

## AWARENESS AND KNOWLEDGE OF POST OPERATIVE SURGICAL SITE INFECTION IN PATIENT

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### ABSTRACT

**Background:** Understanding surgical site infections (SSIs) can help lower SSI-related hospital stays, morbidity, and death.

**Objective(s):** This study aimed to determine the knowledge and awareness of SSI among patients undergoing surgeries

**Methodology:** A descriptive cross-sectional design was used in this study to evaluate its goals. After the Departmental Research Committee gave its clearance, data were gathered from the chosen research setting during a four-month period. The study used a non-random convenience sampling approach to enroll 125 people in total.

**Results:** The research had 125 individuals in total. The majority were between the ages of 18 and 34 (41.3%), followed by those between the ages of 35 and 44 (27.0%) and 45 and 64 (24.6%). Only 6.3% were older than 65. Age, gender, marital status, educational status, employment status, region, type of surgery, length of hospital stay, prior admission, number of admissions, or history of SSI did not show any statistically significant associations with awareness level, according to an analysis of participant characteristics (all  $p > 0.05$ ). These results show that knowledge of SSI was typically comparable among various clinical and demographic categories. On the other hand, the examination of knowledge level revealed that the only factor that was substantially linked to knowledge was age ( $p = 0.032$ ). While older individuals tended to have lower levels of knowledge, those between the ages of 18 and 34 showed the largest proportion of good knowledge. Gender, marital status, education, work status, area, kind of operation, length of hospital stay, prior admission, number of admissions, and history of SSI did not significantly correlate with knowledge level (all  $p > 0.05$ ).

**Conclusion(s):** It is concluded that knowledge varies by age, but general awareness of SSI is stable across patient groups. Therefore, consistent preoperative and postoperative teaching programs should be implemented for all surgical patients by healthcare professionals, with a special focus on older persons who might need more focused education to increase their understanding of surgical site infection prevention.

**Key words:** Awareness, knowledge, postoperative, surgical intervention, surgical site infections

## 1 INTRODUCTION

Surgical site infections (SSIs) are defined as an infection occurring within 30 days following a surgical procedure in the anatomical region of body where the surgical incision was performed. Surgical site infections may be either superficial who is just affecting the skin level or deep. Which can be more serious, involving tissue beneath the skin, organs or devices inserted into the body. (Alnofaiey et al., 2022) Surgical site infections (SSIs) are an all-time challenge within the surgical care domain, making them a major threat to both patients and the healthcare system. These infections, having an appearance in 30 days after a surgical and which typically requires re-operation for therapy, take a significantly important toll in phrases of a boom Using these data regarding hospitalization, healthcare cost and mortality rate. The This impact of SSIs reaches well beyond the patient with the infection and has a negative ripple effect on the overall healthcare system by taxing resources and patient safety. (Abbas Fadeil Aleid et al., 2024)

Compared to patients who do not receive surgical site infections, those who do are up to 60% more likely to remain in the intensive care unit, five times more likely to be readmitted to the hospital, and twice as likely to die. Because there are so many risk variables to address, surgical site infections may be the most avoidable healthcare-associated infection, particularly when a care package strategy is used. Surgery-related problems include contaminated operations, emergency surgeries, protracted procedures, inadequate sterilization, poor instrument handling, and inadequate antiseptic surgical site preparation. (Yasser Hussain Alnofaiey et al., 2022)

SSI is a considerable disease and healthcare burden, as it increases hospitalizations, costs, and mortality rates. In low-and middle-income countries, SSI can pose a serious economic burden. Therefore, there is need to lower the rates of SSIs worldwide. One of the effective strategies for SSI prevention is increasing patient engagement. To develop effective engagement strategies, it is important to understand the current knowledge and awareness of patients. (Alaa Mohammed Alsahli et al., 2022). Up to 20% of patients

experience surgical site infections (SSIs), which account for 14–16% of health care-associated infections (HAI) and are the most common postoperative complication following surgical procedures. SSIs can affect morbidity and mortality, cause physical, psychological, and/or social harm, and jeopardize patient safety. The development of infection-related signs and symptoms within thirty days following surgery without implants or ninety days following surgery with implants is the basis for the diagnosis of SSI. In terms of the topography of involvement, it can be divided into three categories: organ-space SSI, which covers the cavity and organs manipulated during surgery; deep incisional SSI, which affects deep soft tissues like muscle and fascia; and superficial incisional SSI, which affects skin and subcutaneous tissue. (Mayra de Castro Oliveira et al., 2023)

There are two categories of risks for SSIs: intrinsic and extrinsic variables. On the other hand, old age, malnourishment, metabolic disorders, smoking, obesity, hypoxia, immunosuppression, and duration of preoperative period are examples of intrinsic variables. The extrinsic factors were pre-operative skin preparation and skin antiseptics, antibiotic prophylaxis, insufficient sanitation of surgical tools, surgical drains, surgical hand scrubs, and dressing procedures. Despite all the efforts made by medical professionals to prevent infections, infections continue to be a significant undesirable consequence of surgical procedures. Patients suffer grave consequences as a result of this undesired occurrence. (Oluwakemi Ajike Kolade et al., 2026)

The most commonly reported extrinsic factors included antibiotic prophylaxis, dressing methods, surgical drains, surgical implants, preoperative skin preparation, surgical hand scrubs, application of skin antiseptics, insufficient instrument sterilization, and preoperative shaving. Preoperative and postoperative procedures might be modified with the use of knowledge about these risk factors. The improvement of patient care quality is largely dependent on the prevention and management of SSI. A number of rules are available to reduce healthcare-associated infections (HAIs) in hospital settings; all of these

policies are predicated on the enhancement of healthcare workers' hygiene practices. (Fasalu Rahiman O. M et al.,2019)

According to the World Health Organization (WHO) and the Organization for Economic Cooperation and Development (OECD), HAIs could kill almost 3.5 million people a year until 2050. Hospital-acquired infections (HAIs) are defined as systemic or localized infections that do not exist at the time of admission to a medical facility and that appear during hospitalization, within three days after discharge, or within thirty days following surgery. Surgical site infections (SSIs), which were found to be the most common type of HAI reported hospital-wide in low- and middle-income countries (LMICs) with a significantly higher risk than in high-income countries (HICs), are linked to the use of various invasive devices and procedures. According to the World Health Organization (WHO), 11% of patients in low- and middle-income nations suffer from SSIs. (Marzouq Amarin et al.,2026)

