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Determinants of Prolonged Hospitalisation following Emergency Laparotomy in the Buea and Limbe Regional Hospitals in Cameroon

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1. Abstract

1.1. Background

Prolonged hospitalization following emergency laparotomy (EL) poses a significant burden on patients and healthcare systems in low-resource settings. Identifying the determinants of length of stay (LOS) is crucial for improving surgical outcomes and resource allocation. This study aimed to investigate the factors associated with prolonged LOS after EL in two regional hospitals in Cameroon.

1.2. Methods

A retrospective cohort study was conducted, reviewing records of 347 patients who underwent EL at the Buea and Limbe Regional Hospitals from 2015 to 2020. Data on demographics, preoperative, intraoperative, and postoperative factors were collected. LOS was calculated from surgery to discharge. Statistical analyses, including ANOVA and t-tests, were used to identify determinants of LOS.

1.3. Results

The mean LOS was 9.36 days (median: 7 days; IQR: 6). The cohort was predominantly male (62.3%) and aged 20-50 years (60.2%). Common diagnoses were community-acquired peritonitis (36.9%) and acute appendicitis (24.6%). Prolonged LOS was significantly associated with age >50 years (mean LOS: 12.59 days, p=0.002), male gender (10.09 vs. 8.15 days, p=0.010), and presence of comorbidities (11.69 vs. 8.84 days, p=0.003). Intraoperatively, complex procedures like “drainage, resection, and stoma” were linked to the longest stays (mean: 21.5 days, p<0.001), and surgeries lasting >2 hours resulted in longer LOS (11.9 days, p<0.001). Postoperatively, delayed mobilization (>2 days) and feeding (>2 days) were associated with mean LOS of 13.86 and 13.28 days, respectively (p<0.001). The presence of drains (12.71 vs. 7.03 days, p<0.001) and immediate postoperative complications (18.6 vs. 7.52 days, p<0.001) substantially prolonged hospitalization.

1.4. Conclusion

Prolonged LOS after EL is multifactorial, driven by advanced age, comorbidities, complex surgical procedures, and postoperative complications. Implementing targeted strategies, such as optimized perioperative care protocols and early mobilization and feeding, could significantly reduce hospitalization duration and improve patient outcomes in this setting.

2. Introduction

Emergency laparotomy (EL) represents a cornerstone of acute surgical care worldwide. It is a life-saving intervention for a diverse spectrum of life-threatening abdominal conditions, including intestinal obstruction, perforated viscus, and intra-abdominal sepsis [1]. Being one of the most commonly performed major surgical procedures globally, EL carries a disproportionately high risk. Postoperative morbidity and mortality rates following EL are substantial, with global studies indicating in-hospital mortality often exceeding 10-15%. These figures starkly highlight the critical nature of these interventions and the vulnerability of this patient population [2, 3].

Within the spectrum of surgical outcomes, the postoperative length of hospital stay (LOS) has emerged as a pivotal metric. It serves as a composite indicator, reflecting not only the severity of the initial disease and the complexity of the surgical insult but also the quality of perioperative care and the efficiency of the

patient's recovery pathway [4]. A prolonged LOS is consequentially linked to a cascade of negative implications. For healthcare systems, it signifies increased direct costs, heightened consumption of finite resources such as bed days and nursing care, and a reduction in the capacity to treat other patients [5]. For the individual patient, an extended hospitalization elevates the risk of hospital-acquired infections, deconditioning, and thromboembolic events, while also imposing a crippling financial burden through out-of-pocket expenses and lost income, a factor that can perpetuate cycles of poverty, especially in low-resource settings [6, 7].

In high-income countries, the standardization of care through evidence-based protocols like Enhanced Recovery After Surgery (ERAS) has revolutionized perioperative management. These multidisciplinary pathways systematically address the surgical stress response through principles of preoperative counselling and nutrition, minimally invasive surgical techniques, goal-directed fluid therapy, multimodal opioid-sparing analgesia, and aggressive postoperative rehabilitation including enforced early enteral feeding and mobilization [8, 9]. The implementation of such protocols has consistently demonstrated significant reductions in LOS and complication rates without increasing readmission rates, establishing a clear benchmark for high-quality surgical care [10].

However, the direct translation of these protocols to low- and middle-income countries (LMICs) is fraught with fundamental challenges. The context of emergency surgical care in sub-Saharan Africa is characterized by a distinct and complex clinical reality. Patients frequently present after significant delays, often with advanced disease processes such as generalized peritonitis, profound sepsis, and septic shock [11, 12]. This delayed presentation is compounded by systemic constraints, including limited diagnostic capabilities (e.g., restricted access to computed tomography), shortages of essential surgical supplies, and a critical scarcity of high-dependency and intensive care unit (ICU) beds for postoperative management [13]. The disease spectrum also differs, with a high prevalence of conditions like typhoid intestinal perforation, perforated peptic ulcers, and complicated appendicitis, which often present at a more advanced and complicated stage than typically seen in high-income settings [14, 15].

