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RESEARCH ARTICLE

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Utilisation of Digital Health Technologies for Medical Communication and Healthcare Delivery in Cameroon: Current Use and Evidence Gaps

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ABSTRACT

Healthcare delivery in Cameroon is constrained by workforce shortages, weak infrastructure, and fragmented health information systems, resulting in suboptimal medical communication and service coordination. As digital connectivity expands, digital health technologies (DHTs) offer opportunities to strengthen communication and healthcare delivery; however, evidence on their utilization and impact in Cameroon remains limited.

This study aimed to identify the types of DHTs in Cameroon and to assess their influence on medical communication and healthcare delivery outcomes.

A qualitative secondary research design was employed, reviewing peer-reviewed articles, policy documents, and reports published between 2015 and 2025. Data were thematically analyzed to identify the types of DHTs in use, their effects on provider - provider and provider - patient communication, healthcare delivery outcomes, and implementation barriers.

Findings indicate that Cameroon has introduced several DHTs, including telemedicine platforms, mobile health (mHealth) applications, electronic medical records, and national health information systems such as DHIS2. These technologies show potential to improve communication, expand access to care, and enhance efficiency, particularly in underserved settings. However, most initiatives remain pilot-based, with limited empirical evidence demonstrating sustained improvements in healthcare outcomes. Key barriers include inadequate infrastructure, low digital literacy, language constraints, weak interoperability, and insufficient regulatory frameworks.

While DHTs hold significant promise for strengthening Cameroon's health system, their impact remains uneven and under-evaluated. Strengthened investment, capacity building, policy enforcement, and rigorous outcome-focused research are required to support scalable and sustainable digital health integration.

ARTICLE HISTORY

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KEYWORDS

Digital health technologies; medical communication; healthcare delivery; telemedicine; Cameroon; low- and middle-income countries.

Introduction

Cameroon, a lower-middle-income country in Central Africa, has a population exceeding 27 million and a healthcare system characterized by persistent structural challenges. These include limited access to quality healthcare services, shortages of trained health professionals, marked urban–rural disparities, and weak health information systems [1,2]. Logistical constraints such as poor transportation networks, geographical barriers, and inconsistent electricity and internet connectivity further complicate healthcare delivery, particularly in rural and conflict-affected regions [3].

Effective medical communication, defined as the timely and accurate exchange of health information among healthcare providers, patients, and health systems, is critical to quality care. In Cameroon, communication gaps contribute to fragmented care, diagnostic delays, medication errors, and poor patient outcomes [4]. These challenges are exacerbated by reliance on paper-based systems and limited inter-facility coordination, which often result in delayed referrals and incomplete patient records [5].

Globally, DHTs including mHealth, telemedicine, electronic health records (EHRs), health information systems (HIS), and digital decision-support tools have demonstrated potential to address such gaps by improving information flow, care coordination, and service efficiency [6,7]. In sub-Saharan Africa, increasing mobile phone penetration and expanding network coverage create new opportunities to leverage digital tools to improve healthcare delivery [8].

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Cameroon has introduced several digital health initiatives, often through pilot projects led by government agencies, non-governmental organizations, and international partners. Examples include the national rollout of DHIS2 for routine health data reporting, telemedicine programs in selected urban hospitals, and mHealth interventions targeting maternal and child health [9]. The COVID-19 pandemic further accelerated digital health deployment for surveillance, case tracking, and remote consultations [10]. Despite these efforts, adoption remains fragmented, and systematic evidence on the impact of DHTs on medical communication and healthcare delivery in Cameroon is scarce.

This study examines this gap by synthesizing existing evidence on the utilisation of DHTs in Cameroon, addressing specifically the following objectives:

- To determine the types of DHTs currently in use in Cameroon.
- To determine how DHTs have impacted communication between healthcare providers and between providers and patients.
- To determine the influence of DHTs on healthcare delivery outcomes such as access, efficiency, and quality of care in Cameroon.

Methods

Study Design

This study employed a qualitative secondary research design, involving the systematic review and thematic synthesis of existing literature on DHTs in Cameroon. The review focused on publications from 2015 to 2025 to capture recent developments while allowing for contextual understanding of earlier initiatives.

Data Sources and Search Strategy

Secondary data were obtained from peer-reviewed journals, government publications, and reports from international organizations and non-governmental organizations. Databases searched included Google Scholar, PubMed, ScienceDirect, Sage Journals, and African Journals Online (AJOL). Grey literature was sourced from the Ministry of Public Health Cameroon, WHO, World Bank, UNICEF, and development partners such as GIZ and USAID.

Search words included combinations of: *digital health technologies*, *eHealth*, *mHealth*, *telemedicine*, *medical communication*, *healthcare delivery*, and *Cameroon*. Searches were filtered by publication date and relevance.

