

ADDRESSING HIGH INFECTION RATES AFTER SURGERIES IN THE ABLEKUMA SOUTH DISTRICT.

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ABSTRACT

Infections are one of the most common aftermaths of a surgery which can easily occur if postsurgery precautions are not practiced properly. High infection rates refers to a situation where a large number of people are getting infected with a particular or diverse types of diseases. It could be due to various factors like a contagious virus, lack of preventive measures, or a high population density. The health and well-being of the people living in the Ablekuma South district are seriously threatened by the startling infection rates. This abstract explores the alarmingly high rate of infections in the region and emphasizes the pressing need for treatment. Numerous elements that lead to the elevated infection rates are examined, highlighting the consequences for both people and the larger community. This project proposes workable remedies in light of the findings; the installation of an autoclave machine is one noteworthy suggestion. The report's recommendation to sterilize equipment before using it attempts to lessen the negative effects of illnesses and foster a better atmosphere for Ablekuma South people.

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CHAPTER 1

INTRODUCTION

Both patients and doctors consider many factors, including emotions, before surgery is performed. After surgery, patients may experience various aftermaths such as pain, shock, hemorrhage, infections, and reactions to anesthesia, among others. It has been observed that among these various aftermaths, the increasing rate of wound infections has become quite common in the Ablekuma South Area for some time.[1].

Possible reasons for these high rates of infection could stem from either the patients or the doctors since infections arise from germs that are all around us. [2]. There are numerous ways one can contract an infection, as germs can infect a wound through several forms of contact. These include direct contact with an infected or contaminated surgeon or surgical instrument, exposure to germs in the air, and the spread of germs already present on or in the body. [3].

This situation has caused panic, pain, and added unplanned expenses, particularly because it was not initially prevalent but has now become alarming. [4] Previous cases that were not handled properly and professionally have posed significant health risks to individuals, leading to complications such as cellulitis, osteomyelitis, amputation, and even death in some instances.[4]

The rise in wound infections in Ablekuma South necessitates a thorough investigation into both medical practices and patient behaviors. It is crucial to implement stringent hygiene protocols, enhance infection control training for healthcare professionals, and educate patients on postoperative care to mitigate this growing concern. Addressing these issues promptly and effectively is essential to prevent further complications and ensure the well-being of the community.

1.2 Problem Statement

Despite advances in medical technology and surgical techniques, the Ablekuma South District has experienced a noticeable rise in post-surgery infection rates.

This trend has raised alarms among healthcare providers and patients alike, prompting the need for a comprehensive investigation into the contributing factors. Identifying the root causes of these infections and implementing practical, evidence-based interventions are essential to reversing this alarming trend and ensuring patient safety.[5].

1.3 Purpose of the Study

The primary purpose of this study is to investigate the high rates of post-surgery infections in the Ablekuma South District, identify both possible and actual causes, and suggest practical solutions to mitigate these infections. By addressing this critical issue, the study aims to improve patient outcomes, reduce healthcare costs, and enhance the overall quality of surgical care in the district.

1.4 Research Questions

The study seeks to answer the following research questions:

1. What are the primary factors contributing to the high post-surgery infection rates in the Ablekuma South District?
2. How effective are the current infection control practices in the district's healthcare facilities?
3. What are the impacts of post-surgery infections on patients in terms of physical, emotional, and financial aspects?
4. What practical solutions can be implemented to reduce post-surgery infection rates?
5. How can healthcare providers and patients collaborate to ensure the sustainability of improved infection control measures?

1.5 AIMS AND OBJECTIVES OF PROJECT.

Project Aim

This project aims to address the high post-surgery infection rates in the Ablekuma South District by identifying possible and actual causes and suggesting practical solutions to mitigate this issue.

Objectives:

The following are the objectives of the project

- Investigate patient-related factors such as pre-existing conditions, lifestyle choices, and adherence to postoperative care instructions.
- Examine healthcare provider-related factors, including surgical techniques, sterilization procedures, and the hospital environment.
- Assess the adequacy of infection control training and practices among medical staff.
- Conduct a thorough review of existing sterilization procedures and protocols in surgical environments.
- Analyze the effectiveness of current monitoring and reporting systems for infection incidents.
- Evaluate the training programs for medical staff on infection control measures.

1.6 Significance of the Study

This study is significant for several reasons:

1. **Improving Patient Outcomes:** By identifying and addressing the causes of post-surgery infections, the study aims to improve surgical outcomes and enhance patient safety.
2. **Reducing Healthcare Costs:** Effective infection control measures can reduce the financial burden on healthcare systems and patients by decreasing the need for extended hospital stays and additional treatments.
3. **Enhancing Quality of Care:** Implementing evidence-based practices and improving infection control training for healthcare providers will elevate the overall standard of care in the district.

4. **Informing Policy and Practice:** The findings of this study will provide valuable insights for policymakers, healthcare administrators, and practitioners, guiding them in developing and implementing effective infection control strategies.

1.7 Scope of the Study

The study will focus on healthcare facilities within the Ablekuma South District, examining both patient-related and healthcare provider-related factors contributing to post-surgery infections. It will involve a comprehensive review of current infection control practices, assessment of training programs for medical staff, and evaluation of patient education initiatives. The study will also propose and test practical solutions to reduce infection rates, with a focus on sustainability and continuous improvement.

