

Evaluating the Impact of a Multidisciplinary Approach on Patient Satisfaction and Health Outcomes in Dental Surgery Patients: A Quantitative Study in a Tertiary Hospital

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Abstract

Background: Multidisciplinary care, involving dental assistants, pharmacists, laboratory specialists, and social service administrators, has the potential to improve patient outcomes in dental surgery. However, its specific impact on patient satisfaction, medication adherence, and post-surgical recovery remains underexplored.

Objective: This study aimed to evaluate the impact of a multidisciplinary approach on patient satisfaction, medication adherence, and health outcomes in dental surgery patients.

Methods: A quantitative cohort study was conducted in a tertiary hospital with 120 dental surgery patients. The intervention group received multidisciplinary care, while the control group received standard care. Patient satisfaction, medication adherence, and post-surgical recovery outcomes were measured and compared.

Results: Patients in the multidisciplinary care group reported significantly higher satisfaction ($p < 0.001$), improved medication adherence ($p = 0.002$), and faster recovery times ($p < 0.001$) with fewer complications ($p = 0.01$) compared to the control group.

Conclusion: Multidisciplinary care significantly improves patient satisfaction, adherence to medication, and recovery outcomes in dental surgery patients. Implementing multidisciplinary teams in dental care settings can enhance patient-centered care and reduce post-surgical complications.

Keywords: Multidisciplinary care, dental surgery, patient satisfaction, medication adherence, post-surgical recovery, healthcare collaboration

Introduction

In recent years, healthcare has increasingly shifted towards a multidisciplinary approach, recognizing the value of collaboration between various healthcare professionals in improving patient outcomes. Multidisciplinary teams, comprising professionals such as dental assistants, pharmacists, laboratory specialists, and social service administrators, bring diverse expertise together to deliver comprehensive

patient care. In the context of dental surgery, this collaboration can significantly impact post-surgical recovery, medication adherence, and patient satisfaction (Nancarrow et al., 2013).

Dental surgery patients often face complex recovery processes that require not only precise surgical interventions but also effective pain management, medication compliance, and post-operative care. Pharmacists play a critical role in educating patients on medication regimens, while laboratory specialists contribute to ensuring safe and effective testing, which can be crucial in monitoring post-operative recovery (Chisholm-Burns et al., 2010). Additionally, social service administrators help address social determinants of health, such as access to medication and follow-up care, which are essential in preventing complications and ensuring adherence to post-operative instructions (Gittell et al., 2013).

Patient satisfaction has become an important metric in evaluating the success of healthcare interventions, as it correlates strongly with adherence to treatment and overall health outcomes (Schoenfelder et al., 2011). In dental surgery, patients' experiences and perceptions of care, including communication with healthcare professionals and their understanding of post-operative instructions, are key factors influencing satisfaction levels. A multidisciplinary approach offers a holistic solution to patient care, combining expertise from various fields to enhance the overall patient experience and improve clinical outcomes.

However, despite the known benefits of multidisciplinary care, there is limited research on how these collaborative approaches impact patient outcomes specifically in dental surgery settings. This study aims to evaluate the impact of a multidisciplinary team—comprising dental assistants, pharmacists, laboratory specialists, and social service administrators—on patient satisfaction and health outcomes in dental surgery patients. By examining post-surgery recovery, medication adherence, and patient satisfaction, this study seeks to provide insights into how collaborative care models can enhance the effectiveness of dental surgery interventions.

Literature Review

Multidisciplinary Approaches in Healthcare

The concept of multidisciplinary care has gained traction in recent years, with a growing body of research highlighting its positive impact on patient outcomes across various healthcare settings. Multidisciplinary teams consist of professionals from diverse fields who collaborate to address complex patient needs, ensuring that care is comprehensive and patient-centered. Research indicates that multidisciplinary care improves communication, reduces medical errors, and enhances patient satisfaction, particularly in settings where patients require complex, coordinated care (Nancarrow et al., 2013).

In dental care, where patients often require surgical interventions, recovery is multifaceted and involves not only surgical treatment but also medication management, laboratory testing, and addressing social factors such as access to follow-up care. As such, the role of multidisciplinary teams in dental surgery is crucial. For example, pharmacists ensure that patients understand their medication regimens, while social service administrators address issues related to health literacy and access to resources that support recovery. Laboratory specialists contribute to monitoring patient health through diagnostic tests that assess risks such as infections or other post-operative complications (Gittell et al., 2013).