In Cameroon, these regional challenges are acutely felt. Studies from major urban centers have documented the significant burden of surgical disease, with high rates of postoperative complications such as surgical site infections and anastomotic leaks, which are well-established drivers of prolonged convalescence and extended hospitalization [16, 17]. The socioeconomic impact is severe, with catastrophic health expenditure for surgery being a common occurrence for families [7]. While the high burden and mortality associated with conditions requiring EL in Cameroon have been previously described, there remains a critical gap in context-specific evidence. A detailed, multi-factorial analysis of the precise determinants-encompassing patient demographics (e.g., age, comorbidities), disease-related factors (e.g., diagnosis, severity), and hospital-process factors (e.g., time to surgery, postoperative care practices)-that directly influence LOS following EL is lacking for many regions, including the South-West.

This study, therefore, sought to address this evidence gap by conducting a comprehensive analysis of the determinants of prolonged hospitalization following emergency laparotomy at the Buea and Limbe Regional Hospitals. We hypothesized that prolonged LOS is a multifactorial problem, significantly associated with advanced patient age, the presence of comorbidities, delayed presentation to hospital, the performance of complex surgical procedures, and the occurrence of postoperative complications. By identifying these key drivers within our local context, this research aims to provide a robust evidence base to inform targeted quality improvement initiatives, guide rational resource allocation, and ultimately, improve patient outcomes and healthcare efficiency in the region.

3. Methodology

3.1. Study Design

A hospital-based, retrospective cohort study was conducted.

3.2. Study Setting and Period

The study was carried out in the surgical departments of the Buea Regional Hospital (BRH) and the Limbe Regional Hospital (LRH), two major public referral facilities in the South-West Region of Cameroon. These hospitals serve as primary referral centers for a large and diverse population, handling a high volume of emergency surgical presentations. The study reviewed patient records over a five-year period, from January 1st 2015 to January 31st 2020.

3.3. Study Population and Sampling

The study population comprised all patients (both adult and paediatric) who underwent an emergency laparotomy during the study period at the two hospitals. A complete (census) sampling method was employed. A total of 4,782 admission records from the surgical wards of both hospitals were systematically screened. After applying the inclusion and exclusion criteria, a final cohort of 347 patients who underwent emergency laparotomy was established for analysis (Figure 1).

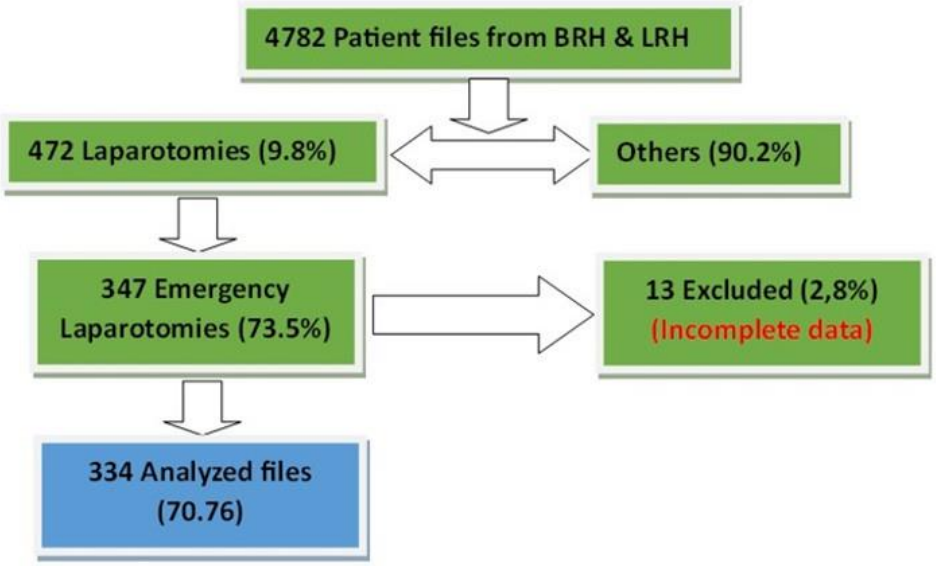

Figure 1: Study flow chart.

3.4. Inclusion and Exclusion Criteria

All patient files with a clearly documented emergency laparotomy were included in the initial screening. Files were excluded if they were incomplete, defined as missing crucial data on the surgical procedure performed, the primary diagnosis, or the patient outcome (including LOS). Additionally, patients who died within the first 24 hours of admission or surgery were excluded to focus the analysis specifically on factors influencing recovery and LOS in survivors.

