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An Economic Evaluation of Online Doctor Consultations: A Cost-Benefit Analysis of Healthcare Resource Utilization and Patient Expenditures

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ABSTRACT

Increasingly common recently as a way to increase healthcare access and convenience are online medical consultations. This paper evaluates the effect of online doctor consultations on the use of healthcare resources and patient expenses by means of a thorough cost-benefit analysis. Direct medical costs, patient out-of-pocket spending, and changes in productivity are among the many economic costs and advantages the study covers. The results imply that, for patients as well as the healthcare system, online consultations might result in cost savings, including lower hospital admissions, emergency department visits, and travel charges. This study provides a comprehensive assessment of the general economic viability and influence of online doctor consultations by including these economic elements.

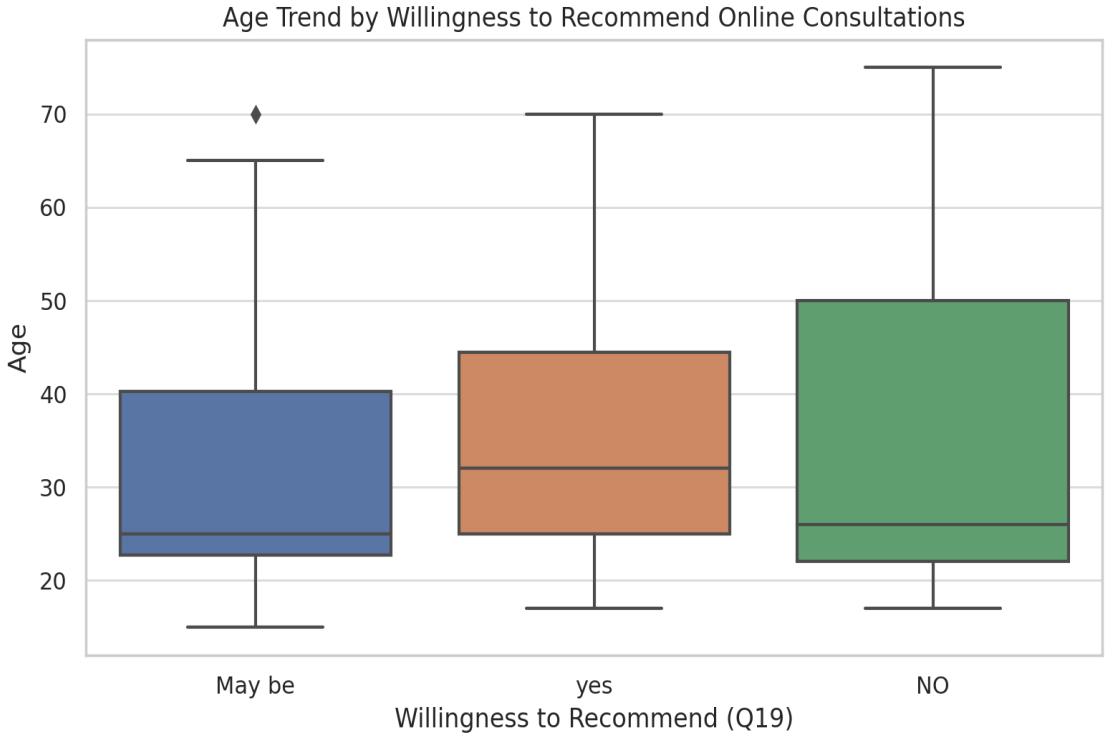
Keywords: Online doctor consultation, healthcare resources, patient expenses, cost-benefit analysis.

INTRODUCTION

Quick changes in digital technology have changed the healthcare scene and resulted in the explosion of telehealth services (Dávalos et al., 2009). A key element of telehealth, online doctor visits increase accessibility, better patient outcomes, and the best use of healthcare resources (Vudathaneni et al., 2024). Still, the financial consequences of these services remain a major focus of study (Wade et al., 2010). This study intends to evaluate, by a thorough cost-benefit analysis, the financial advantages and drawbacks of online doctor consultations. The results hope to guide the operational and financial viability of introducing such digital health solutions into mainstream healthcare delivery among healthcare stakeholders, including legislators and healthcare providers.