Inclusion and Exclusion Criteria

Included sources:

- Publications between 2015 and 2025
- Studies focusing on Cameroon or providing Cameroon-specific insights
- Literature addressing DHT types, communication, or healthcare delivery outcomes

Excluded sources:

- Publications without credible authorship or institutional backing

Data Extraction and Analysis

Data were extracted using a structured matrix capturing publication details, DHT types, communication impacts, healthcare delivery outcomes, challenges, and recommendations. Thematic analysis was conducted through familiarization, coding, theme development, and interpretation, aligning findings with the study objectives.

Ethical Considerations

As a secondary study using publicly available data, ethical approval was not required. Proper citation and adherence to academic integrity standards were maintained.

Results

Types of Digital Health Technologies in Use in Cameroon

The literature shows that several digital health technologies (DHTs) have been introduced in Cameroon, including telemedicine platforms, mobile health (mHealth) applications, electronic medical or patient records, digital training tools, and national health information systems such as DHIS2. Most of these technologies have been implemented through pilot projects supported by government agencies, non-governmental organizations, or international partners [11].

However, the majority of these tools are not fully integrated into routine clinical practice. Their use is often limited to specific facilities or districts, with few initiatives scaled nationally. In addition, much of the available evidence is outdated, and there is limited recent data on the consistency or extent of current use. Overall, DHT implementation in Cameroon remains fragmented, uneven, and largely experimental [12].

Impact of DHTs on Medical Communication in Cameroon

Provider–Provider Communication

Digital tools such as telemedicine platforms and electronic reporting systems have the potential to improve communication between healthcare providers by supporting remote consultations and routine data reporting [13]. However, there is little empirical evidence showing meaningful improvements in everyday clinical communication, such as faster referrals or reduced diagnostic delays [14]. Infrastructure challenges, including poor internet connectivity and unstable power supply, further limit consistent use.

Provider–Patient Communication

mHealth tools, particularly SMS reminders and follow-up calls, are commonly used to support communication with patients for appointment reminders and health education [10]. Nevertheless, evidence of their effectiveness is weak and mostly based on small-scale or short-term projects [9]. Language barriers, low literacy levels, and poor network coverage reduce their reach and impact.

Influence of DHTs on Healthcare Delivery Outcomes in Cameroon

Access to Care

DHTs are often promoted as a way to improve access to healthcare, especially in remote areas. While telemedicine and mobile platforms may reduce the need for travel, there is little measured evidence demonstrating significant improvements in access, such as increased service coverage or reduced travel time [12].

Efficiency and Quality of Care

Some studies suggest that digital systems may improve efficiency and support better clinical decision-making [15,16]. However, few provide clear data on time savings, cost reductions, or improvements in clinical outcomes. Technical challenges, limited training, and system downtime frequently undermine potential efficiency and quality gains [8].

Discussion

This review highlights a clear gap between the expected benefits of digital health technologies and the limited evidence from real-world implementation in Cameroon. Although many DHTs have been introduced, most remain at pilot or early implementation stages, with little rigorous evaluation of their impact on healthcare delivery or clinical practice.

A major limitation in the literature is the lack of outcome-based research. Many studies focus on describing technologies or reporting perceptions rather than measuring concrete outcomes such as improved communication, efficiency, or quality of care.

Persistent barriers including weak infrastructure, low digital literacy, limited device access, language challenges, and weak governance frameworks, continue to restrict effective adoption and scale-up.

The existing evidence base is also limited by outdated data, narrow geographic focus, and small sample sizes. Rural and conflict-affected regions are particularly underrepresented. These gaps make it difficult to inform policy decisions or justify large-scale investment in digital health.

Conclusion

Although digital health technologies (DHTs) show potential to improve communication, access, and service delivery, their use in Cameroon remains limited, fragmented, and largely confined to pilot initiatives. Evidence demonstrating their efficiency, effectiveness, and impact on clinical outcomes is still insufficient. Persistent barriers including weak infrastructure, low digital literacy, language constraints, limited access to devices, and inadequate regulatory frameworks, continue to hinder scale-up and meaningful impact. Progress beyond pilot implementation will require sustained investment in infrastructure and capacity building, together with rigorous, context-specific research that evaluates real-world outcomes. Without such evidence, DHTs are likely to remain aspirational rather than transformative for clinical practice and healthcare delivery.

Limitations

This study relied exclusively on secondary data, some of which may be outdated. Limited availability of quantitative outcome measures restricted the ability to assess causal impact.

Authors' contributions

Simo Alastair Mope: Concept development, elaboration, Discussion/conclusion writing and proofreading.

Patrick Ngan: Methodology, evidence-based report writing and proofreading.

M. Fomene Vladimir: Literature search and proofreading.

Jude S. Moutchia: Data synthesis, analysis and reporting.

Kammi Steven: Literature search and proofreading.

STROBE Statement—checklist of items that should be included in reports of observational studies.

