

REVIEWER'S REPORT

Manuscript No.:IJAR-54621

Date: 3/11/2025

Title: Telemedicine Outcomes in Riyadh Tertiary Hospitals: A systematic review

Recommendation:

Accept as it is

Accept after **minor revision**.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality	✓			
Techn. Quality	✓			
Clarity	✓			
Significance	✓			

Reviewer Name: Mrs. Shreya Vaz

Detailed Reviewer's Report

This article is based comprises a brief contents.

This systematic review examines telemedicine outcomes in tertiary hospitals across Riyadh, Saudi Arabia, synthesizing findings from 13 studies published between 2013 and 2023.[1] The research comprehensively evaluates patient satisfaction as the primary outcome while investigating cost-effectiveness, barriers, and facilitators to adoption. Key findings demonstrate that patient satisfaction with telemedicine services is generally high (ranging from 68.1% to 93%), with significant cost savings and improved accessibility, though technical challenges and limitations in physical examination capabilities remain substantial obstacles to widespread implementation.[1]

Research Design and Methodology

****Study Scope and Selection Criteria****

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

The systematic review employed rigorous inclusion criteria focused on telemedicine outcomes in Riyadh's tertiary hospitals and broader Saudi Arabian healthcare contexts. Relevant studies published within a ten-year window (2013–2023) were selected according to specific parameters: studies addressing telemedicine outcomes including cost-effectiveness, patient satisfaction, and adoption barriers/facilitators; availability of quantitative and qualitative data; and publications in English or Arabic.[1]

****Data Source and Search Strategy****

Data extraction involved comprehensive searches across major academic databases including PubMed, Scopus, Google Scholar, and the Saudi Digital Library.[1] The search strategy incorporated multiple relevant terms including “telemedicine,” “patient satisfaction,” “cost-effectiveness,” “barriers,” “facilitators,” and “tertiary hospitals in Riyadh.” The screening process yielded 13 studies from an initial pool of 3,589 records, with 1,456 duplicates removed and rigorous full-text assessment conducted to ensure alignment with inclusion criteria.[1]

****Study Quality and Data Extraction****

The methodology prioritized studies demonstrating methodological rigor and contemporary relevance. Data extraction captured study designs, sample sizes, participant demographics, primary and secondary outcomes, and major findings. Study designs ranged across cross-sectional surveys, retrospective analyses, and descriptive studies, with sample sizes varying from 49 to 607 participants.[1] Reference management utilized Mendeley software, and data synthesis employed both narrative and thematic analysis approaches to identify patterns across studies.[1]

Key Findings

****Primary Outcome: Patient and Physician Satisfaction****

Patient satisfaction with telemedicine services demonstrated substantial variability across the included studies. Overall satisfaction rates ranged from 68.1% to 93%, with most studies reporting high satisfaction levels.[1] Several studies achieved notably high satisfaction: Alfaleh et al. (2021) reported 83.14% satisfaction, with key satisfaction drivers being physician recommendations,

REVIEWER'S REPORT

communication quality, and reduced waiting times.[1] Alhumud et al. (2020) documented 80.4% overall satisfaction, emphasizing accessibility to healthcare professionals and service convenience as critical factors.[1] Alomar et al. (2025) similarly reported high satisfaction attributed to time-saving benefits, convenience, and quality of communication during consultations.[1]

However, satisfaction varied by demographic factors and telemedicine service type. The lowest reported satisfaction rate was 68.1%, observed by Alharbi et al. (2021), where gender, age, education level, and familiarity with telemedicine emerged as significant influencing factors.[1] Notably, telephone-based consultations in specialties such as tele-psychiatry and tele-rhinology achieved higher satisfaction rates compared to video consultations, which experienced marginally reduced satisfaction due to technological difficulties affecting audio and video quality.[1]

Physician and resident satisfaction presented a contrasting picture to patient satisfaction. Alqahtani et al. (2022) reported only 27.8% physician satisfaction with telemedicine services, with dissatisfaction primarily stemming from the inability to conduct physical examinations and the lack of face-to-face patient interactions, despite recognition of time-saving benefits and increased productivity.[1] AlFawaz et al. (2023) documented that 71.7% of family medicine residents preferred in-person visits, citing reduced clinical experience opportunities and diminished supervision from attending physicians.[1] These findings highlight fundamental tensions in telemedicine adoption related to clinical completeness and professional development.

****Secondary Outcomes: Cost-Effectiveness, Accessibility, and Barriers****

Cost-effectiveness emerged as a significant benefit across multiple studies. Alomar et al. (2025) emphasized that telemedicine substantially reduced patient travel time and costs while maintaining high satisfaction levels.[1] Alanazi et al. (2022) demonstrated that telemedicine provided substantial cost savings, particularly benefiting patients in remote areas by reducing travel expenses, time away from work, and increasing overall convenience.[1] The review noted that travel cost reduction and decreased waiting times represented consistent advantages across studies.[1]

Barriers to successful telemedicine implementation were consistently identified across studies. Technical difficulties—including communication problems, inadequate video conferencing options, and audio/video quality issues—were frequently cited obstacles.[1] Almalky et al. (2021) and Habib

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

et al. (2023) specifically identified technical issues with communication systems as significant barriers hindering telemedicine effectiveness.[1] Privacy concerns and the absence of video consultation options represented additional implementation challenges, particularly noted in studies by Alshareef et al. (2021) and Habib et al. (2023).[1] The fundamental limitation of lack of face-to-face interaction emerged as a persistent barrier, especially problematic in specialties requiring physical examination.[1]

