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Assessing language barriers in health facilities in Malawi

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Abstract

Background Language barriers in healthcare lead to miscommunication between professionals and patients, thereby reducing the quality of and equitable access to healthcare. In African countries, the recognition and formal study of these barriers is severely limited despite Africa having more languages than any other continent. Our study investigates language barriers in healthcare facilities in Zomba district in Malawi, where three major local languages are spoken.

Methods We employed a mixed methods approach and conducted a questionnaire-led study. Data were gathered at 22 health facilities, from 79 healthcare professionals and 312 outpatients using a semi-structured questionnaire. Findings were corroborated using document analysis to review legislation and policies, curriculum documents and patient notes.

Results Language discordance emerged as a problem for professionals and patients. Both faced challenges due to vocabulary limitations for medical terms in English and Chichewa. Professionals did not receive training on how to effectively communicate medical concepts in local languages. Most patients did not speak English, which was used for all written records. Patient understanding of the information given to them verbally during consultations or in written health notes was very low, and this diminished their confidence in the diagnosis or treatment they received. Social factors including gender, age or patient experience, as well as patient literacy or perceived low literacy, poor rapport between healthcare professionals and patients, and a lack of privacy during consultations all exacerbated communication issues. Consequences of language barriers included unsatisfactory care experiences and compromised exchanges of health information. Strategies used by professionals to cope with these challenges were flexibility in the choice of language, reliance on physical checks and non-verbal communication indicators and the occasional use of ad-hoc interpretations.

Conclusion Language barriers in healthcare facilities in Malawi have serious implications on the quality of healthcare provided. We propose solutions such as the development of dictionaries with phrases for symptoms and conditions, sensitisation courses that incorporate language considerations for both professionals and patients. Policies such as the provision of interpreters and staff allocation are discussed. We recognise that coordinated efforts at national and international levels are key to securing significant funding for effective interventions.

Keywords Language discordance, Doctor-patient communication, Health and medical vocabulary, Health literacy, Local languages, Health passports, Background

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Background

Language barriers in healthcare exist in many countries across the world and have been shown to cause miscommunication between healthcare professionals and patients which leads to a reduced quality of care [1]. The doctor-patient relationship is complex, and many social, educational and linguistic factors contribute to realising a shared understanding [2]. Language discordance is one of these factors and occurs when patients and healthcare providers do not share a common language [3, 4]. On the African continent, many ethnic groups co-exist, and many local languages are spoken. Due to colonialism and widespread multilingualism, European languages remain the most important official languages [5]. The primary language for education and health education in particular, is not the language used in general communication by local communities. This situation naturally gives rise to language discordance. This issue has been extensively studied in the USA and other developed countries [6, 7], but is understudied in Africa.

In South Africa, language barriers in the hospital setting were reported to be considerable, persistent and had multiple ramifications: from complicating the process for informed consent, to negatively influencing the attitudes of patients and staff towards each other [8] to reducing compliance or affecting emergency care [3, 9, 10]. Medical students and interns in a South African Hospital had vocabulary gaps in local languages when communicating with patients [11]. In Nigeria, clinical clerks supported the incorporation of indigenous language training into the medical school curriculum and agreed that this would enhance their communication skills [12]. In Ethiopia a recent study showed evidence of language discordance [13]. In Zimbabwe, patients' rights of access to healthcare services and information were compromised due to language barriers and a lack of supporting services such as interpretation [14, 15]. The linguistic situation of African countries is not uniform [16]. While studies from different African countries may point to similar types of issues, local nuances of language use in health communication may be quite different.

In Malawi, Chichewa is the most widely spoken local language. It was declared the national language in 1968. It is generally considered that everyone in Malawi, regardless of their education level should be able to speak Chichewa to get by in their daily life. It is recognised that several dialects are spoken and that in some parts of the country many people cannot speak Chichewa at all or insufficiently [17]. Chichewa language is taught as a subject in primary and secondary schools in Malawi [18]. The Education Act of 2013 [19] sets out the current language policy in Malawi and states that the medium of instruction in all schools and colleges in Malawi should be English. This policy is not implemented in practice due to a lack of materials in English, poor English language preparation of teachers and the difficulties of learners coming from primary education to adapt quickly to English [18, 20, 21]. Despite these challenges, the dominant importance of English from the secondary up to university level is well established. A pass in English language is a requirement for the award of all school certificates and for admittance to university. Efforts to promote or give guidance on the use of local languages in healthcare have not received the attention given to similar efforts in education or law [21–23]. The view that indigenous languages are not fully developed as academic languages and are less equipped to serve as technical languages is also prevalent in Malawi. This also means that English has become the language of the better educated. Additionally, like the situation observed in Zimbabwe, inequalities can be exacerbated by policies that promote some local languages over others, which are further enforced by organisational structures, including in healthcare [14].

In all medical universities and colleges in Malawi, English is the language of teaching and learning. English is a requirement for obtaining a licence for medical practice. The *Malawi Medical Practitioners and Dentists Act* specifies that a medical professional must have "adequate knowledge of the English language". There is no mention of competency in local languages. There have been discussions surrounding the need for language proficiency tests in Chichewa or other local language for expatriate medical practitioners working in Malawi, although language discordance can affect local professionals as well [24, 25]. Careful translation of questionnaires from English have also been recognised as important when these are used to collect health data in Malawi [26, 27]. In a study at the Chiradzulu District Hospital, out-patients considered that they received inadequate health information at discharge to help them manage their conditions at home [28]. The study referred mainly at the quality of information that was given to patients and did not look at issue of language discordance.

A study on language barriers in doctor-patient communication that is closely related to ours was conducted in the Northern Region in 2004 [24]. Here the setting was that of a central hospital where doctors and nurses, who were trained elsewhere, abroad or in the Southern Region of Malawi, could not speak Chitumbuka, the dominant language in the Northern Region. The study investigated the opinion of patients and professionals on policies such as the provision of interpreters and allocation of staff based on language competence. At the time, legislation and health policy documents in Malawi were silent on the use of language in health facilities or health communication and there were no provisions for

interpretation services. Now over 20 years later, this situation has remained unchanged.

Despite their significance, language barriers in public healthcare remain understudied in Malawi, especially in how language barriers may have a negative impact on healthcare delivery in rural areas. Sustainable Developmental Goal 3 (SGD3) [29] emphasises the importance of universal health coverage and access to quality healthcare, both being necessary for ensuring a healthy human capital necessary to drive the economic aspirations of the country. Malawi 2063 is a long-term strategy to transform Malawi into an industrialised, middle-income country by 2063, and its implementation is coordinated by the National Planning Commission [30]. A better understanding of the scope, causes, and possible solutions to language barriers in healthcare are essential to help Malawi develop targeted interventions to ensure that all citizens, regardless of language, can access the health information and services they need, thereby promoting social inclusion, equitable development, and the overall well-being of its population.

Our study adds new dimensions to the study by Kamwendo [24] by looking at language use rather than language preferences. Additionally, we seek to uncover sources of language discordant care as these arise from medical language training and to infer their influence on patient outcomes. The picture emerging from the language planning situation in Malawi and from our experience is one in which the official language for medical training is English, but communication with patients takes place predominantly in local languages [18]. Language planning occurs usually in multilingual countries and involves making deliberate efforts by authorities to regulate how languages are used and taught. In Malawi, language planning refers to the use of language in education.

There seems to be a silent assumption that the exclusive use of English for medical training does not have a significant impact on the ability of health professionals to use medical terms in local languages when communicating with their patients. In all government universities and colleges, in the preparatory or first year of study, students take a general language and communication module. This module focusses on English language skills, and it may not adequately prepare students for the specific demands of health communication in the workplace. Do medical students have a chance to become familiar with specific medical terms in local languages, especially in Chichewa? As multilingual speakers of English and other local languages, do students take notes in their mother tongue?

The language used in the workplace in Malawi for writing reports and in patient files is English, but little is known about the impact that this has on the quality of information exchanged during consultations. What is the role and use of local languages in communication among healthcare professionals when discussing patients, or when they engage with patients? If healthcare professionals also rely on using English when discussing patients among themselves, does this not have vocabulary implications? It seems reasonable to imagine that some challenge may arise when these healthcare professionals need to switch to Chichewa (or another local language) to communicate with patients. If medical professionals are more comfortable discussing clinical matters in English they may struggle to find precise or appropriate terms in Chichewa to explain medical conditions, which could lead to oversimplifications or incomplete explanations of a patient's condition. This can create misunderstandings or lead to patients having a vague understanding of their diagnosis and treatment. If both English and Chichewa are used, in written or verbal communication, how does this situation affect the quality of information that patients receive about their diagnosis and treatment? Do patients have access to their medical notes in a language and format that they can understand? To what extent are health professionals and patients aware of the language discordance present during consultations and do they perceive that as being a significant barrier to communication?

While acknowledging that no communication can be perfect or precise, these questions are important when trying to understand language use from a bottom-up approach and from multiple angles. These questions were not covered in previous published studies from Malawi. Therefore, to gain a deeper understanding of the kind of challenges language discordance creates in healthcare communication in Malawi, we pursue a qualitative study guided by the questions above. They can be grouped into three broad lines of inquiry:

1. Do healthcare professionals have difficulties in communicating with patients in English or in local languages regarding medical issues?
2. How do language difficulties affect the ability of patients to fully communicate their symptoms to healthcare professionals?
3. How do language barriers affect the ability of patients to understand the diagnosis or the treatment they receive?

Methods and materials

Study design

We used a mixed methods grounded theory (GT) approach with an objectivist underpinning. We adhered to key principles of GT in terms of iterative data collection and analysis, sampling and data saturation. We

departed from classical GT by using semi-structured questionnaires and not interviews. We started with initial investigation by consulting with a small group of healthcare professionals and patients and shared with them our questions regarding possible language barriers and vocabulary gaps in medical communication. We conducted a literature review to understand the language situation in Malawi and identify studies that could answer our questions. We identified a gap in the published research and recognised the importance of addressing these issues. We developed a questionnaire-based approach, which we implemented in healthcare facilities in Zomba. Given the complexity of studying language use, there was a need to consult more widely than would have been possible in small focus groups or in-depth interviews. We opted for a questionnaire based approach to facilitate discussions with participants and data collection. We employed an iterative process, meaning after each visit to a facility, we analysed the data collected to incorporate any new findings. Through this process, some questions were made clearer, and others were introduced, e.g., questions about the usefulness of a medical dictionary. We maintained notes with comments and observations from our respondents during or after they completed the questionnaire. This data was incorporated and analysed together with that resulting from the questionnaires. Theoretical sampling that characterises the use of GT was achieved by selecting sites in the Zomba District where recent research on local languages was available and by relying on the administrators of facilities to suggest those healthcare professionals who interacted the most with patients. We reviewed continuously our sample to ensure we incorporated input from diverse healthcare cadres. We stopped data collection from a clinic after we felt that we had reached data saturation. We used document analysis to corroborate findings from data collection.