3.5. Data Collection

Ethical approval for the study was granted by the Institutional Review Board of the Faculty of Health Sciences, University of Buea. Subsequent administrative clearance was obtained from the leadership of both BRH and LRH. Data were abstracted from patient medical records (including clinical files, operation notes, and nursing charts) using a standardized, pre-piloted data extraction form. The collected variables were organized into the following domains:

- **Demographic Data:** Age and sex.
- **Preoperative Variables:** Duration of symptoms prior to hospital presentation, vital signs at admission (e.g., hyperthermia, tachycardia, tachypnea), primary diagnosis, and any documented pre-existing comorbidities.
- **Intraoperative Variables:** The specific surgical procedure performed (e.g., appendicectomy, bowel resection and anastomosis, splenectomy, drainage and lavage) and the total duration of surgery (from incision to closure).
- **Postoperative Variables and Outcomes:** Total length of hospital stay (calculated from the day of surgery to the day of discharge), time to first mobilization out of bed, time to commencement of oral intake, the use of surgical drains, and the occurrence of both immediate (e.g., haemorrhage, septic shock) and late (e.g., surgical site infection, pneumonia, anastomotic leak) postoperative complications.

3.6. Data Management and Analysis

Data were entered into a computer database using CSPro software version 7.3. Following data cleaning, all analyses were performed using IBM SPSS Statistics for Windows, Version 26.0. Descriptive statistics were computed; categorical variables were summarized using frequencies and percentages, while continuous variables were described using means and standard deviations or medians and interquartile ranges based on their normality of distribution. To assess the determinants of prolonged hospitalization, inferential analyses were performed. Analysis of Variance (ANOVA) and independent samples t-tests were used to examine the associations between various independent variables (demographic, preoperative, intraoperative, and postoperative) and the continuous dependent variable (length of stay). A p-value of less than 0.05 was considered statistically significant for all tests.

3.7. Ethical Considerations

The study protocol received full ethical clearance from the designated committee. Given its retrospective design based on medical records, the requirement for individual patient informed consent was waived. To ensure strict confidentiality, all patient identifiers (names, hospital registration numbers) were removed at the point of data collection, and each participant was assigned a unique, non-identifiable study code. All electronic data were stored on a password-protected computer, and hard copy materials were kept in a locked cabinet, with access restricted solely to the principal investigators.

4. Results

4.1. Demographic Characteristics of Study Patients

A total of 4782 hospital records of all patients admitted in the Buea and Limbe Regional hospital surgical units over the study period, were reviewed of which 472 represented admissions secondary to laparotomies. Thirteen files were excluded from further analysis. A total of 347 emergency laparotomies were identified, representing 73.5% of all laparotomies (Figure 1).

The data from Table 1 reveals that the majority of respondents (60.18%) are between 20 and 50 years old, followed by 28.74% who are under 20, and a smaller proportion (11.08%) aged over 50. In terms of gender distribution, males constitute a significant majority at 62.28%, while females represent 37.72% of the sample (Table 1).

Table 1: Demographic characteristics of the patients.

Variables	Sub variables	Frequency	Percentage (%)
Age	<20 years	96	28.74
	20-50 years	201	60.18
	>50 years	37	11.08
Sex	Male	208	62.28
	Female	126	37.72

4.2. Duration and Clinical Presentation of Symptoms before Surgery

Figure 2 highlights both the duration patients prior to surgery. Over half of the patients (52.9%) reported symptoms lasting more than two days before undergoing surgery.

Meanwhile, the symptom profile is dominated by abdominal pain, which appears alone in 36.1% of cases and in various combinations most notably with fever (14.8%) and vomiting (10.6%) indicating that abdominal discomfort is the most prevalent clinical feature (Figure 3).

Figure 4 illustrates the distribution of clinical features observed in the Buea and Limbe Regional Hospitals, with hyperthermia appearing most frequently with 22.5%. Notably, the combination of hyperthermia, tachycardia, and tachypnoea accounts for 6.6%, while isolated tachycardia and tachypnoea are less common accounts for 7.5% and 3.3%, respectively (Figure 4).