It has been demonstrated that involving several disciplines in multicomponent quality improvement initiatives, such as surveillance, lowers the incidence of SSIs and preserves patient safety. When evidence-based strategies are used, such as perioperative glycaemic management, antibiotic prophylaxis, healthcare professional education, and the implementation of care bundles, the incidence of SSIs can be lowered by up to 60%. As a result, hospitals are increasingly implementing the systematic strategy of surveillance, which is a recognized indication of care quality as well as an effective defense against SSIs. In the clinical setting, putting SSI prevention principles into practice and conducting SSI surveillance are acknowledged as complicated interventions. (S. Horgan et al.,2023)

SSI is caused by complex interactions between the patient and the host regarding preoperative infection, diabetes, smoking, and other risk factors; the surgical technique; and the operating room environment, including the use of precautions to reduce intraoperative wound contamination. SSIs are linked to increases in hospital readmission rates, expenses, postoperative length of stay (LOS), and antibiotic use. (Annette Erichsen Andersson et al.,2010). Overall, these infections cause

significant patient suffering and can range in severity from bothersome to fatal. Surgeons, nurses, anesthetists, and infection preventionists are just a few of the medical professionals who must work together to avoid SSIs, which is a major patient safety issue. The risk of death for surgical patients who acquire an SSI is between two and eleven times higher than that of patients without an SSI; 77% of SSI-related deaths are directly related to SSI. (Jessica Seidelman et al.,2022)

Prophylactic antibiotic use (preoperative first generation cephalosporin and intravenous azithromycin), skin preparation with chlorhexidine rather than iodine, hair removal with clippers rather than razors, vaginal cleansing with povidone-iodine, placental removal by traction of the umbilical cord rather than manual removal, suture closure of subcutaneous tissue if the wound thickness is greater than 2 cm, and skin closure with sutures rather than staples are effective ways to reduce surgical site infections. Although they raise the risk of SSI, small hematomas may resorb without surgical intervention. Reclosure of the wound, ligation or cauterization of bleeding arteries, and sterile clot removal are all part of managing a wound hematoma.

Seromas raise the risk of SSI and slow the healing of wounds. Aspiration with a needle can be used to remove seromas beneath the skin. Compression dressings should be used to stop reaccumulation. Wound examination in the operating room can be necessary if seromas continue. (Tetsuya Kawakita et al.,2017)

Unless it is contraindicated, an alcohol-based compound should be used for skin preparation in the operating room. Even with a drain, further prophylactic antimicrobial agent doses should not be given in the operating room following the closure of the surgical incision for clean and clean-contaminated surgeries. The surgical incision should not be treated with topical antibacterial medications. All patients should maintain normothermia throughout surgery, and glycemic control should be used with blood glucose target levels of fewer than 200 mg/dL. In order to prevent SSI, surgical patients shouldn't be denied transfusions of blood products. (Sandra I. Berrios-Torres et al.,2017). Patients may be more

vulnerable to postoperative infections due to changes in host immunity brought on by their dietary state. In certain malnourished or seriously injured patients, early nutritional care can enhance the success of major surgery and reduce the occurrence of infection complications. Nutritional therapies are thought by several researchers to be able to lower SSIs and related morbidity. In order to ensure that the skin is as clean as possible prior to surgery and lower the bacterial burden, especially at the site of incision, preoperative whole-body bathing or showering is regarded as excellent clinical practice. Antiseptic soap is typically utilized in environments where it is accessible and reasonably priced. (Benedetta Allegranzi et al.,2016)

Antibiotic prevention is a proven strategy. Antibiotics should likely be re-administered during procedures that take longer than three hours, and there is a justification to be made for increasing the dosage in patients with substantial body masses. Although there is no proof that chlorhexidine showers are beneficial for patients, they are cheap. During the process, hair is always removed in the operating room using clippers. Antiseptic use at the surgical site prior to incision cannot be justified scientifically. It's undoubtedly vital to keep the body's core temperature and blood glucose concentration close to normal, but it's unknown how close. Leukocyte decrease of transfused blood may be advantageous, however transfusion increases SSI. The effectiveness of antibacterial sutures in avoiding SSI is supported by certain data. (Tjasa Hranjec et al.,2010)

It makes sense that when hair goes into a surgical wound, the risk of wound infection would rise. All the data, however, points to the least amount of infection when hair is left in place. Shaving should never be utilized when the surgeon determines that hair removal is necessary. The best approach seems to be carefully cutting the hair to prevent skin harm. The majority of research supports hair removal right before surgery. The incidence of infection rises when conduit drains and drainage through a working incision are used. Although they can be helpful in removing fluid from vast, potentially dead regions, closed suction drains cannot stop infections on their own. (J. Wesley Alexander et al.,2011)

Current evidence revealed that alcohol-based preparations are superior to aqueous solutions in lowering SSI. preparations, and should be used, unless contraindicated. Alcohol has a quick bactericidal effect, although with the lack of prolonged antibacterial action. The bene fit of iodine or chlorhexidine and alcohol solutions is extended bactericidal action. Skin antiseptic treatments based on alcohol should be utilized unless there is a contraindication. Infection is one of the most frequent surgical complications in patients with pre-existing diabetes mellitus and hyperglycemia; a significant portion of these complications are caused by superficial surgical site infections (SSIs), deep wound infections, surgical space abscesses, urinary tract infections, and pneumonia. Poorly managed diabetes is defined by the American Diabetes Association as having a goal HbA1c level of  $\geq 8\%$ . According to research using this cutoff, patients with HbA1C levels of  $\geq 8\%$  who had heart and orthopaedics conditions were more likely to get postoperative wound infections. (Moi Lin Ling et al.,2019)

To lower the incidence of SSI in adult patients undergoing elective colorectal surgery, preoperative oral antibiotics should be administered in conjunction with MBP. Oral antibiotics should be taken in addition to MBP. Non-absorbable antibiotics should be used preferably, and an activity against facultative Gram-negative and anaerobic bacteria should be ensured. However, based on the evidence currently available, no recommendation can be made regarding the preferred type of oral antibiotic, including the timing of administration and dosage. (Benedetta Allegranzi et al.,2019)

### 1.1: RATIONALE

Many cases lack knowledge of proper crack care, hygiene and early signs and symptoms of infection, which may lead to delays and deteriorating problems. The proper assessment of patient mindfulness in Lahore will help identify knowledge gaps and highlight the areas which are lacking and in which education is needed.

## 2 LITERATURE REVIEW

(Alaa Mohammed Alsahli et al.,2022) studied about A Multi-Regional Cross-Sectional Study of

Saudi Arabian Patients' Knowledge and Awareness of Postoperative Surgical Site Infections. Understanding surgical site infections (SSIs) can assist lower hospital stays, morbidity, and death related to SSI. The purpose of this study was to ascertain the level of SSI awareness and understanding among Saudi Arabian surgical patients.