Study site

The study was conducted in Zomba District, where Chichewa, Chiyao, and Chilomwe are spoken. Zomba City, the first capital of Malawi, is one of the four urban centers in the Southern Region and the home of the University of Malawi. The district has a high population density. A 2017–2022 socio-economic report of the Zomba District [31] highlighted an acute shortage of healthcare staff, isolated healthcare centres lacking in electricity, running water and telephones and having poor road conditions. Only one facility had doctors, and no statistics were available in the report for the number of laboratory assistants. The doctor-to-population ratio was about three times lower than the ratio recommended by the Ministry of Health. Our study covered facilities under the jurisdiction of the District Health Office (DHO). These are organised into six zones: Chingale, Zomba City, Domasi, Likangala, Mayaka, and Thondwe (Fig. 1). We intended to cover all these facilities. We choose to begin data collection by starting from the border with Machinga District continuing towards Zomba City. The language mapping survey of 2009 [32] showed that Chiyao was the first language used in Machinga District and, as one progressed into Zomba District; it became less dominant in favour of Chichewa. Chilomwe was spoken more frequently in Machinga and less in Zomba where it was said to be confined to a very few old people. We covered half of the district, and all DHO facilities in Chingale, Zomba City, and Domasi, and one facility in Likangala. Mayaka and Thondwe were not covered due to both data saturation and considering distance and transport costs.

Data collection

Primary data were collected through face-to-face semi-structured questionnaires with healthcare professionals and patients. We did not have access to personnel lists, hence, at each facility, we aimed to speak to as many healthcare professionals who were involved in clinical consultations as was possible. We were guided by the officers in charge at each clinic who suggested to us the individuals who interfaced the most with patients and/or conducted consultations. We were also advised on the way we should interact with patients and in what areas of the facility. We only interviewed out-patients. Typically, we spent the entire day at each facility, and we sometimes returned in subsequent days if the facility was large, and we thought more insights could be gained. Data collection took place from the 15th February to the 9th May 2024.

The questionnaire for healthcare professionals was in English, and the patient questionnaire was translated into Chichewa and included both languages. Patient responses were taken down in Chichewa. Healthcare professionals completed the questionnaire independently during our site visit, and many engaged in follow-up discussions with the researcher. The notes from these discussions contributed to our analysis. Patients, assisted by the data collector, completed their brief two-page questionnaires in the waiting room or after consultations, or while waiting for medication. We maintained a diary with notes about the catchment area, busyness, and type of services at each clinic. We also recorded the kind of patients who attended these facilities, for example, at some facilities women and mothers with their babies predominated. The diary also included information about the paperwork required to obtain permissions for the study, the level

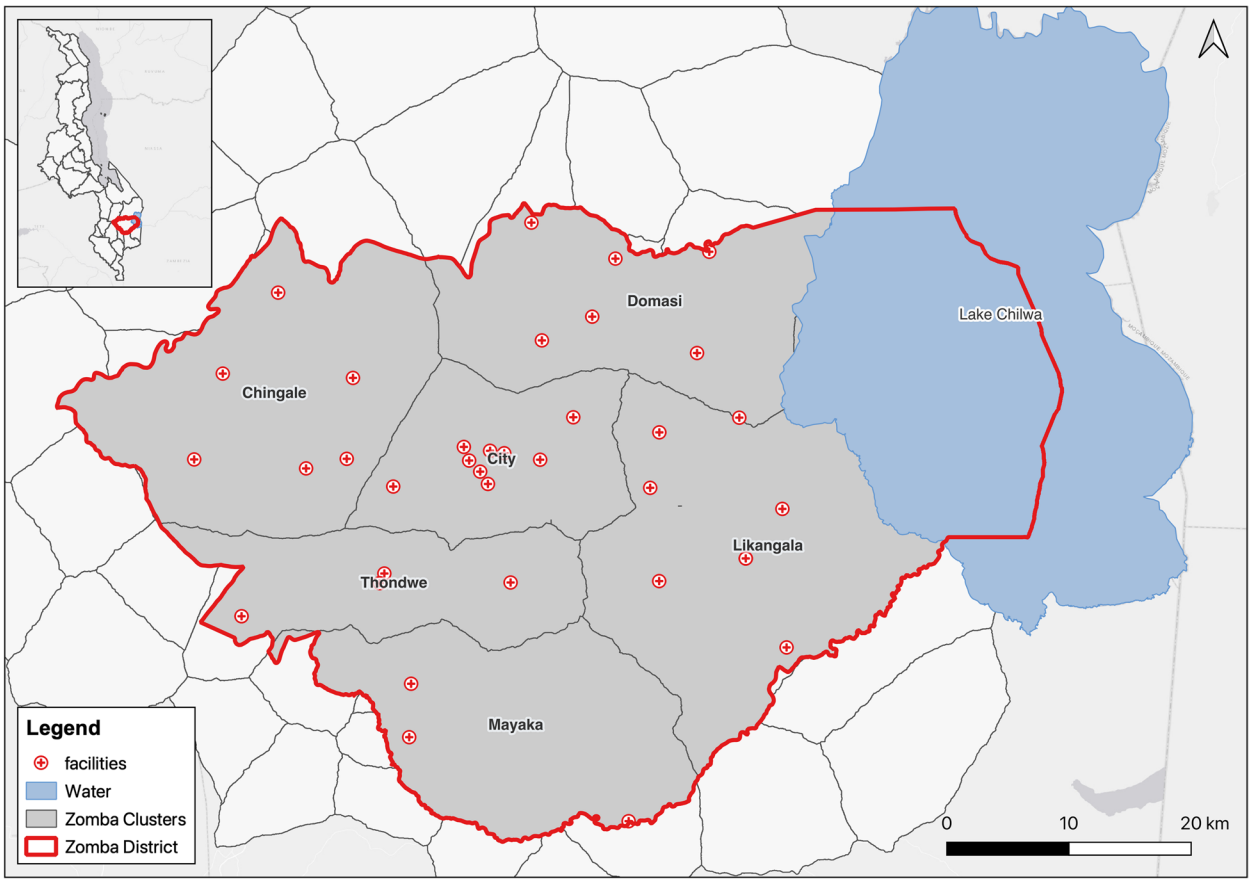

Fig. 1 Study area showing health facility clusters in Zomba District

of engagement with staff and patients, and any questions, comments, and observations they had about the questionnaire content.

We reviewed curriculum documents from the Kamuzu University of Health Sciences (KUHeS) to confirm whether any language courses were part of the degrees for medical, nursing, pharmacy, and laboratory sciences degrees in Malawi. KUHeS is the primary medical training institution in Malawi. As the first and only medical university in the country, it plays a pivotal role in training medical professionals and sets the educational standards for other private nursing and health colleges in the country. The University's curriculum and educational practices significantly influence the training and qualification of healthcare professionals across the nation.

We also reviewed health legislation and policies to find out if language use in health is mentioned. Additionally, we collected a sample of anonymised images of pages from patients' health passports to corroborate the answers about the type of information recorded in these passports.

The construction of the questionnaires

The authors developed these questionnaires because there were no validated tools available for assessing language barriers in health in Malawi. To develop the questionnaire items, we drew from literature and the researcher's local knowledge about the language situation in Malawi. The questionnaires were validated by language experts regarding item wording, ease of understanding, grammar, ease of completion and logical sequence of items. We also slightly refined them as the data collection progressed, an activity typical of a GT approach.

The types of questions included, and their themes are presented in Table 1. For each respondent, healthcare professional or patient, we collected demographic data on age, gender, home village, occupation, years in occupation, and highest qualification. We did not record respondents' names.

We included questions about the level of education of both professionals and patients and perceived literacy of patients. The patients' level of education influence literacy and health literacy and may affect the ease of communication with healthcare professionals [33, 34]. The

Table 1 The questionnaires composition: Types of questions

Type of question / Number of questions of each type	Professionals' questionnaire	Patients' questionnaire
Demographics	7	7
Language demographics (maternal language and language of frequent use)	2	2
Language of medical learning and training	4	N/A
Language of communication in hospital setting	3	1
Language for documenting medical records and reports	4	N/A
Factors affecting healthcare professionals' choice of language when communicating to patients	3	N/A
Challenges for patients in communication with healthcare professionals	3	5
Vocabulary / knowledge check	1	7
Medical dictionary availability and usefulness	3	N/A

level of education and work experience of healthcare professionals are also potential determinants of communication challenges [35].

Participants were asked to specify their mother tongue and the language they used most frequently for communication. We did not ask about language preference, as our focus was to understand actual language use and its implications on the quality of health communications for a linguistically diverse population. For healthcare professionals, we included questions regarding the languages used for medical training, for writing official reports, for conducting training sessions and seminars, and for communicating with colleagues and patients, both verbally and through patient health passports. Malawi uses patient health passports in all public facilities. These are paper-based, patient-kept portable medical records. Patients bring them along when they visit healthcare providers, who in turn write details of the visit in the passport. These questions aimed to validate the current language use in medical education in Malawi and the extent of English usage among healthcare professionals. We asked about code-switching between English and local languages, noted as typical in Malawi's educational and professional settings by other authors [36]. Code-switching refers to the practice of alternating between two or more languages, dialects, or linguistic varieties within a single conversation, sentence, or even word.

We asked medical professionals to give and rank the importance of factors that influenced their choice of language or code-switching when communicating with patients. The factors suggested in our questionnaire were the nature of the illness, the patient's literacy levels, the difficulty of explaining medical concepts in local languages, the challenge of finding appropriate medical terms in local languages, and time constraints. Each factor was ranked on a scale from 1 to 3, where 1 indicated low impact, 2 was neutral, and 3 signified high impact. This information helped us understand key elements that guided language use in healthcare interactions.

We conducted a short vocabulary check for both healthcare professionals and patients. Professionals were asked to provide the Chichewa equivalent for selected medical terms related to diseases, medical tests, conditions, and symptoms, and to rate the difficulty in translating these terms from English. The ten terms were abscess, biopsy, edema, fracture, hypertension, outpatient, embolism, seizures, gland, fever, and runny nose. All are terms characterising conditions that are frequently encountered in Malawi. For instance, pulmonary embolism, a known COVID-19 complication with high in-hospital mortality rates is frequently associated with HIV and cancer [37, 38]. Edema, or swelling, is related to conditions like pregnancy and diabetes and can affect the eye. Biopsies, essential for diagnosing diseases such as cancer and skin conditions, are perceived as invasive and sensitive procedures. Given the high rate of misdiagnosis in Malawi discussions about biopsies for early diagnosis can be life-saving [39]. The final three questions for professionals inquired about their opinion on the usefulness of a bilingual medical vocabulary dictionary to support them in translating and communicating with patients.