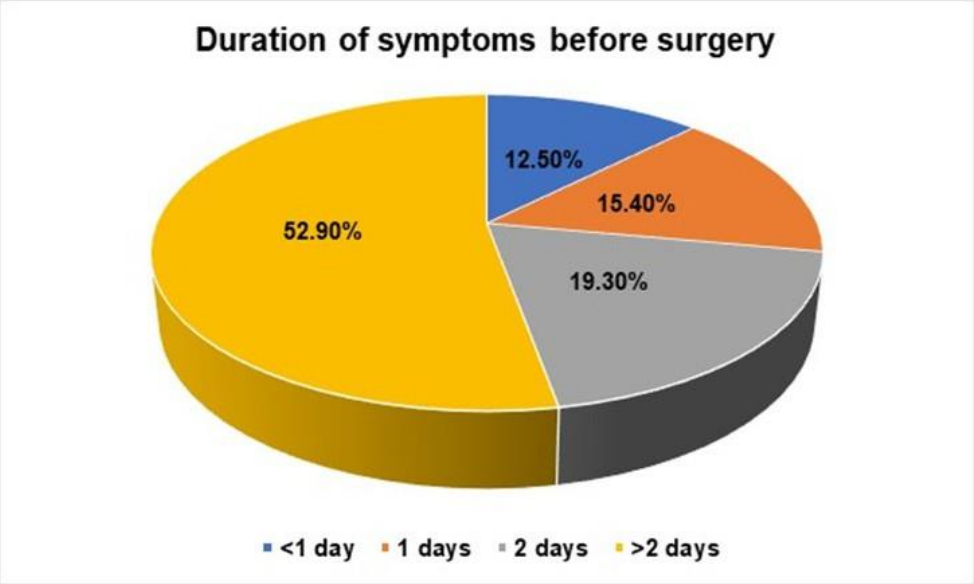

Figure 2: Duration of symptoms prior to consultation.

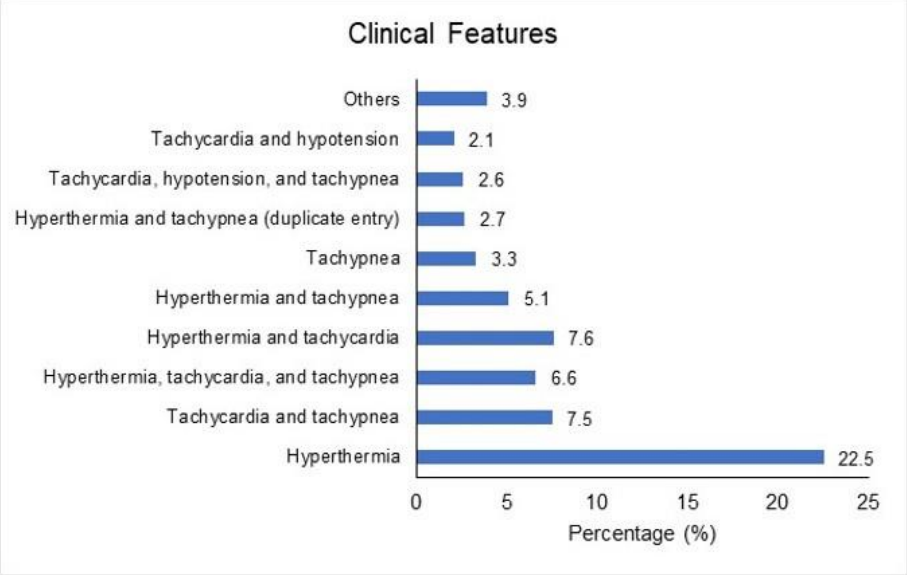

Figure 4: Clinical features of patients in the Buea and Limbe regional hospital.

4.3. Diagnosis of patients in the Buea and Limbe Regional Regional Hospital

Based on the diagnostic data from Buea and Limbe Regional Hospitals, the most prevalent conditions are community-acquired peritonitis (36.9%) and acute appendicitis (24.6%), together accounting for over 60% of cases (Figure 5). Other notable conditions include intussusception (9.3%) and splenic rupture (7.5%), which may indicate trauma-related or paediatric surgical cases. The presence of hospital-acquired peritonitis (3.9%) also raises concerns about post-operative or nosocomial complications (Figure 5).

The results from Buea and Limbe Regional Hospitals reveals a diverse range of underlying causes for peritonitis, with appendiceal abscess (20.69%), duodenal perforation (15.66%), and gastric perforation (14.48%) emerging as the leading contributors (Figure 6). Notably, ruptured appendix (11.03%) and bowel perforation secondary to penetrating abdominal injury (8.97%) also represent significant proportions, indicating both infectious and traumatic aetiologies. Less common but clinically relevant causes include ileal and typal perforations account 5.52% each (Figure 6), strangulated hernia-related complications, and various forms of postoperative peritonitis, which collectively highlight the importance of surgical vigilance and timely intervention.

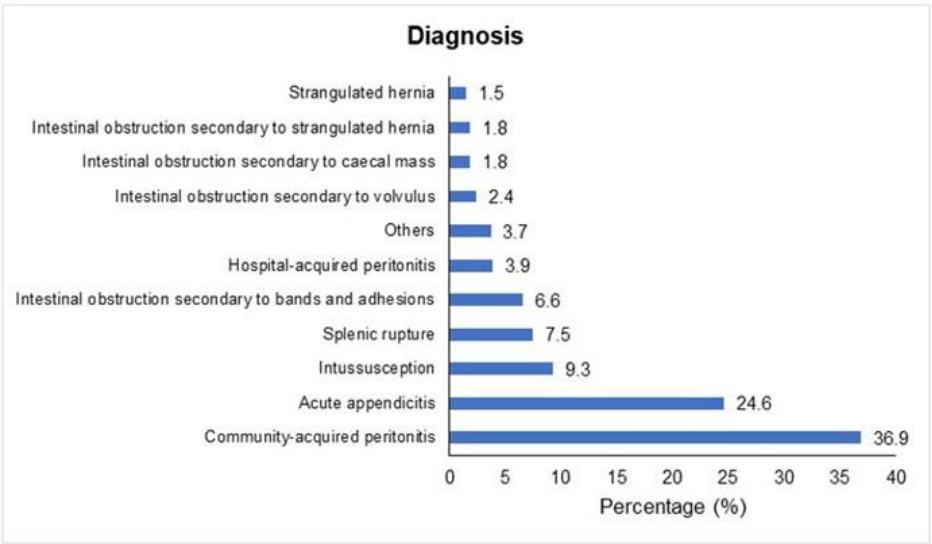

Figure 5: Diagnosis of patients in the Buea and Limbe regional hospital.