Adult patients (over the age of 18) who had surgery at six facilities spread throughout Saudi Arabia's five regions were included in this multi-center cross-sectional study. Data on patient demographics, health status, procedures, hospitalization history, and awareness and understanding of SSIs were collected using a 36-item questionnaire. There were 375 patients total equally from each of Saudi Arabia's five regions. The majority of patients were male (55.7%) and between the ages of 18 and 34 (44%). The majority of respondents (49.1%) were illiterate, and coming from the North was a significant predictor ( $P = 0.001$ ). Additionally, patients with no history of SSI ( $P = 0.003$ ) or surgery ( $P = 0.001$ ) exhibited low awareness. Participants' knowledge levels were shown to be substantially correlated with region ( $P = 0.001$ ), with 45.8% and 35.2%, respectively, having fair and poor knowledge. Male patients had strong knowledge ( $P = 0.02$ ), whereas patients over 65 had poor knowledge ( $P = 0.033$ ). SSIs were poorly understood by patients who had never had surgery ( $P = 0.003$ ). Just 32.8% of the patients remembered receiving instruction from medical professionals.

(Abbas Fadeil Aleid et al., 2024) analyzes A cross-sectional study of Saudi Arabian surgical patients' post-operative health and surgical site infections. Surgical site infections (SSIs) are a common and serious post-operative complication that raises morbidity and mortality. Additionally, these infections negatively impact the patients' general quality of life. In addition to assessing the prevalence of SSIs among surgical patients in Saudi Arabia and investigating the relationship between SSIs and post-operative morbidity and mortality, this research is crucial given the significant impact of SSIs on healthcare outcomes and resource utilization, underscoring the need for effective preventive measures. A cohort of Saudi surgery patients participated in a cross-

sectional study between January and August of 2023. A thorough survey was created to gather information from 1219 respondents. People between the ages of 18 and 24 made up the majority of the study sample, with a fairly even gender distribution. The questionnaire's main objectives were to determine whether SSIs were present and to rate the patients' post-operative complications' severity. The association between SSIs and post-operative outcomes was assessed using a variety of statistical techniques, such as correlation tests, regression models, and Chi-square tests.

(Alnofaiey et al., 2022) studied about clinical years medical students knowledge of surgical site infections in the western region of Saudi Arabia. A surgical site infection is defined as an infection that appears within 30 days after surgery in the body where the surgical incision was made. The purpose of this study was to evaluate medical students' awareness of surgical site infections in western Saudi Arabia during their clinical years and to demonstrate the disparity in knowledge between governmental universities. We conducted an observational study using a cross-sectional study design Medical students typically have a low level of awareness and knowledge about SSI. We recommend improving their knowledge of SSI by providing them with more courses and sessions.

(Abbas Fadeil Aleid et al., 2024) analyzed A cross-sectional investigation of surgical site infections and post-operative health in Saudi Arabian surgical patients found the purpose of this study was to ascertain the knowledge and awareness of surgical site infections (SSIs) among patients undergoing surgeries throughout Saudi Arabia. Methods: This multi-center cross-sectional study included adult patients (aged >18 years) who underwent surgery at six centers located across the five regions of Saudi Arabia. A 36-item questionnaire was used to elicit data regarding demographics, patient health status, procedures, hospitalization history, and awareness and knowledge about SSIs. A sizable fraction of the patients in this study had inadequate SSI awareness and knowledge. In order to lower the risk of SSIs, the study emphasizes the necessity of improving preoperative patient education in Saudi Arabia. The results of this study highlight the

urgent problems that SSIs present in Saudi Arabia's healthcare system. These problems include more severe complications, more medical interventions, longer hospital stays, and a significant detrimental effect on patients' quality of life. Resolving these problems is crucial for improving patient care as well as for directing the creation of policies and optimizing surgical procedures in Saudi Arabia. This research emphasizes the importance of creating and putting into practice efficient strategies to prevent SSIs and improve overall surgical outcomes.

(Fasalu Rahiman O. M. et al.,2019) conducted An examination of patients' awareness and knowledge about surgical site infection risk and management. One of the main causes of death is surgical site infections (SSIs), and preventing them is essential to the healthcare industry. However, there hasn't been a thorough evaluation of how patients perceive the obstacles they face while seeking medical attention. Therefore, the purpose of the study was to assess patients' knowledge and comprehension of the dangers and repercussions of SSI.

Direct patient interviews were used to gather patient demographics, medical history, and treatment information for the study. The survey was created after reviewing the SSI patient education guides, which have been approved by the infection control department. It asked a number of questions about SSI, specifically addressing patients' knowledge of factors associated with increased risk and consequences of infection. Hence, better techniques are needed to enhance patient knowledge of and participation in lowering SSI risks and effects and encouraging the prevention of SSI.

(Marzouq Amarín et al.,2026) found an evaluation of information about wound infection risks and surgical site infections: a cross-sectional study. Surgical site infections (SSIs) account for 20% of all healthcare-associated infections (HAIs), which have a substantial influence on patient outcomes. It is crucial to follow preventative recommendations. The purpose of this study was to evaluate Jordanian doctors' and medical students' understanding of SSIs. Between April and October of 2023, Jordanian physicians participated in this cross-sectional survey. A self-

administered questionnaire that was taken from the literature and a demographic questionnaire were used to gather data. A 20-point scale was used to measure and categorize the SSI Knowledge level (poor: 0–9, fair: 10–15, good: 16–20). Using Fisher's exact tests, ANOVA, and descriptive statistics at a 5% significance level, data analysis was carried out using Jamovi version 2.3. Participants' general knowledge of SSI was inadequate, with notable gaps in their comprehension of important preventative techniques, causative organisms, and ideal preoperative procedures. To improve adherence to preventative strategies and eventually lower SSI-related morbidity, mortality, and costs, it is advised to incorporate organized SSI-focused teaching modules into medical training along with practical workshops and context-tailored guidelines.

(Sin'ead Horgan et al.,2023) examined a knowledge and attitudes of medical personnel regarding surgical site infection and surveillance: A comprehensive narrative review. The knowledge and attitudes of healthcare professionals about surgical site infections, surgical site infection monitoring, and treatments targeted at improving the knowledge and attitudes of healthcare workers are all included in this systematic review. One major side effect after surgery is surgical site infection. Patients and hospitals still struggle to avoid surgical site infections despite the existence of international guidelines. Healthcare workers must be well informed about surgical site infections and their part in putting evidence-based preventative measures into practice.

The Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA) criteria are used to report this review. The following databases were searched for papers published between January 2010 and March 2022: Academic Search Complete, CINAHL, ERIC, MEDLINE, PsycARTICLES, PsycINFO, and Web of Science. Included were studies that looked at the attitudes and knowledge of medical professionals about surgical site infections, surgical site infection monitoring, and risk factors for their development. We also considered studies that looked at treatments meant to improve the knowledge and attitudes of medical workers about risk factors, surveillance, and surgical site infections.