Patients were given two lists of five terms each, one for common external organs and one for internal organs. They were asked to rank the difficulty of translating these terms into Chichewa. They were also asked to give equivalent translations. We inquired about patients' knowledge of the symptoms that characterised conditions they suffered from. We were interested in their ability to describe and discuss these symptoms in English, or in Chichewa, or in other local languages. We also asked if language posed challenges in communicating symptoms to clinicians. We were also interested to know whether patients understood the information written in their health passports.

Data analysis methods

We entered and analysed data using Microsoft Excel 2016 (MS Excel). Textual data were organised as descriptive statistics and analysed by applying codes and standardising values into core categories. For example, due to a wide range of names for similar occupations, it was necessary to consolidate them into main categories. Seniority designations were removed, for example senior clinical officer, was categorised simply as clinician. MS Excel was used to calculate the frequency of responses and present the data in tables. Quantitative data, for example, rankings for participants' preferences or evaluations, were analysed using a descriptive analysis.

All responses from patients were in given in Chichewa. We analysed textual responses by extracting the main themes and meaning. During analysis we translated them into English, but we analysed their meaning both in Chichewa and in English. The quotations from patients in this paper are all our translations from Chichewa into English. When analysing Chichewa translations, we used clustering to merge similar terms and correct spelling mistakes. For example, *kutentha thupi*, *tentha thupi*, and *kutentha kwa thupi* were all recognised as fever, with the latter being more grammatically correct. The translation into English was based on meaning rather than direct translation. For example, the following Chichewa terms mean diarrhoea: *kutsekula m'mimba, chimbuzi pafupi-pafupi, kupitapita ku chimbuzi*, *kupita kuchimbuzi mowirikiza*, *chimbuzi cha madzi madzi.* The literal translation of the first expression is opening of the bowels/stomach, and the next three refer to frequent visits to the toilet, while the last talks about watery stools.

We analysed data throughout its collection and incrementally adjusted the themes and coding to reflect any new findings. We made some adjustments to the questionnaire, for example, three questions regarding the need for and use of a medical dictionary for local languages were added as the gaps in vocabulary became evident. The first 14 out of 79 professionals were not asked this question.

We reviewed official sites with legislation and policies for health in Malawi. The choice of documents was reviewed by a legal person with expertise in health legislation. We then did textual search to find all references to language use. Document analysis was also used to review the content of any language courses for medical degrees and the content of patients' notes.

Quality of the data

The credibility of our findings was increased by gathering information from several health facilities and perspectives from both healthcare professionals and patients. We tried to ensure that our findings could be reliably verified in other contexts by describing the study environment and our methods, thus establishing a replicable audit trail for future researchers. Additionally, we triangulated findings using document analysis.

Ethical approval

The study was approved by the Research Committee of the Zomba DHO (ZA/DC/ADMIN/15/02/2024). All participants were given a written explanation regarding the aim of the study and consent was obtained verbally. We did not collect names; therefore, the consent of healthcare professionals and patients came in the form of completed and returned questionnaires. Some professionals wanted to engage further in this study and helped us answer some follow-up questions we had regarding the findings. To maintain confidentiality, participants were assigned codes for the entirety of the data collection and management process.

Results

Results from healthcare professionals

We collected data from 20 clinics in Zomba District and 2 clinics in Machinga District at the border with the Zomba District. In total we obtained responses from 79 professionals and 312 patients.

Demographics for healthcare professionals (Tables 2 and 3)

Out of 79 medical professionals, 30 were female (representing 38% of the total) and 49 were male. Most [50] were educated to diploma level, 19 were educated at Malawi School Certificate of Education (MSCE) or certificate level (short post-secondary certificates) and a few had university degrees [10]. The degree holders were found only in the clinics in the urban areas of Zomba City and Domasi (9 out of 10).

The most common category was nurses [33], who performed dual nursing/midwifery roles. The second-largest category was clinicians [27] and this included clinical officers, and the more senior category of clinical technicians. Public health officers [7] and medical assistants [8] were the next most common category. In Domasi we found two laboratory technicians, and one pharmacist. These occupations reflect the availability of staff encountered during our visits and reasonably represent the services available at typical rural clinics in Malawi. Most rural clinics lack laboratory testing facilities. Among the clinics we visited, St. Luke's Hospital in Domasi, is a larger site and offers paid laboratory services. Additionally, most rural clinics operate without a pharmacist, a role requiring a degree, but may have assistant pharmacists [40].

Almost half, 49%, of the professionals were between 30 and 45 years of age, 12% were aged between 45 and 60

Table 2 Demographics of healthcare professionals. Average literacy levels of patients as they were estimated by healthcare professionals at each clinic

Question number		**1.2**	**5.1**	**Highest Qualification (1.7)**			**Occupation (1.4)**						
Clusters and Clinics	**Respondents, n**	**Female, N**	**Avg. Literacy (5.1)**	**Degree**	**Diploma**	**Certificate or MSCE**	**Clinician**	**Laboratory Technician**	**Medical Assistant**	**Nurse**	**Nurse/ Midwife**	**Pharmacist**	**PHO**
Chingale	**11**	**4**	**66%**		**7**	**4**	**3**		**1**	**4**	**3**		
CHIPINI	4	1	68%		2	2	2				2		
MMAMBO	5	2	65%		4	1	1			4			
NKASALA	2	1	65%		1	1			1		1		
City	**38**	**13**	**66%**	**6**	**25**	**7**	**12**		**3**	**8**	**8**		**7**
CHANCO	5	3	96%	2	3		2			1	2		
CHULUCHOSEMA	2		30%		2					1	1		
COBBE	4		60%		4		2			1	1		
MATAWALE	5	4	72%	1	3	1	1			2	2		
NAISI	3	1	63%	2		1	1		1	1			
NAMADIDI	2	1	57%		1	1	1				1		
SADZI	4	1	70%		2	1	1		1				2
ZILINDO	3	1	60%		2	2	1		1	1			
POLICE HOSPITAL	5	1	65%	1	4		2			1	1		1
CITY CLINIC	5	3	57%		4	1	1						4
Domasi	**25**	**10**	**41%**	**3**	**15**	**7**	**10**	**2**	**2**	**5**	**4**	**1**	
BIMBI	4	1	25%		4		1	1		1	1		
HAWARD PAKER	3	2	58%		2	1	1			2			
MACHINJIRI	5	3	50%		3	2	1		1		1	1	
NAMASALIMA	4	1	32%		1	3	2		1		1		
DOMASI (GENES)	4	2	42%	2	1	1	2			1	1		
ST LUKES HOSPITAL	5	1	41%	1	4		3	1		1			
Likangala	**1**		**50%**		**1**				**1**				
CHAMBA	1		50%		1				1				
Machinga	**4**	**1**	**46%**	**1**	**2**	**1**	**2**		**1**	**1**			
MACHINGA HEALTH CLINIC	2	1	35%		1	1	1			1			
GAWANANI HEALTH CENTER	2		57%	1	1		1		1				
Total	**79**	**30**	**57%**	**10**	**50**	**19**	**27**	**2**	**8**	**18**	**15**	**1**	**7**

Table 3 Age, location and language use of healthcare professionals

Age split	**Responses n, %**
18–30	31, 39%
30–45	39, 48%
46–60	9, 11%
Region of origin	**Responses n, %**
Central	14, 17%
Northern	10, 13%
Southern	55, 70%
Experience	**Responses n, %**
less than 5	25, 32%
5–10	28, 35%
10–15	12, 15%
more than 15	14, 18%
Q2.1 Maternal Language	**Responses n, %**
Chichewa	32, 41%
ChiLomwe	16, 20%
ChiYao	11, 14%
ChiSena	7, 9%
ChiTumbuka, ChiNkhonde, ChiTonga	9, 11%
Ngoni	4, 5%
Question	**Responses Category (n, %)**
Q2.2 Language you speak most frequently	Chichewa (77, 97%)
Q2.3.1 Language of lectures	English (79, 100%)
Q2.3.2 Language of notes	English (74, 94%), Chichewa (5, 6%)
Q2.3.3 Lecturers switch between English and local languages	Yes (73, 92%), No (6, 8%)
Q2.3.3.1 Which local language is most used	Chichewa (76, 96%), Yao (1, 1 + %) English (1, 1 + %)
Q4.1 Doctors communicate among themselves about medical symptoms and diagnosis	Mixed (49, 62%) Only English (29, 37%) Only local languages (1, 1%)
Q4.2 Doctors write weekly/monthly reports	Mixed (2: 3%), Only English (77: 97%), Only local languages (0)
Q4.3 Conduct professional development activities	Mixed (37, 47%) Only English (42, 53%) Only local languages (0)
Q4.4 Talk to the patients	Mixed (36, 46%) Only English (0), Only local languages (43, 54%)
Q5.2. During consultation, do you explain medical terms to patients? If yes, in what language?	Yes, Chichewa (34, 43%), Yes, Mixed (14, 18%), Yes, English (3), Yes, Other Local Languages (1), No (28, 35%)

and 39% were between 18 and 30. This indicated that our respondents experienced various types of training over a period of at least 20 years. They had a broad mix of work experience: 26 out of 79 (33%) had more than 10 years, 35% between 5 to 19 years and 32% has less than 5 years' work experience.

Most healthcare professionals came from the Southern Region (69%), a third came from the Central and Northern Regions combined (31%). This showed that healthcare professionals were quite mobile, pursuing careers and jobs across Malawi. This also meant the existence of an interesting mix of languages, dialects, and cultural norms in rural healthcare facilities.

For less than half of the respondents, 47% (36 out of 79) Chichewa or its dialects was the mother tongue. More than a third (35%) spoke Chiyao, Chilomwe or Chisena as their mother tongues and the rest [9] spoke Chitumbuka, Chitonga and Chinkhonde (the languages of the Northern Region) as their mother tongue. However, Chichewa was the language that the respondents (97%) said that they spoke most frequently. This reflects the role of Chichewa as the lingua franca in Malawi [32].

The use of english language in medical training and practice (Table 3)

English is the language of teaching/instruction. All respondents said that lectures are done only in English and 95% responded that notes are also provided solely in English. In class, some lecturers frequently code-switched between English and Chichewa to provide additional explanations for their students. Unlike lectures, training during workshops take place in a mixture of English and local languages (mainly in Chichewa). Chichewa had a social function and was used in creating a more relaxed

and approachable atmosphere. Code-switching by facilitators signified either a desire to relate better in terms of experiences or an acknowledgement of the prevailing hierarchies based on work seniority or education. These hierarchies were reflected by the language use. Chichewa was also preferred when describing practical scenarios.

