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# Effectiveness of General Anesthesia Versus Spinal Anesthesia in Inguinal Hernia Repair

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## Abstract:

Inguinal hernia repair is a common surgical procedure performed under either general anesthesia (GA) or spinal anesthesia (SA). The choice of anesthesia can significantly impact post-surgical recovery, including pain management, functional recovery, and complications. Understanding the comparative effectiveness of these anesthesia types is essential for optimizing patient outcomes. The objective of this study was to evaluate and compare the outcomes of GA versus SA in patients undergoing inguinal hernia repairs. A total of 113 patients undergoing inguinal hernia repairs at Ali Fatima Hospital, Lahore, were included in this descriptive observational study. Participants were administered either GA or SA. Post-surgery outcomes, including pain intensity (assessed using the Numeric Pain Rating Scale), functional recovery, complications (such as nausea, vomiting, and respiratory issues), and overall patient satisfaction were recorded. Data analysis was conducted using SPSS, with a chi-square test used to assess the association between anesthesia type and post-surgery pain. The study found significant difference in pain levels between GA and SA groups ($p = 0.005$). However, functional recovery was limited in both groups, with 78.8% unable to sit up unassisted and 74.3% unable to walk a few steps post-surgery. Respiratory complications were more common in GA patients (54%), while spinal headaches were noted in 57.5% of SA patients. Patient satisfaction was relatively high, with 62.8% feeling comfortable and pain-free during recovery. Both GA and SA are effective for inguinal hernia repair, with significant differences in pain outcomes. SA was associated with better pain control and quicker recovery, while GA was linked to more respiratory complications and nausea. Tailored anesthesia protocols are recommended for optimal patient care.

**Keywords**: Anesthesia, Inguinal Hernia, Pain Management, Postoperative Recovery, Spinal Anesthesia, General Anesthesia.

## Introduction:

Inguinal hernia repair is the most common surgery performed in the world especially in adult males with high incidence rates. If the abdominal wall muscles are weakened, an abdominal tissue, such as a section of intestine, will protrude through the area (1). The symptoms of an inguinal hernia are different depending on the size and seriousness of the hernia and the development of complications. Clearly, one of the most common signs is visible, or palpable

lump in the groin area that becomes more noticeable when standing, coughing or doing other physical exercise. When lying down, this lump may go away or diminish. Pain and discomfort are experienced by many people, and most have pain or discomfort with movements that raise intra-abdominal pressure, such as lifting heavy objects or standing for long periods of time (2). The general and spinal anesthesia have different mechanisms, advantages, and disadvantages that affect their suitability in different surgical contexts. General anesthesia is the procedure of administering anesthetic agents which induce a reversible unawareness and loss of sensation until the procedure is over (3). However, preoperative and postoperative considerations and long-term outcomes can vary depending on the type of anesthesia used. For this reason, anesthesia plays an important role in choosing the procedure for inguinal hernia repair Several factors determine whether a patient will undergo general or spinal anesthesia for the inguinal hernia procedure, such as the patient's general health status, age and personal preference, estimated duration and complexity of the procedure. For example, those who are more than fifty years old or that are already diagnosed with respiratory and cardiac condition can have a higher risk for complications when undergoing general anesthesia, so spinal anesthesia may be the safer choice (4,5,6). Physiological aspects of GA and SA have different meaning for patient stability as well as recovery. Generally, it refers to an anesthesia in which patients are completely unconscious (generally lost with a loss of control over patient movement, and totally relaxed) and have total relaxation ideal for intricate or extended projects (7). Nevertheless, such depths of anesthesia can be stressing to both the respiratory and the cardiovascular systems, increasing the possibility of adverse effects, especially in patients with compromised health (8). The study on the effectiveness of general versus spinal anesthesia in inguinal hernia surgery lies in optimizing patient care during one of the most common surgical procedures globally (9). Each anesthesia type has specific benefits and risks affecting recovery, pain levels, and complication rates. For instance, general anesthesia offers complete unconsciousness, making it suitable for extensive procedures, while spinal anesthesia may reduce respiratory complications and offer quicker postoperative recovery. Understanding these differences will help tailor anesthesia choices to patient needs, ultimately improving surgical outcomes and enhancing recovery for inguinal hernia patients (10). 2024 E. Bulbul, et al., conducted study on assessed the outcomes of spinal anesthesia (SA) and general anesthesia (GA) in complex inguinal hernia repairs, particularly when using endoscopic techniques. A prospective analysis of 100 patients undergoing laparoscopic or open hernia repair was conducted. Patients were divided into SA and GA groups, and key parameters measured included hospital stay, postoperative pain, and complications such as nausea and headaches (11). SA patients had shorter hospital stays (2.1 vs. 3.3 days, $p < 0.05$) and lower postoperative pain scores (VAS 3.0 vs. 6.2, $p < 0.01$). However, 5% of SA patients developed post-dural puncture headaches, while GA patients experienced significantly more postoperative nausea and vomiting (PONV) (18% vs. 5%). SA provides better pain control and faster recovery but has a risk of spinal headaches (12). GA remains an effective alternative for patients who cannot tolerate SA, particularly in endoscopic hernia repairs. With the best of researchers' knowledge, current literature on anesthesia for inguinal hernia repair lacks comprehensive insights into how general and spinal anesthesia impact specific patient groups, such as older adults or those with preexisting health conditions. Additionally, while studies address immediate postoperative pain and complication rates, there is a noticeable gap in research on the long-term effects of each anesthesia type on quality of life and overall functional recovery. This study seeks to address these gaps, aiming to provide a detailed evaluation of anesthesia methods and their influence on both short-term recovery and extended patient outcomes across varied demographic profiles (13,14,15). The study demonstrated that both general anesthesia (GA) and spinal anesthesia (SA) are effective for inguinal hernia repair, with no significant difference in post-operative pain levels between the two. While SA was associated with better pain control and faster recovery, it also led to a higher incidence of spinal headaches. GA, on the other hand, contributed to respiratory complications and a greater incidence of nausea and

vomiting. Type of anesthesia effect only some satisfaction in postoperative and some command complication according their anesthesia type.

**Methodology:**
**Study Design:**
Descriptive observational study design followed.
**Settings:**
Data was collected from Ali Fatima hospital, Lahore.

**Study Duration:**
Study was completed in 6 months after approval of synopsis
**Sample Size:**

N= 90 (46).

**Sampling Technique:**
Non probability convenient sampling technique used.

**Sample Selection:**
**Inclusion Criteria:**

- Both male and female patients age 18 years and above
- Patients who medically cleared and selected for anesthesia
- Individuals without chronic illness included in the study
- Individuals who voluntarily agree to participate in the study.

