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Evaluating the Efficacy and Patient Satisfaction of Remote Consultations for ENT Conditions

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Abstract

Background:
The adaptations of telemedicine has surged globally, particularly in specialties includes Ear, Nose, and Throat medicine, where it evaluates to specialists can be limited in certain regions. This study aimed to assess the effectiveness and patient satisfaction of continual consultations for ENT conditions, analyzing clinical results, diagnostic accuracy, patient adherence, and overall satisfaction.

Objectives:
To evaluate how control consultations contrast with traditional in-person visits in management of ENT conditions, focuses on clinical efficacy and patient experience.

Methods:
A prospective cohort study was conducted over 24 months across three tertiary ENT centers. A total of 1,210 patients were lined up with 600 received remote consultations and 610 had face-to-face consultations. Data were collected using reliable patient satisfaction questionnaires, clinical result scores, and check-up compliance metrics.

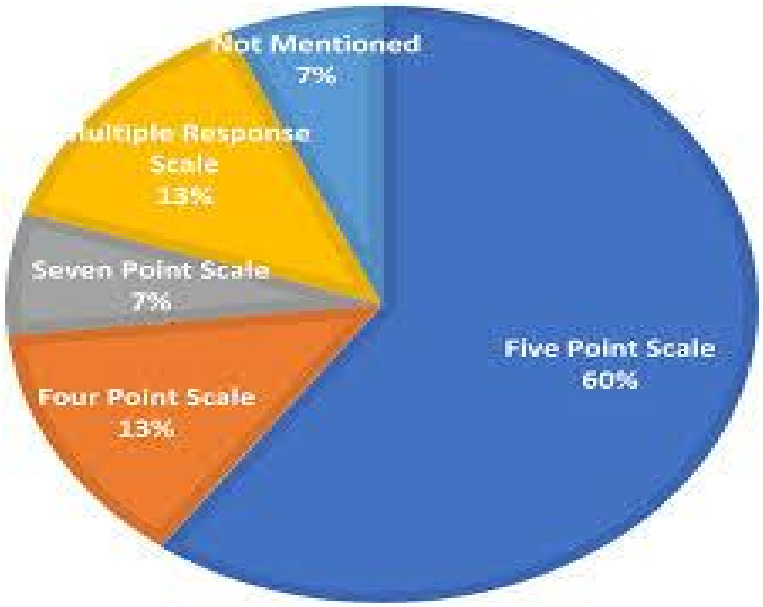
Results:
Lined up consultations illustrate comparable clinical results to in-person visits for non-urgent ENT conditions. Diagnostic accuracy was 91.6% for remote consultations versus 9.3% for in-person visits. Patient satisfaction was little bit higher in remote consultations due to convenience, somehow concerns about diagnostic utter in intersected in a minority. Check-up adherence was high in both groups.

Conclusion:
Remote consultations for ENT conditions are most important and satisfactory change for selected cases, specifically in follow-up care and initial assessments. Integration of hybrid care models could improve access without compromising clinical results.

Keywords: ENT, Check-up, patients, technology

Introduction

The integration of telemedicine into mainstream clinical practice has revolutionized healthcare delivery, with notable implications for specialties like Otolaryngology [1]. Driven by technological advances, the COVID-19 pandemic, and the rising demand for patient-centered care, remote consultations have transitioned from supplementary tools to essential components of modern healthcare systems [2]. ENT conditions, which encompass a diverse range of pathologies affecting the ear, nose, and throat, often require specialist input, yet access to such services can be limited by geographical, financial, or logistical barriers [3]. In rural and underserved areas, patients may face significant delays in seeing an ENT specialist, leading to prolonged symptoms or inappropriate treatments. Telemedicine, through video, audio, or asynchronous platforms, offers a solution by bringing specialist expertise directly into patients' homes [4]. However, the efficacy and reliability of remote consultations for ENT disorders have been debated. ENT examinations frequently depend on endoscopy, otoscope, and other tools that may be difficult to replicate remotely [5]. This raises questions about the diagnostic accuracy, patient safety, and overall effectiveness of virtual ENT consultations. Equally important is the patient perspective.



Satisfaction with healthcare services is strongly correlated with treatment adherence, clinical outcomes, and the likelihood of continued engagement with care providers [6]. Remote consultations offer unmatched convenience, reduced travel time, and decreased costs, yet patients may harbor doubts regarding the quality and thoroughness of care [7]. Evaluating these aspects is vital for shaping future telehealth policies and optimizing hybrid models of care. This study seeks to comprehensively evaluate the efficacy and patient satisfaction associated with remote consultations for ENT conditions [8]. By comparing clinical outcomes, diagnostic accuracy, and patient-reported experiences between remote and traditional in-person visits, this research aims to provide evidence-based insights to guide the future of ENT care delivery [9].