English took a more central role when doctors communicated among themselves in the workplace about the medical symptoms and diagnosis of the patients: 62% participants said that they used both English and Chichewa and 37% said that they used only English. Healthcare professionals preferred to use English because some medical terms were very difficult to find in Chichewa and did not align well with equivalent concepts in local languages for example "intrapartum haemorrhage". Chichewa was used alongside English for ease of communication between medical professionals on medical issues, but resulted in less precise medical explanations, for example "stethoscope *iyi siikugwira ntchito ka clot ka magazi kanatseka mtsempha wa magazi ku ubongo*" meaning that the stethoscope would not work or make a sound when patients may have a clot that blocks the blood flow to the brain.

Language discordance occurs frequently (Table 3)

When communicating with patients, it was seen as imperative to be able to use the language of the patient or that of the guardian to explain medical conditions and treatment administration. There was an acknowledgement of the fact that due to the existence of multiple ethnicities and languages in the area, language discordance occurred frequently, and code-switching was necessary.

> *"In circumstances where the term would best be described in Chichewa, Chichewa is used in mixture with English, for example, explaining some routes of drug administration like vaginal and anal" (Professional 1, Machinjiri).*
> *"Patients seeking treatment here sometimes are of different cultures and language background and so it is with the professional workers too, though the Yao speakers are predominant around here. Sometimes those speaking Chichewa and Lomwe and other languages do come for consultation, so a mixture of languages is used for easy communication" (Professional 3, H. Paker).*

In government run health facilities in Malawi, there are no resident interpreters employed to assist with overcoming language barriers. This is probably also the case in non-governmental clinics as there is no legal requirement for the provision of interpreters. As a result, any interpretation is ad-hoc, done by colleagues, guardians, or even other patients.

When a term did not have a direct equivalent or a good translation into Chichewa, the use of the English term was preferable. When achieving a good understanding with the patient or guardian was important to a particular course of action, for example making a referral to another hospital, or administering treatment or in case of death, efforts to interpret into the language of the patient, usually Chichewa or other local languages, were made.

The majority (50 out of 79) of professionals ranked vocabulary challenges and patients' low literacy as the most important factors affecting their choice of language when talking to patients, higher than time constraints. On one hand, they acknowledged that communication must take place in local languages because patients "generally did not speak English well enough." On the other hand, professionals recognised that they had difficulties in finding explanations and medical terms in local languages. When they perceived that the education level of the patients was low, they considered that efforts to interpret into the local languages were pointless and potentially patronising. Some professionals confessed that they sometimes also used English intentionally to hide painful or sensitive information from the client regarding their condition. These findings indicate that healthcare professionals use a more paternalistic model in consultations.

Language use in medical reports and patient records (Table 4)

English was the language for official reports: 97% indicated that they used only English when writing reports. Health professionals responded unanimously that English was also the language in which they wrote their own personal notes about the condition of their patients. These findings may mean that professionals display a high language immersion in English for medical terms. English was also the sole language for making entries in the patient health books: 78 participants (99%) responded that they wrote all notes in health passports in English and only one participant responded that he/she used local languages, but this could have been recorded erroneously.

Professionals considered that their patients do not know what is written in their health passport.

Doctors write consultation notes, and the health passports are also used as prescriptions to obtain medication from the pharmacist. Certain health passports have been specifically customised for use for maternal care and children under five, as well as for patients undergoing HIV treatment. Reasons why patients do not understand the notes in their health passports were given by both patients and doctors. These referred to the fact that patients did not speak English, were not educated enough

Table 4 Language use in communication between healthcare professionals and patients

Q5.4. Rank the following factors in terms of how they affect your choice of language when talking to a patient? (1 = Low impact 3 = High impact)	**Average Rank**
Nature of Sickness	1.68
Patients' level of literacy	2.55
Challenges in finding explanations in local language	2.50
Challenges in finding medical terms in local language	2.71
Time constraints	1.58
Q6.1 In what language do you write in the health passport of the patient	**Responses, n, %**
English	78, 99%
Local languages	1**,** 1%
Q6.2 What language do you use to record your own notes about the patient's condition?	**Responses, n, %**
English	79, 100%
Local languages	0, 0%
Q6.3 Do you use the notes from previously recorded in-patients' health passports?	**Responses, n, %**
Sometimes	34, 43%
Always or often	43, 54%
Very rarely	2, 3%
Q6.4 Do patients understand what is written in the health passport?	**Responses, n, %**
Yes, largely	16, 20%
Very little	57, 72%
No	6, 8%
Q6.5 Are patients open enough to disclose their symptoms to the clinician?	**Responses, n,%**
Yes	29, 37%
Most	5, 6%
Mostly women	6, 8%
Depends on literacy, language, education, age, gender, environment	37, 47%
No	1, 1%
No response	1, 1%
Q6.6 In a situation of critical illness, where the patient does not or cannot speak, what will you, as a clinician, rely on, in terms of symptoms and diagnosis?	**Responses, n, %**
The patient's facial expressions and gestures	25, 32%
Physical examination of the patient	58, 73%
What the guardian will narrate to you based on what the patient confided to that guardian	31, 39%
Where available you rely on lab results	42, 53%
Q7. Do you have a medical dictionary Q8. If yes, how often do you use it?	**Responses, n, %**
No	51, 65%
Yes, frequent use	6, 8%
Yes, rarely use it	8, 10%
Not asked this question	14, 18%
Q9. How useful do you consider a medical dictionary of English and Chichewa medical terms to be?	**Responses, n,%**
Positive	61, 77%
Negative	1, 1%
No response	3, 4%
Not asked this question	14, 18%

and the writing was unintelligible and full of indecipherable symbols.

> *"Entries are made in English hence the illiterates cannot understand it. Doctors use medical terms, medical signs and symbols and medical expressions" (Professional 1, Mmambo).*

Although health passports are regarded as important by patients and healthcare professionals, their relevance seems to have diminished over time. Their current use appears to have deviated from the original

purpose of documenting patient medical history and ensuring that this information is easily accessible to both patients and medical practitioners. Some professionals stated that "the entries in the health passports are mainly meant for health professionals", and therefore patients cannot be expected to understand them or to be familiar with the signs and symbols used. However, "the patient has a duty to remember" what they tell the doctor and what the doctor explains to them both in terms of treatment and diagnosis.

Patients may have multiple health passports; hence their medical history is fragmented and incomplete. Professionals also explained the dangers of relying on the memory of the patient and that of the guardian or family member for translations or explanations on behalf of the patients.

> *"Some patients come for consultation without a health book. In this case, a clinician relies on physical examinations, lab results and probing the past health history which results in errors and exaggerations. Probing is possible only for a patient who is not critically ill and not unconscious or through the guardian, the usage of a guardian is also subject to exaggerations" (Professional 3, H. Paker).*

The importance of the health passport for patient assessment was highlighted by most healthcare professionals. Patients frequently forget to bring their passports to consultations or lose them. In such situations, they must purchase a new health passport as these are required for treatment at government facilities. A study on access to healthcare by people with disabilities in Malawi found that they could not afford the cost of the health passports, a situation that is likely to be true in the case of many poor patients in Malawi [41].

Almost half (46%) of healthcare professionals said that they rarely or sometimes use the previous notes written in the health passports; 54% said that they often or always referred to notes written on previous visits. Given the importance of the health passports for containing the most complete medical history of the patient, we expected this number to be higher. For the great majority of patients in Malawi, no case notes or record cards are kept on the premises by hospitals, health centres and other facilities. This means than when health passports are lost or misused, important patient information is lost forever. The practice of using the health passport may vary depending on the nature of the visits or notes. The low usage reported may also be attributed to a loss of confidence in the notes recorded in these health passports and that they tend to be incomplete [42].

Language barriers affect shared decision making (Table 4)

The majority (63%) of healthcare professionals said that they explained medical terms to patients during consultations. Upon further probing, we found that these explanations referred mainly to conveying lab results and giving treatment instructions. These explanations were given verbally in Chichewa, when the patient did not understand English well-enough. Medical professionals had challenges in expressing medical terms or finding explanations for diseases in local languages and this affected their ability to use local languages more often. They also noted that due to low literacy levels, many patients could not understand medical terms. Additionally, time constraints from heavy workloads further limited their ability to provide thorough explanations to patients.

> *"No, some medical terms remain so technically scientific that they do not have direct and precise equivalent terms in local languages such as in Chichewa or Lomwe. Description of medical terms is rarely done; most doctors prioritise telling the patient the lab results and the way the medicine given should be taken at home" (Professional 2, H. Packer).*

Only one-third of professionals believed that their patients were generally open to express their symptoms and underlying conditions during consultations. Openness was said to depend on factors such as the patient's age, gender, type of disease, literacy, language discordance, and the consultation setting. The setting referred to both the atmosphere created by healthcare professionals during consultations and to the privacy offered by the consultation spaces. Most often, privacy was not assured. Usually there was a need for further probing through doctor's questions if sufficient information for a diagnosis was to be obtained from patients. Female patients were seen to be more open than male patients, and the more experienced patients or older patients were more open than the younger ones. When talking about sexual transmitted diseases or HIV, patients were shier in talking about their symptoms or underlying conditions.

These findings attest that the nature of language barriers is multifaceted. Factors such as gender, age, literacy and the rapport established with the patient can aggravate language barriers. Personal experiences too may lead to pre-conceptions about the other party, and these can play a negative as well as a positive role. High workload limits time for explanations, and when a lack of privacy and vocabulary challenges are present, the quality of information exchanged is significantly compromised. This can lead to poor healthcare delivery, incomplete or incorrect diagnoses, and a loss of patient confidence,

Table 5 Translations of medical terms to Chichewa given by professionals. The table is sorted in terms of average difficulty in translating terms as given by the professionals ordered from highest to lowest. The difficulty scale used was 1 = Very Difficult and 5 = Very easy

Term	Most Frequently Used Translation in Chichewa (number of responses)	Average Difficulty	Number of Responses	Rate of Agreement
Gland	Mwanabedere (4)	1.68	15	27%
Embolism	Kuundana kwa magazi mu mtsempha (6)	1.76	32	19%
Biopsy	Chidutswa cha kanyama (27)	2.63	77	35%
Seizures	Kukomoka (40)	3.52	62	65%
Outpatient	Odwala Oyendera (14)	3.94	77	18%
Edema	Kutupa (35)	4.12	68	51%
Hypertension	Kuthamanga kwa magazi (31)	4.16	73	42%
Abcess	Chotupa (39)	4.49	78	50%
Fever	Kutentha kwa thupi (67)	4.51	77	87%
Runny Nose	Chimfine (55)	4.54	76	72%
Fracture	Kuthyoka kwa fupa (34)	4.64	77	44%

by undermining the shared decision-making process between patient and doctor.

