to be a part of this study.

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