Original Article

The Role of Telemedicine in Postoperative Follow-Up Care for Patients Undergoing Routine General Surgical Procedures in Urban, Suburban, and Rural Pakistan: A Prospective Assessment of Patient Satisfaction and Cost-Effectiveness

Muhammad Munir Memon

ABSTRACT

Objective: To prospectively assess the impact of telemedicine on patient satisfaction and cost-effectiveness compared to traditional face-to-face follow-up for routine general surgical procedures in Pakistan.

Study Design: Prospective randomized controlled trial, Multicenter study

Place and Duration of Study: This study was conducted at the Across Urban, Suburban, and Rural Tertiary Care Centers in Pakistan, between January and December 2024.

Methods: This trial enrolled 180 adult patients who underwent elective or emergency general surgical procedures (laparoscopic appendicectomy, laparoscopic cholecystectomy, and hernia repairs). Patients with complex histories or significant complications were excluded. Participants were randomized (1:1) to either a telemedicine follow-up group (n=90) or a face-to-face follow-up group (n=90). Primary outcomes were patient satisfaction and cost-effectiveness. Secondary outcomes included postoperative complications and time to return to normal activities.

Results: Baseline demographics were comparable. Satisfaction with surgical outcomes was high in both telemedicine (70%) and face-to-face (68%) groups ($P = 0.751$). Mean consultation time for telemedicine was significantly shorter (8.6 min vs. 14.7 min, $P < 0.001$), contributing to cost savings by eliminating patient travel and minimizing time away from work. Non-attendance and complication rates were comparable. Rural patients in the telemedicine group reported higher satisfaction ($P = 0.042$), and video-based consultations led to higher satisfaction than phone-only ($P = 0.049$).

Conclusion: Telemedicine is a safe, efficient, and highly satisfactory alternative for routine postoperative surgical follow-up, particularly beneficial for rural patients and offering substantial time and cost savings, advocating for its wider integration.

Key Words: Telemedicine, postoperative care, patient satisfaction, cost-effectiveness, general surgery, Pakistan.

Citation of article: Memon MM. The Role of Telemedicine in Postoperative Follow-Up Care for Patients Undergoing Routine General Surgical Procedures in Urban, Suburban, and Rural Pakistan: A Prospective Assessment of Patient Satisfaction and Cost-Effectiveness. Med Forum 2025;36(7):52-57. doi:10.60110/medforum.360711.

INTRODUCTION

Surgical site infections (SSIs) pose a significant global health concern, affecting a considerable percentage of surgical procedures[1].

Department Surgery, College of Medicine, Qassim University, Saudi Arabia

Correspondence: Muhammad Munir Memon, Assistant Professor Surgery, College of medicine, Qassim University, P.O Box 6655, Buraidah, Qassim, Saudi Arabia.
Contact No: 00966542862377
Email: m.ghafar@qu.edu.sa

Received: March, 2025
Reviewed: April-May, 2025
Accepted: June, 2025

Given the trend towards earlier patient discharge in contemporary healthcare, a majority of SSIs manifest post-discharge[2]. Prompt identification and treatment are crucial in mitigating SSI-related morbidity and mortality. Conversely, factors such as inadequate wound surveillance, insufficient patient awareness of symptoms, and limited access to healthcare can lead to delayed diagnosis[3]. The emergence of telemedicine, leveraging modern electronic communication and data storage, offers a novel approach to remote patient monitoring. Telemedicine usage in outpatient appointments has witnessed a substantial increase in recent years[4].

Evidence supports the efficacy of telemedicine in diagnosing SSI and its utility as an effective screening tool[5]. Telemedicine also alleviates travel expenses for patients who do not require in-person reviews at acute

hospitals when asymptomatic or in remission. Virtual consultations typically result in fewer missed work or school days[6]. These communication modalities have enhanced patient-reported symptom management, improved procedural preparation, and facilitated earlier diagnosis[7]. The importance of individualized treatment and shared decision-making is highlighted by the fact that almost a third of patients across both telemedicine and in-person groups expressed a preference for an alternative follow-up method[8].

Rural populations in Pakistan encounter significant obstacles in accessing healthcare, with considerable average distances to healthcare facilities[9]. Travel often involves walking or unreliable public transportation, leading to delays in receiving timely care. Access to basic services is notably lower in rural areas compared to urban settings. Many rural healthcare centers face under-resourcing or functional limitations, and the doctor-to-patient ratio is less favorable than in cities[10]. Socioeconomic factors, including high poverty rates and lack of transportation, further restrict access, with travel costs, long waiting times, and overall expenses acting as major barriers[11]. Healthcare utilization significantly declines with increasing distance from facilities[12]. These challenges underscore the potential of telemedicine to overcome access barriers by diminishing the need for travel.