Patient literacy affects the quality of information exchange

Perceived patient literacy affected the extent of explanations that healthcare professionals gave to their patients, and the relevance to patients of the notes written in their health passport, which were in English. The estimates given by professionals of their patients' literacy levels were generally close to the official statistics. The literacy rate averaged 60% in Zomba City and in Chingale, and 50% in more rural clusters. One clinic was an exception and had a higher estimated literacy rate because it served the staff and students from the University of Malawi.

Because literacy is a key determinant of health, lower literacy rates may be associated with poorer health outcomes. Official statistics indicate that Malawi's adult literacy rate was 64 percent in 1998 and had declined to 62 percent by 2015, the most recent year for which figures were available.[1] Health literacy may be even lower. In Zambia, an important segment of the literate population, especially those who did not proceed past the primary school level, preferred to read about health matters in their mother tongue [43]. We can conjecture that this is also the case in Malawi. A small study showed that generally in Malawi patients lacked access to health information in a language and format that they could understand and that among young adults who completed the final year of primary school (grade 8), only 40% could fully read and comprehend Chichewa [34].

[1] UNESCO Institute for Statistics.

Vocabulary affects language barriers (Table 5)

Vocabulary is the basis of all languages and plays a role in communication. As was confirmed by our findings, healthcare professionals learn medical terms in English and do not receive training in local languages. Most of their patients speak only local languages. However, the vocabulary of everyday speech is informal and domestic, limited and inexplicit and the fact that someone is competent in a language does not mean that they possess a good vocabulary of medical terms.

We asked healthcare professionals to rate the difficulty and give the Chichewa equivalent for 10 medical terms. Respondents commented positively on the choice of terms on the list. The hardest terms to translate were *gland* and *embolism*. The word *gland* was given the highest difficulty score. For difficult terms, a high variety of translations were given. Some terms in Chichewa were used interchangeably for different organs, for example, the word for liver or bile were also given to mean gland. Even terms that were easy to translate into Chichewa, such as *fever* or *runny nose*, received multiple translations in Chichewa. The agreed Chichewa translation for *fever* was "kuthentha kwa thupi" (67 mentions), but 11 other different translations were given. A complementary way to measure the difficulty of translation is to calculate the rate of agreement by dividing the frequency of the most common translation to the total responses. For example, the agreement rate for hypertension was calculated as 31/73 = 42% and the rate of agreement for fever was 87%. Although "fracture" was rated as the easiest to translate, the rate of agreement among participants in translating this term was lower than for "fever" or for "runny nose."

This short vocabulary check revealed to us that healthcare professionals could not easily find equivalent

translations of medical terms in local languages. Judging by the multiple different translations that were given even for easier terms, we deduced that a medical dictionary with well-thought translations and expressions would prove useful. Hence we added questions to understand the opinion of healthcare professionals on the usefulness of a bi-lingual dictionary with medical terms. The majority of those asked (78%, 51 out of 65) indicated that they did not have access to a medical dictionary in any language. Among those who said that they do have a dictionary (in English), only 6 said that they use it. The majority (77%) of respondents agreed that it was important to have access to a bilingual English-Chichewa medical vocabulary and that a dictionary would help "promote understanding and cooperation between health workers and patients."

> *"It would be very useful. It will make it easy to explain some of the medical terms which lack direct translations" (Professional 2, Chanco).*

The respondent who answered negatively thought that such a dictionary would be rarely used for common diseases; these should be well-known to healthcare practitioners, but that in cases of rare conditions such a dictionary could be useful.

Results from Patients' Questionnaires

Demographics (Table 6)

We collected responses from 312 patients, 87 were men and 224 were women (representing 72% of the total) and one did not indicate the gender. The large proportion of women can be explained by the fact that clinics prioritised maternal health and under-5 consultations. Half of the respondents were between 18 and 30 years of age (160), 36% between 30 and 45 (113), 10% between 46 and 60 (30) and 3% over 60 (9). The top 10 patient occupations were farming (93), housewife (70), business (63),

Table 6 Patients demographics

		Gender			Education						
Facility	**Patients, *n***	**Female, *n***	**Male, n**	**Unknown, *n***	**Not attended**	**< PSLC**	**PSLC**	**JCE**	**MSCE**	**Certificate**	**Diploma**
Chingale	**56**	**53**	**3**		**6**	**11**	**16**	**12**	**11**		
Changalume	16	15	1		1	2	4	4	5		
Chipini	7	6	1				4	2	1		
Mmambo	15	15			1	5	4	2	3		
Nkasala	18	17	1		4	4	4	4	2		
City	**167**	**108**	**59**		**19**	**8**	**57**	**37**	**43**	**2**	**1**
Chanco	12	3	9						12		
Chuluchosema	15	11	4		1	2	7	4	1		
City Clinic	15	8	7		2		4	5	4		
Cobbe	12	8	4				3	5	4		
Matawale	20	17	3				10	3	6		1
Naisi	17	10	7		2		5	4	6		
Namadidi	19	10	9		4		8	2	3	2	
Police Hospital	15	11	4		2		6	5	2		
Sadzi	19	14	5		1	3	6	5	4		
Zilindo	23	16	7		7	3	8	4	1		
Domasi	**79**	**56**	**22**	**1**	**19**	**20**	**15**	**11**	**12**	**1**	**1**
Bimbi	20	15	5		4	3	6	5	1	1	
Domasi (Genes)	3	2	1			1	1	1			
Haward Parker	3	3				1	1				1
Machinjiri	25	16	9		11	7	2	2	3		
Namasalima	22	16	6		4	6	3	3	6		
St. Luke's Hospital	6	4	1	1		2	2		2		
Likangala	**9**	**7**	**2**			**6**	**1**	**2**			
Chamba	9	7	2			6	1	2			
Machinga	**1**		**1**				**1**				
Machinga Health Clinic	1		1				1				
Total	**312**	**224**	**87**	**1**	**44**	**45**	**90**	**62**	**66**	**3**	**2**

student or pupil (41), teacher (12), piecework (9), house maids (3) and fishing or forestry (4).

More than half (57%) were educated only up to Primary School Leaving Certificate of Education (PSLCE) level and 20% to Junior Certificate of Education (JCE) level. Some patients had never been to school or had dropped out of school very early (44, 14%). Interestingly, Zomba City and Domasi, both clusters with good access to schools, had the highest percentages, 11% and 24% respectively, of patients who said they never attended school. Only 20% of patients obtained an MSCE certificate and only 2% were educated up to diploma level.

PSLCE examinations are written by learners at the end of primary school. JCE is obtained after completing two years of secondary school. The MSCE examination is written by students who complete the fourth and final year of secondary school. Students who pass MSCE may qualify for selection into public and private colleges and universities or get absorbed into the jobs market. Both Chichewa and English are subjects for examination for all these certificates, but only English is mandatory and requires a pass as a condition for the award of all these certificates.

Language Demographics (Table 7)

Although Chichewa was the mother tongue of only 36% of the patients, the majority, 86%, said that they spoke Chichewa more frequently than other languages. This reflects the expected role of Chichewa as the lingua franca. More especially, 96% of respondents did not use their mother tongue in communication during consultations and relied almost exclusively on Chichewa. The vocabulary check showed that patients did not always find relevant medical terms in Chichewa, even if this was the language they most frequently used.

Language barriers compromise the quality of the health information exchanged (Table 8).

Patients frequently mentioned that language discordance was an obstacle in their communication with healthcare professionals. Patients whose mother tongue was Lomwe or Yao faced difficulties when required to communicate in Chichewa. They expressed concerns that this negatively impacted their care and could potentially result in incorrect diagnosis.

> *"The doctor might not understand me if I speak Lomwe while he instructs me in Chichewa" (Patient 2, Machinjiri).*
> *"Yes language differences create a problem because one fails to express the symptoms in the doctor's language. I am a Yao, I do fail sometimes" (Patient 20, Machinjiri).*
> *"There may be a problem because they cannot understand each other, and the doctor may write the wrong diagnosis" (Patient 31, Bimbi).*

Most patients (68%) said that language created a challenge when they expressed symptoms and conditions to medical professionals. The majority (83%) said that they could describe symptoms and conditions they suffered from in Chichewa, and only very few could do so in English (4%). However, knowledge of the relationship between symptoms and conditions was low. Half said they knew only few of the symptoms that characterised conditions they suffered from, and 42% said that they knew many of them. This lack of health knowledge could be addressed by improving the dialogue and the knowledge transfer between healthcare professionals and patients. A useful shared vocabulary must be negotiated through encouraging more dialogue, and by developing shared lists with bilingual medical terms and expressions.

Table 7 Patients' mother tongue, the language they speak most frequently, and the language used in communication with healthcare professionals

Language / Number (percentage) of respondents with	Mother tongue	Language they speak the most	Language used in communication with the doctor
Chichewa	113 (36%)	269 (86%)	300 (96%)
Chiyao	96 (31%)	36 (12%)	0 (0%)
Chilomwe	80 (26%)	6 (2%)	2 (1%)
Chingoni	3 (1%)	0 (0%)	0 (0%)
Chisena	5 (2%)	0 (0%)	0 (0%)
Chitumbuka	15 (5%)	0 (0%)	0 (0%)
Mixed English and local Languages	0 (0%)	1 (0%)	7 (2%)
English	0 (0%)	0 (0%)	3 (1%)
Total	**312**	**312**	**312**

Table 8 Patients' knowledge of conditions and symptoms. In the first version of the questionnaire, Questions 5 (ii) – 6 (iv) were structured differently and, thus, data collected from the first 14 respondents were recorded in the table as non-responses. Question 5 (iii) is open-ended, and it is not included in this table; we will discuss this question separately

Q5.i. Can you describe well the conditions affecting you?	**Respondents, n, %**
No	5, 2%
Yes, no language information provided	14, 4 + %
Yes, in Chichewa	260, 83%
Yes, in English	12, 4%
Yes, in other language: ChiYao	12, 4%
Yes, in other language: not specified	2, 1%
Yes, in other language: ChiLomwe	6, 2%
Yes, in other language: ChiTumbuka	1, 0 + %
Q 5 (ii) How well do you know the symptoms of the conditions you suffer from?	**Respondents, n**
I know all of them	10, 3%
I know many of them	131, 42%
I know a few of them	152, 49%
Not asked this question or no response	19, 6%
Q 5 (iv) Do you use a Chichewa term, equivalent to English, in expressing symptoms?	**Respondents, n**
No	276, 88%
Yes	12, 4%
Not asked this question or no response	24, 8%
Q 6 (i) Do you find it easy to express your symptoms to the clinician?	**Respondents, n**
Yes, always	84, 27%
Yes, sometimes	167, 54%
No	42, 13%
Not asked this question or no response	19, 6%
Q 6 (ii) Does language create a challenge in expressing these symptoms?	**Respondents, n**
Yes	185, 59%
Yes, sometimes	10, 3%
No	96, 31%
Not asked this question or no response	21, 7%
Q 6 (iv) Do you understand what the doctor writes in your health book?	**Respondents, n**
No	232, 74%
Yes	53, 17%
Yes, a little	4, 1%
No response	23, 7%
Grand Total	**312, 100%**

Eighty-seven percent of respondents said that they did not use direct Chichewa terms for conditions and symptoms but used descriptive language. Encouraging medical professionals to explain medical terms to patients in local languages may help to expand the health-related vocabulary of the patients and enhance the shared understanding of diseases and symptoms.