****Facilitators to Telemedicine Adoption****

The review identified several key facilitators supporting telemedicine adoption. Convenience and time-saving aspects were recognized as major drivers of acceptance and success.[1] Alharbi R (2023) and Bin Traiki et al. (2020) documented that telemedicine improved healthcare accessibility—particularly in emergency settings—by reducing the necessity for in-person visits.[1] Healthcare provider attitudes demonstrated important facilitation capacity, with Habib et al. (2023) noting that physicians recognized telemedicine benefits in reducing face-to-face consultations, particularly during the COVID-19 pandemic.[1] Bin Traiki et al. (2020) reported positive surgical outcomes with 93% patient satisfaction regarding doctor care and 77.6% satisfaction with nursing care, demonstrating telemedicine's effectiveness even in complex clinical scenarios.[1]

Critical Analysis

****Strengths of the Research****

The systematic review demonstrates several methodological strengths. The inclusion of 13 studies across diverse telemedicine service types (general consultations, tele-retinal screening, virtual clinics, tele-emergency services, telepsychiatry, and tele-rhinology) provides comprehensive coverage of telemedicine applications in tertiary hospital settings.[1] The recruitment of large participant cohorts (total samples ranging from 49 to 607 individuals) and the predominant focus on Saudi Arabian participants (54% to 93.59% Saudi representation) ensure contextually relevant findings applicable to the target healthcare system.[1] The systematic approach to data extraction and narrative synthesis prevents cherry-picking of favorable results and facilitates transparent evidence synthesis.

****Limitations and Research Gaps****

REVIEWER'S REPORT

Several limitations warrant consideration in interpreting these findings. First, the review acknowledges that cost-effectiveness was not uniformly discussed across all included studies, limiting comprehensive financial analysis of telemedicine implementation.[1] Alharbi et al. (2021) noted that questions regarding diagnostic accuracy and the absence of face-to-face professional meetings represented shared concerns, yet these clinical validity concerns were not systematically measured across all studies.[1] The physician satisfaction data, though revealing important professional concerns, came from relatively small sample sizes in some studies, potentially limiting generalizability to broader physician populations.

The temporal focus on studies published between 2013 and 2023 captures the period encompassing the COVID-19 pandemic, which substantially accelerated telemedicine adoption; however, this may skew findings toward pandemic-influenced adoption patterns that may not sustain post-pandemic. The review's restriction to English and Arabic publications may exclude relevant studies published in other languages, potentially introducing language bias.

Discussion of Key Themes

****Service-Type Differentiation****

The evidence demonstrates that telemedicine efficacy and satisfaction vary substantially by clinical specialty and service delivery method. Telephone-based consultations in mental health and otolaryngology settings consistently outperformed technology-intensive video consultation formats. This pattern suggests that optimal telemedicine implementation may require specialty-specific adaptation rather than uniform system-wide deployment strategies.[1]

****Technology as Both Enabler and Barrier****

While technological infrastructure theoretically facilitates telemedicine's expansion, technical limitations paradoxically emerged as among the most frequently cited implementation barriers. This contradiction underscores that technology deployment must be accompanied by robust technical support systems, staff training, and quality assurance mechanisms to realize intended benefits.[1]

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

****The Provider-Patient Satisfaction Gap****

The substantial divergence between patient satisfaction (68.1–93%) and physician satisfaction (27.8%) represents a critical finding.[1] This gap suggests that telemedicine may optimize certain patient-centered metrics (convenience, access, cost) while compromising clinically valued professional capabilities (physical examination, comprehensive assessment, professional development). Sustainable telemedicine implementation likely requires addressing professional concerns regarding clinical completeness and establishing telemedicine within a hybrid care model rather than as a complete alternative to in-person encounters.

Recommendations for Implementation

****For Healthcare Systems and Hospital Administration****

Healthcare facilities should develop telemedicine programs tailored to specific clinical applications, prioritizing specialties where evidence demonstrates strong outcomes (telepsychiatry, tele-rhinology, tele-retinal screening) while maintaining in-person capacity for specialties requiring physical examination. Investment in robust technological infrastructure with reliable technical support, comprehensive staff training programs, and clear protocols for hybrid care models (combining telemedicine with periodic in-person evaluations) can address identified barriers while optimizing demonstrated benefits.[1]

****For Future Research****

Further investigation is required to quantify cost-effectiveness more rigorously across diverse clinical settings and develop standardized metrics for healthcare provider satisfaction and clinical outcome quality. Studies examining long-term sustainability of telemedicine adoption post-pandemic and investigating hybrid care models combining telemedicine with periodic in-person consultations would advance understanding of optimal implementation strategies.[1]

Conclusion

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

www.journalijar.com

REVIEWER'S REPORT

Telemedicine has demonstrated substantial effectiveness in improving patient satisfaction, healthcare accessibility, and cost-efficiency in Riyadh's tertiary hospitals.[1] However, technical barriers, privacy concerns, and limitations in delivering comprehensive clinical care through remote consultation remain significant obstacles requiring systematic attention.[1] The marked disparity between patient and provider satisfaction indicates that successful telemedicine implementation must balance accessibility and convenience benefits with clinical quality and professional practice considerations. Future advances in technology, integration of telemedicine within comprehensive healthcare systems, and development of specialty-appropriate implementation strategies will be essential to maximizing telemedicine's contribution to healthcare delivery in tertiary hospital settings.[1]