This study posits that telemedicine-based postoperative follow-up is comparable to or even better than face-to-face care in terms of patient satisfaction, clinical outcomes, and cost-effectiveness for general surgical patients across urban, suburban, and rural regions of Pakistan.

METHODS

Study Population and Eligibility Criteria: This multicenter, prospective randomized controlled trial was conducted between January and December 2024, encompassing urban, suburban, and rural tertiary care centers in Pakistan. A total of 420 adult patients who underwent elective or emergency general surgical procedures were initially screened for eligibility. The inclusion criteria required participants to be adults (aged 18 years or older) who had undergone uncomplicated surgical procedures. Exclusion criteria were implemented to ensure a homogeneous cohort for safety and satisfaction assessment, including the exclusion of patients with complex surgical histories, significant intraoperative complications, or severe postoperative complications.

Sample Size Calculation: The sample size was determined to detect a meaningful difference in patient satisfaction and cost-effectiveness, assuming a power of 80% and a significance level of 0.05. Based on an estimated satisfaction rate of 70% for telemedicine and 60% for face-to-face follow-up, a sample size of 81 patients per group was calculated. To account for a potential dropout rate of 10%, the final target was set at 90 patients per group.

Prospective Randomization and Group Allocation: Following screening, 180 eligible patients were randomized in a 1:1 ratio to either telemedicine follow-up (n = 90) or face-to-face outpatient clinic review (n = 90). Randomization was achieved using a computer-generated sequence to ensure allocation concealment. Both groups were carefully balanced with respect to baseline demographics and the types of surgical procedures performed.

Intervention and Follow-Up Protocol: Patients assigned to the telemedicine group received postoperative follow-up through either video or phone consultations, depending on the availability of technology and the patient's preference. Patients in the face-to-face group attended standard outpatient clinic appointments. The initial follow-up was conducted at a standardized interval after hospital discharge, consistent across both study groups.

Data Collection: Demographic data, details of the perioperative period, and postoperative outcomes were systematically recorded. These outcomes included tenderness at the incision site, the use of analgesia, any issues related to wound healing, postoperative infection rates, and the resumption of normal activities. The duration of each follow-up consultation was recorded from start to finish. Non-attendance rates and the necessity for any additional appointments were also documented. Patient satisfaction was evaluated using a standardized Likert-style questionnaire administered after the follow-up consultation. This survey assessed satisfaction with surgical outcomes, the methods of follow-up, the timing of the review, and the overall experience. Patients were also asked about their preferences for future follow-up methods.

Cost Categories: Cost-effectiveness was evaluated across four main categories: direct clinic costs (including staffing, facilities, and consumables), patient costs (covering travel, accommodation, and lost income), platform costs (related to telemedicine software, data usage, and equipment), and indirect costs (such as time saved and reduced missed work or school days).

Statistical Analysis: Continuous variables were described using means and standard deviations, while categorical variables were summarized as percentages and frequencies. Results were presented as incident risk ratios (IRRs) along with their corresponding P-values. Multivariate regression analysis was employed to identify independent factors influencing patient satisfaction. Statistical significance was defined as a P-value of less than 0.05.

Ethical Considerations: The study protocol received approval from the Institutional Review Boards (IRBs) of all participating centers. Written informed consent was obtained from each participant before their

enrollment in the study. All procedures were conducted in accordance with the principles outlined in the Declaration of Helsinki.

RESULTS

Demographics: In this multicenter, prospective randomized controlled trial conducted across three distinct regions in Pakistan (urban, suburban, and rural centers) from January to December 2024, a total of 420 patients were initially screened for eligibility. After applying the inclusion & exclusion criteria, 180 patients were enrolled and randomized in a 1:1 ratio to either telemedicine follow-up (n = 90) or face-to-face outpatient clinic review (n = 90). All participants were adults who had undergone elective or emergency general surgical procedures, including laparoscopic appendicectomy, laparoscopic cholecystectomy, open and laparoscopic hernia repairs. Patients with complex surgical histories, significant intraoperative complications, or severe postoperative complications were excluded to ensure a homogeneous cohort for safety assessment. The demographic profiles of both groups were well balanced. The mean age in the telemedicine group was 43.8 years (SD 13.9), while in the face-to-face group, the mean age was 44.3 years (SD 14.1), with an overall age range of 21 to 78 years. The gender distribution was almost equal in both groups. The distribution of the surgical procedures performed was also similar across the two groups. Ensuring comparability for outcome analysis, the two groups did not differ statistically in baseline characteristics.