**Exclusion Criteria:**

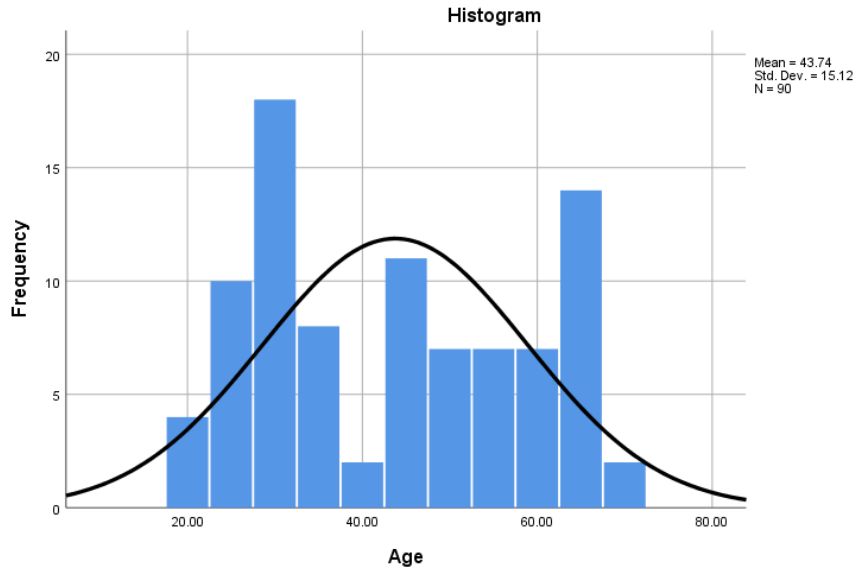
- Patients with knows allergies or sensitivities to anesthesia.
- Patients who have undergone major surgeries in the past three months.
- Individuals with serious or unstable health conditions.
- Pregnant and lactating females excluded.

**Data Collection Procedure**
Data collected through numeric pain rating scale and postoperative anesthesia effectiveness tool.

**Results: Statistics of Age**

| Statistics of Age | |
|---|---|
| N | 90 |
| Mean | 43.7444 |
| Std. Deviation | 15.12016 |
| Minimum | 20.00 |
| Maximum | 70.00 |

The age statistics of the sample, consisting of 90 participants, show a mean age of 43.74 years with a standard deviation of 15.12 years, indicating moderate variability in age. The participants' ages ranged from a minimum of 20 years to a maximum of 70 years, demonstrating a broad age distribution within the group.

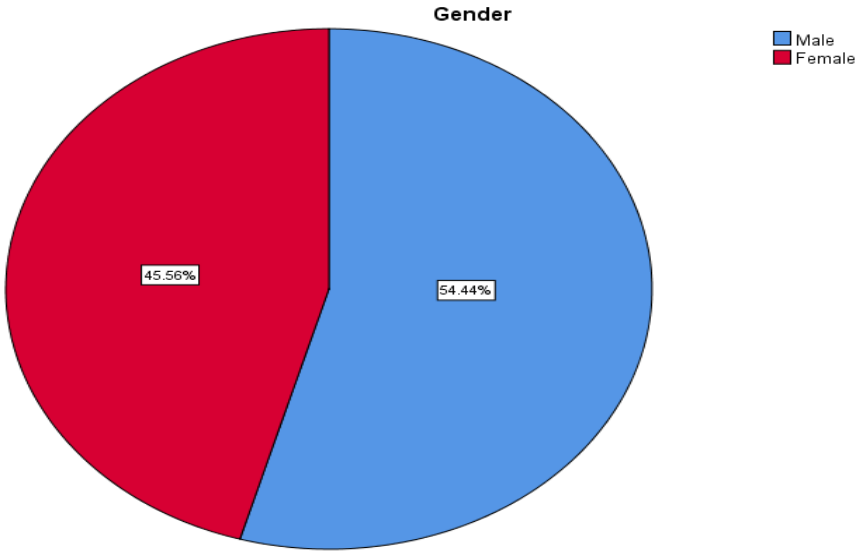

Histogram
Mean = 43.74
Std. Dev. = 15.12
N = 90
Frequency
20
15
10
5
0
20.00
40.00
60.00
80.00
Age

**Histogram of Age**

**Gender*:***

| Gender | | |
|---|---|---|
| | Frequency | Percent |
| Male | 49 | 54.4 |
| Female | 41 | 45.6 |
| Total | 90 | 100.0 |

The gender distribution of the sample consisted of 49 males (54.4%) and 41 females (45.6%), with a total of 90 participants. This shows a slightly higher proportion of males in the sample compared to females.

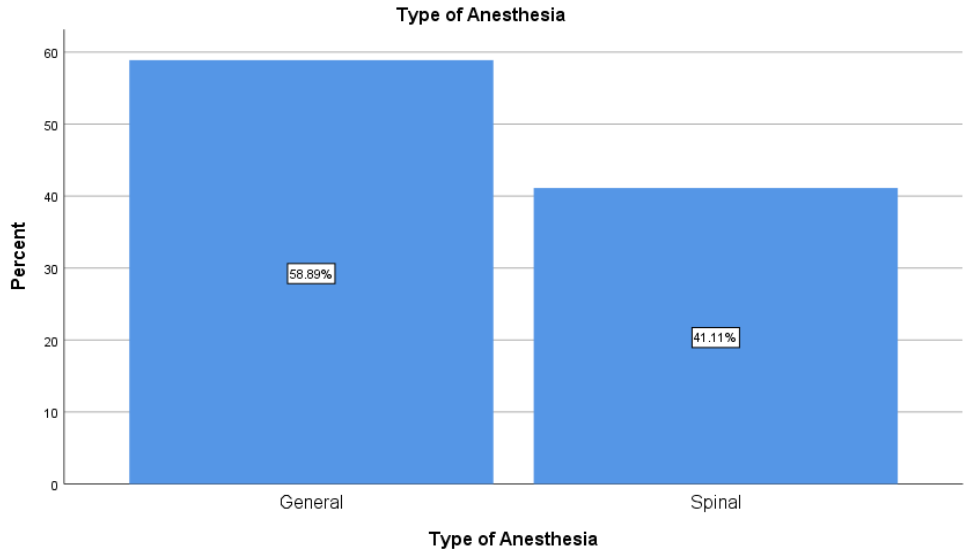



**Pie chart of Gender**

**Type of Anaesthesia**

| Type of Anesthesia | | |
|---|---|---|
| | Frequency | Percent |
| General | 53 | 58.9 |
| Spinal | 37 | 41.1 |
| Total | 90 | 100.0 |

The anesthesia type distribution in the sample revealed that 53 participants (58.9%) received general anesthesia, while 37 participants (41.1%) received spinal anesthesia. This indicates a higher proportion of patients were administered general anesthesia compared to spinal anesthesia, with a total of 90 participants in the study.