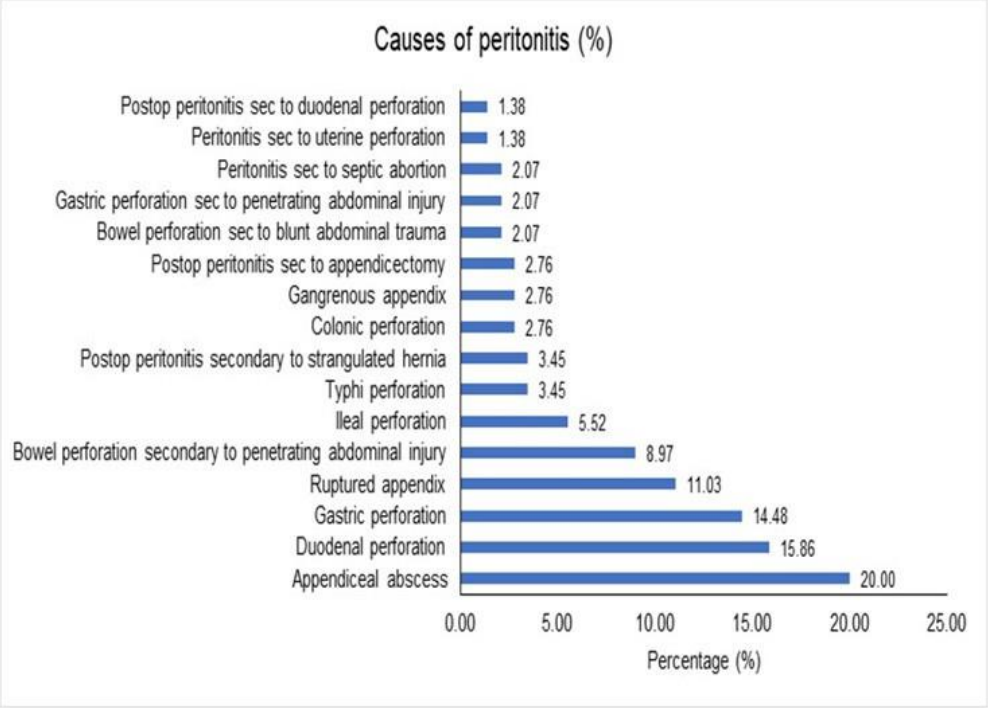

Figure 6: Causes of peritonitis of patients in the Buea and Limbe regional hospital.

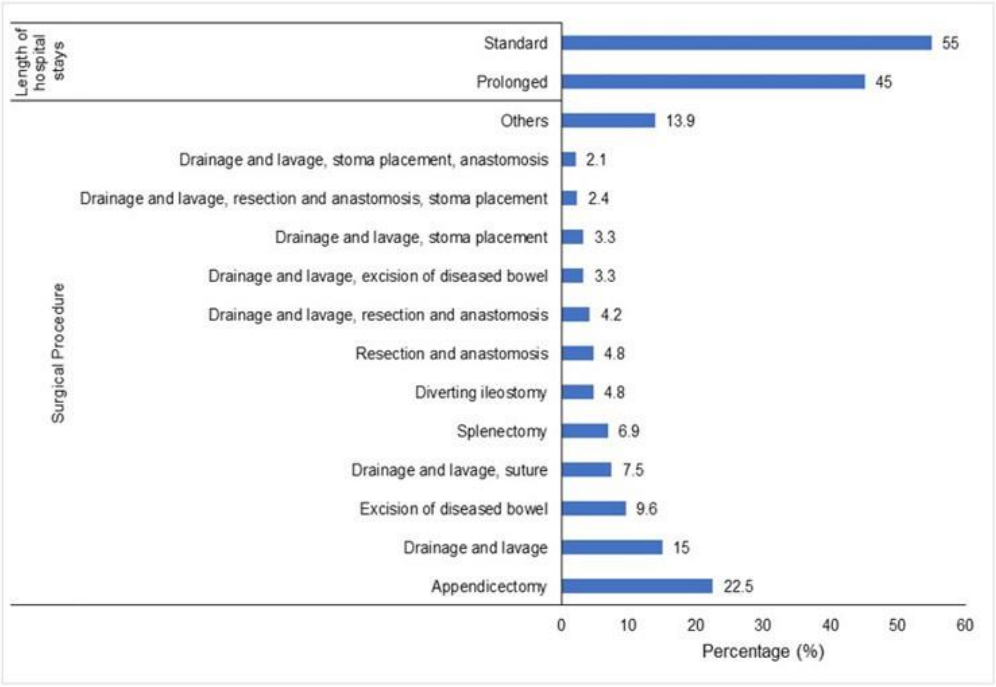

Figure 7: Surgical procedure and length of hospital stay of patients in the Buea and Limbe regional hospital.