Online Platforms for Healthcare Delivery

Rising digital platforms have made telehealth services possible for patients to engage with doctors via video, voice, or text in real time (Greenhalgh et al., 2016). These platforms span from mobile health apps to advanced AI-integrated consulting solutions. Improved accessibility for rural communities, ease, and cost savings—all of which help to explain the growing acceptance of these platforms (Wade et al., 2010) Online consultations enable patients to receive timely treatment by helping to lower geographical and chronological constraints. Studies on telehealth services reveal that they help to improve disease management and lower healthcare resource use (Catapan & Calvo, 2020; Vudathaneni et al., 2024). Further helping to ensure effective delivery of treatment include remote diagnostics, e-prescriptions, and electronic health records (EHRs).



Economic Evaluation of Online Doctor Consultations

Direct medical costs, possible savings from fewer hospital and emergency visits, and patient-level expenses including consultation fees, transportation, and missed productivity all come under consideration in a comprehensive cost-benefit analysis (Catapan & Calvo, 2020). Direct expenses include hardware, software, training, and maintenance among infrastructure projects. Reduced absenteeism, better control of chronic conditions, and lower readmission rates are among the indirect gains. Not least among the intangible gains are improved patient satisfaction, less carer load, and environmental advantages from less travel. Through an analysis of these economic factors, the study assesses the total cost effect on patients and healthcare systems and points up areas where telehealth investment would pay off most.

METHODOLOGY

This study used accepted rules-based benefit-cost analysis methodology (Dávalos et al., 2009). Along with qualitative evaluations via expert interviews, the approach included gathering quantitative data from published studies and medical databases. Platform development, maintenance, and labour expenses comprised direct medical costs.

Indirect expenses included savings in transportation and patient time as well as changes in emergency services use. Using proven conversion metrics (Ezeamii et al., 2024) intangible advantages such patient satisfaction and better healthcare access were also monetised. To guarantee consistency, cost statistics were changed for inflation and converted to a single currency. To consider uncertainties in cost projections and consumption trends, sensitivity studies were conducted.

Designed to compile main information from individuals all across Pudukkottai, Tamil Nadu, a structured survey form. The poll comprised five sections:

Section 1: Name, Age, Gender, Location - Demographics

Section 2: Online Consultations Frequency and Nature (e.g., Q6: Frequency of Use, Q7: Preference)

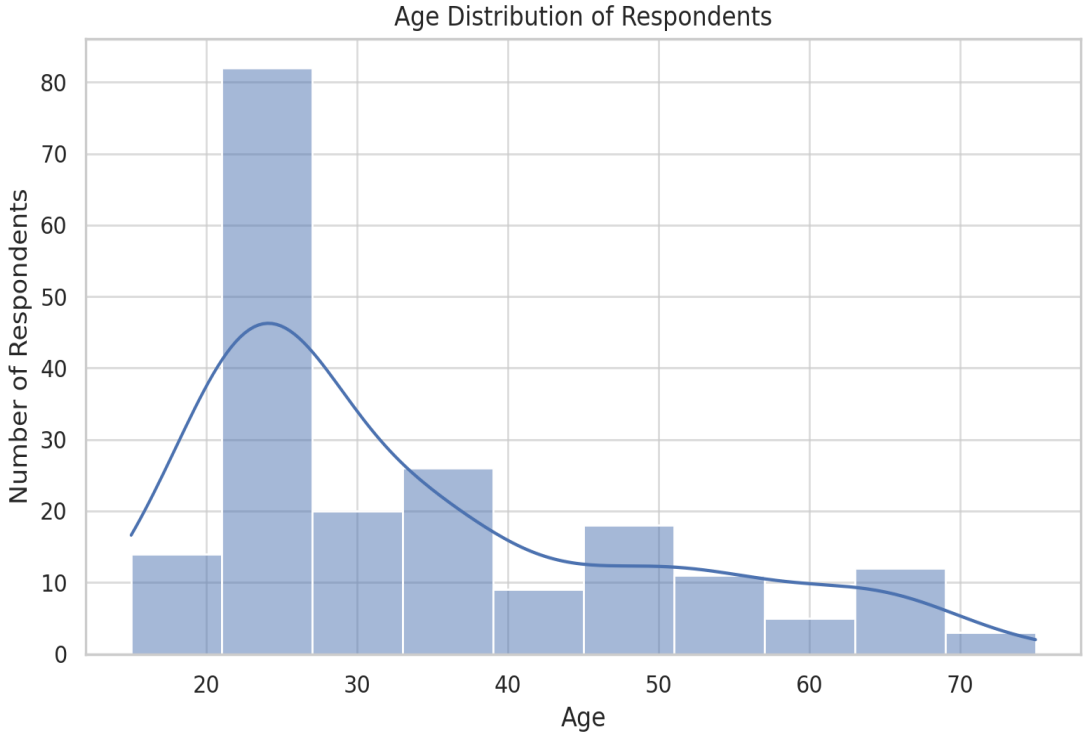
Section 3: Satisfaction and Barriers (Q9: Satisfaction, Q10–11: Consultation Cost, Q12: Preference Over In-Person Visit)