Additionally, we discussed how these therapies affected the frequency of surgical site infections. Healthcare personnel often have a limited understanding of surgical site infection and how to avoid it, but their attitudes are generally favorable, especially when it comes to their involvement in prevention.

To assess treatments that target healthcare personnel' attitudes and knowledge about surgical site infection prevention and monitoring, further experimental research is required. All medical personnel participating in a surgical patient's care should be included in such research.

(Tanya Yadav et al.,2024) A Study to Evaluate Nursing Officers' Knowledge and Awareness of Surgical Site Infection in the Surgery Ward at SGT Hospital, Gurugram. This study examines nursing officers' awareness and understanding of surgical site infections at SGT Hospital in Gurugram, Haryana. A self-administered questionnaire was used in a cross-sectional study to gauge nurses' understanding of SSI definitions, risk factors, signs and symptoms, medical care, and nursing management techniques. Correlation analysis and descriptive statistics were used to examine the data. The nurses at SGT Hospital showed a modest degree of SSI knowledge, with particular shortcomings in identifying symptoms and indications and using nursing care techniques. One important aspect that may be impeding the translation of knowledge into practice is limited access to necessary resources.

(Ahmad S. Maoudah et al.,2023) examined the Degree of Knowledge Among Surgical Doctors Concerning Surgical Site Infections and the Dangers of Wound Infections in Makkah. Because surgical site infections (SSIs) are a major cause of death worldwide, patient safety and effective treatment strategies are essential to preventing these deadly consequences. The purpose of this study is to evaluate the knowledge of surgical doctors in Makkah City, Saudi Arabia, regarding wound infection risks and SSIs. Using an online survey, a descriptive cross-sectional study was conducted between February and March 2023 among surgical physicians and interns at Makkah city hospitals. Only 4.1% of physicians had an excellent level of expertise. Thus, we urge Makkah hospitals offer academic workshops to surgical

physicians regarding preventative methods for high-quality management of SSIs in order to enhance their levels of awareness and understanding.

(Benedetta Allegranzi et al.,2016) An evidence-based worldwide view of the new WHO guidelines for preoperative surgical site infection prevention measures. In terms of patient morbidity, mortality, and extra expenditures, surgical site infections (SSIs) constitute a significant burden on health care systems and service payers globally. They are also among the most avoidable illnesses related to healthcare. The prevention of surgical site infections (SSIs) is complicated and necessitates the combination of several strategies prior to, during, and following surgery. There are no worldwide guidelines available, and national guidelines' recommendations and evidence interpretation have been shown to be inconsistent. WHO made the decision to give the creation of evidence-based guidelines for the prevention of SSIs top priority due to the prevalence of SSIs across the world, the many gaps in evidence-based advice, the requirement for standardization, and the need for a global strategy. The guidelines include patient values and preferences, the quality of the evidence, the implications for cost and resource utilization, and the balance between benefits and hazards. We offer 13 suggestions for preoperative preventative measures based on expert consensus and rigorous literature studies.

(J. Wesley Alexander et al.,2011) Revised Guidelines for Managing Surgical Site Infections. The effectiveness of surgical therapy has always been hampered by the emergence and management of surgical wound infections. Despite ongoing advancements, surgical site infections still happen at an intolerable incidence, resulting in yearly economic losses of billions of dollars due to related morbidity and mortality. In 1999, the Centers for Disease Control (CDC) released comprehensive guidelines for managing surgical infections. The suggestions have been updated by a review of the current research and an interpretation of the results. According to this review, wound infections could be considerably decreased by uniformly adhering to the suggested guidelines for the prevention of surgical infections; that is, to a target of less than 0.5% in clean

wounds, less than 1% in clean contaminated wounds, and less than 2% in highly contaminated wounds. Additionally, related costs could be reduced to less than half of what they are now. (Moi Lin Ling et al., 2019) studied about the APSIC Guidelines for the Prevention of Surgical Site Infections were introduced by the Asia Pacific Society of Infection Control (APIC) in 2018. The recommendations and guidelines for preventing surgical site infections (SSIs) are outlined in this publication. In order to help healthcare institutions in the Asia Pacific area achieve high standards in preoperative, perioperative, and postoperative procedures, it seeks to emphasize useful advice in a succinct way. After reviewing previously published guidelines and suggestions pertinent to each subject, an appointed committee made up of specialists in the Asia Pacific region prepared the guidelines. When it comes to safe surgical procedures, healthcare facilities should strive for perfection. Effective and long-lasting outcomes may be attained by using evidence-based strategies through a quality improvement approach.

### 3.1: OBJECTIVE(S)

This study aimed to determine the knowledge and awareness of SSI among patients undergoing surgeries

### 3.3: OPERATIONAL DEFINITION(S)

An infection that appears in the site of a surgery is known as a surgical site infection (SSI).