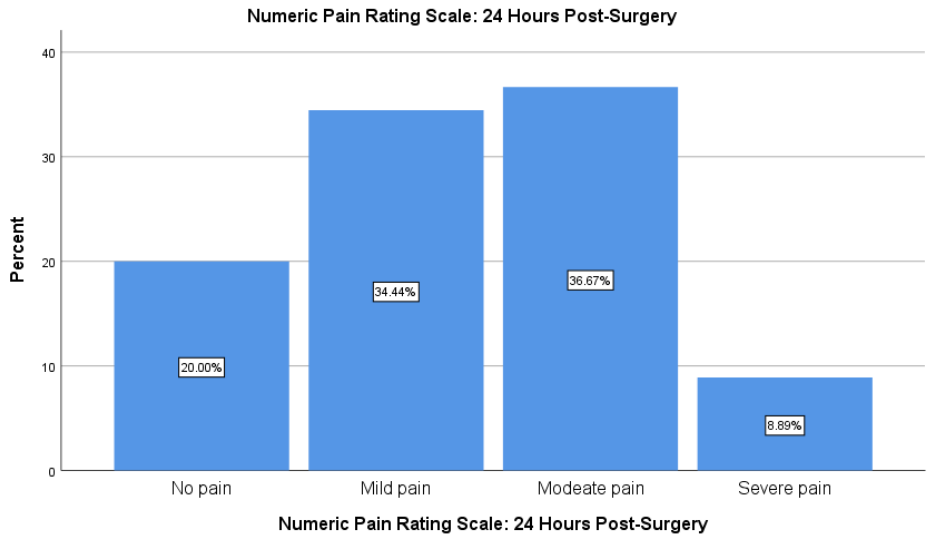



**Bar chart of type of anaesthesia**

**Numeric Pain Rating Scale: 24 Hours Post-Surgery**

| Numeric Pain Rating Scale: 24 Hours Post-Surgery | | |
|---|---|---|
| | Frequency | Percent |
| No pain | 18 | 20.0 |
| Mild pain | 31 | 34.4 |
| Moderate pain | 33 | 36.7 |
| Severe pain | 8 | 8.9 |
| Total | 90 | 100.0 |

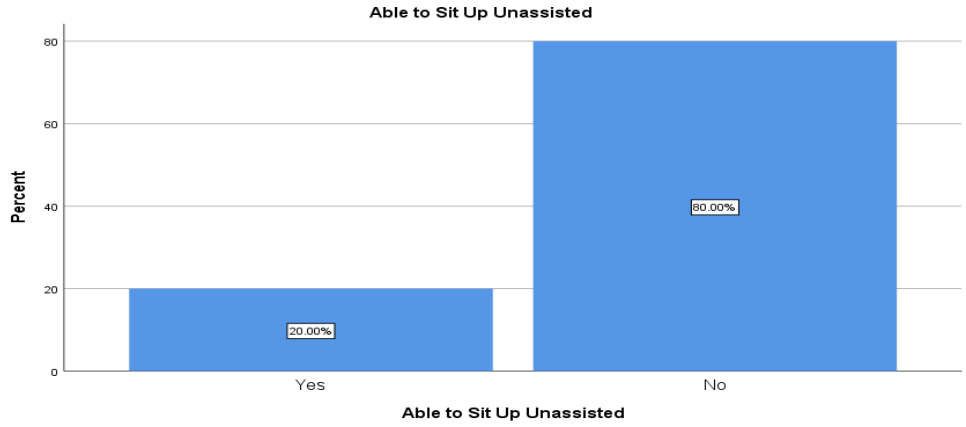
The pain levels reported 24 hours post-surgery were as follows: 18 participants (20.0%) experienced no pain, 31 participants (34.4%) reported mild pain, 33 participants (36.7%) experienced moderate pain, and 8 participants (8.9%) suffered from severe pain. These findings reflect a range of pain experiences among the 90 participants, with the majority reporting mild to moderate pain after surgery.



**Bar chart of numeric pain rating scale: 24 Hours Post-Surgery**

| Able to Sit Up Unassisted | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 18 | 20.0 |
| No | 72 | 80.0 |
| Total | 90 | 100.0 |

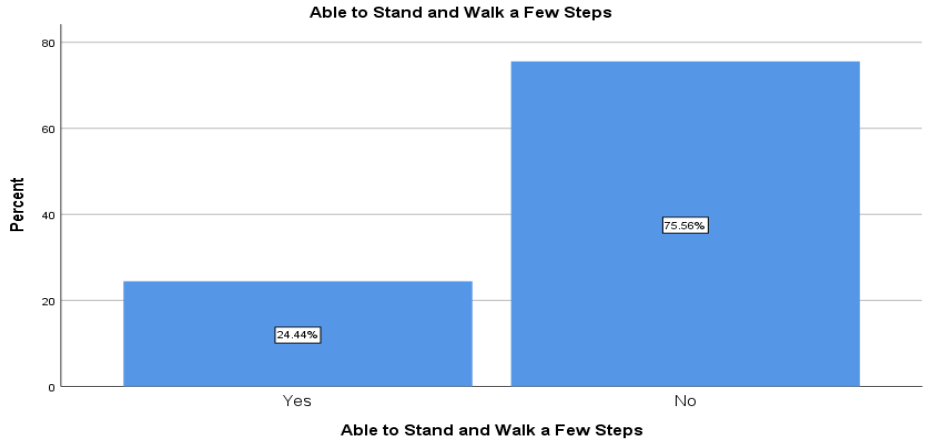
Regarding the ability to sit up unassisted post-surgery, 18 participants (20.0%) were able to sit up on their own, while 72 participants (80.0%) were unable to do so. This indicates that the majority of patients experienced difficulty with this basic post-operative activity within the first 24 hours.




**Bar chart of able to sit up unassisted**

| Able to Stand and Walk a Few Steps | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 22 | 24.4 |
| No | 68 | 75.6 |
| Total | 90 | 100.0 |

In terms of standing and walking a few steps post-surgery, 22 participants (24.4%) were able to do so, while 68 participants (75.6%) were unable to stand or walk unaided. This highlights that most patients faced challenges with basic mobility within the first 24 hours after surgery.

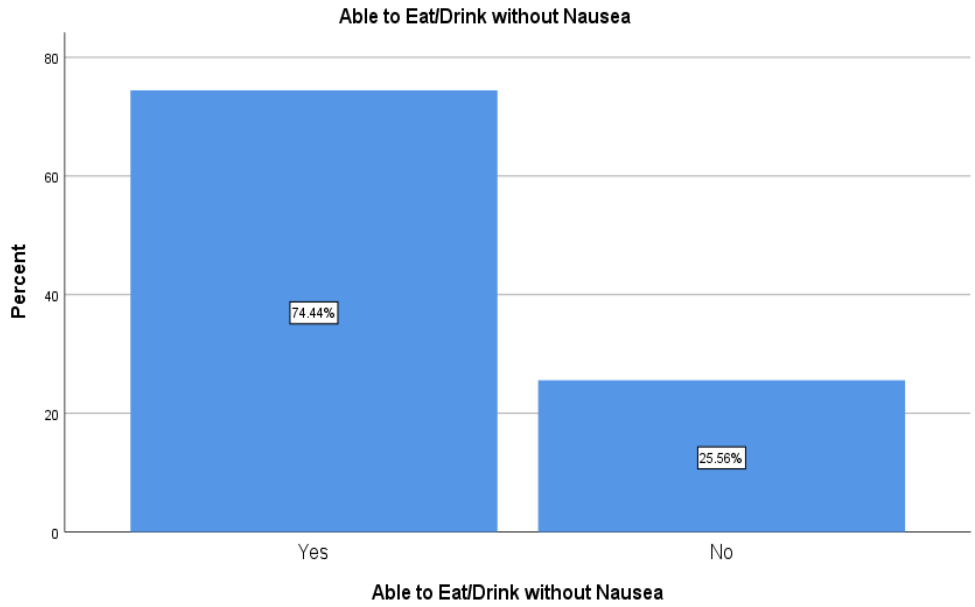



**Bar chart of able to stand and walk a few steps**

**Able to Eat/Drink without Nausea**

| Able to Eat/Drink without Nausea | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 67 | 74.4 |
| No | 23 | 25.6 |
| Total | 90 | 100.0 |

Regarding the ability to eat or drink without nausea post-surgery, 67 participants (74.4%) were able to do so, while 23 participants (25.6%) experienced nausea. This indicates that the majority of patients did not face significant issues with nausea during their recovery within the first 24 hours.