Table No.1: Patient Demographics and Surgical Details

Variable	Teleme-dicine (n = 90)	Face-to-Face (n = 90)	Total (n = 180)	P-value
Male (%)	49	51	50	0.881
Female (%)	51	49	50	
Mean Age (years, SD)	43.8 (13.9)	44.3 (14.1)	44.1 (14.0)	0.821
Laparoscopic cholecystectomy	47 (52%)	44 (49%)	91 (51%)	0.512
Laparoscopic appendicectomy	18 (20%)	21 (23%)	39 (22%)	
Open hernia repair	10 (11%)	9 (10%)	19 (11%)	
Laparoscopic hernia repair	15 (17%)	16 (18%)	31 (17%)	
Postoperative infection	8 (9%)	5 (6%)	13 (7%)	0.412

Postoperative Outcomes: The assessment of incision site tenderness during the initial follow-up consultation, conducted by both patients and clinicians, revealed no significant difference between the telemedicine group (46%) and the face-to-face group (42%) (P = 0.519). Similarly, the utilization of analgesia was comparable, with 21% in the telemedicine group and 19% in the face-to-face group requiring pain relief at follow-up (P = 0.712). Concerns regarding wound healing were reported by 13% of telemedicine patients and 9% of face-to-face patients (P = 0.288). These concerns were typically minor and managed conservatively. Postoperative wound infections or delayed healing were diagnosed in 8 telemedicine patients (9%) and 5 face-to-face patients (6%), with all cases successfully treated with oral antibiotics prescribed by local practitioners (P = 0.412). No patient in either group required surgical re-intervention, and no mortalities or unplanned returns to the operating theatre occurred during the study period. The proportion of patients who had returned to work at the time of follow-up was 74% in the telemedicine group and 79% in the face-to-face group (P = 0.221). Return to exercise was reported by 65% and 68% of patients, respectively (P = 0.782), and return to activities of daily living (ADLs) was high in both groups (88% telemedicine vs. 85% face-to-face, P = 0.441).

Consultation Time: A significant difference was observed in the duration of follow-up consultations. Telemedicine consultations had a significantly shorter mean duration of 8.6 minutes (SD 5.1) compared to 14.7 minutes (SD 8.4) for face-to-face appointments (P < 0.001). Within the telemedicine group, video consultations averaged 10.1 minutes, while phone-only consultations were shorter at 7.3 minutes (P = 0.02). The shorter duration of telemedicine appointments is likely due to the absence of physical examination and the streamlined nature of remote communication.

Table No.2: Postoperative Outcomes and Consultation Times

Outcome	Telemedi-cine (%)	Face-to-Face (%)	P-value
Incision site tenderness	46	42	0.519
Use of analgesia	21	19	0.712
Wound healing concerns	13	9	0.288
Return to work	74	79	0.221
Return to exercise	65	68	0.782
Return to ADLs	88	85	0.441
Mean consultation time (min)	8.6 (5.1)	14.7 (8.4)	<0.001
Non-attendance	2	5	0.341
Discharged from clinic	96	94	0.632

Clinic Attendance and Acceptability: Non-attendance rates were modest and did not differ significantly between the telemedicine group (2%) and the face-to-face group (5%) (P = 0.341). Satisfaction levels were generally high in both groups. Specifically, 70% of telemedicine patients and 68% of face-to-face patients strongly agreed with their satisfaction with the outcome of their surgery (P = 0.751). Satisfaction with the follow-up method (60% telemedicine vs. 63% face-to-face, P = 0.672) and the timing of the review (58% telemedicine vs. 54% face-to-face, P = 0.612) were also

favorable in both groups. Overall, 65% of telemedicine patients and 61% of face-to-face patients reported being "very happy" with the service. However, approximately one-quarter of patients in both groups indicated a preference for a different follow-up method. Notably, patients in the telemedicine group residing in rural areas reported higher satisfaction compared to their urban counterparts (P = 0.042). Five patients initially randomized to telemedicine opted for face-to-face clinic visits and were excluded from the satisfaction analysis due to incomplete survey data.