	Item No.	Recommendation	Page No.	Relevant text from manuscript
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	2	Secondary Research Design
		(*b*) Provide in the abstract with an informative and balanced summary of what was done and what was found	2	
Introduction				
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported	3	
Objectives	3	State specific objectives, including any prespecified hypotheses	4	
Methods				
Study design	4	Present key elements of study design early in the paper	5	Study Design
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5	Data sources and search strategy
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants	5	Inclusion and exclusion criteria
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case		
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	N/A	
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	5	Data sources and Search Strategy
Bias	9	Describe any efforts to address potential sources of bias	6	Ethical considerations
Study size	10	Explain how the study size was arrived at	N/A	
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	N/A	

	12	(*a*) Describe all statistical methods, including those used to control for confounding		
		(*b*) Describe any methods used to examine subgroups and interactions		
		(*c*) Explain how missing data were addressed	N/A	
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy		
		(*e*) Describe any sensitivity analyses	N/A	
Results				
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed.		
		(b) Give reasons for non-participation at each stage		
		(c) Consider use of a flow diagram		
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders		
		(b) Indicate number of participants with missing data for each variable of interest		
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount)		
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time		
		Case-control study—Report numbers in each exposure category, or summary measures of exposure		
		Cross-sectional study—Report numbers of outcome events or summary measures	7,8	
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included		
		(*b*) Report category boundaries when continuous variables were categorized		
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time Period	7,8	
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses		
Discussion				
Key results	18	Summarise key results with reference to study objectives	9	Discussion
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias		
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of	9	
Generalisability	21	Discuss the generalisability (external validity) of the study results	9	Conclusionn
Other information				
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	10	Funding

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

References

1. Forbinake NA, Enongene JM, Asonglefac BK, Akamin A, Mbock I, et al. The universal health coverage challenge in Cameroon and strategies for sustainable reform. Discov Public Health. 2025; 22(1): 419.
2. Tandi TE, Cho YM, Akam AJ-C, Afoh CO, Ryu SH, et al. Cameroon public health sector: shortage and inequalities in geographic distribution of health personnel. Int J Equity Health. 2015; 14(1): 43.
3. Holly L, Smith RD, Ndili N, Franz C, Stevens EAG. A Review of Digital Health Strategies in 10 Countries With Young Populations: Do They Serve the Health and Wellbeing of Children and Youth in a Digital Age? Front Digit Health. 2022; 4.
4. Sharkiya SH. Quality communication can improve patient-centred health outcomes among older patients: a rapid review. BMC Health Serv Res. 2023; 23(1): 886.
5. Sylla B, Ouedraogo B, Traore S, Ouedraogo O, Savadogo LGB, et al. Current status of digital health interventions in the health system in Burkina Faso. BMC Med Inform Decis Mak. 2024; 24(1): 171.
6. Manyazewal T, Woldeamanuel Y, Blumberg HM, Fekadu A, Marconi VC. The potential use of digital health technologies in the African context: a systematic review of evidence from Ethiopia. NPJ Digit Med. 2021; 4(1): 125.
7. Yeung AWK, Torkamani A, Butte AJ, Glicksberg BS, Schuller B, et al. The promise of digital healthcare technologies. Front Public Health. 2023; 11.
8. Wirsiy FS, Ako-Arrey DE, Njukeng PA. Mobile Health Interventions in Cameroon: A Review of their Effect on Women's Health Outcomes. J Womens Health Dev. 2019; 2(3): 76-89.
9. Agboryah B-ENM, Ndip VA, Ngomba AV, Tazinya AA, Adiogo D. Factors associated with the use of digital health among healthcare workers in the Buea and Tiko health districts of Cameroon: a cross-sectional study. Pan Afr Med J. 2024; 47: 51.
10. Mbah M, Bang H, Ndi H, Ndzo JA. Community Health Education for Health Crisis Management: The Case of COVID-19 in Cameroon. CHERP. 2023; 43(4): 443-452.
11. https://dig.watch/resource/the-cameroon-national-digital-health-strategic-plan-2020-2024
12. https://socasan.cm/les-avantages-de-la-sante-numerique-pour-ameliorer-le-systeme-de-sante-camerounais/

13. Ateghang-Awankem B, Atanga NSNS. Digital Health in Low Resource Setting: Overview of Telehealth Market in Cameroon. J Qual Health Care Econ. 2022; 5(2).
14. Dodoo JE, Al-Samarraie H, Alsswey A. The development of telemedicine programs in Sub-Saharan Africa: Progress and associated challenges. Health Technol. 2022; 12(1): 33-46.
15. Asonganyi EA, Tanue EA, Kwalar GI, Kibu OD, Ondua M, et al. Preparedness of the Local Population for the Uptake of Artificial Intelligence and Digital One Health for Home Healthcare of Emerging and Reemerging Infectious Diseases in Southwest and Littoral Regions of Cameroon. J Trop Med. 2025.
16. Ngwakongnwi E, Atanga MBS, Quan H. Challenges to implementing a National Health Information System in Cameroon: perspectives of stakeholders. J Public Health Afr. 2014; 5(1).