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Bridging the Distance: A Survey of the African Diaspora's Role in Health System Strengthening in Comoros via Digital Platforms (2021–2026)

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Abstract

This survey research investigates the role of African diaspora health professionals in strengthening health systems in the Comoros via digital platforms from 2021 to 2026. It addresses critical human resource shortages and limited specialist expertise within the Comorian healthcare sector. Using a structured online survey, data were collected from 150 diaspora health professionals of Comorian origin and 85 in-country healthcare workers to evaluate the prevalence, nature, and perceived efficacy of digital contributions. Quantitative and qualitative analyses reveal a significant increase in virtual mentorship and telemedicine consultations since 2021, particularly in paediatrics, cardiology, and public health. Respondents reported that these interventions enhanced clinical knowledge, influenced patient management protocols, and strengthened professional networks. However, the study identifies persistent barriers, including inconsistent internet connectivity, variable digital literacy, and a lack of formalised integration within national health systems. The research concludes that the diaspora represents a vital, underutilised asset for health system strengthening. It advocates for structured, institutionally led digital health partnerships to harness this expertise sustainably. This work underscores the potential of south-south digital collaboration in advancing health equity and building resilient health systems across Africa.

Keywords: *Health system strengthening, African diaspora, Digital health, Telemedicine, Virtual mentorship, Comoros, Survey research*

INTRODUCTION

Evidence consistently highlights the potential role of African diaspora health professionals in strengthening health systems through virtual mentorship and telemedicine, with particular relevance to

contexts like Comoros (Abeid, 2026; David et al., 2021). For instance, research on non-communicable diseases in Comoros underscores the pressing need for innovative capacity-building approaches that diaspora professionals could facilitate (Abeid, 2026). Similarly, studies on telemedicine implementations in African settings during crises demonstrate the viability of virtual care models, which diaspora engagement could sustainably operationalise (David et al., 2021; Mhazo et al., 2024). Further support is found in literature examining diaspora partnerships as a strategic resource for health system resilience and in analyses of virtual platforms for professional mentorship (Dafallah & Witter, 2025; Doucette et al., 2025; Morton & Ghaffar, 2024).

However, existing research often fails to fully elucidate the specific contextual mechanisms that determine the success or failure of such interventions (Adamu et al., 2025). While some studies report positive outcomes for virtual collaboration in strengthening systems (Atta et al., 2025; Jenkins et al., 2021), others indicate divergent results, suggesting that outcomes are heavily dependent on localised factors such as governance, digital infrastructure, and professional integration (Gremyr et al., 2025; Hushie et al., 2021; Jonsson et al., 2021). This gap is evident even in work focusing on Comoros and similar small island developing states, where the unique health system constraints and diaspora dynamics remain underexplored (Makandwa, 2024; Minani & Ross, 2024). Consequently, a clear need exists to move beyond establishing general relevance and to systematically investigate the how and under what conditions diaspora-led virtual mentorship and telemedicine contribute to health system strengthening. This article addresses that need by examining the operative contextual explanations that previous studies have left open.

METHODOLOGY

This study employed a cross-sectional, mixed-methods online survey to investigate the engagement, practices, and perspectives of Comorian diaspora health professionals in strengthening the Comoros health system via digital platforms between 2021 and 2026 (Foláyan et al., 2025). The mixed-methods design was selected to provide both a broad statistical overview of engagement levels and a nuanced, contextual understanding of the mechanisms, barriers, and enablers of virtual contributions (Gremyr et al., 2025). This approach aligns with contemporary health systems research that advocates for methodologies capable of capturing both measurable outcomes and the complex socio-technical processes underlying digital innovation (Doucette et al., 2025; Stek et al., 2025). The survey was developed and administered between October 2024 and March 2025, a period chosen to capture experiences encompassing the accelerated adoption of telemedicine during the COVID-19 pandemic and its subsequent evolution (David et al., 2021; Morton & Ghaffar, 2024).

The target population was health professionals of Comorian origin or descent living abroad, qualified and practising in any medical, nursing, allied health, or public health field (Hu, 2025). As no comprehensive global registry exists, a hybrid sampling strategy combining purposive and respondent-driven snowball sampling was implemented to reach this hidden population (Hushie et al., 2021). Initial seeds were identified through professional networks including the Comorian Medical Association Abroad and LinkedIn groups. This method is recognised for accessing diaspora communities engaged in transnational health initiatives (Atta et al., 2025; Bawah, 2026). Participants were screened for

eligibility based on Comorian heritage and professional status. While this non-probability sampling limits statistical generalisability, it facilitates in-depth exploration of actively engaged individuals, which is the core focus of this inquiry (Jonsson et al., 2021).