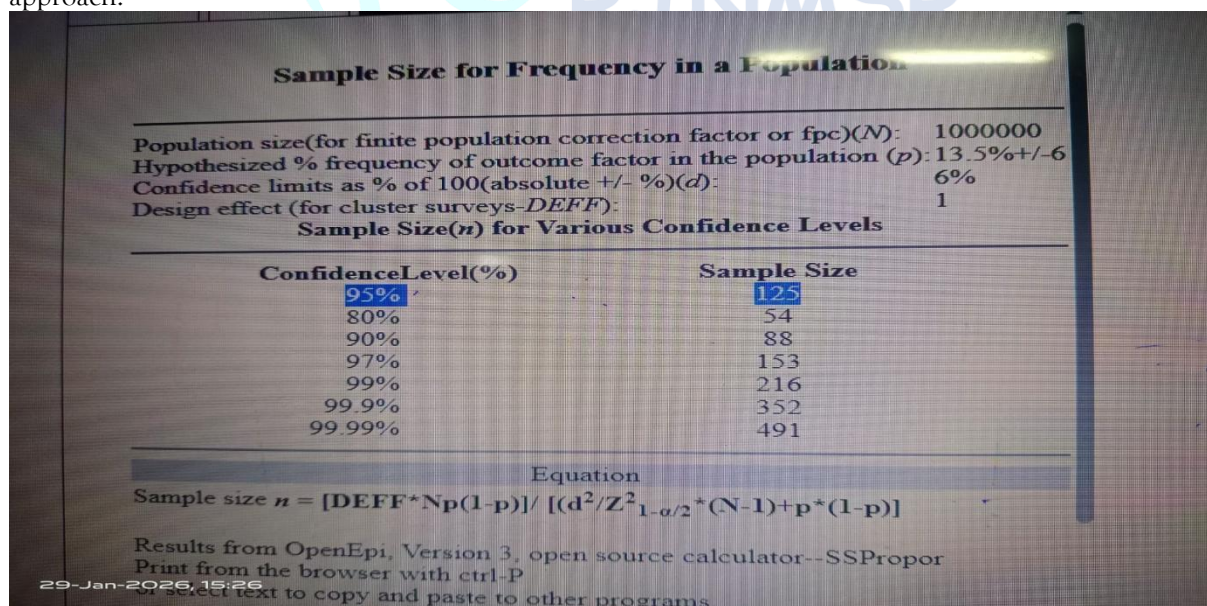
## 4 MATERIAL AND METHODS

**4.1: Study Design:** It was descriptive cross sectional study design

**4.2: Settings:** Data was collected from Social Security Hospital.

**4.3: Study Duration:** The duration of this study was 4 months after the approval from the department research committee

**4.4: Sample Size:** It was 125



**Sample Size for Frequency in a Population**

Population size (for finite population correction factor or fpc) (N): 1000000  
Hypothesized % frequency of outcome factor in the population (p): 13.5% +/- 6  
Confidence limits as % of 100 (absolute +/- %)(d): 6%  
Design effect (for cluster surveys-DEFF): 1

**Sample Size (n) for Various Confidence Levels**

| Confidence Level (%) | Sample Size |
|----------------------|-------------|
| 95%                  | 125         |
| 80%                  | 54          |
| 90%                  | 88          |
| 97%                  | 153         |
| 99%                  | 216         |
| 99.9%                | 352         |
| 99.99%               | 491         |

Equation  
Sample size  $n = [DEFF * Np(1-p)] / [(d^2 / Z^2_{1-\alpha/2} * (N-1) + p * (1-p)]$

Results from OpenEpi, Version 3, open source calculator--SSPropor  
Print from the browser with ctrl-P  
29-Jan-2026, 15:26  
or select text to copy and paste to other programs

**4.5: Sampling Technique:** Non randomize convenience sampling technique was used

**4.6: Sample Selection:**

**4.6.1: Inclusion Criteria:**

- Patient with age greater than 18 years

- Both sexes were included

**4.6.2: Exclusion Criteria:**

- Patient those who were not gave data

**4.7: Equipment(s):** Pre approved questionnaire was used

**4.8: ETHICAL CONSIDERATIONS**

(Where needed for clinical studies, animal study, experimental study)

The rules and regulations set by the ethical committee of university of Lahore were followed while conducting the research and the rights of the research participants were respected.

- Written informed consent attached was taken from all the participants.
- All information and data collection was kept confidential.
- Participants were remained anonymous throughout the study.
- The subjects were informed that there are no disadvantages or risk on the procedure of the study.
- They were also be informed that they will be free to withdraw at any time during the process of the study.

- Data was kept in under key and lock while keeping keys in hand. In laptop it was kept under password.

#### 4.9: DATA COLLECTION PROCEDURE

Following the approval of synopsis data collection commenced at Social Security Teaching Hospital. Information was obtained through a Pre-approved questionnaire that focused on the Awareness and Knowledge Of Post Operative Surgical Site Infection in patient in clinical practice. After receiving the approval for the questionnaire I visited the hospital's and gather the required data.

#### 4.10: DATA ANALYSIS PROCEDURE

- ✧ Data analysis was carried out through SPSS version 27

## 5 RESULTS

### Frequencies of surgical characteristics

**level of surgical characteristics**

|                               | N  | %     |
|-------------------------------|----|-------|
| poor surgical characteristics | 47 | 37.3% |
| fair surgical characteristics | 76 | 60.3% |
| good surgical characteristics | 2  | 1.6%  |

Table 5.1 shows that out of 125 participants, 37.3% were poor surgical characteristics (n = 47), 60.3% were fair surgical characteristics (n = 76), 1.6% were good surgical characteristics (n = 2)

### Frequencies of Awareness Level

**awarenesslevel**

|                | N  | %     |
|----------------|----|-------|
| poor awareness | 51 | 40.5% |
| fair awareness | 60 | 47.6% |
| good awareness | 14 | 11.1% |

Table 5.2 shows that out of 125 participants, 40.5% were poor awareness (n = 51), 47.6% were fair awareness (n = 60), 11.1% were good awareness (n = 14)

## Frequencies of Knowledge Level

### knowledgelevel

|                | N  | %     |
|----------------|----|-------|
| poor knowledge | 30 | 23.8% |
| fair knowledge | 78 | 61.9% |
| good knowledge | 17 | 13.5% |

Table 5.3 shows that out of 125 participants, 23.8% were poor knowledge (n = 30), 61.9% were fair knowledge (n = 78), 13.5% were good knowledge (n = 17)

## Level of Awareness

### Crosstab

|       |       | poor awareness |        | awarenesslevel<br>fair awareness |        | good awareness |        | Total |        |
|-------|-------|----------------|--------|----------------------------------|--------|----------------|--------|-------|--------|
|       |       | N              | %      | N                                | %      | N              | %      | N     | %      |
| age   | 18-34 | 21             | 41.2%  | 25                               | 41.7%  | 6              | 42.9%  | 52    | 41.6%  |
|       | 35-44 | 14             | 27.5%  | 14                               | 23.3%  | 6              | 42.9%  | 34    | 27.2%  |
|       | 45-64 | 14             | 27.5%  | 15                               | 25.0%  | 2              | 14.3%  | 31    | 24.8%  |
|       | >= 65 | 2              | 3.9%   | 6                                | 10.0%  | 0              | 0.0%   | 8     | 6.4%   |
| Total |       | 51             | 100.0% | 60                               | 100.0% | 14             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                    | Value              | df | Asymptotic<br>Significance<br>(2-sided) |
|--------------------|--------------------|----|-----------------------------------------|
| Pearson Chi-Square | 4.970 <sup>a</sup> | 6  | .548                                    |

Table 5.4 shows that there is significant association among the study participants the p value is .548

### Crosstab

|        |        | poor awareness |        | awarenesslevel<br>fair awareness |        | good awareness |        | Total |        |
|--------|--------|----------------|--------|----------------------------------|--------|----------------|--------|-------|--------|
|        |        | N              | %      | N                                | %      | N              | %      | N     | %      |
| gender | male   | 29             | 56.9%  | 29                               | 48.3%  | 7              | 50.0%  | 65    | 52.0%  |
|        | female | 22             | 43.1%  | 31                               | 51.7%  | 7              | 50.0%  | 60    | 48.0%  |
| Total  |        | 51             | 100.0% | 60                               | 100.0% | 14             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                   | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|-------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>.829<sup>a</sup></b> | <b>2</b> | <b>.661</b>                             |