4.4. Postoperative Length of Stay following Emergency Laparotomy

The results on hospital stay duration at Buea and Limbe Regional Hospitals reveals a moderately skewed distribution, with a mean stay of 9.36 days and a median of 7 days (Table 2). The standard deviation of 6.693 days and a range of 60 days (from 1 to 61 days) highlight substantial variability in recovery or management time. The interquartile range of 6 days indicates that the middle 50% of patients stayed between roughly 4 and 10 days. Importantly, the positive skewness of 3.034 indicates a long tail to the right to the patients who stayed for extreme days as compared to the median length of hospital stay (Table 2).

Table 2: Statistics of length of hospital stay.

Length of hospital stay (days)	Statistic
Mean	9.36
Median	7
Standard Deviation	6.693
Minimum	1
Maximum	61
Range	60
Interquartile Range	6
Skewness	3.034

4.5. The association between Preoperative Factors and Length of Stay

The results from Buea and Limbe Regional Hospitals reveals that age is significantly associated with length of hospital stay (p = 0.002). Patients over 50 years old had the longest average stay of 12.59 days, with a notably higher standard deviation (10.32) (Table 3). In contrast, those under 20 had mean shorter stays of 8.08 days (Table 3). Gender also showed a statistically significant association (p = 0.010) with hospital stay duration (Table 3). **Male patients had a longer average stay of 10.09 days** compared to females of 8.15 days (Table 3).

Comorbidity status was another strong predictor of prolonged hospitalization (p = 0.003). Patients with comorbid conditions stayed on average nearly 3 days longer (11.69 vs. 8.84 days), with significantly more variability in their recovery (Table 3). Interestingly, while duration before consultation approached significance (p = 0.057), those who delayed more than two days had a mean longer stays of 9.95 days (Table 3).

Table 3: The association between preoperative factors (age group, sex, comorbidity and duration before consultation) and length of stay.

Variable	Categories	N	Min.	Max.	Mean	Std. Dev	F-test	p-value
Age group	< 20	96	1	40	8.08	6.01	6.259	**0.002**
	20 - 50	201	1	42	9.37	5.96		
	> 50	37	3	61	12.59	10.32		
	Total	334	1	61	9.36	6.69		
SEX	Female	126	2	26	8.15	4.615	6.709	**0.010**
	Male	208	1	61	10.09	7.601		
	Total	334	1	61	9.36	6.693		
Comorbidity	No	273	1	40	8.84	5.74	9.26	**0.003**
	YES	61	1	61	11.69	9.619		
	Total	334	1	61	9.36	6.693		
Duration before consultation	0	35	4	40	11.06	7.72	2.534	0.057
	1	43	2	33	8.88	5.79		
	2	54	3	28	7.52	5.12		
	> 2	148	1	61	9.95	7.21		

Table 4 shows a significant association (p =0.001) between different types of intraoperative surgeries and the length of hospital stay. The mean length of stay varies widely depending on the type of surgery performed, with more complex procedures like "Drainage and lavage, resection and stoma" associated with the longest mean stay of about 22 days and a large standard deviation (14.85), indicating high variability. Comparatively, simpler surgeries such as "Appendectomy" had a much shorter mean stay around 5 days with less variability (Table 4).

Regarding the length of surgery is statistically significant (p=0.001) with the length of hospital stay (Table 4). The mean length of stay increases notably with longer surgery duration, from an average of about 5 days for surgeries under 1 hour to about 12 days for those lasting more than 2 hours.

Table 5 presents the statistically significant ((F-test 45.80; p= 0.001) association between various postoperative factors and the length of hospital stay. The results reveal the impact of the presence of drains on length of stay: patients without drains had a mean stay of about 7 days, while those with drains stayed significantly mean longer of about 13 days (Table 5). Similarly, the timing of patient mobilization post-surgery strongly affects length of stay. Patients mobilized within 1 day had the shortest mean stay (5 days), whereas those mobilized after more than 2 days had a much longer stay, averaging 14 days. These results also show high statistical significance (F-test 45.80, p < 0.001) (Table 5).