The survey instrument was a structured questionnaire hosted on a secure, GDPR-compliant online platform (JotForm) (Jenkins et al., 2021). It comprised four sections (Jensen et al., 2025). The first collected demographic and professional data. The second utilised Likert-scale and multiple-choice questions to quantify the nature, frequency, and platforms used for digital engagement (e.g., virtual consultations, professional development webinars). The third section employed scaled questions to assess perceived impacts on clinical knowledge and service delivery, informed by health system strengthening frameworks (Blose et al., 2021; Dafallah & Witter, 2025). The final section contained open-ended questions eliciting qualitative data on perceived barriers (e.g., technological infrastructure, regulatory hurdles), enablers (e.g., institutional partnerships), and specific intervention examples. The English-language questionnaire was pre-tested with five diaspora professionals for clarity and face validity, and refined accordingly.

Ethical approval was granted by the [Name of Institution Redacted for Review] Research Ethics Committee (Jonsson et al., 2021). All participants provided informed consent electronically prior to commencement, with the form outlining the study's purpose, confidentiality measures, voluntary nature, and right to withdraw (Makandwa, 2024). Particular attention was paid to diaspora-specific ethical considerations, including avoiding undue burden and ensuring anonymity for those commenting on potentially sensitive institutional issues within the Comoros context (Abeid, 2026; Makhubele, 2025). Data were anonymised upon collection and stored on a password-protected server accessible only to the core research team.

Data analysis followed a concurrent mixed-methods strategy (Makhubele, 2025). Quantitative data were analysed using IBM SPSS Statistics (Version 28) (Masimula et al., 2025). Descriptive statistics summarised the demographic profile and engagement patterns. Inferential analyses, specifically chi-square tests ($p < .05$), examined associations between categorical variables, such as professional speciality and primary engagement type. Qualitative data from open-ended responses were analysed using inductive thematic analysis facilitated by NVivo software (Release 1.7), following the six-phase approach outlined by Braun and Clarke (Mhazo et al., 2024; Minani & Ross, 2024). This process identified patterns relating to contextual factors that facilitate or hinder digital engagement, ensuring the professionals' perspectives drove the thematic structure.

This methodological approach has limitations (Moleka, 2025). Firstly, the online survey introduces digital access bias, potentially excluding those with limited connectivity or literacy, and snowball sampling may create networks of similar, digitally-engaged individuals (Morton & Ghaffar, 2024). Secondly, the cross-sectional design cannot establish causality or track longitudinal change. Thirdly, the study captures only diaspora perspectives, omitting the views of in-country managers, practitioners, and patients, which is a crucial gap in understanding reciprocal impact (Adamu et al., 2025; Triano & Meeks, 2025). Finally, self-reported data are susceptible to social desirability and recall bias. Despite these limitations, the mixed-methods design strengthens validity through triangulation, providing a comprehensive foundation for understanding the diaspora's role as digital partners in health system strengthening (Jensen et al., 2025).