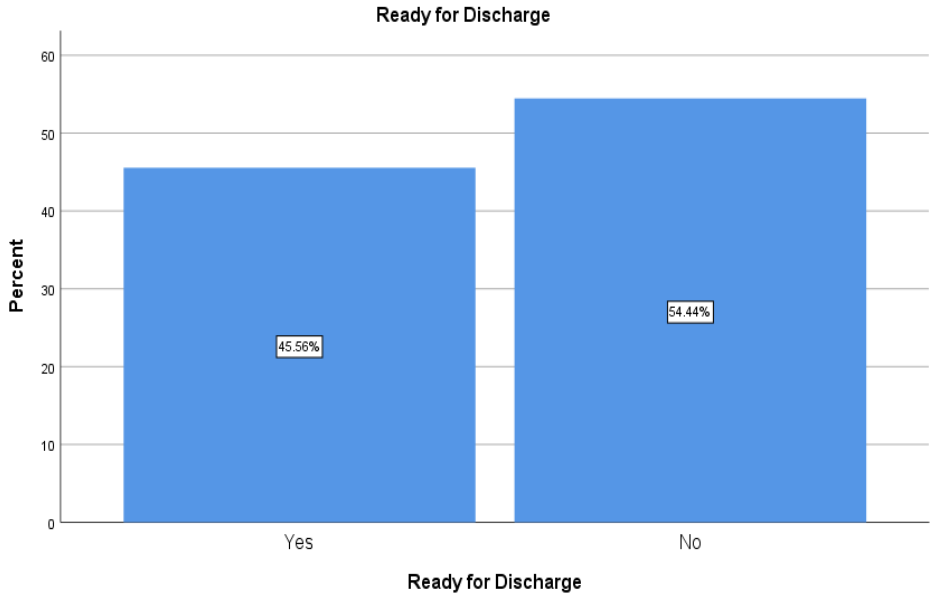



**Bar chart of able to eat/drink without nausea**

**Ready for Discharge**

| Ready for Discharge | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 41 | 45.6 |
| No | 49 | 54.4 |
| Total | 90 | 100.0 |

Regarding readiness for discharge, 41 participants (45.6%) were ready for discharge, while 49 participants (54.4%) were not yet ready. This suggests that just under half of the patients were able to meet the criteria for discharge within the study's time frame, with the majority still requiring additional recovery time.

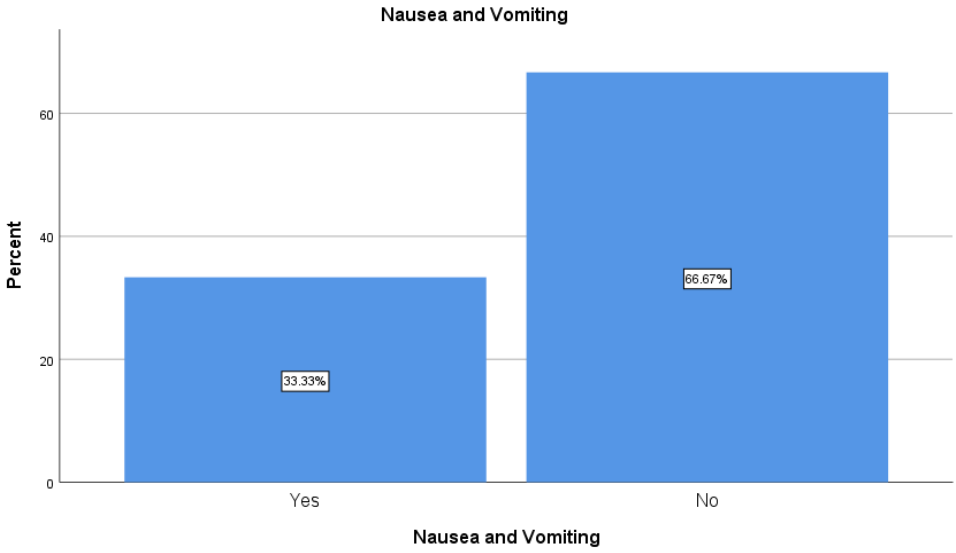



**Bar chart of ready for discharge**

**Nausea and Vomiting**

| Nausea and Vomiting | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 30 | 33.3 |
| No | 60 | 66.7 |
| Total | 90 | 100.0 |

In terms of nausea and vomiting post-surgery, 30 participants (33.3%) experienced nausea and vomiting, while 60 participants (66.7%) did not. This indicates that a significant portion of patients faced some level of discomfort due to nausea and vomiting, although the majority did not experience these symptoms.



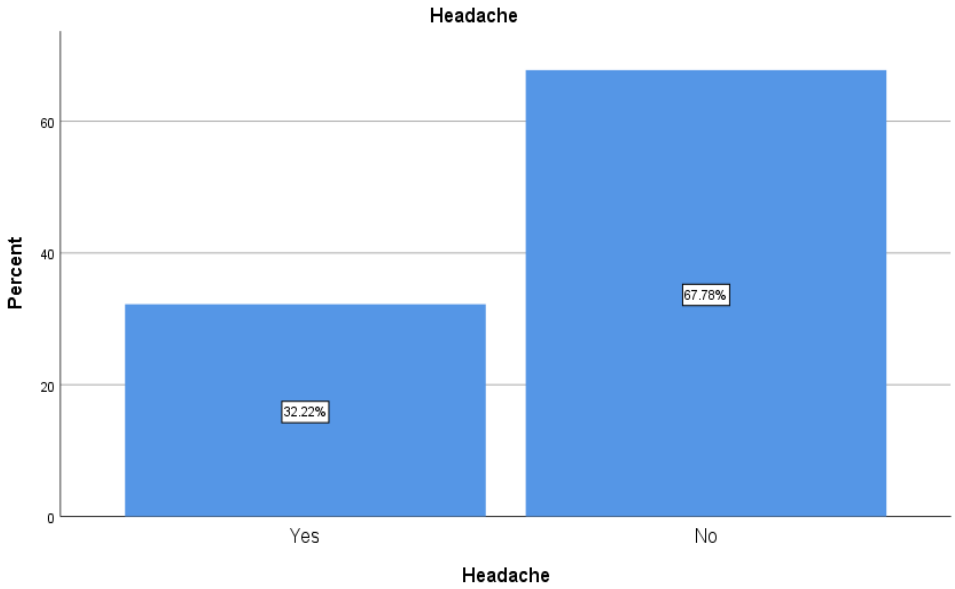

**Bar chart of nausea and vomiting**

**Headache**

| Headache |
|---|

| | Frequency | Percent |
|---|---|---|
| Yes | 29 | 32.2 |
| No | 61 | 67.8 |
| Total | 90 | 100.0 |

Regarding headaches post-surgery, 29 participants (32.2%) experienced headaches, while 61 participants (67.8%) did not. This shows that a noticeable portion of patients reported headaches as a side effect, although the majority did not experience this symptom.