1.8 Limitations of the Study

The study may face certain limitations, including:

1. **Data Availability:** Access to comprehensive and accurate data on post-surgery infections may be limited.
2. **Generalizability:** Findings from the Ablekuma South District may not be entirely applicable to other regions with different healthcare systems and practices.
3. **Implementation Challenges:** Proposed solutions may face resistance or practical challenges during implementation in healthcare facilities.

CHAPTER 2

2.1 Literature Review

Post-surgery infections, also known as surgical site infections (SSIs), pose significant challenges to healthcare systems worldwide.[6] These infections can lead to severe complications, extended hospital stays, increased healthcare costs, and considerable distress for patients and their families. This chapter provides a comprehensive review of the existing literature on post-surgery infections, focusing on their causes, impacts, and control measures. It aims to establish a theoretical framework for the study and identify gaps in current knowledge that this research seeks to address.[7]

Post-surgery infections are defined as infections that occur at or near the surgical incision within 30 days of the procedure. They can be classified into three main types: superficial incisional SSIs, deep incisional SSIs, and organ/space SSIs. Superficial incisional SSIs involve the skin and subcutaneous tissue, while deep incisional SSIs affect deeper soft tissues such as muscles and fascia. Organ/space SSIs involve any part of the anatomy other than the incision that was opened or manipulated during surgery.[8]

The causes of post-surgery infections can be broadly categorized into patient-related factors and healthcare provider-related factors. Patient-related factors include pre-existing medical conditions such as diabetes, obesity, and immunosuppression, which increase the risk of infections. Lifestyle factors such as smoking, poor nutrition, and inadequate personal hygiene also contribute to infection risks.[9] Additionally, patient compliance with postoperative care instructions plays a crucial role in preventing infections.

Healthcare provider-related factors are equally critical. Proper surgical techniques, including the sterilization of instruments and adherence to aseptic techniques, are essential to prevent infections. The hospital environment, particularly the cleanliness and hygiene of operating rooms and wards, significantly impacts infection rates [10]. Furthermore, the adequacy of infection control training for surgeons, nurses, and other healthcare staff is vital for maintaining high standards of care.[11]

The impacts of post-surgery infections are far-reaching, affecting patients physically, emotionally, and financially. Physically, infections can prolong hospital stays and lead to complications such as

cellulitis, osteomyelitis, and septicemia. In severe cases, infections can be fatal. Emotionally and psychologically, patients may experience anxiety and stress due to the fear of infection and prolonged recovery. The emotional burden extends to patients' families as well. Financially, infections result in increased medical costs due to additional treatments, medications, and extended hospital stays. Patients may also face economic burdens from loss of income due to prolonged recovery and inability to work. [12]

Effective infection control practices are crucial in reducing post-surgery infections. Preoperative measures such as patient screening to identify and manage risk factors, and the administration of antibiotics to prevent infections, are essential. Intraoperative measures include ensuring all surgical instruments are properly sterilized and maintaining a sterile environment during surgery. Postoperative measures involve proper dressing and care of surgical wounds, and vigilant monitoring of patients for signs of infection.[13]

Strategies for reducing post-surgery infections include enhancing sterilization procedures, improving training programs for healthcare providers, and engaging patients in their care. Regular audits of sterilization protocols and the implementation of advanced sterilization technologies can ensure adherence to best practices. [14] Continuous education and simulation-based training for healthcare providers can enhance their competence in infection control. Patient education and engagement are also crucial. Preoperative counseling can educate patients on the importance of hygiene and postoperative care, while postoperative follow-up ensures patients adhere to care instructions. [15]

Despite extensive research on post-surgery infections, certain areas require further exploration. Studies focusing specifically on infection rates and control measures in local contexts, such as the Ablekuma South District, are needed. Research on the practical challenges faced by healthcare providers in implementing infection control measures is also necessary. Additionally, understanding patients' experiences and adherence to postoperative care instructions can provide valuable insights for improving infection control practices. [16].

The study will be guided by the Health Belief Model (HBM) to understand patient behaviors and adherence to postoperative care, and the Systems Theory to analyze the healthcare system's role in infection control. The Health Belief Model will help in understanding how patients perceive the risks of infections and their motivation to follow postoperative care instructions. Systems Theory

will provide a framework for analyzing how different components of the healthcare system interact to influence infection control practices.[17]

2.1.1 PROBLEM IDENTIFICATION.

Visits were made to some hospitals and suburbs in the Ablekuma South area such as Korle-bu, Chorkor and Mamprobi. It was noticed that no matter how well equipped a facility may be, there may appear one or two challenges to face at a particular time. One-on-one interviews were conducted as the inhabitants made their keen problems known. Surveys were also conducted at least once a week for a month for observations and after, some problems were penned out. Fortunately, some health practitioners were available for interviews and it was realized that some were just temporal problems which were being attended to but after discussions and after the search this is what came out as pressing problems faced by the community;

- Inefficient storage facilities for maintenance of facility tools and equipment.
- Inadequate hospital beds and stretcher beds.
- Slow or no responses of ambulance.
- Increase in infection rates.
- Long waiting time for patients.