Social factors such as age, gender, rapport and privacy issues affect language barriers

We asked patients if they found it easy to communicate and describe their symptoms to healthcare professionals: 29% of respondents said this was always easy, 57% said that sometimes it was easy and 14% did not find it easy. Several factors were given for the difficulty in communicating: the nature of their disease, the rapport during consultations and language differences. Doctors' attitude was a major inhibitor of patient openness. Often patients are made to feel ashamed of their condition. They experienced fear in engaging in conversation when doctors appear to be aggressive and may raise their voice. Some indicated that there were problems in "listening to each other" *(Simungamvane polankhulapo)* and in taking sufficient time to

understand each other's signs and gestures *(sitimvetsetsana zizindikiro).*

Some diseases were difficult to explain *(matenda ena ngovuta kuwafotokoza)* and patients failed to explain their illness due to a lack of appropriate words (*nthawi zina odwala malephera kzifotokoza matenda ake chifukwa cha kusowa mau oyenera kapena kudwalika).* Privacy was also compromised due to a lack of dedicated consultation spaces:

> *"Privacy is compromised because the doctor's desk is as a metre away from the next patient sitting on a bench on a queue" (Patient 3, Machinga).*

Patient use of the health records is impaired by language barriers and professionals' attitude and use of the notes (Table 8)

Most patients (74%) did not know at all what was written in their health passport. Some were able to occasionally recognise names of drugs, a common one being PCM for paracetamol, and results of tests such as "Positive" or "Negative." In some cases, patients' literacy or education levels were the main obstacle, in some, it was the "sloppy writing" and the use of medical symbols by professionals. Most of the times, the main obstacle was the use of English which patients could not speak. Because notes are written exclusively in English, healthcare professionals must explain verbally to patients what they write in their health passport. However, patients did not think that they received sufficient explanations. They noted that healthcare professionals did not utilise the medical history recorded in their health passports.

> *"The doctor does not refer to or take the initiative to closely follow my health history as written in my health book. He does not open my health book back entered pages to check previous prescriptions but rather just opens a new page and makes new illegible scribbles" (Patient 1, Machinga).*
> *"The doctor does not explain nor say to the patient what disease the patient is suffering from nor what (drug name) drugs he has prescribed in the health book" (Patient 2, Machinga).*

These findings call into question the relevance and importance placed on health passports by healthcare professionals, but also the quality and confidence that patients have in the information and care they receive. The ability to access one's own health records is generally upheld as a basic right. In Malawi, patients in government facilities have, in theory, access to their records in the form of health passports, but the quality of this access is in practice diminished by language barriers and other constraints.

The Impact of Vocabulary on Health Communication and Patient Care (Table 9)

Patients in Malawi arriving at healthcare facilities face new demands on their vocabulary. We asked patients to name in Chichewa ten health terms given to them in English. Table 9 contains only the two topmost frequent Chichewa translations given for the English terms. Participants were familiar with the terms for common external body parts, but faced difficulties in naming internal organs. It should be noted that although patients use Chichewa to communicate in a healthcare setting, many speak other languages at home. This explains why even for very common words such as head or eyes, not all gave correct translations into Chichewa. Chest was translated correctly as *chidali by* 186 respondents, but also as *chifuwa* by 79 respondents. Chifuwa is the word for cough or bronchitis and even influenza. *Chifuwa* is common in Chichewa speaking areas, while *Chidali* predominates in Chiyao speaking areas. Table 9

Among the terms for internal organs, the Chichewa words for *liver* and *spine* were the most familiar. Liver (*mphafa*) is commonly seen in chickens and was easily recognised and translated. For many terms there was a variety of translations given, some were imprecise. Spine was translated using *mtsempha* or *mtsempha wa ku msana.* Surprisingly, many did know how the Chichewa word for *kidney* and asked the researcher to demonstrate the position of the organ in the body, to help them to identify it and try to find its corresponding Chichewa name. Thirteen respondents used the same word *mphafa* to translate gallbladder, and 52 respondents gave the word for bile, *ndulu* as the translation for gallbladder. We found that patients' vocabulary for internal organs was poor. This has a connection with the fact that medical professionals do not prioritise explaining medical terms and how diseases affect the human body to their patients.

Patients were more confident in their linguistic ability to describe symptoms. They were more confident to do that in their mother tongue or in Chichewa rather than in English.

However, their vocabulary for medical terms in local languages was limited and patients were more knowledgeable of symptoms that characterised common diseases such as malaria.

> *"I do describe the symptoms indirectly in Chichewa. It's difficult to have symptoms terms said in Chichewa or Yao directly equivalently as they are in English language" (Patient 17, Machinjiri).*

Many English words did not have a direct translation in Chichewa and similarly, many "Chichewa terms do not have directly equivalent terms in English" (Patient 56, Namasalima).

Table 9 The most frequently mentioned conditions and symptoms by patients

Q4. English Terms: Most frequent translation given by patients	**Frequency, n**
Head: Mutu	278
Eye: Diso or maso	245
Ear: Khutu	213
Arm: Mkono or Nkono	208
Chest: Chidali; Chifuwa	186; 79
Liver: Chiwindi	139
Spinal Cord: Mtsempha (mtsempha wa kunsana)	132
Aorta: Mtsempha (mtsempha wa magazi)	82
Gall Bladder: Ndulu; Mphafa	52; 13
Kidney: Ipso	46
Q5. Most frequently mentioned conditions patients suffered from	**Total**
Malaria	181
Dysentery or Diarrhoea	36
Coughing	41
Tuberculosis	5
Pneumonia	16
Runny Nose	29
Others	50
Total	358
Q5. Top Mentioned Symptoms (translated into English)	**Frequency, n**
fever	136
headache	116
vomiting	93
body pains	87
feeling cold	84
body weakness	73
diarrhoea	64
chills	42
coughing	22
weight loss	15
loss of appetite	12
Total	**744**

The vocabulary list we collected during the study shows that symptoms can be described in various ways, including by their severity, duration, and the patient's perception or experience. This linguistic diversity underscores the importance of having a comprehensive list of symptoms in local languages, in Chichewa and in English to enhance mutual understanding during consultations. This approach can enhance the decision-making process and ultimately improve the quality of care.

Results from document analysis

Review of Sample Images from patients' health passports

We inspected a sample of pages from health passports. All the notes we saw were entirely in English, and contained vital signs, some symptoms, test results and mostly drugs prescriptions. In some cases, notes were reasonably legible but, in the majority, the writing was difficult to decipher even for a trained eye. The notes contained many abbreviations and symbols. There was a higher degree of standardisation when it came to symbols used in drug prescriptions. We included two sample images that contain reasonably legible text in the supplementary material.

Review of curriculum documents

Our review of curriculum documents from KUHeS for degrees in nursing, medicine, pharmacy, and laboratory sciences revealed that a general module in language and communication in English is offered in the first or preparatory year. This module focuses on

general reading, listening, and writing language skills in English. However, the syllabus lacks content on medical or anatomical vocabulary in local languages and does not address essential aspects of patient-doctor interaction. As a result, graduates need to acquire these critical communication skills on the job or through experience. In the heavily under-resourced and busy clinics of Malawi, this may not always be feasible. There is a need to acquire from early on in their training the vocabulary required to effectively communicate with their future patients in the workplace.

Review of legislation and policy

We reviewed key health legislation and policies in Malawi. Table 10 lists all the documents we reviewed, and the official platforms from which these were obtained. The *Malawi Constitution* does not mention language rights in healthcare, leaving this area unaddressed. The Constitution specifically prohibits discrimination based on language without mentioning any specific situations. The Constitution also guarantees the right to an interpreter during legal proceedings, stipulating that arrests and accusations should be communicated in a language the person understands. Similar rights to interpreters in healthcare are not specifically assured by the Constitution. The key legal

Table 10 Review of health legislation and key policies in Malawi

Health Legislation and Policies	Reference to Language
The Constitution of Malawi	The constitution stipulates that no person should be discriminated against on ground of language, but there is no specific mention of example of discrimination based on language. The constitution ensures the right of any person to an interpreter during legal proceedings and matters concerning accusations, detaining or arrest should be offered in the "language he or she understands". The Constitution also stipulates that parliamentary proceedings should be conducted in English and that members of the Parliament should speak English "well enough to take an active part in the proceedings of Parliament."
Public Health Act Cap. 34:01	Language is only mentioned once in relation to notices for the intention to remove a body from a grave in an authorised cemetery. The law stipulates that such a notice should be given in English and in the language of "the race of the legal personal representative or next of kin".
Medical Practitioners and Dentists Act Chap. 36:01	Language is mentioned twice as a requirement for obtaining a licence to practice. Only adequate knowledge of the English language is mandated.
Nurses and Midwifes Act Chap. 36:02	Language is mentioned once. A requirement is made for professionals to possess adequate knowledge of the English language as a requirement for a licence to practice.
Anatomy Act Chap. 34:03	No mention of the use of language is present.
Mental Treatment Act Chap. 34:02	No mention of the use of language is present.
Pharmacies and Medicine, and Poison Act Chap. 35:01	Language is mentioned once. A requirement is made for professionals to possess adequate knowledge of the English language as a requirement for a licence to practice.
Occupational Safety, Health and Welfare Act Chap. 55:07	Language is mentioned three times. Mention is made for translating signs for the water supply to indicate where it is drinkable, or for the presence of a medical aid. This should be done in both vernacular and in English. Information about potential hazards and measures for prevention and control should be given in a language that is understood by the worker (Part IV paragraph 65).
Access to Information Act 13 of 2017	The only reference is to the fact that language is a type of information that may be recorded about an individual.
Data Protection Bill 2023	The only reference is to the fact that language is a type of information that may be recorded about an individual..
National Health Policy 2020	No reference to language.
National Community Health Strategy 2022	No reference to language.
Digital Health Strategy 2020 - 2025	No reference to language.
Health Sector Strategic Plan III 2023 - 2030	No reference to language.
Malawi 2063	No reference to language.
Charter of Rights for Patients	No reference to language.