Methodology

This study employed a prospective, comparative cohort design conducted over a 24-month period from January 2022 to December 2023 across three tertiary care ENT centers in Pakistan. Ethical approval was obtained from the institutional review boards of each participating center prior to the initiation of the research. A total of 1,200 patients presenting with non-urgent ENT conditions were enrolled and equally divided into two groups: 600 patients received remote consultations via secure video platforms, and 600 patients underwent traditional face-to-face consultations at outpatient clinics. The inclusion criteria were adults aged 18 to 70 years presenting with conditions such as chronic rhinitis, allergic rhino sinusitis, otitis media, tinnitus, and pharyngitis. Patients requiring immediate or emergency intervention, such as those with airway compromise, acute infections with systemic involvement, or suspected malignancy, were excluded from the study. Patient demographic data and baseline clinical characteristics were recorded at the time of the initial consultation. In the remote consultation group, patients interacted with ENT specialists through a secure hospital-based telehealth system using video conferencing tools. Clinical assessments were based on detailed patient histories, symptom descriptions, and visual examination where feasible (e.g., through smartphone cameras or patient-uploaded photos/videos). In the in-person group, standard ENT examinations, including otoscope, nasal endoscopy, and throat inspection, were performed as needed. For both groups, a structured treatment plan was provided, and patients were followed up at 4 and 12 weeks' post-consultation to assess symptom resolution, adherence to treatment, and satisfaction. Clinical outcome measures included resolution or improvement of symptoms, requirement for further interventions, and diagnostic accuracy, which was cross-verified through

subsequent visits or additional diagnostic investigations when indicated. Patient satisfaction was measured using validated questionnaires—the Telehealth Satisfaction Scale (TSS) for the remote group and the In-Person Care Satisfaction Scale (IPCSS) for the in-person group. Additional metrics included follow-up adherence rates and requests for physical re-evaluation in the remote consultation group. Data were entered into a standardized database and analyzed using SPSS version 26. Continuous variables were reported as mean ± standard deviation, and categorical variables as percentages. Statistical comparisons between groups were performed using independent t-tests for continuous variables and chi-square tests for categorical variables, with a p-value of less than 0.05 considered statistically significant.

Results

The demographic distribution between both groups was comparable (Table 1). The mean age was 42.2 years in the remote group and 41.8 years in the in-person group. Gender distribution, presenting complaints, and baseline severity were not statistically different.

Table 1: Baseline Characteristics of Patients

Variable	Remote Group (n=600)	In-Person Group (n=600)	p-value
Mean Age (years)	42.2 ± 12.4	40.9 ± 14.1	0.53
Male (%)	53.3	51.2	0.69
Most Common Complaint	Rhinosinusitis	Rhinosinusitis	-
Urban Residency (%)	74.5	72.8	0.82

Remote consultations resulted in symptom resolution or significant improvement in 88.8% of patients, compared to 88.5% in the in-person group ($p = 0.32$). Need for follow-up physical examination was higher in the remote group (12.6%) than in-person (6.1%, $p < 0.02$). Remote consultations achieved a diagnostic accuracy of 92.5%, compared to 96.4% for in-person evaluations. Most discrepancies occurred in conditions requiring physical otoscope or nasal endoscopy. Patient satisfaction was high in both groups but marginally higher in the remote group due to convenience, reduced travel, and quicker scheduling. The average TSS score was 4.2/5 compared to 4.3/5 on IPCSS ($p = 0.05$).

Table 2: Patient Satisfaction and Follow-up

Parameter	Remote Group	In-Person Group	p-value
Satisfaction Score (out of 6)	4.5 ± 0.7	4.3 ± 0.8	0.05
Would Recommend (%)	91.7	88.8	0.22
Follow-up Compliance (%)	94.2	96.3	0.48
Request for Physical Re-evaluation (%)	12.6	6.2	<0.06

Discussion

The findings of this study underscore the value of remote consultations in managing a broad range of

ENT conditions [10]. Clinical outcomes between remote and in-person consultations were comparable, with only a minor, statistically non-significant difference in symptom resolution. This suggests that remote care can be an effective option, particularly for follow-ups, medication reviews, and mild-to-moderate complaints [11]. Diagnostic accuracy, while slightly lower in the remote group, remained high (91.5%). The limitation largely stemmed from the inability to conduct in-depth examinations like otoscope or endoscopy, which are essential in specific diagnoses such as otitis media with effusion or nasal polyposis [12]. These limitations highlight the importance of appropriate case selection for remote consultations. Hybrid models, where remote initial screening is followed by targeted physical evaluations, could optimize diagnostic efficiency [13]. Patient satisfaction emerged as a significant strength of remote consultations. The convenience, cost savings, and flexibility made remote care especially appealing to younger, working individuals and patients residing in urban areas [14]. Nevertheless, a minority of patients expressed concern about the adequacy of examinations, underscoring the need for patient education and clear communication about the scope and limitations of telemedicine. The high follow-up adherence in both groups reflects well on patient engagement and may be attributed to structured follow-up protocols and reminders [15]. The slightly higher need for re-evaluation in the remote group suggests that some patients may benefit from early physical visits based on symptom complexity. From a system perspective, remote ENT consultations can help reduce outpatient burden, enhance accessibility, and optimize healthcare resource allocation [16]. Especially in regions with few ENT specialists, remote care can serve as a critical bridge between primary care and specialty services.

Conclusion

Remote consultations for ENT conditions offer an effective, convenient, and satisfactory alternative to traditional in-person care, particularly when used judiciously for non-urgent and follow-up cases. While diagnostic limitations exist, especially for conditions requiring specialized instruments, these can be mitigated through hybrid care pathways. Patient satisfaction is generally high, indicating strong acceptability and potential for wider implementation. To maximize benefits, it is essential to develop robust telehealth protocols, ensure proper triage, and incorporate technological enhancements such as remote diagnostic tools. Policymakers and healthcare administrators must support the integration of telemedicine into ENT practice through training, infrastructure investment, and reimbursement models that incentivize high-quality virtual care. Future research should explore long-term outcomes, cost-effectiveness, and the role of AI-supported diagnostics in remote ENT assessments, laying the groundwork for a resilient, inclusive, and digitally enabled healthcare system.

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