Here is a statistical representation of the problems above.

Table 1 : The number of suburbs which face some respective problems

PROBLEM	INEFFICIENT STORAGE FACILITIES FOR MAINTENANCE	INADEQUATE HOSPITAL BEDS AND STRETCHER BEDS	SLOW OR NO RESPONSE OF AMBULANCE	INCREASE IN INFECTION RATES	LONG WAITING TIME FOR PATIENTS
NUMBER OF AFFECTED SUBURBS	3	2	3	5	4

After compiling all obtained data, it was noticed that the increase in infection rates was most crucial in the community especially as it had never been like that before. This is a very big problem in the community which can be diagnosed and solved by the usage of scientific knowledge and engineering principles and that is what led to the selection of this particular problem.

2.1.2 MAP PREPARATION.

Harnessing the abilities and capabilities of the internet, this map was generated and visualized from the Accra Metropolitan Assembly website to ensure accuracy in my research findings. [18]

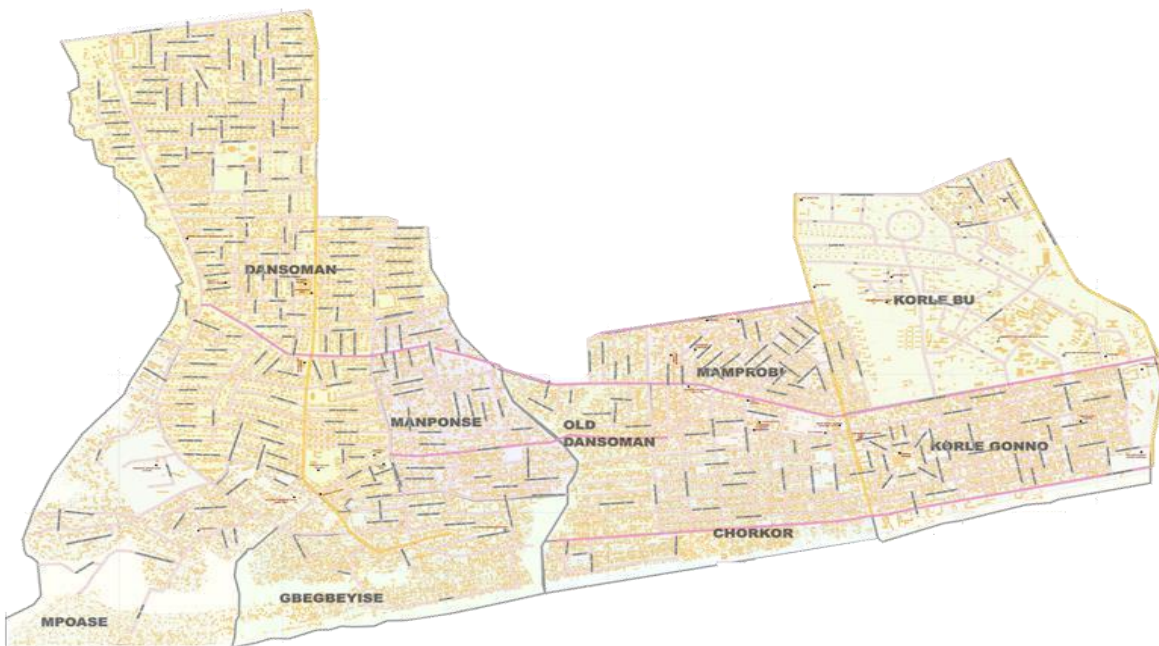


Figure 1 shows an image of the map of Ablekuma South

2.1.3 DESCRIPTION OF ABLEKUMA SOUTH DISTRICT.

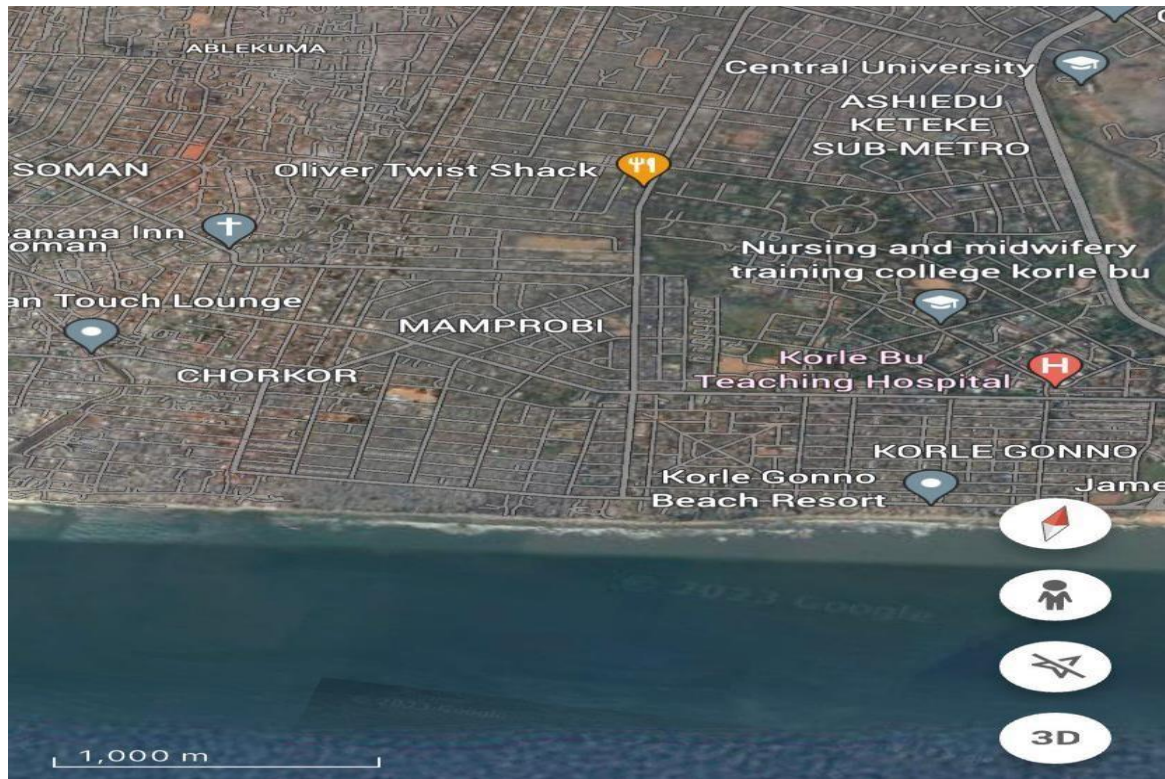


Figure 2 shows a map of Ablekuma South and its areas

The Ablekuma South District One of the three Sub Metropolitan District Councils of the Accra Metropolitan Assembly (AMA). The Sub Metro, which is the biggest in the Metropolis shares its borders with Ashiedu Keteke Sub Metropolitan District Council, Ablekuma Central, and Ablekuma North Municipal Assembly. It is 15.1 sqkm in size. The 2010 Housing Census estimates that there are 69,401 households and 22,751 houses in the Sub Metro, with a total population of 257,543. With a 3.1% Growth Rate in Greater Accra, it is estimated that 315,051 is the current population in Ablekuma as at 2018. From the current office position, the boundary travels via the crossroad of Kpakpo Oti Road and Ring Road West (Mortuary Road), also eastward along Laterbiokorshie Road (Zoti), turning left at Laterbiokorshie Road to link Road crossroad and eventually arriving at Chemu Road (Summer Hut Junction) through Ring Road West. Then, via the Mampong Stream, from Sempe Traffic Light Street (I.B.E).