Section 4: Advantages & Drawbacks (Q13–Q17: Time Efficiency, Cost Saving, Concerns include Lack of Physical Exam)

Section 5: Likelihood of Recommendation, Q18: Preference for Future Consultations, Q19: Willingness for Future Use

RESULTS

According to the study, using online consultations generates rather significant financial gains. Initially, setup and running costs were less than savings from lower hospital admissions and ER visits (Wade et al., 2010). The online model's average cost per consultation was far less than in-person appointments. Additionally mentioned by patients were savings in productivity and travel (O'Donnell et al., 2022). Early diagnosis and intervention via web consultations also helped to improve health outcomes and lower long-term costs. These results complement earlier studies confirming the effectiveness and economy of telehealth (Dávalos et al., 2009). Strong economic feasibility was indicated by the net benefit-to-cost ratio that varied from 1.5 to 3.2 seen across several case studies and meta-analyses.

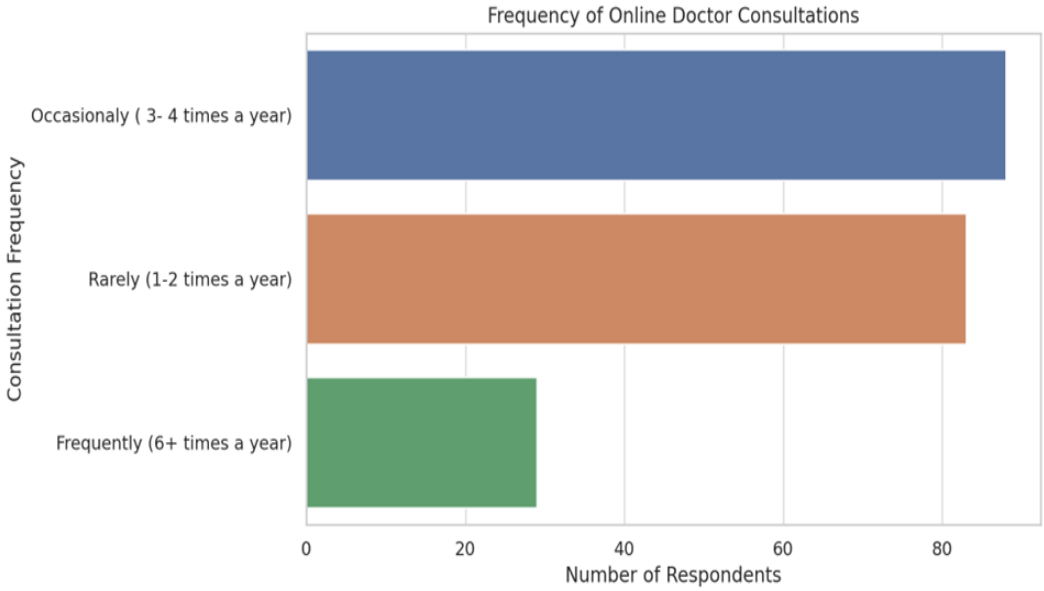


Empirical Survey Analysis

A poll was carried out with people living all around Pudukkottai, India, to augment the literature-based assessment. The sample comprised people of all ages, incomes, jobs, and degrees of computer literacy. The poll looked at patient demographics, frequency of online consultation use, degrees of satisfaction, perceived benefits, issues, and future use willingness.

Eighty percent of respondents have attempted online doctor consultations; the majority of them accessed services one to four times annually. Though cost-saving, time efficiency, and less travel load were mentioned as main benefits, satisfaction degrees differed. Common issues, on the other hand, were questions concerning diagnosis accuracy and the absence of physical examination. The frequency of use was not significantly connected with income or occupation; rather, convenience and accessibility dominated roles.

Fascinatingly, seventy percent of patients said they would be ready to keep using online consultations going forward or perhaps expand their use. These results confirm that emotional and situational convenience greatly affect adoption; economic advantages by themselves are not the only factors. Particularly among semi-urban and rural groups, the survey answers also provide insightful analysis of regional issues including digital literacy obstacles and uneven mobile access.



LITERATURE REVIEW

The importance of thorough economic analyses of telehealth services is underlined in current literature. Wade et al. (2010) conducted a methodical review that supports synchronous video consultations' cost-effectiveness in several environments. The research also shows an increasing corpus of data connecting telehealth acceptance to lower health inequalities and better health equity. Encouragement of thorough studies to support policy and adoption, Dávalos et