Other postoperative factors such as the commencement of oral feeding and postoperative complications likewise show significant associations (p= 0.001) with length of stay (Table 5). Early commencement of oral feeds within 1 day corresponds to a mean shorter stay of about 5 days, while starting feeds after two or more days is linked to mean longer stays of about 13 days (Table 5). Regarding complications, patients without immediate postoperative complications had a much shorter mean stay of about 8 days compared to those with complications averaging 19 days, a highly significant difference (F-test 228.4, p < 0.001) (Table 5). Late postoperative complications also increase hospital stay; patients without these complications stayed about 9 days on average, compared to 14 days for those with complications, also statistically significant (p= 0.001) (Table 5).

Table 4: The association between intraoperative factors (type and length of surgery) and length of stay.

Variables	Categories	N	Min.	Max.	Mean	Std. Dev.	F-test	p-value
Type of surgery	Drainage and lavage, resection and stoma	2	11	32	21.5	14.85	5.192	<0.001
	Resection and anastomosis, hernioplasty	2	16	21	18.5	3.54		
	Drainage and lavage, stoma placement, anastomosis	7	4	27	17.14	8.36		
	Drainage and lavage, resection and anastomosis, stoma placement	10	4	33	16.7	8.54		
	Drainage and lavage, total hysterectomy	3	11	21	16.67	5.13		
	Adhesiolysis, resection and anastomosis	3	10	19	14.67	4.51		
	Drainage and lavage, graham patch	32	1	61	14.5	12.65		
	Drainage and lavage, uterine repair	2	12	14	13	1.41		
	Appendectomy, resection and anastomosis	3	7	18	11.33	5.86		
	Resection and stoma	4	9	15	11	2.83		
	Drainage and lavage, resection and anastomosis	14	4	19	10.64	4.55		
	Drainage and lavage, anastomosis	11	7	24	10.45	5.22		
	Resection and anastomosis, stoma placement	5	4	14	10.4	3.85		
	Adhesiolysis, drainage and lavage, resection and anastomosis	1	10	10	10	0		
	Resection and anastomosis, herniorrhaphy	4	7	11	9.5	1.92		
	Drainage and lavage, splenectomy	25	6	40	9.44	6.87		
	Appendectomy, drainage and lavage	50	4	26	9.42	4.23		
	Drainage and lavage, bilroth 1	8	3	15	9.38	3.7		
	Adhesiolysis	16	2	16	9.13	3.79		
	Adhesiolysis, appendectomy, drainage and lavage	5	5	14	9	4.18		
	Resection and anastomosis	16	2	17	8.38	3.32		
	Disinvagination	23	1	20	7.35	4.24		
	Adhesiolysis, appendectomy, herniorrhaphy	1	6	6	6	0		
	Adhesiolysis, appendectomy	5	5	6	5.2	0.45		
	Appendectomy	75	3	18	4.73	1.84		
Length Surgery	< 1 hour	13	4	7	4.54	0.88	26.661	<0.001
	1 - 2 hours	127	1	20	6.11	2.82		
	> 2 hours	191	1	61	11.9	7.6		

Table 5: The association between postoperative factors and length of stay.

Variable	Categories	N	Min	Max	Mean	Std. Dev.	F-test	p-value
Presence of drains	No	197	1	41	7.03	4.10	69.87	**<0.001**
	Yes	136	1	61	12.71	8.17		
Mobilisation	1 day	59	3	12	5.15	1.54	45.80	**<0.001**
	2 days	103	3	18	6.74	2.65		
	> 2 days	127	6	42	13.86	7		
Commencement of oral feeds	1 day	37	3	7	5.24	1.42		
	2 days	141	3	40	7.22	4.30		
	> 2 days	129	4	61	13.28	8.02		
Immediate postoperative complications	No	263	3	21	7.52	3.20	228.4	**<0.001**
	Yes	60	4	61	18.6	9.87		
Late postoperative complication	No	285	3	61	8.66	5.71	26.93	**<0.001**
	Yes	46	1	42	13.98	9.90		

Table 5 demonstrates that several postoperative factors significantly impact (p= 0.001) the length of hospital stay. Patients without drains had a shorter mean stay of about 7 days compared to 13 days for those with drains, indicating that drain presence correlates with longer hospitalization (F-test 69.87, p = 0.001). Early mobilization within 1-day post-surgery was associated with the mean shortest stay of about 5 days, whereas mobilization after more than 2 days corresponded to a much longer stay of about14 days, showing the importance of timely mobilization (F-test 45.80; p < 0.001) (Table 5). Similarly, early commencement of oral feeding within 1 day was linked to mean shorter stays of about 5 days, while delayed feeding beyond 2 days increased length of stay substantially of about 13 days (Table 5).

Postoperative complications had a particularly strong association (F-test 228.4; p =0.001) with extended hospital stays (Table 5). Patients without immediate complications stayed an average of about 8 days, while those with immediate complications had stays more than twice as long, averaging 17 days. Late postoperative complications also increased length of stay significantly, from 9 days without complications to 14 days with complications (p < 0.001).

