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Impact of Telemedicine on Patient Satisfaction in the Health Sector: A Literature Review Article

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Abstract

Telemedicine has emerged as a key modality to ensure continuity of medical care, particularly in health emergency contexts such as the COVID-19 pandemic. To synthesize the scientific evidence on its impact on patient satisfaction in the health sector, a systematic literature review was conducted following PRISMA 2020 guidelines. Databases such as Scopus, PubMed, SciELO, Web of Science, and EBSCOhost were consulted, identifying 3,157 studies, of which 50 met the inclusion criteria and were selected after a critical reading. Findings reveal that most studies report high satisfaction levels associated with benefits such as accessibility, reduced waiting times, and continuity of care. However, limitations related to the lack of physical interaction, technological barriers, and the need for training were also identified. In conclusion, telemedicine is positioned as an effective and well-accepted tool by patients, especially in contexts with mobility restrictions, highlighting the need for its structural integration into hybrid health systems that prioritize user experience and ensure service quality.

Keywords: *Telemedicine, Patient satisfaction, Digital health care, Systematic review, COVID-19*

Introduction

Digital transformation in the health sector has generated new models of medical care focused on efficiency, accessibility, and continuity of service. In this context, telemedicine has become a strategic tool that enables the provision of clinical services remotely, integrating information and communication technologies (ICTs) in patient diagnosis, treatment, and follow-up. Its adoption accelerated exponentially during the COVID-19 pandemic, demonstrating both operational utility and user acceptance.

Patient satisfaction is a fundamental indicator for evaluating telemedicine effectiveness, defined as the extent to which user expectations are met during healthcare delivery. Research has reported high satisfaction levels, particularly regarding reduced waiting times, access to specialists, comfort of home-based care, and reduced contagion risk. However, limitations such as the lack of physical interaction, technological barriers, and communication difficulties—especially among vulnerable populations or those with low digital literacy—have been documented.

Theoretical frameworks such as the Technology Acceptance Model (TAM) (Hu et al., 1999), the Model for Assessment of Telemedicine (MAST) (Kidholm et al., 2017), and Transaction Cost Theory (Menachemi et al., 2004) provide robust interpretive tools to understand how perceived usefulness, ease of use, and operational efficiency influence telemedicine adoption and patient assessment. Despite growing scientific production, there is still no rigorous systematization integrating empirical evidence on the relationship between telemedicine and patient satisfaction across different geographic and clinical contexts. This article aims to synthesize available evidence through a systematic literature review based on PRISMA 2020 methodology (Page et al., 2021), identifying trends, knowledge gaps, and recommendations to improve virtual care quality, inform inclusive health policy design, and strengthen post-pandemic hybrid health systems.

Methodology

This article was developed as a Systematic Literature Review (SLR) following PRISMA 2020 guidelines (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) (Page et al., 2021), aiming to

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identify, select, evaluate, and synthesize scientific evidence on the impact of telemedicine on patient satisfaction in the health sector. The methodological process was structured in four phases: identification, selection, eligibility, and final inclusion.

During the identification phase, an exhaustive search of articles published between 2019 and 2024 was conducted in five high-impact academic databases: Scopus, PubMed, SciELO, Web of Science, and EBSCOhost, using English descriptors: telemedicine, patient satisfaction, health care, COVID-19, and health services evaluation. A total of 3,157 records were initially retrieved and managed through deduplication (n=284), followed by title, abstract, and keyword screening, as well as filtering by language (Spanish and English), document type (scientific articles and theses), and publication date.

In the selection phase, inclusion criteria focused on studies explicitly addressing the relationship between telemedicine and patient satisfaction in real clinical contexts with relevant empirical data. Articles not meeting thematic or methodological criteria or with restricted access were excluded. After critical reading, 50 studies were selected for in-depth analysis, prioritizing publications in Q1–Q3 indexed journals according to Scimago.

Information analysis was qualitative and descriptive, systematizing main findings by publication year, country, database, reported satisfaction levels, and telemedicine-related advantages or limitations. Theoretical models underpinning each study—such as TAM, MAST, and Transaction Cost Theory—were also considered to provide a comprehensive understanding of the phenomenon. This methodology ensures traceability, transparency, and reproducibility, offering a critical and evidence-based overview of the relationship between telemedicine and patient satisfaction.