Factors Influencing Satisfaction: Multivariate regression analysis revealed that patients requiring further appointments or those who had not returned to ADLs at the time of follow-up reported significantly lower satisfaction with their care (P = 0.001 and P = 0.017, respectively). Interestingly, patients in the face-to-face group, particularly those from suburban and rural centers, were more inclined to express a preference for telemedicine follow-up in the future (P = 0.033). The modality of telemedicine also influenced satisfaction, with video consultations associated with higher satisfaction levels compared to phone-only follow-up (P = 0.049). Age and gender did not significantly impact satisfaction scores.

Table No.3: Factors Influencing Patient Satisfaction (Multivariate Regression)

Factor	Incident Risk Ratio (IRR)	P-value
Further appointment needed	0.51	0.001
Not returned to ADLs	0.67	0.017
Video vs. phone telemedicine	1.19	0.049
Age	1.01	0.621
Gender (female vs. male)	1.08	0.408
Rural vs. urban	1.22	0.042

Cost-Effectiveness: From a cost-effectiveness standpoint, telemedicine follow-up demonstrated clear advantages. The average duration of telemedicine consultations was significantly shorter than face-to-face appointments. Non-attendance rates were low and comparable in both groups. Importantly, no significant differences were observed in clinical outcomes, such as wound healing, infection rates, or return to normal activities.

Table No.4: Cost-Effectiveness Outcome

Cost-Effectiveness Parameter	Telemedicine	Face-to-Face	P-value	Interpretation
Mean consultation time (min)	8.6 (5.1)	14.7 (8.4)	<0.001	Telemedicine more time-efficient
Non-attendance rate (%)	2	5	0.341	No significant difference
Wound healing concerns (%)	13	9	0.288	No significant difference
Postoperative infection (%)	9	6	0.412	No significant difference
Return to work (%)	74	79	0.221	No significant difference
Return to exercise (%)	65	68	0.782	No significant difference
Return to ADLs (%)	88	85	0.441	No significant difference

Table No.5. Cost Comparison of Telemedicine vs. Face-to-Face Postoperative Follow-Up

Cost Category	Telemedicine (PKR)	Face-to-Face (PKR)	P-value	Interpretation
Direct clinic cost	3,563	6,498	<0.001	Telemedicine lower clinic cost
Patient out-of-pocket cost	599	2,537	<0.001	Telemedicine lower patient cost
Platform/technology cost	399	N/A	N/A	Applies only to telemedicine
Total cost per visit	4,561	9,035	<0.001	Telemedicine more cost-effective

DISCUSSION

Telemedicine and conventional in-person follow-up have shown similar clinical outcomes across a variety of surgical specialities and procedures, which is in line with the findings of a number of recent randomized controlled studies and systematic reviews[13,14]. There were no statistically significant differences between telehealth follow-up and in-person care in terms of complication rate (6% vs. 12%, p = 0.013), number of visits to the emergency room, number of readmissions within 30 days, or number of adverse events that were missed[13]. For elective, low-risk surgeries such laparoscopic cholecystectomy and hernia repairs, prior research found no statistically significant differences in complication rates between conventional follow-up versus telemedicine[14].

A significant advantage observed in this study, consistent with other research, is the notable reduction in consultation times with telemedicine, which can lead to improved clinic efficiency and resource utilization. In this trial, telemedicine consultations were on average five minutes shorter than face-to-face visits. This time saving is likely multifactorial, including the absence of physical examination and the streamlined nature of remote communication. Patient satisfaction is a critical factor in evaluating healthcare delivery strategies. This study found no statistically significant differences in satisfaction levels between the telemedicine and in-person groups[15]. These results are in line with those of a

recent meta-analysis of RCTs that found that patients' perceptions of their own satisfaction with telemedicine interventions following general surgery were comparable to those with conventional care models[16]. Supporting the suitability of telemedicine for follow-up care, the study reported low and comparable non-attendance rates in both groups.

The flexibility of telemedicine allows for more timely (it should be timelier) follow-up and may facilitate earlier detection of postoperative complications, as demonstrated by the successful identification and management of wound issues in this and other studies[17]. Despite the overall positive findings, patient preferences for follow-up modality remain nuanced. Individualized treatment and shared decision-making are crucial because almost a third of patients in the telemedicine and in-person groups preferred a different way of follow-up[15].

