

## Chapter 3

# Telemedicine Adoption Opportunities and Challenges in the Developing World

**Khondker Mohammad Zobair**

*Griffith University, Australia*

**Louis Sanzogni**

*Griffith University, Australia*

**Kuldeep Sandhu**

*Griffith University, Australia*

**Md Jahirul Islam**

*Bangladesh Planning Commission, Ministry of Planning, Bangladesh*

### ABSTRACT

*Mapping opportunities and challenges of telemedicine adoption in an emerging economy has always been presumptive due to the scarcity of empirical evidence. Only recently the potential influencing factors of both issues in the rural context of emerging economies (using Bangladesh as a cases study) were investigated. Analysis of existing literature identified seven broad categories of challenges (e.g., deficient organisational commitment, inadequate technological infrastructure, insufficient resource allocations, deficient service quality, clinicians demotivation, patients' dissatisfaction, and patients' distrust) and six broad categories of opportunities (e.g., service usefulness, service assurance, secured patient privacy, adequacy of services, peer influence on use of services, and environmental conditions) concerning telemedicine adoption. Their significance is outlined. These findings contribute to the literature by distinguishing significant factors, which can positively favour or deter telemedicine implementation in developing countries and similar settings.*

DOI: 10.4018/978-1-7998-8052-3.ch003

## **INTRODUCTION**

Providing equally efficient and systematised healthcare services in rural areas of developing or developed countries poses many challenges. For example sustainability, one of the substantial challenges in rural healthcare systems has widened its complexity in public administration, leading to high interest in adopting information and communications technology-mediated healthcare services (Celdrán, Pérez, Clemente, & Pérez, 2018; Zobair, 2019). Rural and remote communities are mostly reliant on primary care physicians because specialist physicians rarely practice in rural areas (Leaming, 2007), highlighting the necessity for innovation in the service delivery of health care. Despite growing demand for telemedicine, the implementation rate is below expectation (Kim, Gellis, Bradway, & Kenaley, 2018). An abundance of published studies investigating the challenges and opportunities associated with telemedicine adoption are reviewed, and guidelines to gain insight on how to optimise successfully sustainable telemedicine in underdeveloped contexts are put forward.

It is anticipated that without a commitment to recognise opportunities and challenges, the substantial promise of telemedicine as an innovative health care system, may not be evidently understood and therefore remain underutilised. The prevalent objective is to gain a clear understanding of the opportunities and challenges of telemedicine adoption in the rural context of emerging economies. This can provide valuable insights for government, policymakers, and stakeholders with the added benefit of informing/developing appropriate policy strategies for the improvement of rural healthcare in underdeveloped areas (Zobair, Sanzogni, & Sandhu, 2019). This research has undertaken a comprehensive, in-depth review of the literature (journal articles, conferences, and reports) including some recent direct experiences to the application of telemedicine, e-health, telehealth, and m-Health projects in both developed and developing countries contexts. These narrative proceeds as follows:

- Definition and scope of telemedicine services.
- Socioeconomic impact of telemedicine services.
- Emerging challenges for telemedicine services.
- Promoting adoption opportunities for telemedicine services.
- Conclusion.

## **DEFINITION AND SCOPE OF TELEMEDICINE SERVICES**

A growing body of published studies is attempting to define telemedicine (R. Bashshur, Shannon, Krupinski, & Grigsby, 2011; R. L. Bashshur, 1995). The first formal published definition of telemedicine refers to ‘the practice of medicine without the usual physician-patient confrontation via an interactive audio-video communication system’ (R. L. Bashshur, Reardon, & Shannon, 2000, p. 614). According to the World Health Organization (WHO) “Telemedicine is the delivery of healthcare services, where distance is a critical factor, by all healthcare professionals using information and communication for the exchange of valid information for diagnosis, treatment, and prevention of disease and injuries, research and evaluation, and for continuing education of healthcare providers, all in the interests of advancing the health of individuals and their communities”(Organization, 1998).

19 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

[www.igi-global.com/chapter/telemedicine-adoption-opportunities-and-challenges-in-the-developing-world/273457](http://www.igi-global.com/chapter/telemedicine-adoption-opportunities-and-challenges-in-the-developing-world/273457)

## Related Content

---

### A Review of Trends, Opportunities, Practices, and Security Challenges in Cloud Computing for Telehealth

Mohana R. S., Kousalya K., Nirmaladevi K., Kadhambari S., Abirami K. P. and Javin N. T. (2022). *Advancement, Opportunities, and Practices in Telehealth Technology* (pp. 64-85).

[www.irma-international.org/chapter/a-review-of-trends-opportunities-practices-and-security-challenges-in-cloud-computing-for-telehealth/312082](http://www.irma-international.org/chapter/a-review-of-trends-opportunities-practices-and-security-challenges-in-cloud-computing-for-telehealth/312082)

### The Road to Digitally-Driven Mental Health Services: Remote Psychological Interventions

Artemisa Rocha Does, Andreia Geraldo and Helena Martins (2022). *Digital Therapies in Psychosocial Rehabilitation and Mental Health* (pp. 42-71).

[www.irma-international.org/chapter/the-road-to-digitally-driven-mental-health-services/294070](http://www.irma-international.org/chapter/the-road-to-digitally-driven-mental-health-services/294070)

### Telenutrition: The Fine Line Between Nutritional Coaching and an Effective Professional Practice

Julia Rodríguez Castelán and Fabiola Luna Vázquez (2022). *Advancing Health Education With Telemedicine* (pp. 23-40).

[www.irma-international.org/chapter/telenutrition/293529](http://www.irma-international.org/chapter/telenutrition/293529)

### The Use of Social Media, Online Support Groups, and Apps for Pregnant Women During COVID-19

Amy L. Rathbone, Duncan Cross and Julie Prescott (2022). *Digital Innovations for Mental Health Support* (pp. 78-101).

[www.irma-international.org/chapter/the-use-of-social-media-online-support-groups-and-apps-for-pregnant-women-during-covid-19/293404](http://www.irma-international.org/chapter/the-use-of-social-media-online-support-groups-and-apps-for-pregnant-women-during-covid-19/293404)

### Li-Ion-Based DC UPS for Remote Application

Chiang Liang Kok and Yansen Setyadi (2023). *The Internet of Medical Things (IoMT) and Telemedicine Frameworks and Applications* (pp. 276-289).

[www.irma-international.org/chapter/li-ion-based-dc-ups-for-remote-application/313081](http://www.irma-international.org/chapter/li-ion-based-dc-ups-for-remote-application/313081)