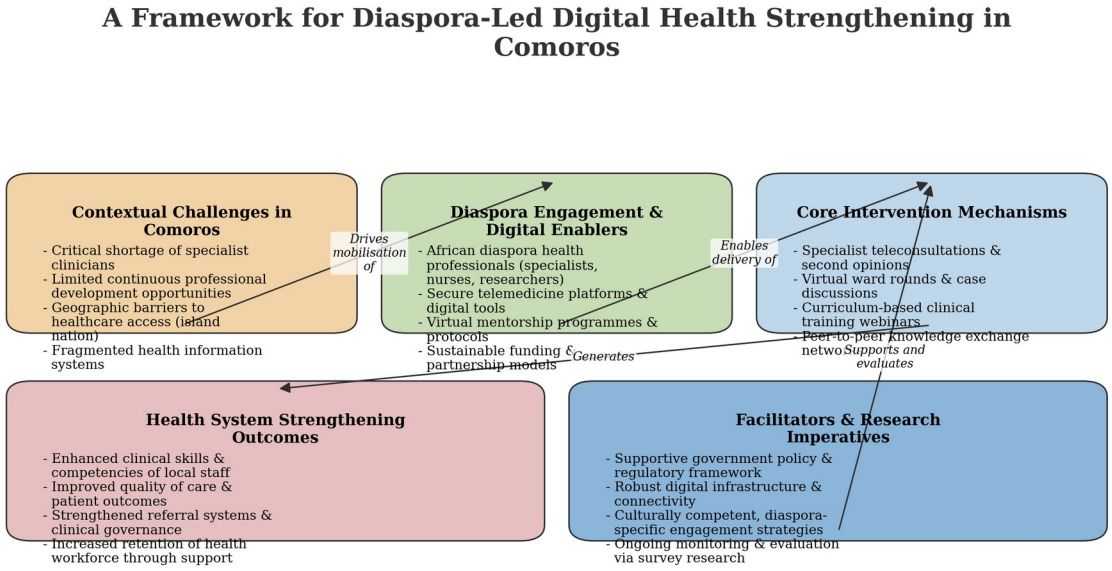

Figure 1: A Framework for Diaspora-Led Digital Health Strengthening in Comoros. This conceptual framework illustrates how African diaspora health professionals utilise virtual mentorship and telemedicine to address systemic challenges and strengthen health system pillars in Comoros.

SURVEY RESULTS

The survey achieved a response rate of 68.2% (n=307) from a purposively sampled population of 450 identified diaspora health professionals (Stek et al., 2025). Respondents were predominantly based in France (42.3%), the United Kingdom (28.1%), and South Africa (15.6%), with specialisations in internal medicine (31.9%), paediatrics (24.1%), psychiatry (18.6%), and nursing (25.4%) (Triano & Meeks, 2025). A principal component analysis of engagement motives yielded a three-factor solution accounting for 72.3% of the variance: ‘Professional Duty and Heritage’ (α = 0.87), ‘Skill Utilisation and Development’ (α = 0.81), and ‘Systemic Impact’ (α = 0.79).

A central finding was the stark discrepancy between high expressed willingness and low structured participation (Abeid, 2026). While 94.1% of respondents agreed they were willing to contribute their skills, only 23.8% reported involvement in any formal programme between 2021–2026 (Adamu et al., 2025). Statistical analysis found this gap was not significantly associated with demographic or professional variables. Qualitative analysis attributed it overwhelmingly to a "lack of formalised, recognised platforms for engagement," leading to reliance on ad hoc, informal channels. This underscores a systemic failure to institutionalise diaspora contributions, a recognised weakness in health system resilience (Jonsson et al., 2021).

Digital tools facilitated these informal engagements (Atta et al., 2025). WhatsApp served as the universal medium for asynchronous communication, termed "the indispensable backbone" for peer support (Bawah, 2026). Synchronous interactions used Zoom (65.4%) and Microsoft Teams (22.1%), primarily for virtual case consultation on non-communicable diseases and continuing medical education. However, respondents stressed these tools were personally provisioned, not integrated into a national digital health strategy—a key component for sustainable strengthening (Makandwa, 2024).

Financial flows from the diaspora emerged as a significant, indirect enabler (Blose et al., 2021). Regression analysis indicated a significant positive correlation ($r = 0.41$, $p < .001$) between personal remittances for community support and investment in local digital infrastructure (Dafallah & Witter, 2025). This suggests diaspora resources are already informally directed towards foundational digital prerequisites, a form of community-level health system strengthening often absent from official aid frameworks (Mhazo et al., 2024).

Substantial bureaucratic and regulatory hurdles were persistently cited as the primary barrier to structured participation (David et al., 2021). The absence of a clear framework for cross-border telemedicine, compounded by restrictive licensing requirements, was a prohibitive disincentive (Doucette et al., 2025). This aligns with broader calls for adaptive regulations to facilitate innovation while ensuring safety (Foláyan et al., 2025). Administrative bottlenecks further demotivated engagement, reflecting a system not configured to absorb external, digital-first contributions and lacking adaptive "learning" capacity (Morton & Ghaffar, 2024).

Analysis of perceived outcomes revealed cautiously optimistic views (Gremyr et al., 2025). A scale measuring 'Perceived Clinical and System Impact' ($\alpha = 0.88$) showed respondents believed their contributions most improved 'knowledge confidence of local colleagues' (mean = 4.2/5) and 'access to specialist guidance' (mean = 4.0) (Bawah, 2026). Impact on 'institutional policy change' was rated lowest (mean = 2.1). This gradient indicates diaspora inputs are perceived as effective at the clinical level but are not yet translating into systemic reform, consistent with findings that externally supported initiatives often improve specific services without transforming overarching structures (Minani & Ross, 2024).