Table 5.5 shows that there is no significance association between variable its p value .661

#### Crosstab

|                |           | poor awareness |        | awarenesslevel<br>fair awareness |        | good awareness |        | Total |        |
|----------------|-----------|----------------|--------|----------------------------------|--------|----------------|--------|-------|--------|
|                |           | N              | %      | N                                | %      | N              | %      | N     | %      |
| marital status | married   | 42             | 82.4%  | 54                               | 90.0%  | 14             | 100.0% | 110   | 88.0%  |
|                | unmarried | 4              | 7.8%   | 1                                | 1.7%   | 0              | 0.0%   | 5     | 4.0%   |
|                | widow     | 4              | 7.8%   | 2                                | 3.3%   | 0              | 0.0%   | 6     | 4.8%   |
|                | divorced  | 1              | 2.0%   | 3                                | 5.0%   | 0              | 0.0%   | 4     | 3.2%   |
| Total          |           | 51             | 100.0% | 60                               | 100.0% | 14             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>6.926<sup>a</sup></b> | <b>6</b> | <b>.328</b>                             |

Table 5.6 that is no significant association between variable its p value is .328

#### Crosstab

|                    |                    | poor awareness |        | awarenesslevel<br>fair awareness |        | good awareness |        | Total |        |
|--------------------|--------------------|----------------|--------|----------------------------------|--------|----------------|--------|-------|--------|
|                    |                    | N              | %      | N                                | %      | N              | %      | N     | %      |
| educational status | illiterate         | 5              | 9.8%   | 7                                | 11.7%  | 2              | 14.3%  | 14    | 11.2%  |
|                    | can read and write | 13             | 25.5%  | 13                               | 21.7%  | 4              | 28.6%  | 30    | 24.0%  |
|                    | school education   | 12             | 23.5%  | 21                               | 35.0%  | 2              | 14.3%  | 35    | 28.0%  |
|                    | bachelor degree    | 13             | 25.5%  | 13                               | 21.7%  | 3              | 21.4%  | 29    | 23.2%  |
|                    | graduate           | 8              | 15.7%  | 6                                | 10.0%  | 3              | 21.4%  | 17    | 13.6%  |
| Total              |                    | 51             | 100.0% | 60                               | 100.0% | 14             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>4.440<sup>a</sup></b> | <b>8</b> | <b>.815</b>                             |

Table 5.7 shows that is not significant association between variable p value is .815

| Crosstab          |               |                |        |                |        |                |        |       |        |
|-------------------|---------------|----------------|--------|----------------|--------|----------------|--------|-------|--------|
|                   |               | awarenesslevel |        |                |        |                |        | Total |        |
|                   |               | poor awareness |        | fair awareness |        | good awareness |        |       |        |
|                   |               | N              | %      | N              | %      | N              | %      | N     | %      |
| employment status | student       | 4              | 7.8%   | 4              | 6.7%   | 2              | 14.3%  | 10    | 8.0%   |
|                   | employed      | 24             | 47.1%  | 28             | 46.7%  | 4              | 28.6%  | 56    | 44.8%  |
|                   | unemployed    | 6              | 11.8%  | 4              | 6.7%   | 3              | 21.4%  | 13    | 10.4%  |
|                   | retired       | 0              | 0.0%   | 3              | 5.0%   | 0              | 0.0%   | 3     | 2.4%   |
|                   | self employed | 17             | 33.3%  | 21             | 35.0%  | 5              | 35.7%  | 43    | 34.4%  |
| Total             |               | 51             | 100.0% | 60             | 100.0% | 14             | 100.0% | 125   | 100.0% |

**Chi-Square Tests**

|                    | Value              | df | Asymptotic Significance (2-sided) |
|--------------------|--------------------|----|-----------------------------------|
| Pearson Chi-Square | 7.567 <sup>a</sup> | 8  | .477                              |

Table 5.8 shows that there is no significant association between variable p value is .477

#### Knowledge Level

Crosstab

|       |       | knowledgelevel |        |                |        |                |        | Total |        |
|-------|-------|----------------|--------|----------------|--------|----------------|--------|-------|--------|
|       |       | poor knowledge |        | fair knowledge |        | good knowledge |        |       |        |
|       |       | N              | %      | N              | %      | N              | %      | N     | %      |
| age   | 18-34 | 7              | 23.3%  | 36             | 46.2%  | 9              | 52.9%  | 52    | 41.6%  |
|       | 35-44 | 14             | 46.7%  | 16             | 20.5%  | 4              | 23.5%  | 34    | 27.2%  |
|       | 45-64 | 5              | 16.7%  | 23             | 29.5%  | 3              | 17.6%  | 31    | 24.8%  |
|       | >= 65 | 4              | 13.3%  | 3              | 3.8%   | 1              | 5.9%   | 8     | 6.4%   |
| Total |       | 30             | 100.0% | 78             | 100.0% | 17             | 100.0% | 125   | 100.0% |

**Chi-Square Tests**

|                    | Value               | df | Asymptotic Significance (2-sided) |
|--------------------|---------------------|----|-----------------------------------|
| Pearson Chi-Square | 13.764 <sup>a</sup> | 6  | .032                              |

Table 5.9 shows that there is significant association between variables p value is .032

**Crosstab**

|        |        | knowledgelevel |        |                |        |                |        | Total |        |
|--------|--------|----------------|--------|----------------|--------|----------------|--------|-------|--------|
|        |        | poor knowledge |        | fair knowledge |        | good knowledge |        |       |        |
|        |        | N              | %      | N              | %      | N              | %      | N     | %      |
| gender | male   | 19             | 63.3%  | 38             | 48.7%  | 8              | 47.1%  | 65    | 52.0%  |
|        | female | 11             | 36.7%  | 40             | 51.3%  | 9              | 52.9%  | 60    | 48.0%  |
| Total  |        | 30             | 100.0% | 78             | 100.0% | 17             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>2.047<sup>a</sup></b> | <b>2</b> | <b>.359</b>                             |

Table 5.10 shows that there is no significant association between variables p value is .359