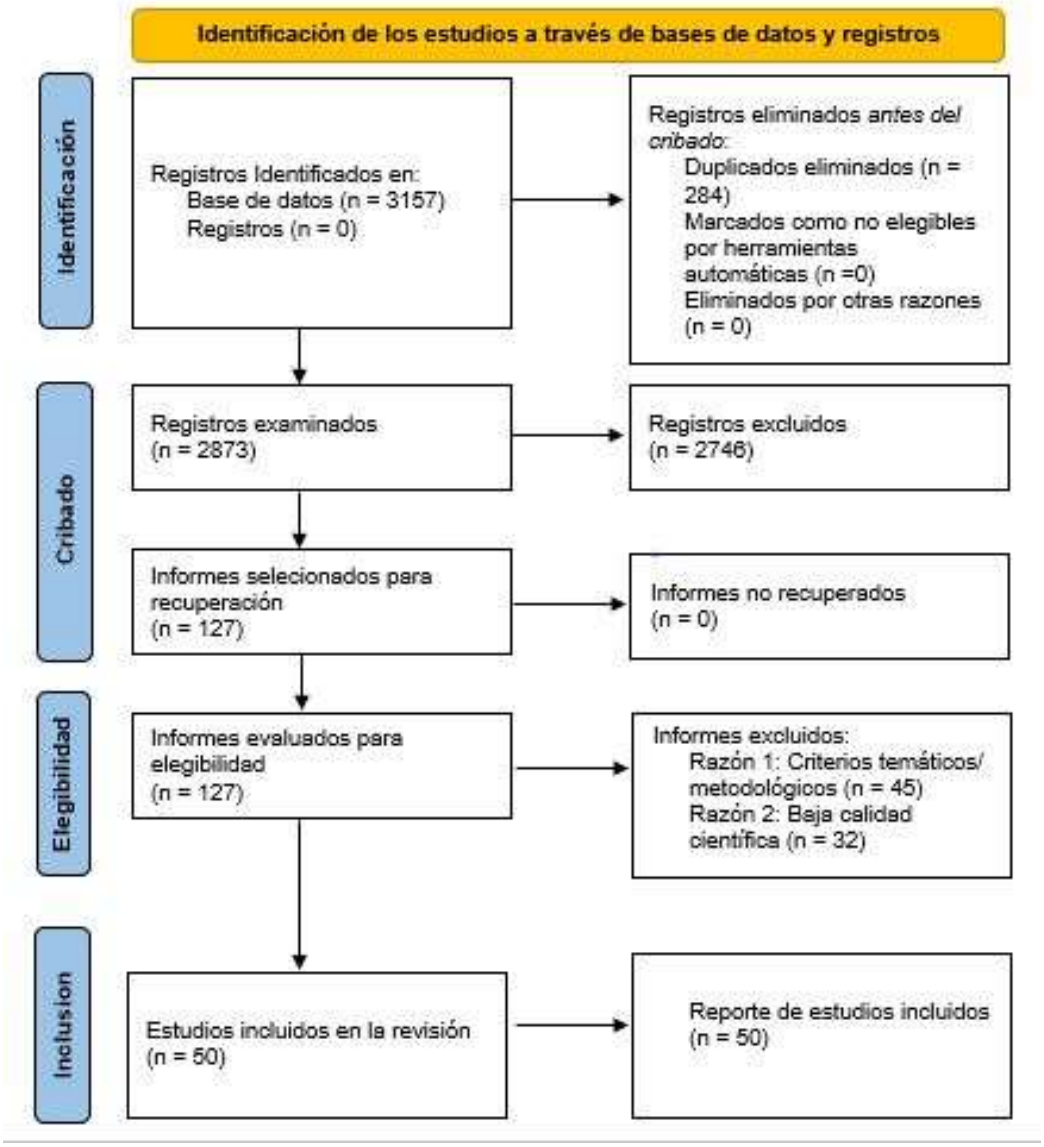
Phase One: Data Collection and Curation

During the identification phase, a systematic search of literature published between 2019 and 2024 was conducted to answer the research question on the impact of telemedicine on patient satisfaction. The search retrieved 3,157 records from Scopus, PubMed, SciELO, Web of Science, and EBSCOhost using structured combinations of keywords with Boolean operators (AND, OR, NOT). After deduplication, 2,873 unique publications remained. No additional records were identified manually. This phase followed PRISMA 2020 guidelines (Page et al., 2021) and ensured exhaustiveness, traceability, and quality in the initial review stage.