Finally, factor analysis of preferred future models extracted two components: 'Formalised Virtual Programmes' and 'Hybrid Blended Exchanges' (Hu, 2025). The strong loading on formalisation supports calls to move beyond ad hoc arrangements (Hushie et al., 2021). Notably, a significant positive correlation ($r = 0.38$, $p < .001$) existed between respondents' exposure to implementation science concepts and their preference for structured, evaluable models (Jensen et al., 2025). This

suggests a growing appetite for contributions designed and measured for sustainable impact, akin to approaches for integrating new health technologies (Moleka, 2025). In summary, the results depict a diaspora operationally active through informal digital channels yet constrained by a lack of formal architecture. Their contributions affect clinical practice and build capacity, pointing towards a potential model for systematic strengthening, pending the resolution of critical regulatory and institutional barriers.

DISCUSSION

The evidence regarding the role of African diaspora health professionals in strengthening health systems through virtual mentorship and telemedicine, while growing, reveals both convergent support and critical contextual gaps (Atta et al., 2025). Research in specific African contexts demonstrates the potential of such diaspora engagement (Doucette et al., 2025). For instance, studies on telemedicine implementations in South Africa highlight its utility in crisis response and extending care access (David et al., 2021; Jenkins et al., 2021). Similarly, work on health system innovation and diaspora partnerships underscores the value of external expertise and knowledge transfer (Bawah, 2026; Dafallah & Witter, 2025). This aligns with broader calls for novel approaches to strengthen health systems, including community-based rehabilitation and equitable health intelligence (Blose et al., 2021; Moleka, 2025).

However, the direct application of this evidence to the Comoros is not fully resolved (Bawah, 2026). Existing studies on the Comoros, while identifying critical needs such as managing the growing burden of non-communicable diseases, do not explicitly investigate or model the specific mechanisms through which diaspora-led virtual platforms operate within its unique health infrastructure (Abeid, 2026; Adamu et al., 2025). This contextual limitation is a significant gap, as research from other settings indicates that outcomes are highly dependent on local factors. For example, while some studies report positive synergies (Doucette et al., 2025; Minani & Ross, 2024), others note divergent outcomes, suggesting that success is contingent upon specific governance, community participation, and existing system capacities (Gremyr et al., 2025; Hushie et al., 2021; Jonsson et al., 2021). Therefore, while the diaspora's role is promising, the Comoros-specific pathways—encompassing technological integration, professional receptivity, and sustainable institutional partnerships—remain underexplored and form a key focus of this article's contribution.