**Crosstab**

|                |           | knowledgelevel |        |                |        |                |        | Total |        |
|----------------|-----------|----------------|--------|----------------|--------|----------------|--------|-------|--------|
|                |           | poor knowledge |        | fair knowledge |        | good knowledge |        |       |        |
|                |           | N              | %      | N              | %      | N              | %      | N     | %      |
| marital status | married   | 27             | 90.0%  | 67             | 85.9%  | 16             | 94.1%  | 110   | 88.0%  |
|                | unmarried | 1              | 3.3%   | 4              | 5.1%   | 0              | 0.0%   | 5     | 4.0%   |
|                | widow     | 1              | 3.3%   | 5              | 6.4%   | 0              | 0.0%   | 6     | 4.8%   |
|                | divorced  | 1              | 3.3%   | 2              | 2.6%   | 1              | 5.9%   | 4     | 3.2%   |
| Total          |           | 30             | 100.0% | 78             | 100.0% | 17             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>2.941<sup>a</sup></b> | <b>6</b> | <b>.816</b>                             |

Table 5.11 shows that there is no significance association between variable its p value is .816

**Crosstab**

|                    |                          | knowledgelevel |        |                |        |                |        | Total |        |
|--------------------|--------------------------|----------------|--------|----------------|--------|----------------|--------|-------|--------|
|                    |                          | poor knowledge |        | fair knowledge |        | good knowledge |        |       |        |
|                    |                          | N              | %      | N              | %      | N              | %      | N     | %      |
| educational status | illiterate               | 5              | 16.7%  | 9              | 11.5%  | 0              | 0.0%   | 14    | 11.2%  |
|                    | can read and write       | 3              | 10.0%  | 23             | 29.5%  | 4              | 23.5%  | 30    | 24.0%  |
|                    | school education         | 9              | 30.0%  | 20             | 25.6%  | 6              | 35.3%  | 35    | 28.0%  |
|                    | bachelor degree graduate | 6              | 20.0%  | 18             | 23.1%  | 5              | 29.4%  | 29    | 23.2%  |
|                    | post graduate            | 7              | 23.3%  | 8              | 10.3%  | 2              | 11.8%  | 17    | 13.6%  |
| Total              |                          | 30             | 100.0% | 78             | 100.0% | 17             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>9.852<sup>a</sup></b> | <b>8</b> | <b>.276</b>                             |

Table 5. 12 shows that there is no significant association between variable p value is .276

#### Crosstab

|                    |               | poor knowledge |        | knowledgelevel<br>fair knowledge |        | good knowledge |        | Total |        |
|--------------------|---------------|----------------|--------|----------------------------------|--------|----------------|--------|-------|--------|
|                    |               | N              | %      | N                                | %      | N              | %      | N     | %      |
| emplantment status | student       | 6              | 20.0%  | 3                                | 3.8%   | 1              | 5.9%   | 10    | 8.0%   |
|                    | employed      | 14             | 46.7%  | 35                               | 44.9%  | 7              | 41.2%  | 56    | 44.8%  |
|                    | unemployed    | 3              | 10.0%  | 8                                | 10.3%  | 2              | 11.8%  | 13    | 10.4%  |
|                    | retired       | 1              | 3.3%   | 1                                | 1.3%   | 1              | 5.9%   | 3     | 2.4%   |
|                    | self employed | 6              | 20.0%  | 31                               | 39.7%  | 6              | 35.3%  | 43    | 34.4%  |
| Total              |               | 30             | 100.0% | 78                               | 100.0% | 17             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                     | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|---------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>11.121<sup>a</sup></b> | <b>8</b> | <b>.195</b>                             |

Table 5.13 shows that there is no significant variable between association p value is .195  
**Surgical characteristic**

#### Crosstab

|       |       | poor surgical characteristics |        | level of surgical characteristics<br>fair surgical characteristics |        | good surgical characteristics |        | Total |        |
|-------|-------|-------------------------------|--------|--------------------------------------------------------------------|--------|-------------------------------|--------|-------|--------|
|       |       | N                             | %      | N                                                                  | %      | N                             | %      | N     | %      |
| age   | 18-34 | 19                            | 40.4%  | 32                                                                 | 42.1%  | 1                             | 50.0%  | 52    | 41.6%  |
|       | 35-44 | 16                            | 34.0%  | 17                                                                 | 22.4%  | 1                             | 50.0%  | 34    | 27.2%  |
|       | 45-64 | 10                            | 21.3%  | 21                                                                 | 27.6%  | 0                             | 0.0%   | 31    | 24.8%  |
|       | >= 65 | 2                             | 4.3%   | 6                                                                  | 7.9%   | 0                             | 0.0%   | 8     | 6.4%   |
| Total |       | 47                            | 100.0% | 76                                                                 | 100.0% | 2                             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>3.606<sup>a</sup></b> | <b>6</b> | <b>.730</b>                             |

Table 5.13 shows that there is no significant association between variable p value is .730

### Crosstab

|        |        | level of surgical characteristics |        |                               |        |                               |        | Total |        |
|--------|--------|-----------------------------------|--------|-------------------------------|--------|-------------------------------|--------|-------|--------|
|        |        | poor surgical characteristics     |        | fair surgical characteristics |        | good surgical characteristics |        |       |        |
|        |        | N                                 | %      | N                             | %      | N                             | %      | N     | %      |
| gender | male   | 23                                | 48.9%  | 41                            | 53.9%  | 1                             | 50.0%  | 65    | 52.0%  |
|        | female | 24                                | 51.1%  | 35                            | 46.1%  | 1                             | 50.0%  | 60    | 48.0%  |
| Total  |        | 47                                | 100.0% | 76                            | 100.0% | 2                             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>9.788<sup>a</sup></b> | <b>8</b> | <b>.280</b>                             |

Table 5.14 shows that there is no statistically significant between variable p value is .280

### Crosstab

|                |           | level of surgical characteristics |        |                               |        |                               |        | Total |        |
|----------------|-----------|-----------------------------------|--------|-------------------------------|--------|-------------------------------|--------|-------|--------|
|                |           | poor surgical characteristics     |        | fair surgical characteristics |        | good surgical characteristics |        |       |        |
|                |           | N                                 | %      | N                             | %      | N                             | %      | N     | %      |
| marital status | married   | 43                                | 91.5%  | 66                            | 86.8%  | 1                             | 50.0%  | 110   | 88.0%  |
|                | unmarried | 1                                 | 2.1%   | 4                             | 5.3%   | 0                             | 0.0%   | 5     | 4.0%   |
|                | widow     | 3                                 | 6.4%   | 3                             | 3.9%   | 0                             | 0.0%   | 6     | 4.8%   |
|                | divorced  | 0                                 | 0.0%   | 3                             | 3.9%   | 1                             | 50.0%  | 4     | 3.2%   |
| Total          |           | 47                                | 100.0% | 76                            | 100.0% | 2                             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                     | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|---------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>16.982<sup>a</sup></b> | <b>6</b> | <b>.009</b>                             |

Table 5.15 shows that there is significant association between variable p value is .009

