

## **Factors affecting Postoperative Recovery in Fort Portal Regional Referral Hospital, Uganda**

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### **ABSTRACT**

Throughout the world millions of patients undergo surgery each year, the burden of surgical disease being greatest in Africa, where operations could save many lives. An extensive range of procedures are available to treat patients who require surgical intervention. A crucial part of the patient's experience, irrespective of the type of procedure, is postoperative recovery. Given the importance of the postop period, and the number of factors that may affect postop recovery involved, this study was about the factors affecting post-operative recovery at Fort Portal Regional Referral Hospital (FPRRH). A cross sectional descriptive study design that involved 384 post-surgical patients at FPRRH was used whereby the incidence of delayed postop recovery/prolonged postop hospital stay was about 8% with (overweight, underweight or obese), comorbidities, older age (> 60 years) and low socioeconomic standing all significantly associated with delayed postop recovery and a prolonged postop hospital stay.

**Keywords:** Post-operative recovery, Surgical site infection, Patients, Surgical intervention, Postop hospital stay.

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### **INTRODUCTION**

Throughout the world millions of patients undergo surgery each year, the burden of surgical disease being greatest in Africa, where operations could save many lives [1]. An extensive range of procedures are available to treat patients who require surgical intervention. A crucial part of the patient's experience, irrespective of the type of procedure, is postoperative recovery [2]. Surgery and anaesthesia have certain inescapable negative impacts on the patients, this maybe discomforts experienced after surgery not necessarily a specific complication. For early detection of complications from surgery, the time immediately following a general anaesthesia is a crucial period for patient recovery, and involves intensive observation by the nurses, to reduce mortality and prolong morbidity [2]. Each year there are 50 million postoperative complications worldwide, which results in 1.5 million deaths. That's a worldwide average of 16.8% of surgeries resulting in postop complications and 2.8% of those complications result in death [3]. The issue is too many patients are suffering from postop complications and too many are dying due to these complications, knowing the factors that affect recovery and help improve postop care. Recovery after surgery and anaesthesia is a complicated process that includes physical, emotional, psychological, social and habitual patterns that should be taken into account when assessing postop recovery. It can be affected by a variety of factors such as the patient's preoperative health status, the socioeconomic status of the patient, nutritional status and, type of procedure performed, type and length of the procedure can also be variables that may influence postoperative recovery [4]. The recovery process can extend from the end of anaesthesia up until months after discharge, and sometimes the preoperative baseline may not be achieved [5]. The recovery phase is divided into 3; immediate, which is the first 24 hours after intervention, mediate, from 24 hours after intervention to complete recuperation, and the late phase, which is rehabilitation [6]. The postoperative period begins after the transfer to the post-anaesthesia care unit (PACU), and ends with the resolution of surgical sequel. Post-op period is divided into 3; the immediate, the mediate and the late [7]. Postoperative care is the care received after undergoing a surgical procedure. Appropriate follow up can help reduce the risk of complications and thus improve quality of life. The assessment of postoperative recovery after surgery and anaesthesia is considered a significant issue because it gives information that could help spot problems and improve postop management, thus improving postoperative recovery

[8]. One of the most important measures for assessing medical and surgical recovery is by patient-reported outcomes.

## METHODOLOGY

### Study Design

Cross sectional descriptive study design was used to generate data.

### Area of Study

The study was conducted at Fort Portal Regional Referral Hospital (FPRRH).

### Study Population

This consisted of male and female patients aged 18 years and above admitted in the surgical ward of FPRRH at the time of study.

### Selection Criteria

#### Inclusion Criteria

The inclusion criteria for this study are adult patients, aged 18 years and above, both male and female, admitted in the surgical wards of FPRRH, who gave consent, and were of sound mind.

#### Exclusion Criteria

All patients less than 18 years, those who declined consent or are not of sound mind.

### Sample Size Determination

A prevalence rate of 50% was used in this study

$$\text{sample size } (N) = \frac{Z^2 P (1 - P)}{E^2}$$

Z value is 1.96

P is prevalence at 50%

E is error margin value is (100-95=5)

$$\text{Sample size } (N) = \frac{1.96^2 \times 0.5 \times (1 - 0.5)}{0.05^2} = 384$$

Sample size is 384.