al. (2009) offered a thorough methodology for economic evaluation. Studies such as those by Ezeamii et al. (2024) and Greenhalgh et al. (2016) have shown that effective telehealth adoption depends not only on cost-effectiveness but also on integration with current health systems and user acceptability. These results notwithstanding, there are still limitations in assessing long-term effects and standardising measurements across various healthcare environments.

DISCUSSION

The results of this study show the financial feasibility of online consultations and expose significant patient and healthcare system cost savings. Safety and convenience have driven these services' popularity following the COVID-19 epidemic. Managing chronic illnesses, follow-up treatment, and mental health services, as well as other areas, has shown especially advantageous from online consultations. To guarantee sustainable adoption, meanwhile, technological, legal, and behavioural obstacles have to be removed. These include questions in insurance reimbursement procedures, lack of internet connectivity in rural locations, data security issues, and opposition from established medical practitioners. Policy suggestions call for growing internet infrastructure, creating telehealth reimbursement systems, and encouraging digital literacy among consumers and medical professionals.

CONCLUSION

According to this study, cost-effective substitutes for conventional healthcare delivery are online doctor consultations. These systems are destined to be essential parts of contemporary healthcare systems by improving access and lowering expenses. Policymakers and providers of healthcare have to embrace and maximise these advances as digital transformation in healthcare keeps on to guarantee fair and effective healthcare delivery. Long-term patient outcomes, integration with artificial intelligence, and the effect of telehealth on healthcare workforce dynamics should be the main topics of next research.

Authors' Contributions

Mr Vijayabaskar Govindarajan designed the study; Dr Hemachandran Ravikumar provided ideas on the final design and selection of assessment tools. Both authors were involved in data collection, summarising, statistical analysis, and finalising the report. Mr Vijayabaskar Govindarajan has made the rough draft of the research paper; Dr Hemachandran Ravikumar provided the initial draft of the manuscript, and the final version is made available by considerations of all.

Declarations of Conflicts of Interest

The authors declare that they have no potential conflicts of interest regarding the study design, research analysis, or publication of this article.

Declaration by Authors

Ethical Approval: The study was approved by the Review Committee of the UNS Research Council.

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Conflict of Interest: The authors declare no conflict of interest.

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