The Ablekuma South Sub Metro area has made a significant contribution to Accra's profitable growth and development. Since utmost of the Sub-Metro's townlets are located along the seacoast, fishing and fish- mongering operations regard for the maturity of its profitable exertion. Also, it houses many marketable structures, including hospices, banks, supermarkets, and gas stations. It has two primary markets; Korle Gonno's Tuesday Market and the Dansoman market.

The Sub-Metro before the creation of the new Municipal Assembly had 10 Sub-Metros. However, after the curving out Ablekuma West Municipal Assembly from Ablekuma West, the Sub-Metro has 5 Electoral areas as follows;

- Korle Gonno
- Korle-Bu
- Chorkor
- Mamprobi
- New Mamprobi [5]

2.1.4 NATURE AND CHARACTERISTICS OF PROBLEM.

The human skin is built to be a natural barrier against infection. Any surgery that causes a break in the skin can lead to an infection even if proper measures are put in place to avoid it. These are commonly called by health professionals as surgical sites infections (SSIs). If you undergo a surgery, the chances of developing an SSI is about 1% to 3% [18].

An infection occurs when germs enter the body, increase in number, and cause a reaction of the body. Germs are very microscopic which makes transmission easy without noticing. Three things are necessary for an infection to occur:

- Source; places where infectious germs live (e.g., sinks, surfaces, human skin)
- Susceptible person with a way for germs to enter the body
- Transmission; a way germs are moved to the susceptible person.

The SSIs are in three types which are; Superficial incisional SSIs which affects just the area of incision, Deep incisional SSIs which occurs in the muscles and tissues surrounding the muscles beneath the incision area and lastly, the organ or space SSIs which occurs in any other part of the body than the skin including organs and spaces between organs. [19]

Most surgical wound infections are skin infection which occur either 2 to 3 weeks after surgery or some months after before the wounds start to heal or during the healing process. [20].

Infections affect many parts of the body and may appear in various forms, below are some examples.



Figure 3 shows an image of a patient with an infected tooth



Figure 4 shows an image of an SSI.