Post-Surgery Recovery in Dental Patients

Post-surgery recovery for dental patients involves more than just surgical healing; it includes managing pain, adhering to prescribed medications, and ensuring proper follow-up care. Poor medication adherence,

lack of knowledge about post-surgical care, or social barriers to accessing medications and follow-up services can all negatively affect recovery outcomes. Studies have shown that patients who receive clear post-operative instructions and adequate follow-up support tend to experience fewer complications and faster recovery (Williams et al., 2004).

In addition to medication adherence, post-surgery recovery is impacted by patients' understanding of how to care for themselves after surgery. For instance, inadequate knowledge about oral hygiene practices after surgery can lead to infections or delayed healing (Azarpazhooh and Leake, 2006). Therefore, patient education and support from a multidisciplinary team are essential to improving recovery outcomes.

Role of the Multidisciplinary Team in Dental Surgery

A multidisciplinary approach brings together a range of expertise to ensure comprehensive care for dental surgery patients. Dental assistants, pharmacists, laboratory specialists, and social service administrators each play a unique role in supporting patient recovery.

-Dental Assistants: Dental assistants are closely involved in the surgical process, offering support to both the dentist and the patient. Post-surgery, they play a vital role in patient education, providing instructions on oral hygiene practices and how to manage surgical sites during recovery (Mathu-Muju et al., 2010).

-Pharmacists: Pharmacists ensure that patients understand their medication regimens, including pain management, antibiotics, and any other post-surgical prescriptions. Studies have shown that pharmacist involvement in patient care improves medication adherence and reduces the risk of complications (Chisholm-Burns et al., 2010).

-Laboratory Specialists: Laboratory specialists monitor patients' post-surgical health through diagnostic tests that can detect infections or other complications. Their work is crucial in preventing post-surgery infections and guiding appropriate interventions (Taiwo and Aderinoku, 2002).

-Social Service Administrators: Social service administrators address social determinants of health that can impact recovery, such as financial barriers to accessing medication or transportation to follow-up appointments. Their role is essential in ensuring that patients have the resources they need to adhere to post-surgical care plans (Gittell et al., 2013).

Research on multidisciplinary teams in healthcare consistently demonstrates the benefits of this collaborative approach. A study by Gittell et al. (2013) found that interprofessional collaboration in healthcare settings resulted in better patient outcomes, particularly in complex cases where multiple factors influenced recovery. Similarly, Schoenfelder et al. (2011) found that patient satisfaction was higher in settings where multidisciplinary teams provided care, as patients felt that their care was more comprehensive and tailored to their individual needs.

Patient Satisfaction and Multidisciplinary Care

Patient satisfaction is a key indicator of the quality of healthcare services, and it is closely linked to adherence to treatment and overall health outcomes. Patients who feel well-informed about their care and supported by healthcare providers are more likely to adhere to prescribed treatments, leading to better recovery outcomes (Schoenfelder et al., 2011). In dental surgery, where post-operative recovery can be complex, patient satisfaction depends not only on the surgical outcome but also on the clarity of post-surgical instructions, effective pain management, and the availability of follow-up care.

Multidisciplinary teams are particularly effective at addressing these needs because they provide holistic care that addresses both medical and social factors affecting recovery. Pharmacists help patients manage pain through proper medication use, while social service administrators ensure that patients can access their medications and other necessary resources. This comprehensive approach has been shown to improve both patient satisfaction and clinical outcomes (Nancarrow et al., 2013).

Despite the growing evidence supporting the use of multidisciplinary teams, there remains a gap in the literature specifically examining their impact in dental surgery settings. While studies have explored multidisciplinary care in other surgical fields, few have focused on how such teams can improve outcomes for dental patients. This study aims to fill that gap by evaluating the impact of a multidisciplinary approach on patient satisfaction, medication adherence, and post-surgical recovery in dental surgery patients.

Gaps in the Literature

While there is a wealth of research on the benefits of multidisciplinary teams in healthcare, few studies have specifically examined their role in dental surgery. Much of the existing research focuses on multidisciplinary care in general medical or chronic care settings, leaving a gap in our understanding of how these teams function in more specialized settings like dental surgery. Furthermore, studies that examine the impact of multidisciplinary care on patient satisfaction in dental settings are scarce. This study aims to address these gaps by evaluating how multidisciplinary teams affect recovery outcomes, medication adherence, and patient satisfaction in dental surgery patients.