5. Discussion

The demographic results indicates that the majority of respondents fall within the 20 to 50 years age group, consistent with typical clinical trial age ranges where adults under 65 are predominantly represented [18,19]. The gender distribution of more males than females' patients, aligns with well-documented sex disparities in medical research participation, often attributed to disease perception biases and historical androcentricity in clinical studies [20]. Symptom duration before surgery, with patients experiencing symptoms longer than two days, is clinically significant, as longer preoperative symptom duration correlates with poorer postoperative outcomes, especially when exceeding two years as shown in cervical decompression studies [21,22]. Abdominal pain being the dominant symptom highlights its prevalence as a presenting feature in abdominal surgical cases, consistent with the studies of Ndong et al. [23] who reported on acute abdominal pain and postoperative symptomatology. The clinical symptom profile from Buea and Limbe Regional Hospitals shows hyperthermia as the most frequent sign with combinations of hyperthermia, tachycardia, and tachypnoea, reflecting typical systemic inflammatory responses seen in surgical patients, where persistent tachycardia and tachypnoea are prognostically important [24]. These findings collectively contextualize the patient symptomatology and demographic representation observed in the study with existing clinical research and epidemiological patterns.

The diagnostic and surgical results from Buea and Limbe Regional Hospitals reflect a clinical landscape dominated by community-acquired peritonitis and acute appendicitis reflects delayed healthcare access, high rates of gastrointestinal infections, and limited diagnostic infrastructure factors commonly reported in sub-Saharan surgical settings [11,14,17]. The presence of intussusception and splenic rupture suggests a mix of paediatric and trauma-related cases, while hospital-acquired peritonitis underscores the need for improved postoperative infection control. Etiologically, peritonitis was most frequently linked to appendiceal abscesses, duodenal and gastric perforations, and traumatic bowel injuries, mirroring patterns observed in Douala and other Cameroonian centres [25]. The observed distribution in hospital stay durations reflects the clinical variability inherent in surgical management pathways. While appendicectomy and drainage/lavage are typically associated with shorter, more predictable recoveries often enabling discharge within a few days [26]. Patients undergoing complex procedures such as bowel excision or ileostomy face extended hospitalization due to factors like postoperative complications, nutritional support needs, and staged surgical care [27]. This divergence in recovery trajectories explains the positively skewed range, with a subset of patients requiring significantly longer stays, thereby elevating the mean relative to the median.

The association between preoperative factors and length of stay from Buea and Limbe Regional Hospitals revealed that older patients (>50 years) typically experience longer hospitalizations due to age-related physiological decline, increased vulnerability to complications, and higher prevalence of chronic conditions, which slow recovery and increase care needs. This aligns with study of Liu et al. [28] who reported that older patients tend to have longer stays due to age-related physiological decline, slower recovery, and higher prevalence of chronic conditions [28]. Gender differences, with males staying longer, may reflect disparities in health-seeking behaviour, disease severity at admission, or underlying risk profiles [29]. Comorbidities significantly prolong length of stay as they complicate treatment pathways and increase the likelihood of adverse events [30]. Delayed consultation, though marginally significant, likely contributes to disease progression before admission, necessitating longer care. Surgical factors are especially impactful: complex procedures like resections and stoma formation inherently require prolonged recovery and carry higher complication risks, while simpler surgeries such as appendectomies involve shorter, more predictable recovery trajectories [30]. Additionally, longer operative durations correlate with increased tissue trauma and anaesthesia exposure, both of which extend recovery time. These associations underscore the multifactorial nature of length of stay and the importance of early intervention and tailored perioperative care.

The presence of surgical drains is associated with longer LOS due to their use in more complex procedures and the need for extended monitoring to prevent infection or ensure adequate drainage. This study aligns with the study of Sauro et al. [31] who study the recovery after surgery guidelines and hospital length of stay, readmission, complications, and mortality. Early mobilization within 24 hours significantly shortens length of stay by promoting circulation, reducing thromboembolic risk, and accelerating functional recovery. Similarly, early oral feeding initiated within one day has been shown to reduce length of stay by en-

hancing gastrointestinal recovery and minimizing complications such as ileus [32]. The most pronounced impact on length of stay arises from postoperative complications: patients experiencing immediate or late complications require prolonged care due to increased clinical interventions, delayed healing, and higher risk of readmission [33]. These results reinforce the importance of proactive postoperative management strategies to optimize recovery and reduce hospitalization duration.

6. Conclusion

The analysis from Buea and Limbe Regional Hospitals reveals that abdominal pain is the most frequent symptom leading to surgery, often following delayed presentation. Clinical signs varied, with systemic symptoms like hyperthermia commonly observed. The most prevalent diagnoses were community-acquired peritonitis and acute appendicitis, stemming from a mix of infectious, traumatic, and postoperative causes. Surgical approaches ranged from routine to complex, and hospital stay durations varied widely, influenced by demographic factors, surgical complexity, and postoperative care practices. Overall, the findings emphasize the need for timely diagnosis and comprehensive perioperative management to enhance patient recovery.

Reference

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