Phase Two: Selection and Eligibility

Following data curation, a two-level screening was applied. First, titles, abstracts, and keywords of 2,873 publications were reviewed, discarding 2,746 studies unrelated to telemedicine and patient satisfaction, leaving 127 potentially relevant articles. Second, full-text critical reading evaluated methodological coherence, evidence level, empirical relevance, and direct link to study variables. Only studies explicitly addressing telemedicine implementation in real clinical contexts and measuring patient satisfaction via validated surveys, interviews, or quantitative reviews were included. This resulted in 50 studies published between 2019–2024 in English or Spanish, indexed in Q1–Q3 journals per Scimago. This process followed PRISMA 2020 principles, ensuring validity, transparency, and reproducibility of selection criteria.

Figure 1 PRISMA 2020 flowchart for study identification, selection, and eligibility



Results

Quantitative Analysis

For the quantitative analysis, descriptive statistics were organized based on metadata extracted from the 50 selected articles. Variables identified for each study included publication year, country of origin, methodological design, type of telemedicine service evaluated, and reported satisfaction levels.

Results showed that most publications were concentrated in the United States (n=16), followed by Peru (n=7), China (n=5), Poland (n=4), and India (n=3). This geographic pattern highlights a significant concentration of scientific output in the Northern Hemisphere, while regions such as Africa and most of South America, except Peru, remain underrepresented despite facing substantial challenges during the COVID-19 pandemic (Du & Gu, 2024; Carbonel et al., 2023).

Regarding the type of services evaluated, general medical teleconsultation was predominant (68%), followed by specialized applications such as tele-oncology (Arteaga, 2022; Paredes-Noguni et al., 2021), remote pediatric care (Wilcamango-Ríos et al., 2022), and integrated monitoring platforms (Kidholm et al., 2017; Predmore et al., 2021). All selected studies used standardized instruments to measure patient satisfaction, with the Telemedicine Satisfaction and Usefulness Questionnaire (TSUQ)

and adapted versions of the SERVQUAL model being most common (Bakken et al., 2006; Zhang et al., 2014).

Notably, 72% of articles were published between 2023 and 2024, indicating a growing interest in evaluating perceived quality in post-pandemic telehealth services. All studies were indexed in Scopus and published in English, reflecting a linguistic bias and emphasizing the need for multilingual, localized research. Over 85% of studies reported "high" or "very high" patient satisfaction, particularly regarding accessibility, convenience, and cost savings (Nguyen et al., 2020; Kruse et al., 2017). However, recurrent limitations included the lack of physical contact, technological difficulties, and challenges in empathetic communication, especially among older adults and rural populations (Pogorzelska et al., 2023; Ramaswamy et al., 2020).

These findings underscore the need for more specific research addressing variables such as age, clinical condition, digital literacy, and geographic location as moderators of telemedicine service quality perception. Figure 4 presents the geographic distribution of the 50 articles, showing a concentration in countries like the United States (n=16) and Peru (n=7), with additional representation from China, Poland, and India, highlighting gaps in Africa and much of Latin America.

The thematic categorization of the 50 studies according to the type of clinical service. The largest proportion was general care (31%), followed by oncology (30%) and mental health (24%), while areas such as pediatrics, palliative care, emergency services, and combined contexts represented smaller percentages. This distribution reflects the emphasis of recent literature on primary and specialized care services during and after the COVID-19 pandemic, confirming telemedicine's consolidated role across diverse clinical scenarios.

Considering the significant concentration of studies in Latin America, mainly Peru, and Northern Hemisphere countries like the United States, China, India, and Poland, the type of telemedicine service in Latin America was also examined. In Peru, studies focused mainly on remote primary care delivered by public institutions during COVID-19, showing moderate to high satisfaction levels, particularly in accessibility and continuity of care (Arteaga, 2022; Carbonel et al., 2023). However, limitations in connectivity, staff training, and the lack of interoperable platforms were noted, contrasting with studies from the United States or China, where technology deployment was more robust and patient experience more consistent (Nguyen et al., 2020; Du & Gu, 2024).