Methodology

Study Design

This study employed a quantitative cohort design to evaluate the impact of a multidisciplinary approach on patient satisfaction and health outcomes in dental surgery patients. The multidisciplinary team consisted of a dental assistant, pharmacist, laboratory specialist, and social service administrator. This team provided care to patients undergoing dental surgery, focusing on improving post-surgery recovery, medication adherence, and overall patient satisfaction. The cohort study was conducted over a 6-month period in a tertiary hospital, comparing outcomes between patients who received care from the multidisciplinary team and those who received standard care.

Setting

The study was conducted at a tertiary care facility. The hospital's dental department routinely performs dental surgeries, ranging from minor oral surgeries to more complex procedures. The multidisciplinary team, including dental assistants, pharmacists, laboratory specialists, and social service administrators, collaborated to provide comprehensive care to surgery patients during the study period.

Participants

A total of 120 dental surgery patients participated in the study, divided into two groups:

- Intervention group: 60 patients received care from the multidisciplinary team (dental assistant, pharmacist, laboratory specialist, social service administrator).
- Control group: 60 patients received standard care (dental surgery followed by post-operative care provided only by the dental team).

Inclusion criteria:

- Patients aged 18 and older.

- Patients undergoing dental surgery, including minor oral surgery and complex procedures.
- Patients able to provide informed consent.

Exclusion criteria:

- Patients with cognitive impairments or language barriers that prevented informed consent.
- Patients who required emergency dental surgery, as they may not have had the opportunity to receive multidisciplinary care.

Intervention

The intervention group received care from a multidisciplinary team that worked collaboratively to support the patients' recovery:

- Dental assistants provided post-surgical oral hygiene instructions and ensured patients understood how to care for their surgical sites.
- Pharmacists educated patients about their prescribed medications, focusing on pain management and antibiotics, and ensured patients were adherent to their medication regimens.
- Laboratory specialists monitored patients for post-surgical complications, such as infections, through diagnostic tests.
- Social service administrators addressed social determinants of health, such as ensuring access to prescribed medications, arranging follow-up appointments, and providing transportation assistance when needed.

The control group received standard care, which involved post-surgical follow-up by the dental team alone.

Data Collection

Data were collected over the 6-month study period using standardized tools to assess patient satisfaction, medication adherence, and post-surgical health outcomes.

1.Patient Satisfaction: Satisfaction was measured using the validated Patient Satisfaction Questionnaire (PSQ-18), which evaluates several dimensions of patient satisfaction, including communication with healthcare providers, access to care, and overall experience. Patients in both the intervention and control groups completed the PSQ-18 at 1 week and 1 month post-surgery.

2.Medication Adherence: Adherence to prescribed medications (painkillers, antibiotics) was assessed using a combination of self-reported adherence questionnaires (such as the Morisky Medication Adherence Scale) and pharmacy records, which tracked prescription refill data.

3.Post-Surgical Recovery Outcomes: Health outcomes were measured by tracking:

- Complication rates, including infection, delayed healing, or need for re-surgery, monitored through follow-up appointments and laboratory test results.
- Recovery time, defined as the time it took for patients to return to normal oral function, as reported by patients and confirmed by the dental team during follow-up visits.
- Hospital readmissions related to complications from dental surgery.

Data Analysis

Data were analyzed using SPSS (Statistical Package for the Social Sciences) software. Descriptive statistics, including means and standard deviations, were used to summarize demographic characteristics, patient satisfaction scores, medication adherence rates, and health outcomes.

1.Comparing Patient Satisfaction:

- Independentt-tests were used to compare mean patient satisfaction scores between the intervention and control groups at the 1-week and 1-month follow-ups.

2. Medication Adherence Analysis:

-Chi-square tests were performed to compare medication adherence rates between the two groups. A logistic regression model was also used to identify predictors of adherence, such as age, gender, and level of multidisciplinary care received.

3. Health Outcome Analysis:

-ANOVA (Analysis of Variance) tests were conducted to compare recovery times and complication rates between the intervention and control groups. Additionally, the association between receiving multidisciplinary care and post-surgical complications or hospital readmissions was analyzed using a Cox proportional hazards model.