Demographic factors like age, gender, and the type of surgery did not significantly affect satisfaction, although some studies have noted higher satisfaction with telemedicine among younger and more technologically proficient patients[18,19]. The rapid increase in telemedicine adoption during the COVID-19 pandemic has accelerated its acceptance and integration into routine surgical care[12,15]. Regulatory changes and the introduction of telehealth funding mechanisms have further facilitated this shift, with professional bodies such as the Royal Australasian College of Surgeons advocating for ongoing support of telemedicine services[15,20]. The shorter consultation times observed with telemedicine translate to improved clinic efficiency and resource utilization. Patient satisfaction remains high, with telemedicine offering similar or greater convenience and reduced disruption to daily life compared to in-person visits[21,22,23]. Ensuring data security and patient confidentiality is crucial in telemedicine[24]. Despite its advantages, several barriers hinder the widespread adoption of telemedicine, particularly in resource-limited and rural settings. Many rural regions in India, Pakistan and similar settings experience unreliable internet connectivity or lack sufficient bandwidth for stable video consultations. This can limit the effectiveness of telemedicine, especially for video-based follow-up, and may necessitate reliance on phone-only consultations, which some patients find less satisfactory. Telemedicine platforms may not always support local languages or dialects, making communication difficult for some patients. Some patients and providers may prefer traditional face-to-face interactions due to cultural norms or a perception that in-person care is more thorough. Addressing these barriers requires targeted interventions, such as improving digital infrastructure in underserved areas, offering digital literacy training, providing multilingual support, and ensuring telemedicine platforms are user-friendly and accessible to all patient populations.

CONCLUSION

Telemedicine presents a safe, efficient, and patient-accepted alternative to traditional face-to-face postoperative follow-up for routine general surgical procedures. The challenge of rural access in Pakistan, where many patients face long travel distances and high costs to reach healthcare facilities, can be directly addressed by telemedicine, reducing the need for travel and enabling timely, convenient follow-up. This study's findings support the hypothesis that telemedicine-based postoperative follow-up is non-inferior and, in certain aspects, superior to traditional face-to-face follow-up, particularly in terms of efficiency, cost-effectiveness, and satisfaction among rural patients. While much of the evidence on telemedicine in surgical follow-up originates from international studies and the COVID-19 era, local healthcare statistics underscore its relevance in the Pakistani context, where digital health initiatives are expanding access and reducing disparities. A hybrid follow-up model is recommended, utilizing telemedicine for most routine cases while reserving periodic in-person evaluations for complex or high-risk patients. This approach balances the convenience and accessibility of telemedicine with the thoroughness of face-to-face assessment when necessary. In conclusion, telemedicine offers a practical and scalable solution for Pakistan's healthcare system, with the potential to improve access, efficiency, and patient outcomes, especially for rural and underserved populations.

Limitations of the Study

This study has several limitations. The exclusion of patients with complex surgical histories or major complications restricts the generalizability of the findings to routine cases. Patient satisfaction is subjective and may be influenced by unmeasured factors. The relatively short follow-up period might not capture late complications, and while time savings suggest potential cost-effectiveness, a formal economic analysis was not conducted. The focus on Pakistan may limit the applicability of the results to other healthcare systems, and the telemedicine model relies on access to and familiarity with digital technology. Future research should aim to include more complex cases, incorporate longer follow-up periods, conduct formal cost evaluations, explore diverse settings, and investigate strategies to enhance digital accessibility.

Author's Contribution:

Concept & Design or acquisition of analysis or interpretation of data:	Muhammad Munir Memon
Drafting or Revising Critically:	Muhammad Munir Memon
Final Approval of version:	The above author

Agreement to accountable for all aspects of work:	The above author

Conflict of Interest: The study has no conflict of interest to declare by any author.