### Crosstab

|                    |                          | level of surgical characteristics |        |                               |        |                               |        | Total |        |
|--------------------|--------------------------|-----------------------------------|--------|-------------------------------|--------|-------------------------------|--------|-------|--------|
|                    |                          | poor surgical characteristics     |        | fair surgical characteristics |        | good surgical characteristics |        |       |        |
|                    |                          | N                                 | %      | N                             | %      | N                             | %      | N     | %      |
| educational status | illiterate               | 5                                 | 10.6%  | 8                             | 10.5%  | 1                             | 50.0%  | 14    | 11.2%  |
|                    | can read and write       | 11                                | 23.4%  | 19                            | 25.0%  | 0                             | 0.0%   | 30    | 24.0%  |
|                    | school education         | 11                                | 23.4%  | 23                            | 30.3%  | 1                             | 50.0%  | 35    | 28.0%  |
|                    | bachelor degree graduate | 12                                | 25.5%  | 17                            | 22.4%  | 0                             | 0.0%   | 29    | 23.2%  |
|                    | post graduate            | 8                                 | 17.0%  | 9                             | 11.8%  | 0                             | 0.0%   | 17    | 13.6%  |
| Total              |                          | 47                                | 100.0% | 76                            | 100.0% | 2                             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>5.536<sup>a</sup></b> | <b>8</b> | <b>.699</b>                             |

Table 5.16 shows that there is no significant association between variable p value is .699

### Crosstab

|                   |               | level of surgical characteristics |        |                               |        |                               |        | Total |        |
|-------------------|---------------|-----------------------------------|--------|-------------------------------|--------|-------------------------------|--------|-------|--------|
|                   |               | poor surgical characteristics     |        | fair surgical characteristics |        | good surgical characteristics |        |       |        |
|                   |               | N                                 | %      | N                             | %      | N                             | %      | N     | %      |
| employment status | student       | 4                                 | 8.5%   | 5                             | 6.6%   | 1                             | 50.0%  | 10    | 8.0%   |
|                   | employed      | 18                                | 38.3%  | 37                            | 48.7%  | 1                             | 50.0%  | 56    | 44.8%  |
|                   | unemployed    | 7                                 | 14.9%  | 6                             | 7.9%   | 0                             | 0.0%   | 13    | 10.4%  |
|                   | retired       | 0                                 | 0.0%   | 3                             | 3.9%   | 0                             | 0.0%   | 3     | 2.4%   |
|                   | self employed | 18                                | 38.3%  | 25                            | 32.9%  | 0                             | 0.0%   | 43    | 34.4%  |
| Total             |               | 47                                | 100.0% | 76                            | 100.0% | 2                             | 100.0% | 125   | 100.0% |

### Chi-Square Tests

|                           | Value                    | df       | Asymptotic<br>Significance<br>(2-sided) |
|---------------------------|--------------------------|----------|-----------------------------------------|
| <b>Pearson Chi-Square</b> | <b>9.788<sup>a</sup></b> | <b>8</b> | <b>.280</b>                             |

Table 5.17 shows that there is no significant association between variable and p value is .280

## 6 DISCUSSION

This current study reveals that Participants in the 18–34 age range showed the highest percentage of reasonable knowledge (46.2%) and good knowledge (52.9%), suggesting that younger participants knew more about SSI than older age groups. On the other hand, only a tiny percentage of participants in all knowledge categories were 65 years of age or older, whereas those between the ages of 35 and 44 had the largest percentage of weak knowledge (46.7%). Age-related differences in knowledge level are suggested by the statistically significant p-value ( $p = 0.032$ ). Patients' awareness of surgical site infection was highly correlated with demographic characteristics, with younger individuals showing greater knowledge than older people. The knowledge level was not significantly correlated with any of the other clinical and demographic factors, such as gender, marital status, education, occupation, location, kind of operation, length of hospital stay, number of prior hospitalizations, and history of SSI (all  $p > 0.05$ ). These findings imply that, although age may affect patients' awareness, all surgical patients should get educational programs to increase their understanding of SSI, with a focus on older persons who might need more specialized health education.

While according to the previous study, 49.1% and 35.2% of the patients had low levels of awareness and knowledge, respectively. These results are consistent with a study carried out in three hospitals in England. It's interesting to note that participants in the current research with a history of SSI had noticeably lower awareness levels, suggesting a lack of a learning curve from previous SSIs. Future research must evaluate this in order to gather information for targeted treatments, as the study was unable to determine whether this was caused by their lack of self-care or ignorance following the first SSI. To the best of our

knowledge, this is the first study from Saudi Arabia to evaluate the knowledge and awareness of surgical patients who are at risk of developing surgical site infections (SSIs). The results of this study serve as a call to action to further raise these patients' awareness and knowledge through patient engagement. (Alaa Mohammed Alsahli et al., 2022)

Current study stated that since all p-values were higher than 0.05, there was no statistically significant correlation between awareness level and any of the variables examined. The majority of participants with good awareness (55.0%) were between the ages of 18 and 34, but the relationship between age and awareness was not statistically significant ( $p = 0.554$ ). Gender did not affect SSI awareness, as evidenced by the similar awareness levels between males and females ( $p = 0.785$ ). Participants' knowledge of surgical site infection was unaffected by their clinical and demographic characteristics. Age, gender, marital status, education level, employment status, region, type of surgery, length of hospital stay, prior admissions, number of admissions, and history of SSI were all found to have no statistically significant correlation with awareness levels (all  $p > 0.05$ ). These findings imply that patient groups' awareness of SSI is generally consistent. Therefore, rather than focusing on particular clinical or demographic subgroups, educational programs meant to increase SSI awareness should be offered to all surgical patients.

Scores on SSI and preventative knowledge increased statistically significantly between the pre-intervention and post-test. The post-test knowledge of risk factors scores were considerably higher than the pre-intervention values. Participants' attitudes about SSI prevention and surveillance were generally positive both before and after the intervention, however there was a noticeable shift. The results show that the complex

intervention had a generally beneficial effect on healthcare workers' knowledge and attitudes on SSI, SSI prevention, and surveillance; however, the degree of improvement varied across the examined categories. (Sinéad Horgan et al.,2022)

### 7.1: CONCLUSION(S)

The study concluded that most patients had **fair awareness and fair knowledge** regarding surgical site infections (SSI), while a considerable proportion still had **poor awareness and knowledge**. Only a small number of patients demonstrated good knowledge and awareness.

### 7.2: RECOMMENDATION(S)

Future research should be carried out on a multiple hospital. Due to the restricted duration of the study or the limited access to the hospitals further complications should be studied.

### 7.3: LIMITATION(S)

- This study area was limited
- The study was conducted in a limited hospitals
- Time duration of this was also minimum

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