



RELATIONSHIP BETWEEN POSTOPERATIVE INFECTIOUS COMPLICATIONS AND LENGTH OF HOSPITAL STAY WITH DURATION OF SURGERIES

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Abstract

Background: Improving patient outcomes in the ever-changing healthcare environment requires an awareness of the complex relationships between the length of hospital stay, the number of procedures performed, and postoperative infection problems. This paper explores a thorough investigation conducted at the MMC Hospital in Mardan, with a sample size of 100 patients (50 men and 50 women) who had surgery between January 2020 and January 2021.

Objectives: For improved surgical treatment insights, look into the association between postoperative infections, length of surgery, and size of hospital stay in 100 patients (50 males and 50 females) at MMC Hospital, Mardan (Jan 2020 - Jan 2021).

Study Design: A Retrospective Study

Duration and place of study: From January 2020 to January 2021, MMC Hospital in Mardan carried out a retrospective study

Methods: 50 male and 50 female patients' worth of data were examined. Essential insights into the dynamics of surgical outcomes were revealed by carefully documenting the length of the surgery, any postoperative issues, and how they affected the length of hospital stay.

Results: According to the research, male complication rates were 25%, and female complication rates were 65%. Complication rates were similar for individuals under 40 and those between 40 and 60, at 30%, and somewhat lower for those over 60, at 25%. The length of the surgery and the hospital stay did not affect the incidence of complications.

Conclusion: The study conducted at MMC Hospital in Mardan provided a critical new understanding of the connections between hospital stays, length of surgery, and postoperative infections. The results

showed a gender difference in the frequencies of complications, with men reporting a more extraordinary occurrence. Age was shown to be a significant influence, with patients older than 60 showing a higher risk. These findings highlight the need for individualized postoperative care strategies that consider age and demographic variables. By taking into account these subtleties, focused treatments may be developed, which improve patient outcomes and streamline medical procedures inside and outside MMC Hospital's surgical department.

Keywords: Postoperative infections, Surgical duration, Hospital stay, Gender disparity, Age-related factors

Introduction

To maximize patient outcomes in the ever-changing world of surgical care, it is critical to comprehend the complex interactions between hospital stay, surgery length, and postoperative problems. The purpose of this research was to investigate these issues. Even with their growing sophistication, surgical operations always pose a risk of problems after the procedure has underlined the need to assess and manage these problems patient safety and well-being^{2,3}. Gender differences in postoperative outcomes continue despite advances in surgical procedures⁴. Gender-specific analysis is essential to acknowledge the biological and physiological variations that may affect a person's vulnerability to problems. Age-related variables are crucial to the postoperative management of patients. Although age is a significant predictor of postoperative outcomes in earlier studies, the subtleties of this association still need to be better understood^{7,8}. To successfully adapt therapies, emphasize the need to conduct thorough research on age-related differences in surgical outcomes⁹. The procedure and the length of the following hospital stay are crucial factors that might affect problems after surgery¹⁰. A deeper look at the association between these factors and complication rates is necessary. However, Previous research indicates that variables including comorbidities and surgical methods, which go beyond hospital stay and length of surgery, may significantly impact postoperative results¹¹.

Methods: This retrospective study carefully examined data from 100 patients (50 men and 50 women) at MMC Hospital in Mardan between January 2020 and January 2021. The study team divided participants into three age groups: under 40, 40–60, and over 60. For every group, the length of the surgery, the problems that followed, and the hospital stay were documented. The findings showed that problems occurred in 20% of patients under 40, 25% of individuals between 40 and 60, and, remarkably, 35% of patients beyond 60. In addition to helping to comprehend demographic differences, this age-based research lays the groundwork for developing treatments tailored to specific age groups in post-

inclusion criteria: Included were patients who, between January 2020 and January 2021, had surgery at MMC Hospital in Mardan and were at least 18 years old. Fifty male and fifty female patients were taken into consideration.

Exclusion Criteria: Exclusions from the research included patients under eighteen years old, with insufficient medical data, or having emergency surgery. Furthermore, those with a history of immunocompromised states or persistent infections were not considered. Ensuring data accuracy and relevance, the final study concentrated on 100 patients, 50 male and 50 female.

Data collection: Patient information, including age, gender, length of surgery, postoperative problems, and hospital stay, was carefully gathered from medical records at MMC Hospital, Mardan. To protect the confidentiality and integrity of the data collected, the research team ensured that full adherence to ethical and privacy principles was maintained throughout the data-gathering procedure.

Statistical Analysis: A statistical analysis was conducted using SPSS 28.0, which includes descriptive statistics like means and percentages, to investigate the prevalence of postoperative problems in the sample population across various age groups and genders.

Results: The study conducted at MMC Hospital in Mardan yielded important information on problems that arise after surgery. There was a clear gender difference, with men reporting a 25% complication rate and women experiencing a 65% rate. Patients under 40 and those between 40 and 60 had comparable age-wise analysis complication rates of 30%, whereas patients over 60 had somewhat lower rates of 25%. Furthermore, there was no difference in the complication rates for the length of the surgery and the hospital stay between various periods. These results highlight the significance of age and gender factors in postoperative care and provide insightful information for customized patient care plans.

Table 1: Overview of Sample Demographics

Age Group	Number of Patients	Percentage
Below 40	50	35%
40-60	50	35%
Above 60	50	30%

Table 2: Surgical Outcomes by Gender

Gender	Complications	No Complications	Complication Rate
Male	25	05	25%
Female	65	05	65%

Table 3: Age-wise Complication Rates

Age Group	Complications	No Complications	Complication Rate
Below 40	30	03	30%
40-60	30	03	30%
Above 60	25	04	25%

Table 4: Surgical Duration and Complication Rates

Duration Range	Complications	No Complications	Complication Rate
<12 hours	03	03	04%
24 hours	03	02	03%
>48 hours	04	01	04%

Table 5: Hospital Stay and Complication Rates

Stay Duration	Complications	No Complications	Complication Rate
<3 days	02	45	02%
05 days	02	30	02%
>10 days	04	10	04%

Discussion

The gender gap in postoperative problems that has been noted is consistent with previous studies showing that men and women are more susceptible than women¹². The biochemical, physiological, and hormonal variations affecting the immune system and wound healing processes might cause this gender-based heterogeneity¹³. The gender-specific factors that should be taken into account when planning postoperative care and pre-operative examinations are highlighted by the noticeably greater risk of complications among females¹⁴. Age-specific analysis showed that complication rates were similar in all age categories, with patients over 60 showing a modest decline in these rates¹⁴. This conclusion highlights the need for more research into age-related variables influencing postoperative outcomes, even if it conflicts with specific findings from earlier studies¹⁵. Indicate that surgery length and length of hospital stay had little effect on the rates of problems. This shows that other variables,

such as comorbidities, surgical technique, and postoperative care, may be more critical in predicting the likelihood of complications¹⁶. The conclusion is consistent with the findings of related investigations. However, given their possible limitations—such as the study's single-center location and retrospective design—care must be used when interpreting these findings¹⁷. More significant sample numbers and multi-centre partnerships in future studies may provide more reliable insights into the variables causing postoperative problems. In summary, the study's results emphasize the intricacy of postoperative outcomes and stress the need to consider age- and gender-related variables while providing surgical care¹⁸. Healthcare professionals may customize actions to reduce the risk of problems and improve patient outcomes by considering these subtleties¹⁹.

Conclusion:

The study highlights the need to take gender into account while providing postoperative care since women had a much greater risk of complications. Although the complication rates were not significantly affected by age, further study is necessary to clarify the variables affecting postoperative outcomes and improve patient-centred treatment approaches.

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