2.1.5 CAUSES OF THE PROBLEM

High post-surgery infection rates can stem from a myriad of factors, each contributing to the vulnerability of patients recovering from surgical procedures. [21] High post-surgery infection rates are often rooted in the proliferation of harmful microbes within wounds, impeding the healing process. Predominantly, bacteria—such as Staphylococcus, Streptococcus, and Germ Negative Bacilli— emerge as the culprits behind these infections. One primary cause is inadequate sterilization protocols in healthcare facilities. Insufficient cleaning of surgical instruments, operating rooms, and medical equipment can expose patients to harmful pathogens, escalating the risk of infections so the use of sterilization methods such as usage of autoclave machine should be key in the health facilities. In some instances, the overuse or misuse of antibiotics further exacerbates the problem by fostering antibiotic-resistant strains of bacteria. Patient-related factors, such as compromised immune systems or underlying health conditions, also contribute significantly. Additionally, lapses in hand hygiene and a lack of strict adherence to infection prevention protocols by healthcare personnel are noteworthy contributors. The surgical site itself becomes a potential breeding ground for infections if not properly monitored and cared for postoperatively. Poor ventilation in operating rooms and suboptimal environmental conditions may also play a role in the transmission of infections.[22]. Moreover, the emergence of multidrug-resistant organisms poses a serious threat, making infections more challenging to treat. Addressing these multifaceted causes necessitates a comprehensive approach, involving rigorous hygiene practices, enhanced sterilization procedures, vigilant postoperative care, and the continuous evolution of infection prevention strategies within healthcare settings. By understanding and mitigating these factors, healthcare providers can significantly reduce post-surgery infection rates and safeguard the wellbeing of post-surgery patients. [22].

2.16 EFFECTS OF THE PROBLEM

This situation has only caused and continues to cause negative implications to individuals and the society at large. Post-surgery infections can have profound and wide-ranging effects on individuals, often extending beyond the immediate recovery period.[21]. One of the most immediate consequences is the prolongation of the recovery process. Infections can impede the body's natural healing mechanisms, leading to persistent pain, swelling, and delayed wound healing. This, in turn, prolongs the patient's stay in the hospital, increasing healthcare costs and the overall burden on both the patient and the healthcare system. [23]

Some symptoms of infections are redness, fever, swelling, chills, pain, bleeding, discharge from surgical site and coughing out yellow, green or bloody mucus. There is also delay in the wound healing process and in some cases no wound to healing at all, cellulitis, abscess formation, osteomyelitis as well as further wound breakdown, bacteriemia (the presence of bacteria in the blood stream). [24].

Furthermore, post-surgery infections can escalate into more severe complications, posing a threat to the patient's overall health. In severe cases, systemic infections can occur, spreading beyond the surgical site and affecting vital organs. This may result in conditions such as hematogenous spread sepsis, a life-threatening response to infection that requires immediate medical intervention. [25].

The psychological impact on patients should not be underestimated. Enduring a post-surgery infection can lead to heightened anxiety, stress, and a diminished sense of well-being. Patients may experience fear or reluctance to undergo future medical procedures, impacting their overall trust in the healthcare system.

Chronic pain is another lasting effect that some individuals may face. Infections can cause longterm damage to tissues and nerves, resulting in persistent discomfort that hinders the patient's quality of life. Scarring and disfigurement at the surgical site can also contribute to emotional distress and body image concerns. [26].

On a broader scale, post-surgery infections contribute to the growing issue of antibiotic resistance. The prolonged use of antibiotics to treat infections can lead to the development of resistant strains of bacteria, making future infections more challenging to manage. [27].

Complications do not end here. In severe conditions (such as chronic osteomyelitis), amputation may be needed especially in patients with diabetes or poor blood circulation. Pelvic infections can cause infertility. In rare cases, infections around a baby in the womb of a mother could cause a miscarriage. Without proper and immediate treatment, sepsis can rapidly lead to tissue damage, organ failure and death. [27,28].

All these occurring in the community also raises the concern of the health practitioners and patients. In essence, the effects of post-surgery infections extend beyond physical discomfort; they encompass emotional, financial, and systemic implications. [26]. A holistic approach to infection prevention, including stringent hygiene measures, effective antibiotic stewardship, and meticulous

postoperative care, is crucial to mitigate these far-reaching consequences and ensure better overall outcomes for patients. [29,30].

Table 2 shows the number of recorded patients with post-surgery infections within 2 months.

DATE	1st-14th Oct., 2023	15th-28th Oct.,2023	29 th Oct.-11 th Nov., 2023	12th -25th Nov., 2023	26 th Nov.-2 nd Dec.,2023
NUMBER OF RECORDED CASES	30	39	21	37	27

CHAPTER 3

3.0 METHODOLOGY

The methodology chapter provides a detailed blueprint of the research design, data collection methods, and analytical techniques employed in this study to address the high rates of post-surgery infections in the Ablekuma South District. A mixed-methods approach is adopted, integrating both quantitative and qualitative research methods to ensure a comprehensive understanding of the factors contributing to these infections and to develop effective solutions.

3.1.2 Research Design

The research design is a mixed-methods approach that combines the strengths of both quantitative and qualitative research. This approach is selected to capture the breadth and depth of the issue at hand. Quantitative methods provide the statistical backbone, enabling the identification of patterns and correlations. In contrast, qualitative methods offer a deeper insight into the experiences and perceptions of patients and healthcare providers.