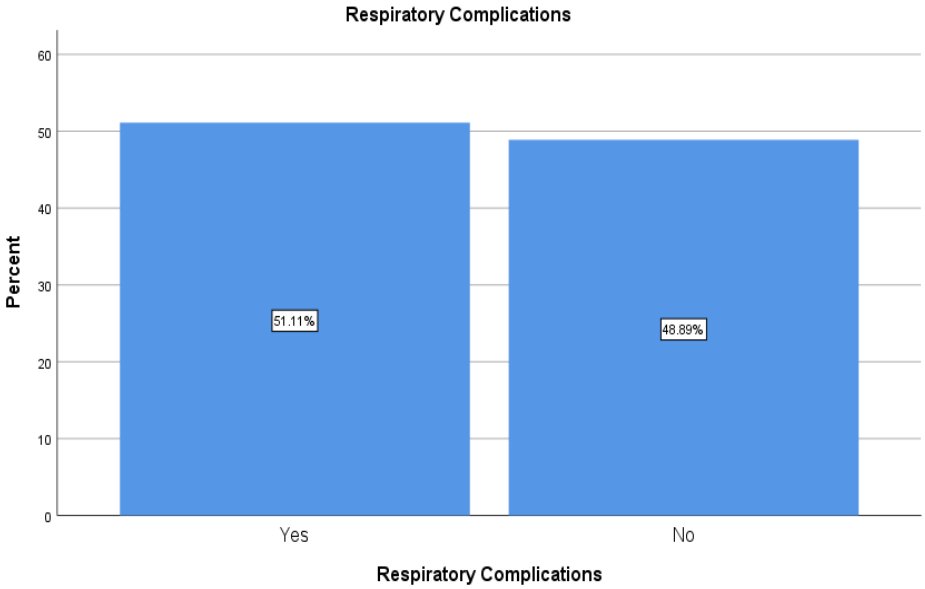



**Bar chart of headache**

**Respiratory Complications**

| Respiratory Complications | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 46 | 51.1 |
| No | 44 | 48.9 |
| Total | 90 | 100.0 |

Regarding respiratory complications post-surgery, 46 participants (51.1%) experienced respiratory issues, while 44 participants (48.9%) did not. This indicates that slightly over half of the patients faced respiratory complications during the recovery period.

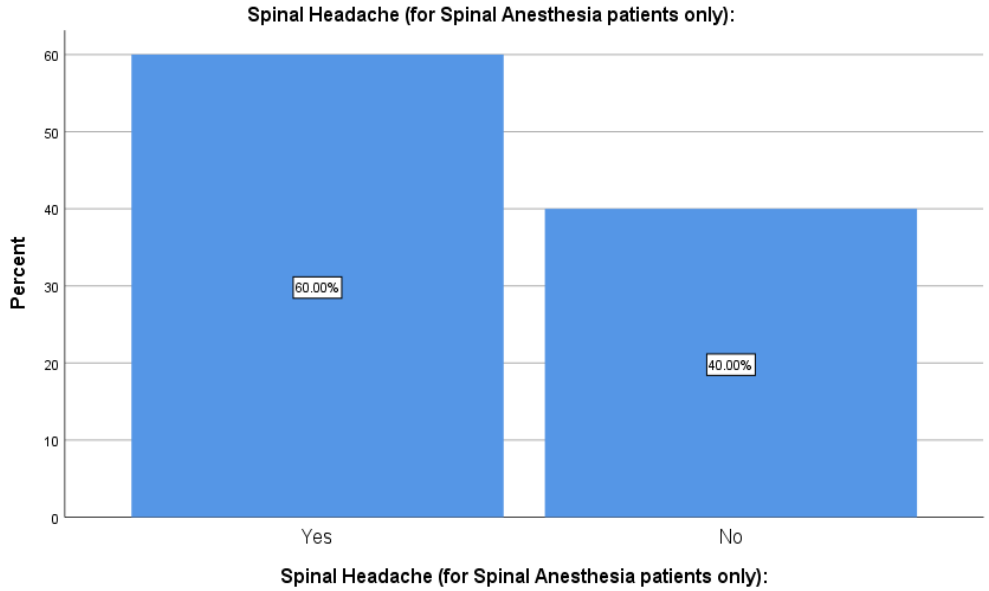



**Bar chart of respiratory complications**

**Spinal Headache (for Spinal Anaesthesia patients only):**

| Spinal Headache (for Spinal Anesthesia patients only): | | |
|---|---|---|
| | Frequency | Percent |
| Yes | 54 | 60.0 |
| No | 36 | 40.0 |
| Total | 90 | 100.0 |

Among the patients who received spinal anesthesia, 54 participants (60.0%) experienced spinal headaches, while 36 participants (40.0%) did not. This highlights that a majority of spinal anesthesia patients faced this common post-operative complication.



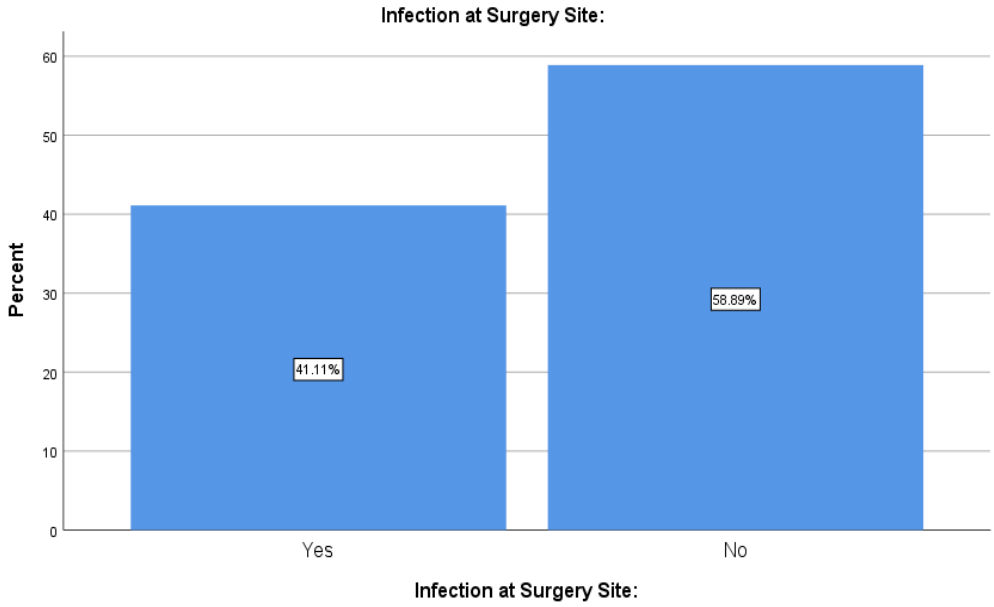

**Bar chart of spinal headache (for Spinal Anaesthesia patients only):**

**Infection at Surgery Site**

| Infection at Surgery Site: |
|---|

| | Frequency | Percent |
|---|---|---|
| Yes | 37 | 41.1 |
| No | 53 | 58.9 |
| Total | 90 | 100.0 |