Sources of legislation

Malawi Legal Information Institute website: https://malawilii.org

Sources for policies

The Ministry of Health website: https://www.health.gov.mw

UN LEAP Platform https://leap.unep.org/en/countries/mw

frameworks for the provision of healthcare, such as the *Public Health Act* and the *Occupational Safety, Health and Welfare Act*, include only one or two references to language. This occurs in administrative and safety contexts, such as stipulating that some notices and hazard information should be provided in both English and local languages. The Acts regulating the healthcare professions, the *Medical Practitioners and Dentists Act*, the *Nurses and Midwives Act*, the *Pharmacies and Medicine, and Poison Act*, only require licenced practitioners to have adequate English proficiency. Health policies such as the N*ational Health Policy, Health Sector Strategic Plan III, and Malawi 2063*, do not address language issues. This situation points to a reluctance at policy and legislative level to acknowledge and address the existing language challenges in the healthcare sector which are significant.

The *Malawi Charter of Rights for Patients* [44], although not a piece of legislation or policy, aims to address concerns about the perceived lack of human rights in Malawi's healthcare system. Formulated by the Medical Council of Malawi, the Charter was designed to be displayed in major government health facilities to raise awareness of patients' rights as well as their responsibilities. It outlines key patient rights, including access to healthcare, the right to choice and second opinions, access to quality information and health education, informed consent, privacy, participation, respect, and the right to complain. It also highlights patients' responsibilities, such as making informed decisions, providing accurate information, following prescribed treatments, keeping appointments, and managing their personal health records. The patients' rights put forward by this *Charter* cannot be ensured without addressing language challenges. However, the Charter makes no reference to languages use in consultations.

Summary of results

Our data and analysis as summarised in Table 11 provide evidence for the established use of languages in Malawi: English and local languages, particularly Chichewa, occupy well-defined roles, often complementary, in medical training, consultations and health communication, and these roles are influenced by both social and policy factors. In Fig. 2, by use of coloured arrows, we show how social and political factors affects the shift between the use of English and the use of local languages in specific settings. The orange arrows (social) indicate how language use shifts from local languages toward English as social factors move towards more formal settings (e.g., staff communication, training and formal education, report writing). The red arrow (policy) represents the relationship between health literacy and policy factors. Health literacy is increasing, and it is higher for English-speaking patients than those who can speak only local languages. Policy encourages the use of the English language and not the use of local languages.

Our findings can be grouped into four categories: sources of language barriers, factors affecting language barriers, consequences of language barriers and strategies mentioned by healthcare professionals and patients to overcome language barriers (Table 12). Key sources of language barriers were the lack of training in local languages in medical education, language discordance present at health facilities, lack of language resources, and negative perceptions that medical professionals and patients formed of each other. We found that vocabulary limitations in both English and Chichewa were

Table 11 Summary of results from questionnaire

Language used for tasks below (Responses, %)	English	Local Languages	Mixed
A. Teaching and learning for healthcare professionals	**100%**		
C. Medical or hospital notes and reports	**94%**	6%	
E. Notes, diagnoses, and medication recorded in the patients' health passports	**100%**		
B. Communication in the workplace among healthcare professionals when discussing patient conditions and medical history	37%	1%	62%
F. Communication with patients		54%	36%
G. Healthcare professionals' explanation of medical terms to their patients	4%	43%	18%
Responses, %	**Yes**	**No**	
D. Healthcare professionals have access to medical dictionaries	22%	**78%**	
G. Healthcare professionals explain medical terms to their patients	**65%**	35%	
H. Healthcare professionals use previous notes written in the patient health passport	54%	46%	
I. Patients know little or nothing regarding what is written in their health passport	80%	20%	
J. Both healthcare professionals and patients struggle to express medical terminology in local languages.*	100%		

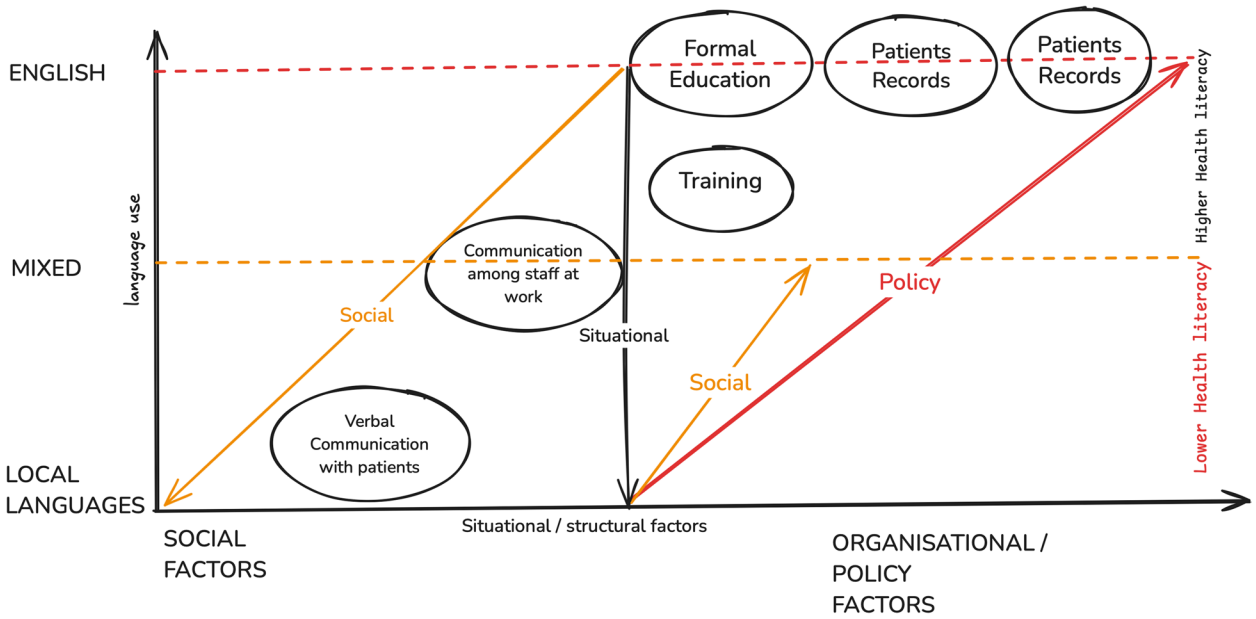

Fig. 2 Dimensions and forces affecting language use in Malawi's healthcare. Social factors (orange arrows) favour local languages in patient interactions, shifting toward English in formal settings like staff communication and report writing. Policy factors (red arrow) promote English, requiring higher health literacy, especially in formal education and official documentation

Table 12 Summary of findings

Category	Findings
Sources of language barriers	Multilingualism
	Language discordance between professionals and patients
	The dominance of English in training, written reports and medical notes
Factors affecting language barriers	Vocabulary limitations experienced by health professionals and patients
	Gender, age and experience
	Type of rapport created between healthcare professional and patients
	Lack of privacy during consultations
	Literacy or perceived low literacy
	Personal perspectives or experiences related to the other party (patients' perceptions of healthcare professionals, and healthcare professionals' views and interactions with patients)
Consequences of language barriers	Poorer healthcare experience
	Compromised quality of health information exchange
	Patients face problems in understanding their medical condition or treatment
Strategies used by respondents to overcome language barriers	Using interpreters
	Flexibility in the choice of languages
	Complement communication with body language indicators, physical checks and laboratory results
Possible solutions and policy implications	Patients records to incorporate explanations in local languages
	Best practice guidelines for handling sensitive and complex situations
	Sensitisation / courses that address intrapersonal communication among staff
	Availability of dictionaries of phrases for symptoms and conditions
	Education efforts / health education within communities that incorporates language needs
	Staff allocation that considers languages needs (policy)
	Provision of interpreters (policy)

experienced by patients and healthcare professionals; and social factors such as gender, age, experience, literacy or perceived low literacy, type of rapport, and lack of privacy during consultations gave rise to additional language barriers.

Discussion

Sources of language barriers

The findings of our study confirm the presence of a misalignment between languages that healthcare professional speak, and the languages spoken by patients, as determined in previous studies. In the study by Kamwendo in the Northern Region of Malawi, Chitumbuka was the local lingua, and language discordance emerged more clearly, as most healthcare professionals were either expatriates, who did not speak local languages, or were from other regions of Malawi, and spoke Chichewa not Chitumbuka [24]. In South Africa, language discordance compromised communication in a similar way because patients spoke only isiXhosa, one of the official ethnic languages; while staff were fluent in English or Afrikaans and could not speak isiXhosa almost at all and interventions such as the introduction of dedicated courses for language training were suggested [8, 11].

Our study took place in the Southern Region of Malawi where the language situation is more nuanced than in the Northern Region. Here, because of the widespread use of Chichewa, language discordance, if it exists, may not immediately be considered to cause significant barriers in communication. However, we found that this was not the case. Multilingualism and language discordance were recognised by both professionals and patients who participated in the study. Chichewa and English, in that order, were used to bridge the communication gaps, but as we saw, patients and professionals had vocabulary gaps in local languages which were notable and contributed to communication barriers.

Given the language situation in Malawi, where English dominates as the language of health and medical education there is a need to investigate firstly how this affects the language preparation of medical professionals and secondly, what resources are needed to support local language competencies in the medical domain. Our study provides some answers to these questions by showing that there is a gap in language training in medical and health education in Malawi and we argue for the introduction of adequate language training and resources. Our vocabulary check provides insights into why language competence in healthcare is not the same as language competence for everyday use. The fact that patients or professionals are bilingual can give a misleading impression of their true health language competence. Additionally, we show that this is a function of the competence of both providers and patients as they are equally important to achieve health literacy [33].

Most medical professionals think that English will remain the main language for medical training in Malawi. We found that code-switching is not sufficient to ensure that patients understand what is being communicated to them. A study in language use and preferences in a classroom setting by nursing lecturers also found that code-switching did not play a translational or a significant preparatory role for 'the demands of the nursing professions'[36]. Hence, language preparation in medical schools is inadequate, and efforts should be made to address vocabulary and communication needs.

Is it worth developing a shared vocabulary for symptoms and conditions in local languages?