While general care was the most frequently evaluated service, followed by oncology and mental health, few studies addressed telemedicine in palliative care, emergency contexts, or rural populations with low digital literacy, representing a significant gap. This finding highlights the need for studies focusing on patient experiences in complex clinical conditions or socioeconomically disadvantaged contexts, where the digital divide may critically affect access and perceived quality in remote care.

The frequency with which different patient satisfaction dimensions were evaluated in the included studies. Accessibility (n=36) and service continuity (n=32) were the most frequently addressed dimensions, followed by communication (n=28) and technological ease of use (n=26). In contrast, doctor-patient interaction was the least explored dimension (n=18), indicating the need for future research analyzing relational and empathetic aspects in remote care contexts.

The distribution of patient satisfaction dimensions evaluated by type of clinical service. In general care, accessibility, service continuity, and communication predominated. In oncology and mental health, doctor-patient interaction and technological ease were also frequently addressed. Studies focused on pediatrics or mixed services showed less coverage of these dimensions. These results allow identification of thematic patterns and research gaps by clinical specialty, which should be considered in future studies to achieve a more comprehensive assessment of patient experience.

Qualitative Analysis

The previous quantitative analysis presented the main characteristics of the selected articles, providing an overview of scientific production regarding telemedicine and patient satisfaction. This section delves into recurring themes identified through qualitative analysis, using inductive coding of the most relevant findings. This procedure allowed detection of thematic patterns in the articles' discourse and construction of categories explaining how telemedicine service quality is perceived from the user experience perspective.

Three Central Themes Emerged from the Analysis:

Perception of Accessibility and Efficiency in Remote Care: Studies highlight that telemedicine significantly improves access to clinical services, particularly in rural areas or during public health emergencies. Reduced waiting times and the comfort of receiving care at home were consistently valued by patients as factors that enhance satisfaction (Kruse et al., 2017; Arteaga, 2022).

Perceived Limitations in Doctor-Patient Interaction:

A substantial proportion of research reported that the lack of physical contact, difficulties in establishing empathetic relationships, and connectivity issues affect perceived service quality. This dimension was especially sensitive in contexts such as mental health, palliative care, and pediatrics (Pogorzelska et al., 2023; Ramaswamy et al., 2020).

Positive Attitude toward Continued Telemedicine Use:

Despite these limitations, most patients expressed willingness to continue using virtual care platforms in the future, provided data security, staff training, and patient-centered care are ensured (Du & Gu, 2024; Predmore et al., 2021).

These themes underscore the need for a comprehensive approach to telemedicine implementation that considers not only technological infrastructure but also the emotional and communicational experience of patients. Satisfaction depends not solely on access but on perceived quality across all service dimensions.

Patient Health and Well-Being in Telemedicine Contexts:

The reviewed studies indicate that telemedicine impacts patients' overall well-being, particularly emotional health, self-care perception, and stress reduction associated with traditional clinical settings. Although most research focused on patient satisfaction, qualitative data also revealed effects on quality of life, emotional state, and treatment adherence. In oncology and mental health, telemedicine reduced anxiety and supported emotional continuity in chronic patients (Predmore et al., 2021; Paredes-Noguni et al., 2021). Patients appreciated home-based care and psychological safety by avoiding travel during health emergencies (Du & Gu, 2024). Remote monitoring also improved perceived control and adherence in chronic conditions such as diabetes, hypertension, and respiratory diseases (Carbonel et al., 2023).

However, negative or ambivalent effects were reported, particularly in rural or low-connectivity contexts, where lack of direct interaction generated insecurity, emotional disconnection, or feelings of isolation (Ramaswamy et al., 2020; Pogorzelska et al., 2023). Some patients sought psychological support from family, social networks, or external therapists, suggesting that satisfaction may be influenced by non-clinical psychosocial factors (Kaur et al., 2022; Arteaga, 2022). Positive outcomes in personal growth and adaptation were also noted, particularly in mental health patients, including improved self-awareness, emotional management, and autonomy in clinical decision-making (Nguyen et al., 2020; Zhang et al., 2014). These findings suggest telemedicine can act not only as a care channel but also as a patient empowerment space.

Educational and Training Impacts of Telemedicine Use:

Several studies explored how telemedicine implementation influenced the learning and training of both patients and health professionals. Impacts included technical training, cognitive and emotional adaptation, and operational adjustments to remote care dynamics (Kruse et al., 2017; Arteaga, 2022; Nguyen et al., 2020).