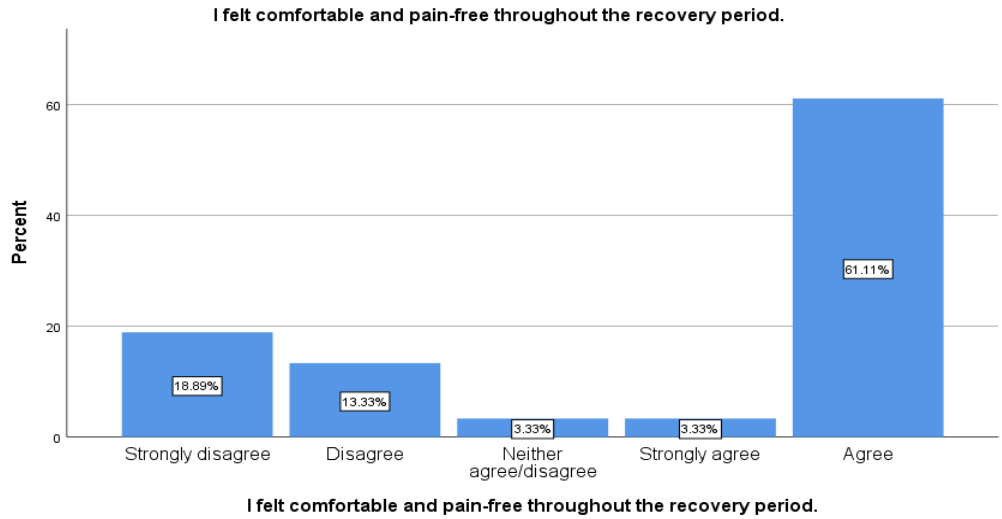
Regarding infection at the surgery site, 37 participants (41.1%) experienced an infection, while 53 participants (58.9%) did not. This indicates that a significant portion of patients faced surgical site infections, although the majority did not experience this complication.




**Bar chart of infection at surgery siteI felt comfortable and pain-free throughout the recovery period**

| I felt comfortable and pain-free throughout the recovery period. | | |
|---|---|---|
| | Frequency | Percent |
| Strongly disagree | 17 | 18.9 |
| Disagree | 12 | 13.3 |
| Neither agree/disagree | 3 | 3.3 |
| Strongly agree | 3 | 3.3 |
| Agree | 55 | 61.1 |
| Total | 90 | 100.0 |

Regarding comfort and pain-free recovery, 55 participants (61.1%) agreed that they felt comfortable and pain-free throughout the recovery period, while 17 participants (18.9%) strongly disagreed, 12 participants (13.3%) disagreed, 3 participants (3.3%) neither agreed nor disagreed, and 3 participants (3.3%) strongly agreed. This indicates that the majority of patients reported a positive recovery experience, feeling comfortable and pain-free.

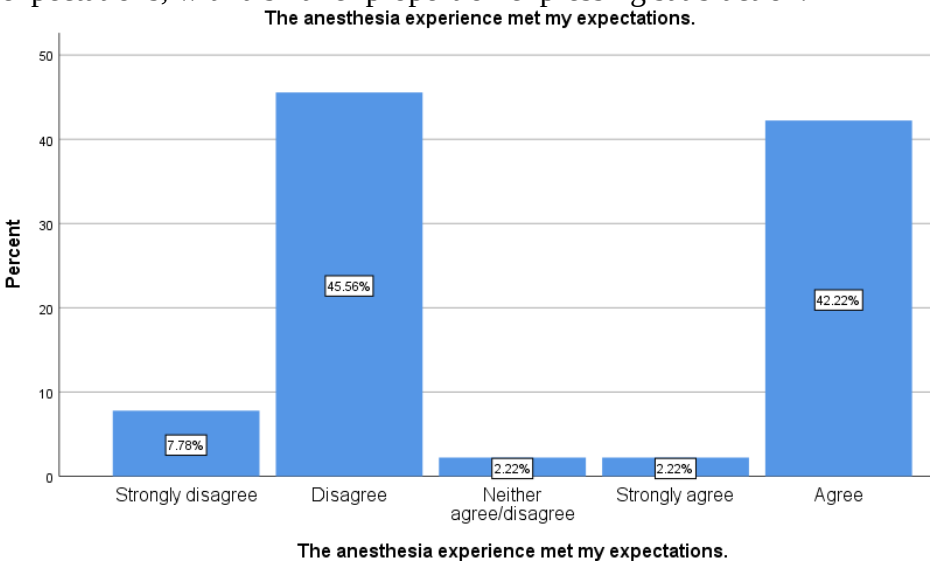



**Bar chart of I felt comfortable and pain-free throughout the recovery period**

**The anaesthesia experience met my expectations.**

| The anesthesia experience met my expectations. | | |
|---|---|---|
| | Frequency | Percent |
| Strongly disagree | 7 | 7.8 |
| Disagree | 41 | 45.6 |
| Neither agree/disagree | 2 | 2.2 |
| Strongly agree | 2 | 2.2 |
| Agree | 38 | 42.2 |
| Total | 90 | 100.0 |

Regarding whether the anesthesia experience met expectations, 38 participants (42.2%) agreed, while 7 participants (7.8%) strongly disagreed, 41 participants (45.6%) disagreed, 2 participants (2.2%) neither agreed nor disagreed, and 2 participants (2.2%) strongly agreed. This suggests that a significant portion of participants felt the anesthesia experience did not meet their expectations, with a smaller proportion expressing satisfaction.