The field of medicine and healthcare forces a confrontation between the technical or scientific and the language of everyday life. Language is involved at all points in the communication: a doctor attempts to understand the problem of a patient and the patient attempts to understand the doctor's diagnosis. Challenges occur even if doctor-patient communication takes place in the same language. We found that healthcare professionals did not prioritise explaining medical terms to their patients. However, explaining medical words in clinical encounters is important and unclear use of medical terminology leads to misunderstanding during consultations [45, 46]. Healthcare professionals in South Africa and Nigeria recognised the need for acquiring a medical vocabulary in local languages. We consider that the language barriers we uncovered justify the need for similar interventions in Malawi [11, 12].

When healthcare professionals and patients meet during repeated visits, the patients become more experienced and there is a greater opportunity to establish a common vocabulary. In most cases, the first visit is the only such opportunity. The initial statement of symptoms is of critical significance to guide clinicians in the search for the clinical signs of the condition of the patient. We were able to collect over a short time a relatively large vocabulary of medical terms, symptoms and diseases that are prevalent among patients in Malawi. We were able to collect over 1,000 different expressions. This vocabulary can be expanded further and could serve as a basis on which to develop a health vocabulary that is useful for improving communication. Even in the case of Chichewa, which can be considered a major African language, no specialist dictionaries covering medical terminology for health have been developed. Having access to a vocabulary list for symptoms and conditions is important because it can facilitate matched consultations in which doctors use the same vocabulary as the patient. Matched

consultations were shown to improve patient satisfaction leading to distress relief, communication comfort, rapport, and compliance intent [46].

Gender, age, experience, literacy and privacy play an important role

Personal perspectives and experiences can also be sources of language barriers. Patients' perceptions of the responsiveness of healthcare professionals and their willingness to listen to them affected their openness. Age and gender also intervened, women and the aged being more open than the young or male adults. Women may be more experienced and may have been encouraged more by the many health programs in Malawi that prioritise women. Patients of low literacy or education level were disadvantaged because healthcare professionals were inclined to explain less. As expected, communication was affected by the rapport created during consultations. To some patients, professionals seemed to make their mind without listening or discussing further their symptoms. This negative perception is magnified by professionals who do not consult the patients' medical history in health passports and by the fact that patients cannot read the notes.

While we did not have any direct questions about privacy, lack of privacy during consultations emerged as a serious issue and affected communication in a negative way. Lack of privacy cause patients to "switch off" and hence their ability to understand, retain and capture information given to them is diminished [28]. We show in this article that the current use of languages in ways that disadvantage patients exacerbate communication barriers and could reduce privacy. Language barriers can lead to privacy loss, especially when patients must rely on intermediaries for translation. Those with low literacy may misunderstand key information, resulting in the unintended disclosure of private details. Additionally, language barriers can hinder patients' ability to give informed consent, potentially leading to a loss of autonomy when others make decisions on their behalf without fully grasping their wishes. We believe that there is a need to consider the interplay between language use and privacy. Efforts to improve privacy, for example in maternal care in Malawi [47, 48] have looked at optimising hospital infrastructure and processes, for example, installing curtains or cubicles, but have all failed to ask questions about language use. A lot of things may look like privacy-related issues, but they could be more about language use.

Improving health literacy is imperative

Education polices can tackle literacy and health literacy by incorporating aspects of language within health education. Health literacy refers not only to abilities and skills of patients, but, as we have showed, it "is a shared function of social and individual factors" [33]. Knowledge, competence and motivation are core attributes of health literacy [33]. Reading and writing is essential for health literacy, but so is acquiring knowledge about diseases and self-care. Our results show overwhelmingly that patients struggle with language differences. Falling literacy and educational opportunities in Malawi means that patients' knowledge and vocabulary in local languages and in English are on a downward slope.

We can deduce that the language barriers we uncovered imply that it will be almost impossible for patients to fulfil their responsibilities set for them in the *Malawi Charter of Rights for Patients,* which are to "provide health care providers with relevant and accurate information for diagnostic treatment", to "comply with the prescribed treatment" and to "take care of his/her health records in his/her possession." Most patients have little to no understanding of what is written in their health passports. Medical professionals saw themselves as the intended users of the notes written in health passport, and that patients receive verbal communication of what is in the notes and must remember that information. If patients are to value their health passports, issues of language use must be looked at. Recently, efforts were made to re-design the health passports for antenatal care to help improve adherence of patients to treatment and change in practice, but no consideration was given to the use of English for the notes [48]. The silent assumption that the current language use is not a significant issue does not reflect reality. Patients may forget what was explained to them verbally and what is written they cannot read or understand.

Similarly, it is not enough to communicate the final diagnosis, laboratory results and treatment to a patient, rather more detailed explanations of their medical conditions and symptoms are needed. Patients were sometimes confused by the information given to them. Contrary to the expectations of professionals, patients appreciated being given more knowledge about their disease or symptoms, which could include knowledge of human organs and their functions [28].

Implications to medical training

To improve communication during consultations, the vocabulary needs of both patients and medical professionals must be met. Community education initiatives could encourage patients to share and learn lists of words that describe conditions and symptoms with reference to human anatomy and preventive care. Aspects of what makes a good communication during consultations can be featured in health literature too, so that patients are

encouraged to be more confident and more open when sharing their medical history. Because healthcare professionals are important contributors to health literacy, there is a need for a perspective on communication in local languages to be included as a part of their medical training. Nursing and medical colleges could consider introducing optional courses that cover key competencies, including terms for organs of the human body and names of common diseases in vernacular. Such courses were shown to be beneficial for medical training in the USA and South Africa [12, 49–51]. Language skills for medical interviews and for patient-centred explanations of medical diagnoses, assessments and treatment plans are also useful. Such courses have the potential to enhance the appreciation that healthcare professionals have for patients and could lead to an improved two-way communications during consultations. Sensitisation and courses that address intra-personal communication among staff and between staff and patients can also help in solving some of the challenges we found [1, 28]. There is a need to develop guidelines for best practice when handling sensitive and complex situations that involve lack of privacy, gender or age.

Possible policy implications and solutions

Our findings can inform policies such as the provision of interpreters when language discordance occurs. There are known problems associated with the use of interpreters, — such as costs, potential for miscommunication, resistance from medical professionals, and concerns about privacy and confidentiality [2, 14, 24, 52]. A study in a hospital in South Africa found that using non-medical isiXhosa-speaking staff as ad-hoc interpreters was ineffective due interpreters' vocabulary limitations for medical terms [8]. Some of our respondents highlighted the need for ad-hoc interpretation to assist in consultations involving Chiyao speaking communities. A separate study would be necessary to explore the provision of interpreters in healthcare facilities in Malawi.

Questions about policies for deploying staff based on language needs were also beyond the scope of our study and may cause controversy given that language and ethnicity are closely interlinked. Language situations display high fluidity, and it is rare to find settings where languages remain stable and balanced over time. The demographics of our respondents showed a high mobility of healthcare professionals who seek jobs and training in Malawi. There are several nursing colleges in Malawi, but only one medical university that trains doctors and pharmacists up to degree level. National language surveys have not been conducted in Malawi in the past 25 years. Healthcare facilities do not collect data about languages spoken by their staff or patients. These considerations mean that policies and guidelines regarding language use in healthcare must be formulated through wider research, with adequate resources for engagement with staff on the ground. Insights such as ours into language use can provide crucial directions. The provision of interpreters or staff allocation based on language may solve some of the problems we found, but there is a need to expand on longer term solutions by seeking to improve the knowledge of and use of local languages in medical communication.

Limitations and further work

Any study of language use is inherently complex and can only cover a subset of its vast array of aspects. Our study covers only one district of Malawi; it is not a linguistic study. Therefore, the vocabulary checks we conducted cannot sufficiently measure the extent of the vocabulary needs of healthcare professionals or those of patients, which may be even greater than what we managed to show. There was a possibility of contagion in responses: some respondents could have overheard the translations of Chichewa terms given by others, so they could have simply 'copied' them. By collecting data in different days and from several clinics we limited this problem. Contagion was less of a concern for health professionals as they completed the questionnaires individually. Further studies are required to investigate possible policy solutions and to investigate in more depth the vocabulary needs of both medical professionals and patients. We think that our findings regarding the problems in the use of health passports were significant and should be looked at in more depth.

Conclusions

We studied language barriers in healthcare communication and provided evidence for the extent of language challenges faced by healthcare professionals and patients in Malawi. This study is novel given the scarcity of linguistic research in Malawi in general, and in health communication in particular. We gathered evidence to attest that language barriers faced by professionals and patients are significant and are caused by language discordance as well as by organisational and social factors. We found that these factors result in limited and often inadequate communication during consultations. Our study highlights how language difficulties hinder patients' understanding of medical explanations and histories recorded in their notes and affect their ability to follow treatment instructions written in their health passports. English will most likely remain the language used in medical education. At the same time, the language barriers we witnessed can only grow larger if sufficient attention is not given

to language training and education for both healthcare professionals and patients. Medical resources such as dictionaries with expressions and translations of symptoms into Chichewa can help facilitate translations and conversations regarding common medical conditions and are essential to ensure a matched vocabulary during consultations.

Our findings have policy implications. Language barriers are significant and cannot be solved by setting them aside or by leaving them completely in the hands of healthcare professionals and patients to manage by themselves. Research into the best means of achieving a coherent set of policies that address language barriers is needed. Ways of getting around language barriers may include the provision of qualified interpreters, strategies for staff allocation, the development of medical dictionaries, and opportunities and incentives to learn languages [11]. We hope that this research motivates additional studies into language difficulties in healthcare facilities and is used by the relevant stakeholders to provide solutions.

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Authors' contributions
AT is the Principal Investigator (PI) from the Malawi University of Business and Applied Sciences (MUBAS), INSPIRE Project who received funding to support the project at MUBAS. As PI, project manager and the corresponding author, AT developed the conceptual framing of the research, wrote the research protocol and obtaining approval from the Zomba District Health office. AT developed the methodology and the questionnaire protocol. AT analysed the data using Excel and wrote the initial manuscript. PK reviewed the questionnaires, provided feedback, and translated the patient questionnaire into Chichewa. PK oversaw and was engaged in data collection, translated responses from Chichewa to English, contributed to data entry, and provided feedback on the manuscript.

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Data availability
The data that support the findings of this study are available from the corresponding author, upon reasonable request.
The authors declare no competing interests.

Declarations

Ethics Approval and Consent to participate
The research committee of the Zomba District Heath Office has approved all materials and procedures for this study (ZA/DC/ADMIN/15/02/2024) dated 15th February 2024. All procedures were carried out in accordance with the Declaration of Helsinki. All patient participants were given a written and verbal explanation regarding the aim of the study, data protection and privacy of individual data. Consent was obtained verbally. The written consent of healthcare professionals and patients came in the form of completed and returned questionnaires.

Consent for publication
Not applicable.

Competing interest
The authors declare no competing interests.

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