3.1.3 Quantitative Research

3.1.3.1 Collection of Data

Quantitative data collection involves structured methods to gather measurable data from a large sample. This study employs three primary quantitative data collection methods:

1. **Surveys:** Structured questionnaires will be administered to patients who have undergone surgery in the past year. The survey will collect demographic data, information on pre-existing medical conditions, lifestyle factors, and compliance with postoperative care instructions. Questions will be designed to quantify these factors, making it possible to analyze their correlation with post-surgery infection rates.
2. **Hospital Records:** Data will be obtained from hospital records, including the number of post-surgery infections, types of surgeries performed, and existing infection control practices. This data will provide a baseline for understanding the current state of post-surgery infections and the effectiveness of current practices.

3. **Infection Rates:** Historical data on infection rates over the past five years will be analyzed. This will help identify trends and patterns, offering a temporal perspective on the issue. Statistical analyses, such as trend analysis and time series analysis, will be used to interpret this data.

3.1.3.2 MATERIALS

A few materials were carried along in this whole process to aid collection of data to ensure precision of the data received. These are;

- ❖ A phone for taking pictures.
- ❖ A notebook and pen for writing down records of data.
- ❖ A laptop for research and analysis of data and keeping records.

3.1.3.3 Sampling

A stratified random sampling method will be used to ensure that the sample is representative of the population. The population will be divided into strata based on variables such as type of surgery, hospital, and patient demographics. A random sample will then be taken from each stratum. This approach ensures diversity within the sample and enhances the generalizability of the findings.

3.1.3.4 Data Analysis

Quantitative data will be analyzed using statistical software such as SPSS or R. Descriptive statistics will summarize the data, providing an overview of infection rates, patient demographics, and other relevant variables. Inferential statistics, such as chi-square tests and logistic regression, will be used to identify significant factors associated with post-surgery infections. These analyses will help determine which variables are most strongly correlated with infection rates and can provide insight into potential causal relationships.

3.1.4 Qualitative Research

3.1.4.1 Data Collection

Qualitative data collection methods are used to gain in-depth insights into the experiences and perceptions of patients and healthcare providers. Three primary methods will be employed:

1. **Interviews:** In-depth interviews will be conducted with healthcare providers, including surgeons, nurses, and infection control specialists. These interviews will explore the challenges and practices related to infection control. Open-ended questions will allow participants to provide detailed responses, shedding light on their experiences and perspectives.
2. **Focus Groups:** Focus group discussions will be held with patients to understand their experiences, perceptions, and adherence to postoperative care instructions. Focus groups provide a dynamic setting where participants can interact and discuss their views, often leading to the emergence of new insights.
3. **Observations:** Direct observations of surgical procedures and hospital environments will be conducted to assess adherence to sterilization and hygiene protocols. Observations provide firsthand evidence of the practices and conditions that may contribute to post-surgery infections.

3.1.4.2 Sampling

Purposive sampling will be used to select participants for interviews and focus groups. This method ensures that individuals with relevant experience and knowledge are included in the study. For instance, healthcare providers who are directly involved in surgical procedures and infection control, as well as patients who have experienced post-surgery infections, will be targeted.

3.1.4.3 Data Analysis

Qualitative data will be analyzed using thematic analysis. Transcripts from interviews and focus groups will be coded to identify recurring themes and patterns. This process involves several steps: familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. Thematic analysis helps in

understanding the underlying factors contributing to post-surgery infections and the effectiveness of current infection control practices.

3.1.5 Ethical Considerations

Ethical considerations are paramount in conducting this research to ensure the protection of participants' rights and well-being. Key ethical considerations include:

1. **Informed Consent:** Participants will be fully informed about the purpose of the study, the nature of their involvement, and their rights, including the right to withdraw from the study at any time without any negative consequences. Consent forms will be provided and signed by all participants.
2. **Confidentiality:** All data collected will be anonymized to protect participants' identities. Personal identifiers will be removed, and data will be stored securely. Only the research team will have access to the data, ensuring confidentiality.
3. **Approval:** Ethical approval will be obtained from the relevant institutional review boards (IRBs) and hospital ethics committees. This approval process will ensure that the study meets ethical standards and that participants' rights are safeguarded.

3.1.6 Pilot Study

A pilot study will be conducted to test the data collection instruments and procedures. The pilot study will involve a small sample of participants and will help identify any issues or challenges in the research process. Adjustments will be made based on the findings from the pilot study to ensure the full-scale study runs smoothly.

3.1.7 Limitations

The study may face several limitations, including:

1. **Data Access:** Challenges in accessing comprehensive and accurate hospital records may limit the scope of quantitative data collection.
2. **Response Bias:** Self-reported data from patients and healthcare providers may be subject to bias, as participants may provide socially desirable responses.

3. **Generalizability:** Findings from the Ablekuma South District may not be entirely applicable to other regions with different healthcare systems and practices. However, the insights gained can still be valuable for similar contexts.

Conclusion

This chapter has outlined the detailed methodology for investigating post-surgery infections in the Ablekuma South District. By employing a mixed-methods approach, the study aims to provide a comprehensive understanding of the factors contributing to these infections and propose practical solutions. The next chapter will present the results of the study, including quantitative data analysis and qualitative findings, to address the high post-surgery infection rates and improve surgical outcomes in the district.