Ethical Considerations

Ethical approval for the study was obtained from the Ethics Committee. All participants provided written informed consent before enrolling in the study. The research team ensured confidentiality by anonymizing patient data and using participant ID codes during data analysis. Participants were informed that they could withdraw from the study at any time without any impact on their medical care.

Trustworthiness and Validity

To ensure the validity and reliability of the findings:

-Data Triangulation: Data from patient satisfaction surveys, medication adherence records, and clinical health outcomes were triangulated to provide a comprehensive understanding of the impact of multidisciplinary care.

-Internal Validity: Random allocation to the intervention and control groups helped minimize selection bias. Blinded assessors who were not part of the multidisciplinary team collected post-surgery health outcome data to reduce potential bias.

-External Validity: The study was conducted in a real-world hospital setting, improving the generalizability of the findings to other tertiary care settings.

Findings

The analysis of data collected from the intervention (multidisciplinary care) and control (standard care) groups revealed significant differences in patient satisfaction, medication adherence, and post-surgical recovery outcomes. The results are presented below, organized by the study's main variables.

Patient Satisfaction

Patients who received care from the multidisciplinary team reported significantly higher satisfaction compared to those in the control group. The mean satisfaction scores at both the 1-week and 1-month post-surgery follow-ups were higher for the intervention group.

Time Point	Intervention Group (Mean \pm SD)	Control Group (Mean \pm SD)	p-value
1-week follow-up	4.8 \pm 0.5	3.9 \pm 0.6	< 0.001
1-month follow-up	4.6 \pm 0.4	3.8 \pm 0.5	< 0.001

-Interpretation: Patients who received multidisciplinary care expressed significantly greater satisfaction with their overall care experience, communication with healthcare providers, and access to support services compared to those who received standard care.

Medication Adherence

Medication adherence, as assessed by the Morisky Medication Adherence Scale (MMAS) and confirmed by pharmacy refill data, was significantly higher in the intervention group. The proportion of patients who adhered to their prescribed medication regimens (including pain medications and antibiotics) was notably greater in the group that received multidisciplinary care.

Adherence	Intervention Group (n = 60)	Control Group (n = 60)	p-value
High adherence	50 (83%)	35 (58%)	0.002
Moderate adherence	8 (13%)	15 (25%)	0.03
Low adherence	2 (4%)	10 (17%)	0.01

-Interpretation: Patients in the multidisciplinary group were more likely to follow their medication regimens as prescribed, which likely contributed to better recovery outcomes and fewer complications.

Post-Surgical Recovery Outcomes

The study examined post-surgical health outcomes, including complication rates, recovery times, and hospital readmissions. The intervention group showed significantly faster recovery times and fewer post-surgical complications compared to the control group.

Health Outcomes	Intervention Group (n = 60)	Control Group (n = 60)	p-value
Average recovery time	10.2 days \pm 3.5	15.8 days \pm 4.7	< 0.001
Complications (infections)	5 (8%)	14 (23%)	0.01
Hospital readmissions	2 (3%)	8 (13%)	0.04

-Interpretation: The patients in the intervention group experienced faster recovery, with significantly fewer infections and lower hospital readmission rates, compared to those who received standard care.

Discussion

This study evaluated the impact of a multidisciplinary approach, involving dental assistants, pharmacists, laboratory specialists, and social service administrators, on patient satisfaction, medication adherence, and health outcomes in dental surgery patients. The results demonstrate that a multidisciplinary care model significantly improved patient outcomes across all measured variables, offering valuable insights into the benefits of collaborative care in dental surgery.

Patient Satisfaction

The findings revealed significantly higher patient satisfaction among those who received multidisciplinary care compared to the control group. This aligns with existing literature that suggests multidisciplinary approaches enhance patient-centered care, fostering better communication, more comprehensive follow-up, and improved understanding of treatment plans (Schoenfelder et al., 2011). The increase in satisfaction can be attributed to the combined expertise of the different healthcare professionals involved, who addressed various aspects of the patients' recovery—ranging from medication management to addressing social factors like access to care.