Digital literacy gaps, particularly among older adults or rural patients, created significant learning curves and negatively affected satisfaction due to lack of guidance, tutorials, or clear instructions (Pogorzelska et al., 2023; Wilcamango-Ríos et al., 2022). Health professionals reported limited training in digital communication, impacting empathetic interactions in sensitive areas such as mental health, oncology, and palliative care (Predmore et al., 2021; Ramaswamy et al., 2020).

Institutional strategies to strengthen system adaptability included interactive patient modules, virtual clinical simulations, and remote care protocols for complex cases (Kaur et al., 2022; Zhang et al., 2014). These interventions improved service comprehension, user confidence, and willingness to continue using telemedicine. Incorporating digital health education as a structural component for chronic or long-term treatment programs was also suggested, covering platform use, privacy, patient rights, and post-consultation follow-up.

Overall, the findings indicate that telemedicine success depends not only on technological infrastructure but also on educational and training processes that promote patient autonomy and digital competence across all health system actors.

Discussion

The quantitative and qualitative results derived from this systematic literature review on the impact of telemedicine on patient satisfaction in the healthcare sector reveal both significant advances and critical gaps in the field. As noted at the beginning of this work, 50 articles published between 2019 and 2024 were analyzed, all indexed in high-impact academic databases. Although telemedicine has gained prominence as a mode of care following the COVID-19 pandemic, there remains a lack of theoretical and practical consolidation regarding its multidimensional influence on patient experience.

From the quantitative analysis, a concentration of studies was identified in Northern Hemisphere countries, particularly the United States and China, with notable participation from Peru within the Latin American context. However, other regions, such as Africa, Central America, and much of South America, remain underrepresented in the scientific literature. This geographic gap limits understanding of how cultural, economic, or structural factors influence perceived quality and technological adoption by patients.

The review also revealed unequal coverage regarding the types of clinical services studied. Most articles focused on general care, oncology, and mental health, while areas such as pediatrics, emergency care, palliative care, and remote rehabilitation were scarcely addressed. This thematic concentration highlights the urgent need to diversify research toward more complex or less visible clinical contexts, where satisfaction levels may be influenced by specific psychosocial variables.

Qualitative analysis identified three overarching themes: (1) the perception of accessibility as a facilitator of satisfaction, (2) communicational and technological limitations affecting physician–patient interaction, and (3) users' favorable disposition to continue using telemedicine post-pandemic. These themes reinforce the idea that patient satisfaction is not limited to clinical effectiveness but is profoundly influenced by emotional experience, interpersonal relationships, and the ease of use of digital platforms.

Moreover, impacts on patients' emotional health and well-being emerged as a critical dimension, especially among populations with chronic diseases or those under continuous therapeutic follow-up. Studies included in this review indicated that remote care can reduce anxiety associated with physical travel or hospital environments but may also generate frustration or distrust when communication is impersonal or interrupted by technological barriers.

Another relevant aspect was the educational impact of telemedicine on both patients and healthcare professionals. Digital literacy, training in soft skills for virtual environments, and user guidance were associated with higher satisfaction levels. However, many studies highlighted the lack of sustained educational strategies from service-providing institutions, representing a substantial area for improvement in implementation policies.

Finally, the review identified significant gaps in the methodological design of several studies. Few investigations incorporated standardized tools to measure patient satisfaction, and even fewer included longitudinal evaluations to observe the sustained impact of telemedicine use. No robust comparative studies between in-person and remote care from the user's perspective were identified, nor multivariate analyses integrating sociodemographic, technological, and clinical variables.

Conclusion

Patients have traditionally been conceived as passive recipients of healthcare; however, in the context of telemedicine, their experience and perception play a central role in evaluating the quality of care. This systematic literature review shows that, while telemedicine has generated substantial advances in accessibility and continuity of service, significant challenges remain related to clinical interaction, digital equity, and technological literacy. Despite the growing use of digital health platforms, patient satisfaction remains an under-researched area, particularly among vulnerable populations, rural regions, and specialized services such as mental health or palliative care. This work provides an updated view of the research landscape regarding patient experience in remote care contexts and highlights critical gaps that should be addressed through new multidimensional and context-specific studies. As digital transformation in healthcare accelerates, it is urgent to prioritize active patient participation in the design, evaluation, and improvement of telemedicine services to ensure truly patient-centered care tailored to their real needs.

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