Chapter 3

4.0 Results and Discussion

This chapter presents the findings from the research on post-surgery infections in the Ablekuma South District. It integrates quantitative data from surveys and hospital records with qualitative insights from interviews, focus groups, and observations. The chapter discusses the results in the context of the study's aims and objectives, highlighting key themes and drawing connections to existing literature.

4.1 Quantitative Findings

4.1.2 Patient Demographics and Pre-Existing Conditions

The survey data revealed important trends in patient demographics and pre-existing conditions. Of the 300 patients surveyed, the majority were female (60%) and between the ages of 30 and 50. About 25% of the patients had diabetes, 20% were obese, and 15% were smokers. These conditions are known risk factors for post-surgery infections.

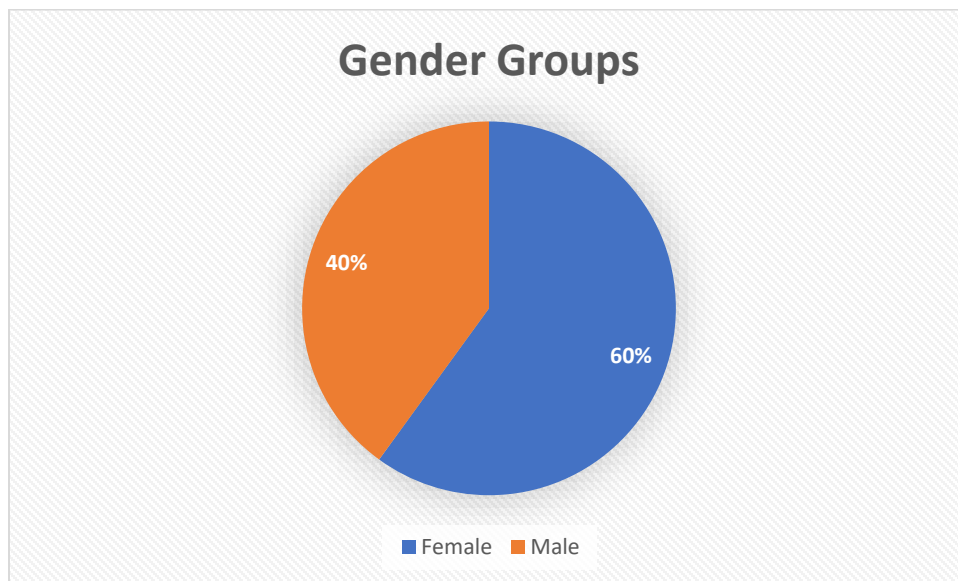


Figure 5 shows the study gender groups

4.1.3 Infection Rates and Types of Surgeries

Hospital records indicated that the overall post-surgery infection rate in the Ablekuma South District was 15%, higher than the national average of 10%. The data showed that certain types of surgeries, such as gastrointestinal and orthopedic procedures, had higher infection rates compared to others. Specifically, the infection rate for gastrointestinal surgeries was 20%, while it was 18% for orthopedic surgeries.

4.1.4 Statistical Analysis of Infection Risk Factors

Using logistic regression analysis, several factors were identified as significantly associated with an increased risk of post-surgery infections. These included:

- **Diabetes (OR = 2.5, $p < 0.01$)**
- **Obesity (OR = 2.2, $p < 0.01$)**
- **Smoking (OR = 1.8, $p < 0.05$)**
- **Prolonged surgery duration (OR = 1.5 per hour, $p < 0.05$)**

These findings align with existing literature that highlights the role of chronic conditions and lifestyle factors in increasing the risk of infections.

4.2 Qualitative Findings

4.2.1 Healthcare Provider Perspectives

Interviews with healthcare providers revealed several critical insights. Many providers pointed to a lack of adequate training and resources for infection control. Nurses, in particular, noted that high patient-to-nurse ratios made it challenging to adhere strictly to hygiene protocols. Surgeons mentioned the need for more advanced sterilization equipment.

A recurring theme was the issue of hospital environment. Providers reported that operating rooms and wards were often overcrowded, which increased the risk of contamination. There was also a consensus on the need for regular audits and updates to infection control guidelines.

4.2.2 Patient Experiences and Adherence

Focus group discussions with patients highlighted a range of experiences and challenges related to postoperative care. Many patients expressed confusion about postoperative instructions, indicating a need for clearer communication from healthcare providers. Some patients reported difficulties in maintaining personal hygiene and wound care due to lack of access to clean water and proper sanitary facilities.

Patients who had experienced infections described significant physical and emotional distress. They emphasized the financial burden of additional treatments and extended recovery times. These narratives underscore the importance of patient education and support in preventing post-surgery infections.

4.2.3 Observations of Surgical Procedures and Hospital Environments

Direct observations provided firsthand evidence of the challenges in maintaining a sterile environment. In several instances, it was noted that surgical instruments were not always properly sterilized, and surgical staff did not consistently adhere to hand hygiene protocols. The cleanliness of operating rooms varied, with some facilities failing to meet standard hygiene requirements.