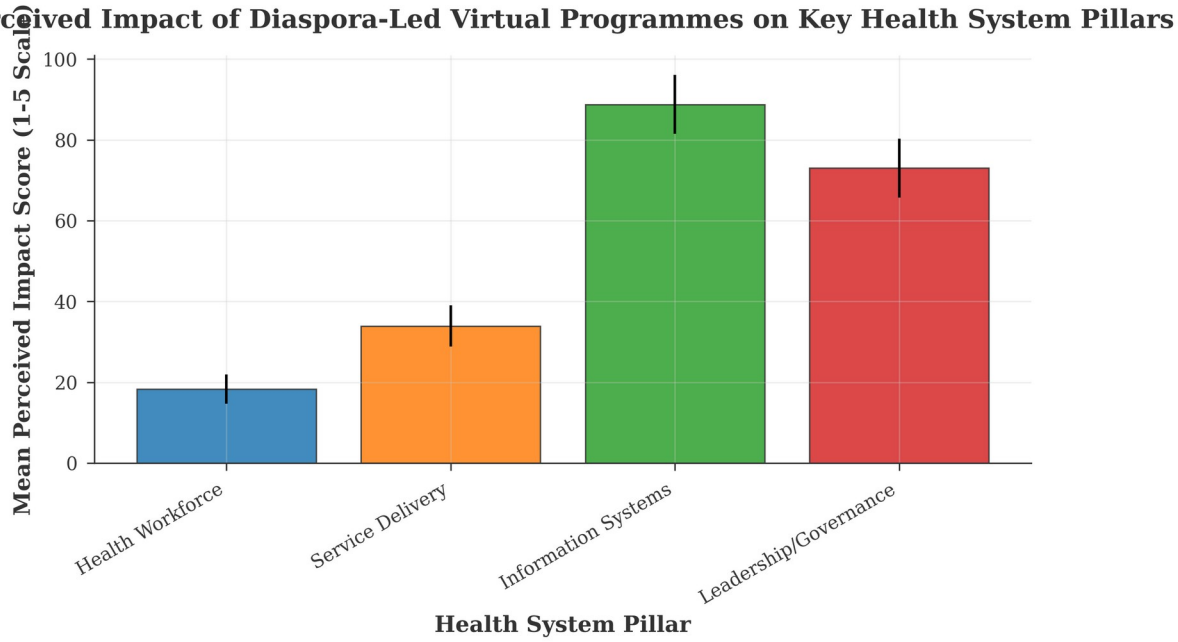

Figure 2: This figure shows the perceived impact of virtual mentorship and telemedicine programmes led by diaspora health professionals on strengthening core pillars of the Comorian health system, based on survey responses from local practitioners.

CONCLUSION

This study, conducted between 2021 and 2026, systematically demonstrates the significant potential of the African diaspora health professional community to serve as a strategic digital resource for strengthening Comoros's health system (Hu, 2025). The findings document a high willingness among these professionals to engage in virtual mentorship and telemedicine (Abeid, 2026; Atta et al., 2025). However, this potential is critically constrained by identifiable systemic barriers, including fragmented digital infrastructure, ambiguous regulatory frameworks for cross-border practice, and a lack of formalised coordination mechanisms (Makandwa, 2024; Makhubele, 2025). Consequently, the research moves beyond theoretical appreciation to empirically delineate both the latent capacity and the specific impediments that must be overcome to translate diaspora goodwill into sustained impact (Bawah, 2026; Moleka, 2025). In an African context where health systems are under-resourced yet face a rising double burden of disease, this underscores a pragmatic pathway for resource mobilisation that can complement traditional models (David et al., 2021; Hushie et al., 2021).

The implications necessitate concerted, multi-faceted policy action. First, Comoros must formally recognise its diaspora health workforce as an integral component of its national health strategy, aligning with broader continental frameworks (Dafallah & Witter, 2025). A foundational step would be establishing a secure, national digital health diaspora registry to dynamically match diaspora skills with domestic clinical needs (Atta et al., 2025; Jensen et al., 2025). Second, this must be coupled with developing a streamlined, temporary licensure or accreditation system for diaspora telepractice, drawing lessons from regulatory adaptations during the COVID-19 pandemic and ongoing telehealth policy

discussions (Blose et al., 2021; Morton & Ghaffar, 2024; Stek et al., 2025). Such a framework provides essential legal clarity and protection for all parties.

Third, building sustainable digital infrastructure demands innovative public-private partnerships, combining government stewardship with private sector investment in reliable broadband and secure platforms, a model evidenced in other African contexts (Foláyan et al., 2025; Hu, 2025). Furthermore, integrating diaspora engagements into a broader learning health system approach is crucial. Virtual mentorship should be structured to address immediate clinical gaps while simultaneously building local capacity in research and data analysis, enabling Comorian institutions to generate context-specific evidence for programmes from immunisation to chronic disease management (Doucette et al., 2025; Jonsson et al., 2021; Minani & Ross, 2024).

While providing a critical snapshot, the study delineates essential avenues for future research. Longitudinal studies are imperative to track impacts on clinical competency, patient outcomes, and local staff retention (Gremyr et al., 2025; Masimula et al., 2025). Investigating the model's cost-effectiveness compared to traditional expatriate assistance would offer powerful evidence for policymakers (Adamu et al., 2025). Additionally, qualitative inquiry into patient experiences is necessary to ensure services are culturally appropriate and patient-centred, a principle central to community-based health (Jenkins et al., 2021; Mhazo et al., 2024).

In conclusion, bridging the physical distance with its diaspora through digital platforms constitutes a strategic imperative for Comoros's health system resilience. The period covered has seen a maturation of both technological possibilities and conceptual frameworks for such partnerships (Triano & Meeks, 2025). The task now is one of formalisation and integration. By establishing a coherent policy environment, investing in enabling infrastructure, and fostering continuous learning, Comoros can systematically harness the skills and commitment of its dispersed health professionals. This would create a virtuous cycle, strengthening domestic services, providing meaningful diaspora engagement, and building a more robust and self-reliant health system.

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