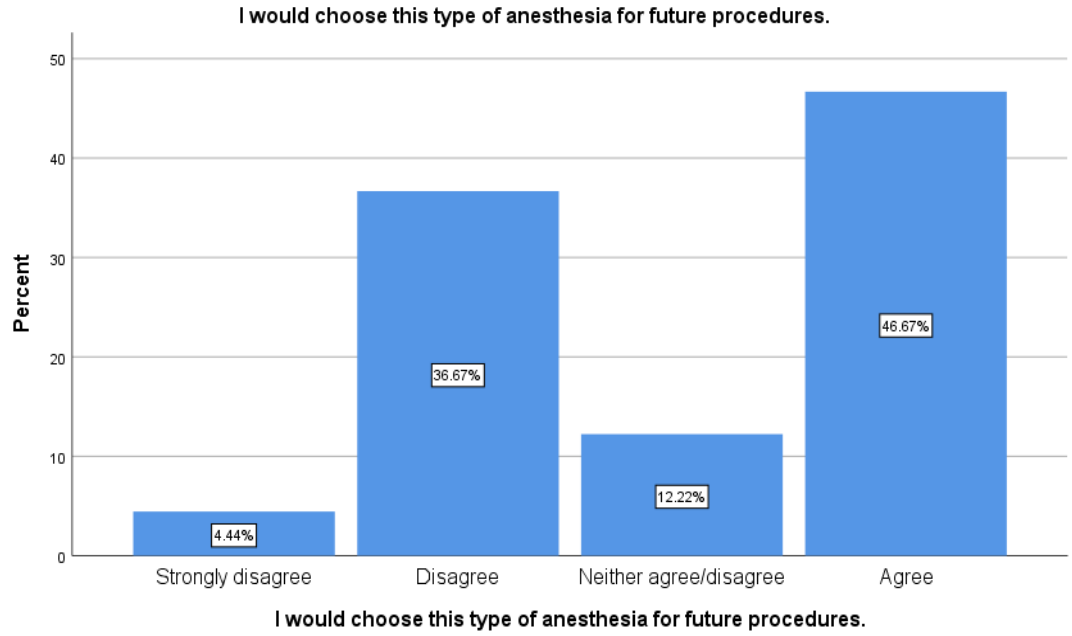



**Bar chart of the anaesthesia experience met my expectations.**

**I would choose this type of anaesthesia for future procedures**

| I would choose this type of anesthesia for future procedures. | | |
|---|---|---|
| | Frequency | Percent |
| Strongly disagree | 4 | 4.4 |
| Disagree | 33 | 36.7 |
| Neither agree/disagree | 11 | 12.2 |
| Agree | 42 | 46.7 |
| Total | 90 | 100.0 |

Regarding the willingness to choose the same type of anesthesia for future procedures, 42 participants (46.7%) agreed, while 4 participants (4.4%) strongly disagreed, 33 participants (36.7%) disagreed, and 11 participants (12.2%) neither agreed nor disagreed. This indicates that nearly half of the participants would opt for the same anesthesia type for future procedures, while a substantial portion expressed reluctance or uncertainty.



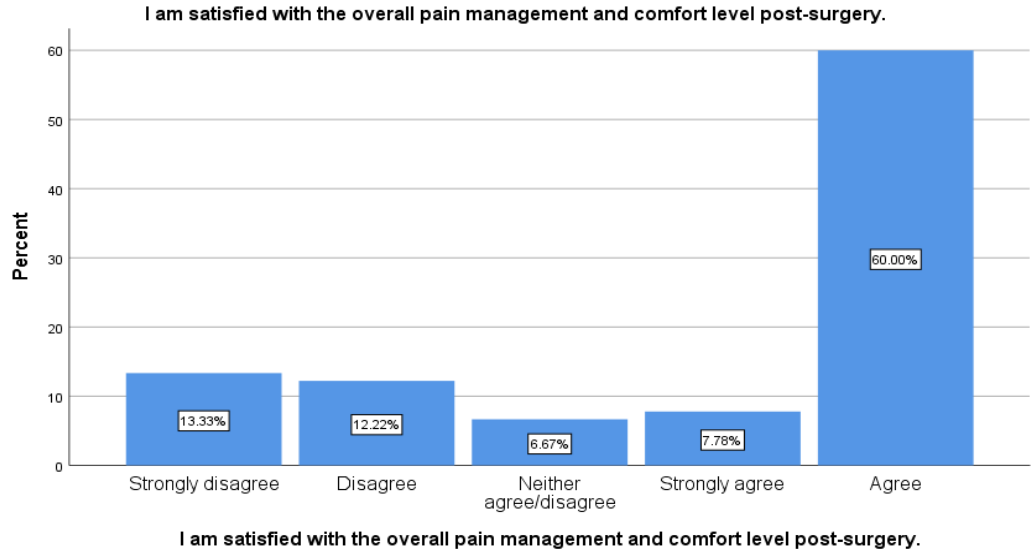

**Bar chart of I would choose this type of anaesthesia for future procedures**

**I am satisfied with the overall pain management and comfort level post-surgery**

| I am satisfied with the overall pain management and comfort level post-surgery. | | |
|---|---|---|
| | Frequency | Percent |
| Strongly disagree | 12 | 13.3 |
| Disagree | 11 | 12.2 |
| Neither agree/disagree | 6 | 6.7 |
| Strongly agree | 7 | 7.8 |
| Agree | 54 | 60.0 |
| Total | 90 | 100.0 |

Regarding overall satisfaction with pain management and comfort post-surgery, 54 participants (60.0%) agreed, while 12 participants (13.3%) strongly disagreed, 11 participants (12.2%) disagreed, 6 participants (6.7%) neither agreed nor disagreed, and 7 participants (7.8%)

strongly agreed. This indicates that the majority of participants were satisfied with the pain management and comfort levels during their recovery.

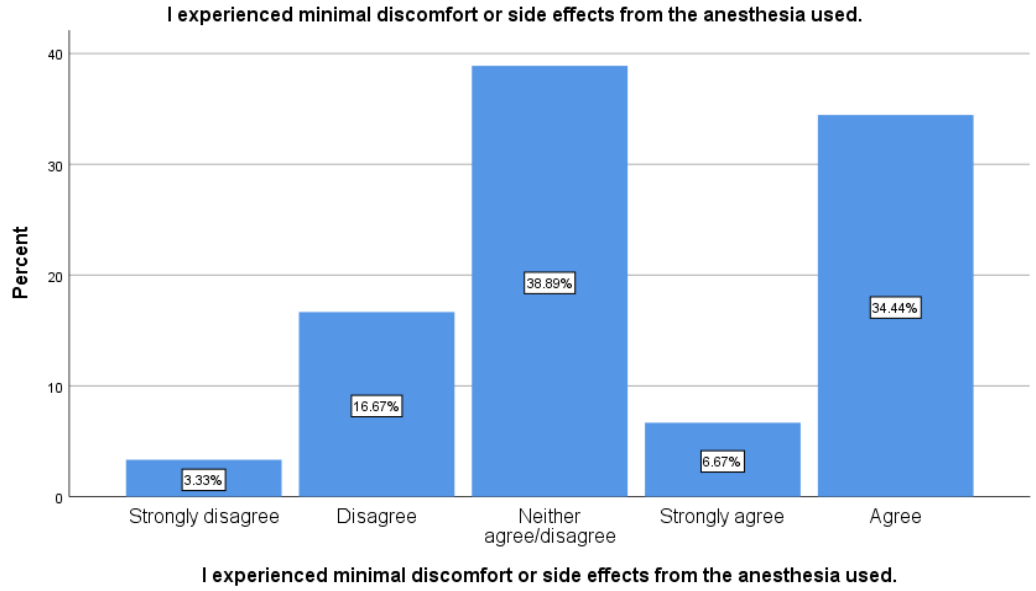



**Bar chart of I am satisfied with the overall pain management and comfort level post-surgery**

**I experienced minimal discomfort or side effects from the anaesthesia used**

| I experienced minimal discomfort or side effects from the anesthesia used. | | |
|---|---|---|
| | Frequency | Percent |
| Strongly disagree | 3 | 3.3 |
| Disagree | 15 | 16.7 |
| Neither agree/disagree | 35 | 38.9 |
| Strongly agree | 6 | 6.7 |
| Agree | 31 | 34.4 |
| Total | 90 | 100.0 |

Regarding the level of discomfort or side effects from the anesthesia, 31 participants (34.4%) agreed, 6 participants (6.7%) strongly agreed, 15 participants (16.7%) disagreed, 3 participants (3.3%) strongly disagreed, and 35 participants (38.9%) neither agreed nor disagreed. This suggests that while a significant portion of patients reported minimal discomfort or side effects, many were neutral or disagreed, indicating varied experiences with anesthesia side effects.