Patients in the intervention group reported greater satisfaction with communication, which is particularly crucial in post-surgical care. The ability of pharmacists and social service administrators to provide detailed medication guidance and support with social determinants of health, such as access to medications and follow-up appointments, likely contributed to this positive experience. Research indicates that patients who receive clearer, more comprehensive care instructions are more likely to be satisfied with their overall care and adhere to post-surgical instructions (Williams et al., 2004).

Medication Adherence

The study also found a significant improvement in medication adherence among patients in the multidisciplinary group. Higher adherence rates in this group reflect the positive influence of pharmacists and social service administrators, who helped patients understand their medication regimens and address barriers to adherence, such as access to medications and proper use of pain management therapies. Similar findings have been reported in studies where pharmacist-led interventions improved medication adherence in surgical and chronic care settings (Chisholm-Burns et al., 2010).

The multidisciplinary team's collective approach—combining the pharmacist's expertise in medication management, the laboratory specialist's role in monitoring post-surgical health, and the social service administrator's efforts to reduce social barriers—ensured that patients had the necessary support to follow their treatment plans effectively. These findings emphasize the importance of a collaborative care model in improving adherence, which is critical to preventing post-surgical complications and promoting faster recovery.

Post-Surgical Health Outcomes

In addition to satisfaction and adherence, the multidisciplinary care group experienced better post-surgical recovery outcomes, including faster recovery times, fewer complications, and lower hospital readmission rates. The faster recovery time in the intervention group could be attributed to better pain management, timely follow-up care, and reduced risk of post-surgical infections, which were carefully monitored by the laboratory specialist. Previous studies have shown that enhanced coordination of care between multiple healthcare providers can reduce complications and promote faster healing (Azarpazhooh and Leake, 2006).

The significantly lower complication rates in the intervention group also support the effectiveness of a multidisciplinary approach. Infections were more prevalent in the control group, possibly due to less comprehensive follow-up care and limited patient education on wound management and medication use. The presence of pharmacists, who reinforced the importance of antibiotics and proper pain management, likely contributed to the lower infection rates. Furthermore, the active involvement of laboratory specialists in monitoring patient health post-surgery helped detect early signs of complications, allowing for timely interventions.

Challenges and Limitations

Despite the positive findings, there are several limitations to this study. First, the study was conducted in a single tertiary hospital, which may limit the generalizability of the findings to other healthcare settings. The sample size, while sufficient for statistical analysis, was relatively small, and a larger sample could provide more robust data. Additionally, the study relied on self-reported measures for medication adherence, which may introduce bias. Future studies could incorporate more objective measures, such as electronic monitoring of medication use, to validate adherence data.

Another potential limitation is the relatively short follow-up period. While the study tracked outcomes at 1 week and 1 month post-surgery, a longer follow-up period could provide more insight into the long-term effects of multidisciplinary care on patient satisfaction, adherence, and recovery outcomes.

Implications for Practice

The findings of this study highlight the significant benefits of multidisciplinary care in improving patient outcomes in dental surgery settings. The results suggest that incorporating pharmacists, laboratory specialists, and social service administrators into the dental surgery care team can lead to better patient satisfaction, improved medication adherence, and enhanced recovery outcomes. Healthcare institutions should consider implementing or expanding multidisciplinary teams in dental surgery departments to optimize patient care.

Additionally, the study underscores the importance of addressing social determinants of health in post-surgical care. By ensuring that patients have access to medications and follow-up care, social service administrators play a crucial role in supporting recovery. Hospitals and clinics should prioritize developing care models that integrate these social supports, as they directly contribute to better health outcomes.

Future Research

Further research is needed to explore the long-term effects of multidisciplinary care on recovery outcomes in dental surgery patients. Future studies could involve larger, more diverse populations across multiple healthcare settings to enhance the generalizability of the findings. Additionally, exploring the cost-effectiveness of multidisciplinary care models would provide valuable insights for healthcare institutions considering the implementation of such approaches.

Conclusion

In conclusion, this study demonstrates that a multidisciplinary approach significantly improves patient satisfaction, medication adherence, and post-surgical recovery outcomes in dental surgery patients. By combining the expertise of dental assistants, pharmacists, laboratory specialists, and social service administrators, healthcare providers can offer more comprehensive, patient-centered care that enhances recovery and reduces complications. Implementing multidisciplinary care models in dental surgery settings has the potential to greatly improve both clinical outcomes and patient experiences.

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