Source of Funding: None

Ethical Approval: No.B.T.M.C./10/12-2023 Dated 15.12.2023

REFERENCES

1. Woelber E, Schrick EJ, Gessner BD, Evans HL. Proportion of surgical site infections occurring after hospital discharge: a systematic review. Surg Infect 2016;17:210-6.
2. Mclean KA, Mountain KE, Shaw CA, Drake TM, Pius R, Knight SR. Tracking wound infection with smartphone technology (TWIST): a randomised controlled trial in emergency surgery patients. Br J Surg 2021;108:e348-55.
3. NHS Digital. Hospital outpatient activity, 2021–2022: all attendance. Available at: https://digital.nhs.uk/data-and-information/publications/statistical/hospital-outpatient-activity/2021-22 (Accessed April 2023).
4. Lathan R, Sidapra M, Yiasemidou M, Long J, Totty J, Smith G. Diagnostic accuracy of telemedicine for detection of surgical site infection: a systematic review and meta-analysis. NPJ Digit Med 2022;5:108.
5. Goedeke J, Ertl A, Zöller D, Rohleder S, Muensterer OJ. Telemedicine for pediatric surgical outpatient follow-up: a prospective, randomized single-center trial. J Pediatr Surg 2019;54(1):200-7.
6. McGillion MH, Parlow J, Borges FK, Marcucci M, Jacka M, Adili A, et al. Post-discharge after surgery Virtual Care with Remote Automated Monitoring-1 (PVC-RAM-1) technology versus standard care: randomised controlled trial. BMJ 2021;374:n2209.
7. Subedi N, Rawstorn JC, Gao L, Koorts H, Maddison R. Implementation of Telerehabilitation interventions for the self-management of cardiovascular disease: systematic review. JMIR Mhealth Uhealth 2020;8(11):e17957.
8. Jain AK, Sathar ZA, ul Haque M. The constraints of distance and poverty on institutional deliveries in Pakistan: evidence from georeference-linked data. Stud Fam Plann 2015;46(1):21-39.
9. Haider S, Shabbir S, Tariq M, Nayeem A, Shafique H, Sahitia S. Socioeconomic Determinants of Access to Primary Healthcare in Rural Population of Sindh, Pakistan: Primary Healthcare Access in Rural Sindh: A Socioeconomic Analysis. Pak J Health Sci 2025;6(3):223–8.
10. Mahdi SS, Allana R, Battineni G, Khalid T, Agha D, Khawaja M, et al. The promise of telemedicine in Pakistan: A systematic review. Health Sci Rep 2022;5(1):e438.
11. Abbitt D, Choy K, Castle R, Bollinger D, Jones TS, Wikiel KJ, et al. Telehealth for general surgery postoperative care. Am J Surg 2024;229:156-61.
12. Williams AM, Bhatti UF, Alam HB, Nikolian VC. The role of telemedicine in postoperative care. Mhealth 2018;4:11.
13. Blount E, Davey MG, Joyce WP. Patient reported satisfaction levels with the use of telemedicine for general surgery-A systematic review of randomized control trials. Surg Pract Sci 2023;12: 100152.
14. Hwa K, Wren SM. Telehealth follow-up in lieu of postoperative clinic visit for ambulatory surgery: results of a pilot program. JAMA Surg 2013;148(9):823-7.
15. Lathan R, Hitchman L, Walshaw J, Ravindhran B, Carradice D, Smith G, et al. Telemedicine for sustainable postoperative follow-up: a prospective pilot study evaluating the hybrid life-cycle assessment approach to carbon footprint analysis. Front Surg 2024;11:1300625.
16. Uppal A, et al. Adoption of Telemedicine for Postoperative Follow-Up After Inpatient Cancer-Related Surgery. JCO Oncol Pract 2022;18: e1091-9.
17. Choi L, Riedinger C, Gardner K, Ziegler C, Brinson R, Sutton E. Gauging the Acceptance of Telemedicine in Postoperative Evaluation of Uncomplicated Laparoscopic Appendectomy and Cholecystectomy. Telemed Rep 2023;4(1):259-65.
18. Liu JKC, Kang R, Bilenkin A, Prorok R, Whiting J, Patel KB, et al. Patient satisfaction and cost savings analysis of the telemedicine program within a neuro-oncology department. J Neurooncol 2022;160(2):517-25.
19. Chaudhry H, Nadeem S, Mundi R. How Satisfied Are Patients and Surgeons with Telemedicine in Orthopaedic Care During the COVID-19 Pandemic? A Systematic Review and Meta-analysis. Clin Orthop Relat Res 2021;479(1):47-56.
20. Patel PK, Shukla AK, Sachan V, Sharma P, Singh S, Saxena S, et al. Evaluation of the Effectiveness of Telemedicine in Postoperative Follow-Up Care After Dental Implant Surgery. A Pilot Study. J Pharm Bioallied Sci 2024;16 Suppl 1:S463-5.
21. Yao LY, Fleshner PR, Zaghiyan KN. Impact of postoperative telemedicine visit versus in-person visit on patient satisfaction: A randomized clinical trial. Surg 2023;173(2):322-7.
22. Houser SH, Flite CA, Foster SL. Privacy and Security Risk Factors Related to Telehealth Services - A Systematic Review. Perspect Health Inf Manag 2023;20(1):1f.
23. Kanwar V, Chaudhary S, Sharma AK. Challenges in implementing digital health services in rural India. Int Soc Telemed eHealth 2023;11(1):1-5.