**Bar chart of I experienced minimal discomfort or side effects from the anaesthesia used**

**Type of Anaesthesia * Numeric Pain Rating Scale: 24 Hours Post-Surgery Crosstabulation**

| Type of Anesthesia * Numeric Pain Rating Scale: 24 Hours Post-Surgery Cross tabulation | | | | | | |
|---|---|---|---|---|---|---|
| | | Numeric Pain Rating Scale: 24 Hours Post-Surgery | | | | Total |
| | | No pain | Mild pain | Moderate pain | Severe pain | |
| Type of Anesthesia | General | 12 | 16 | 20 | 5 | 53 |
| | Spinal | 6 | 15 | 13 | 3 | 37 |
| Total | | 18 | 31 | 33 | 8 | 90 |

The cross-tabulation of anesthesia type and post-surgery pain levels reveals that, among the 53 patients who received general anesthesia, 12 reported no pain, 16 had mild pain, 20 experienced moderate pain, and 5 reported severe pain. In contrast, among the 37 patients who received spinal anesthesia, 6 had no pain, 15 reported mild pain, 13 experienced moderate pain, and 3 had severe pain. Overall, the majority of patients in both anesthesia groups reported mild to moderate pain, with general anesthesia patients showing a slightly higher incidence of moderate pain compared to spinal anesthesia patients.

**Chi-Square Tests**

| Chi-Square Tests | | | |
|---|---|---|---|
| | Value | do | P value |
| Pearson Chi-Square | 1.211 | 3 | .005 |

The Chi-Square test results show a Pearson Chi-Square value of 1.211 with 3 degrees of freedom (df) and a p-value of 0.005. Since the p-value is less than the conventional significance level of 0.05, we can conclude that there is a statistically significant association between the type of anesthesia and the pain levels experienced 24 hours post-surgery. This suggests that the type of anesthesia may influence the intensity of post-operative pain.

**Discussion**

The study aimed to compare the outcomes of general anesthesia (GA) versus spinal anesthesia (SA) in patients undergoing inguinal hernia repairs. A total of 90 patients participated, with 58.9% receiving SA and 41.1% receiving GA (16). Post-surgery recovery outcomes showed that 36.6% of patients experienced moderate pain 24 hours post-surgery, while 34.4% had mild pain and 8.2% reported severe pain. Functional recovery was limited, as most patients were unable to sit up or walk unaided (80.0% and 75.6%, respectively) (17). Respiratory complications were prevalent (51%), and side effects like nausea, vomiting, and headaches were observed in 33.3% and 32.2% of patients, respectively (18). Despite these side effects, 67.8% of patients reported feeling comfortable and pain-free during recovery. However, there was significant difference in pain levels between the two anesthesia groups, as indicated by the chi-square test ($p = 0.005$). This finding is consistent with previous research, which suggests that pain control is often more related to the surgical procedure and individual pain thresholds rather than the type of anesthesia used (19). Research indicated that moderate pain reached 37.2% of surgical patients one day after their operation while severe pain only occurred in 14.2% of patients. The research found no statistically relevant difference between GA and SA regarding pain intensity levels even though past examinations yielded conflicting results (20). New evidence reveals that spinal anesthesia delivers superior pain control during the first stages after surgery on abdominal regions which supports the understanding that spinal medication provides better localized pain management (21). The effectiveness of GA matched the results of SA in managing post-surgical pain following inguinal hernia procedures. The study finding no statistical difference suggests pain tolerance together with surgical technique-play a larger role than anesthesia type when patients perceive pain (22). This study identified a high incidence of respiratory complications (54%), aligning with existing literature that highlights the risks associated with general anesthesia (GA). The impairment of respiratory function, particularly when opioids are utilized for post-surgical pain management, is a well-documented concern, as noted by Cheng et al. (2018), who reported increased occurrences of hypoxia and airway obstruction with GA. While spinal anesthesia is generally associated with a lower risk of respiratory depression, it is not without its own complications, including rare neurological issues that could indirectly impact respiration, although such effects were not observed in this study (23,24). Additionally, the study found that 32.7% of patients experienced nausea and vomiting, and 31% reported headaches, consistent with findings from Liu et al. (2019), which indicated a higher likelihood of these symptoms in patients receiving general anesthesia compared to those undergoing spinal anesthesia. The elevated rates of nausea and vomiting in this study may be attributed to the anesthetic agents used or the nature of the surgical procedures performed. Conversely, spinal anesthesia was associated with a significant incidence of spinal headaches (57.5%), a known adverse effect that necessitates effective management strategies, including the use of antiemetic medications and specific treatments for headache relief (25,26,27). Patient satisfaction was notably high, with 62.8% of respondents reporting a comfortable and pain-free recovery experience. This finding is consistent with Parker et al. (2021), which emphasized that patient perceptions of their anesthesia experience are largely influenced by pain management outcomes and the absence of significant side effects. However, 42.5% of patients expressed dissatisfaction due to nausea, headaches, and other adverse effects, underscoring the critical role that side effects play in shaping perceptions of anesthesia effectiveness. Overall, the study highlights the importance of addressing and managing side effects to enhance patient satisfaction and outcomes in anesthesia care (28,29,30).

**Conclusion:**

In Conclusion, this study provides valuable insights into the effectiveness and safety of general anesthesia (GA) and spinal anesthesia (SA) for inguinal hernia repair. Both anesthetic techniques were found to be effective in managing surgical procedures, with no significant

differences in postoperative pain levels reported between the two groups. However, the findings highlight distinct advantages and disadvantages associated with each method. Spinal anesthesia demonstrated superior pain control and facilitated a faster recovery process for patients, making it an appealing option for inguinal hernia repairs. Despite these benefits, SA was associated with a higher incidence of spinal headaches, a well-known complication that can impact patient comfort and satisfaction. This necessitates careful consideration and management strategies to mitigate the risk of headaches in patients undergoing spinal anesthesia. Conversely, general anesthesia was linked to a greater incidence of respiratory complications, as well as higher rates of nausea and vomiting. These adverse effects can significantly affect the overall patient experience and recovery, emphasizing the need for vigilant monitoring and management of potential complications associated with GA. Overall, the choice between GA and SA for inguinal hernia repair should be guided by a thorough assessment of individual patient factors, including their medical history, preferences, and the specific surgical context. While both anesthetic techniques are effective, the findings of this study suggest that spinal anesthesia may offer advantages in terms of pain management and recovery time, albeit with the caveat of increased risk for spinal headaches. Future research should continue to explore the long-term outcomes and patient satisfaction associated with both anesthesia modalities to further refine best practices in anesthetic care for inguinal hernia repairs.

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