

Driving the SDGs: A Decade of Action for a Sustainable Future

Bridging the Digital Divide in Healthcare: A Mixed-Methods Framework for Inclusive and Sustainable Telemonitoring Service

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Agenda

- Theoretical background
- Research aim
- Methodology
- Results
- Conclusion



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Theoretical background

*Defined as the delivery of healthcare services through telecommunication services and digital technology, telemedicine bridges the gap between healthcare providers and patients, enabling **real-time interactions, diagnosis, treatment,** and monitoring without the constraints of physical*

presence.

- The pandemic accelerated the adoption of telemedicine technologies, prompting healthcare systems to innovate rapidly and expand their digital capacities.





Theoretical background

CHALLENGE: provide equitable access to medical services
for patients in remote or disadvantaged areas

How?

Telemedicine

Opportunities

Threats

- Create sustainable “virtual clinics” where patients can access comprehensive medical services (e.g., consultations, monitoring, and follow-up) from home;
- Improve health outcomes by reducing costs and easing the burden on overburdened healthcare organizations;
- Reduce inequalities in access to qualified medical professionals.

- Integrate organizational and technological frameworks that ensure seamless interaction between providers and patients;
- Develop protocols and workflows that integrate telemedicine practices without compromising the quality of care;
- Ensure robust, secure, and easy-to-use technological solutions to meet the needs of diverse patient populations.



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Theoretical background

- Successful adoption of telemedicine requires **alignment** between **technology infrastructure**, **clinical processes**, and **patient needs**, underscoring the importance of **co-designing** these systems to **improve usability and effectiveness**.
- On the other hand, while telemedicine has the potential to reduce disparities in healthcare, it may inadvertently exacerbate them if vulnerable populations are excluded due to technological or socioeconomic barriers.



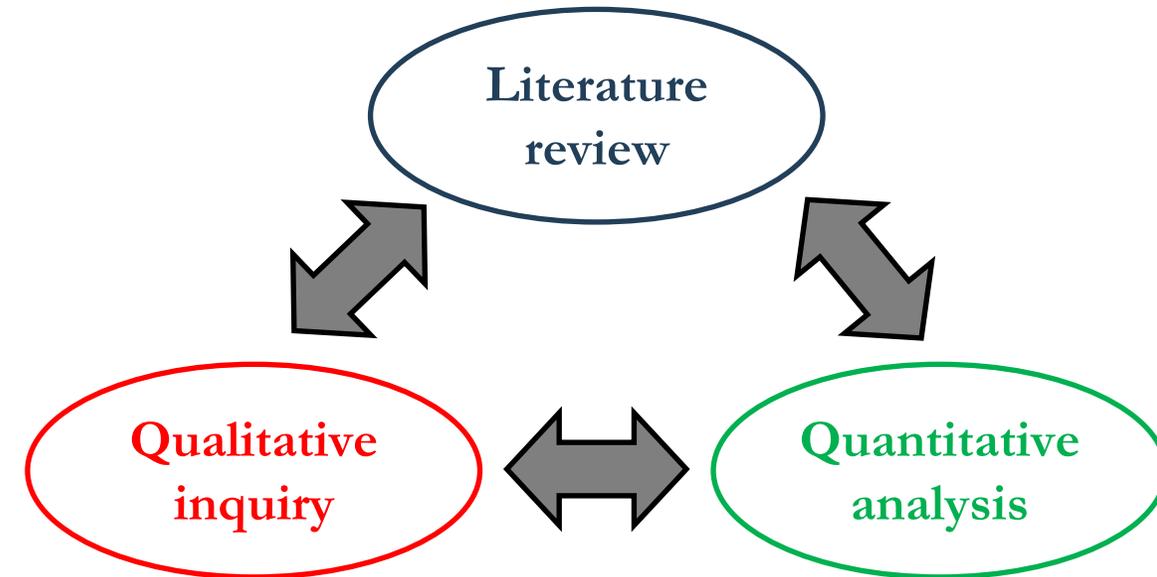
Research aim

The main objective of this work is to identify and analyze a framework for implementing telemedicine services, in particular telemonitoring service with a focus on healthcare delivery to disadvantaged populations.



Methodology

A mixed approach is implemented that integrates literature review, qualitative inquiry, and quantitative analysis into a unified research design. This framework is then refined and validated by a panel of experts using the Delphi method to ensure that the proposed model is contextually appropriate and methodologically valid.





Results

Literature review



- consensus on the critical need to integrate digital infrastructure with supporting administrative practices;
- rapid acceleration of telemedicine adoption during the COVID-19 pandemic;
- dependence of telemonitoring success also on organizational factors (e.g. staff training, process redesign, and continuous performance monitoring).

Qualitative inquiry



- strengthening patient empowerment;
- critical importance of digital literacy;
- need for strong infrastructural support;
- telemonitoring facilitates timely interventions and better management of chronic conditions;
- sporadic internet connectivity;
- limited digital skills of patients;
- coherent framework that aligns technical solutions with administrative policies and ethical considerations remains underdeveloped.

Quantitative analysis



- 78% of operators observed significant improvements in communication with patients and coordination of care;
- 65% of patients reported greater satisfaction with accessibility to health care;
- significant positive correlation ($r = 0.62$, $p < 0.05$) between the implementation of telemonitoring services and the perceived quality of care.



Through iterative rounds, consensus was reached on incorporating essential components such as robust data security protocols, ongoing training programs, and systematic performance evaluation mechanisms. The experts stressed that adherence to ESG principles is vital for developing a resilient telemedicine framework. They emphasized that sustainable digital infrastructure, transparent data management practices, and equitable access are indispensable for fostering trust and ensuring the long-term viability of healthcare organizations.



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Conclusions

VALIDATED FRAMEWORK

Study provides an empirically validated framework for sustainable healthcare delivery, integrating organizational and technological solutions.

PERSISTENT CHALLENGES

Digital literacy and infrastructural limitations remain, but the framework offers a promising roadmap.

FUTURE RESEARCH

Longitudinal research and broader pilot studies are recommended to refine the model and ensure adaptability.



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HR EXCELLENCE IN RESEARCH



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