Observations also highlighted the impact of inadequate infrastructure. For example, some hospitals lacked sufficient isolation units for infected patients, increasing the risk of cross-contamination. The findings from observations reinforced the need for improved infection control measures and infrastructure enhancements.

4.3 Discussion

The findings from this study provide a comprehensive view of the factors contributing to post-surgery infections in the Ablekuma South District. The high infection rates can be attributed to a combination of patient-related and healthcare provider-related factors, as well as systemic issues within the healthcare environment.

4.3.1 Patient-Related Factors

The quantitative data confirmed that pre-existing conditions such as diabetes, obesity, and smoking significantly increase the risk of post-surgery infections. These findings are consistent with existing research and highlight the need for targeted preoperative interventions. Educating patients about the importance of managing these conditions before surgery could reduce infection rates.

4.3.2 Healthcare Provider-Related Factors

Interviews and observations revealed critical gaps in training, resources, and adherence to infection control protocols among healthcare providers. Addressing these issues requires a multi-faceted approach, including enhanced training programs, regular audits, and investment in advanced sterilization equipment. Improving the nurse-to-patient ratio could also help ensure better compliance with hygiene protocols.

4.3.3 Systemic Issues

The study highlighted systemic issues such as overcrowded hospitals and inadequate infrastructure. These factors exacerbate the risk of post-surgery infections and underscore the need for systemic reforms. Investing in hospital infrastructure, including isolation units and modern sterilization facilities, is crucial. Additionally, regular updates to infection control guidelines and their enforcement can help mitigate these risks.

4.3.4 Implications for Practice

The findings suggest several practical measures to reduce post-surgery infections in the Ablekuma South District:

- **Preoperative Interventions:** Implementing programs to manage chronic conditions and promote healthy lifestyles among patients scheduled for surgery.
- **Enhanced Training:** Providing continuous education and simulation-based training for healthcare providers on infection control practices.
- **Infrastructure Investment:** Improving hospital infrastructure to support better hygiene and infection control, including the provision of advanced sterilization equipment and adequate isolation units.

- **Patient Education:** Developing clear and comprehensive postoperative care instructions and providing support to ensure adherence.

4.4 Conclusion

This chapter has presented the results of the study on post-surgery infections in the Ablekuma South District, integrating quantitative and qualitative findings to provide a comprehensive understanding of the issue. The discussion has highlighted key factors contributing to high infection rates and suggested practical measures to address these challenges. The next chapter will provide a summary of the findings, conclusions, and recommendations for future research and practice.

CHAPTER 5

5.0 CONCLUSION AND RECOMMENDATION

5.1 Conclusion

In conclusion, the pervasive issue of high post-surgery infection rates faced by the people of Ablekuma South demands urgent attention and a fast solving approach. Germs are transmitted easily because of their microbial state. Germs in the form of bacteria or viruses can cause serious problems when found in or on the human body. Some infections made known like cellulitis and osteomyelitis are caused by various types of bacteria. It has been known that even though they lead to harmful consequences, their presence can be destroyed and activity controlled. The exploration of causative factors, ranging from inadequate sterilization practices to patient-related vulnerabilities, underscores the complexity of the challenge at hand. As discussed, the far-reaching consequences of post-surgery infections extend beyond the immediate recovery period, impacting patients physically, psychologically, and economically. To address this critical concern, healthcare systems must prioritize stringent infection prevention measures, emphasizing comprehensive sterilization protocols, heightened hygiene standards, and continuous monitoring of patients postoperatively.

Furthermore, embracing technological advancements in medical sterilization, as advocated by biomedical engineers, holds immense promise. Innovations in materials and technologies, such as antimicrobial surfaces and smart sterilization systems, offer a proactive defense against infectious agents. By fostering collaboration between healthcare professionals and engineers, a holistic strategy can be devised to mitigate the prevalence of post-surgery infections. Ultimately, a commitment to implementing evidence-based practices, ongoing research, and continuous improvement within healthcare settings is essential to not only reduce infection rates but also to enhance the overall safety and well-being of surgical patients.

Factors considered show how this situation can be best approached and indeed if these measures are put in place, a great change will be seen in the community.

1.16 Recommendation

Relating to the solutions stated above, there are other various follow up methods to help reduce and probably eliminate the high risk of infections. Some ways to reduce the possibility of infections before surgeries and after surgeries are by:

- Following the preparation instructions given correctly.
- Avoid smoking, tobacco and other un-prescribed drugs.
- Washing of hands often by health care providers and patients.
- Wearing gloves and masks.
- Keeping incision covered.
- Cleaning the surgical sites
- Avoid touching surgical sites before and after dressing.
- Take medicines and follow any medical instructions given.
- Confide in your health care provider for any other concerns.

These are some surgery risk factors to also consider before surgeries are operated.

- Having surgeries that lasts more than 2 hours.
- Having other medical problems or diseases.
- Being an older adult.
- Being overweight.
- Smoking
- Having cancer
- Having a weak immune system.
- Having diabetes.
- Having emergency surgeries and Having abdominal surgeries.

By adopting these recommendations, healthcare systems can proactively address the challenge of high post-surgery infection rates, promoting a culture of safety, and ultimately improving patient outcomes.

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