### Sampling Procedures

Simple random sampling technique with consecutive recruitment technique was used whereby study subjects were recruited as they met the inclusion criteria.

### Data Collection

A researcher-administered questionnaire was used to collect information. The questionnaire consisted of both open-ended and structured close-ended. The questionnaire comprised sections on demographics, nutritional status, and underlying medical conditions. Also, a review of patient's medical records was done. Permission to collect data from patients was gotten from the hospital administration before commencing research. The main aim of the study was explained by the researcher to the respondents prior to data collection, and their approval to participate in the study was obtained. The respondents who fulfilled the inclusion criteria were interviewed individually by the researcher. Data was collected during the morning rounds. The medical and demographic data was collected from the patients and their medical records.

### Data Analysis

All data was collected and entered into Microsoft access and Microsoft Excel and was subjected to statistical analysis. Statistical analysis was done by SPSS version 19.

### Ethical Considerations

A letter of approval was sought from the KIU-TH/ KIU Research Ethics Committee, introducing the research topic and the researcher, which was presented to the administration at FPRRH, thus granting permission to go ahead with data collection. Written consent was gotten from the patients to participate in the study. For confidentiality, patients' names were not included in the collection forms.

**RESULTS**

**Respondents' Demographic Data**

**Table 1: Respondents' Personal Information (N=384)**

Parameter	Frequency (N)	Percentage (%)
<b>AGE (YEARS)</b>		
1. Below 25	34	8.85
2. 25 – 39	84	21.88
3. 40 – 60	112	29.17
4. Above 60	154	40.10
<b>Sex</b>		
1. Male	235	61.20
2. Female	149	38.80
<b>Religion</b>		
1. Christian	280	72.92
2. Muslim	86	22.40
3. Other	18	4.69
<b>Marital Status</b>		
1. Single	68	17.71
2. Married	219	57.03
3. Separated/Divorced	45	11.72
4. Widowed	52	13.54

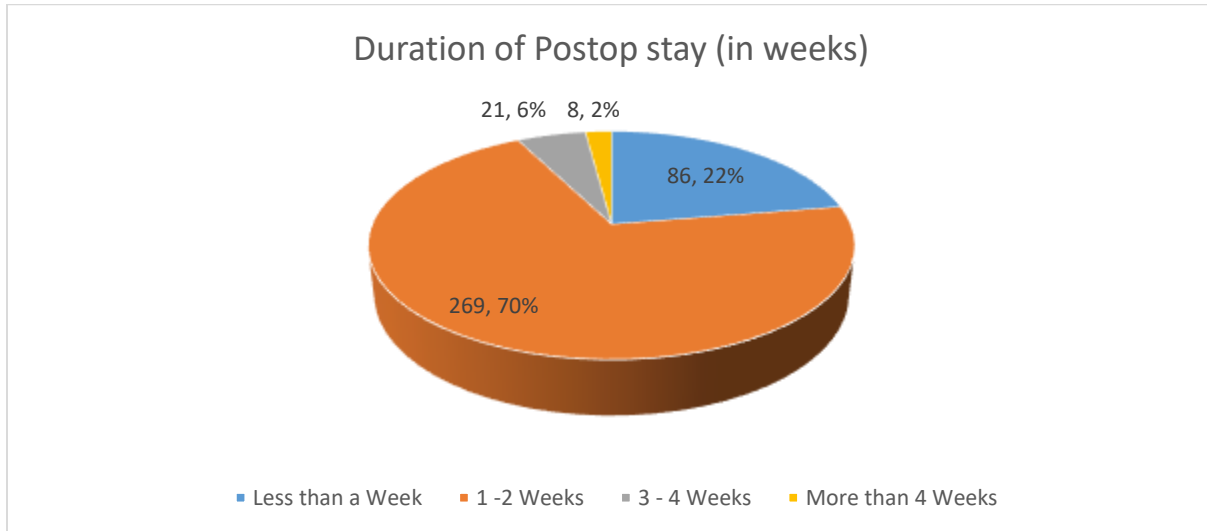
**Table 1: (N=384)**

As from table 1 above, most of the surgical patients were 40 years and above (266, 69.27%), males (235, 61.20%), Christian (280, 72.92%) and married (219, 57.03%). Surgical conditions were common among the elderly and males.

**Table 2: Respondents' Social Status Indicators (N=384)**

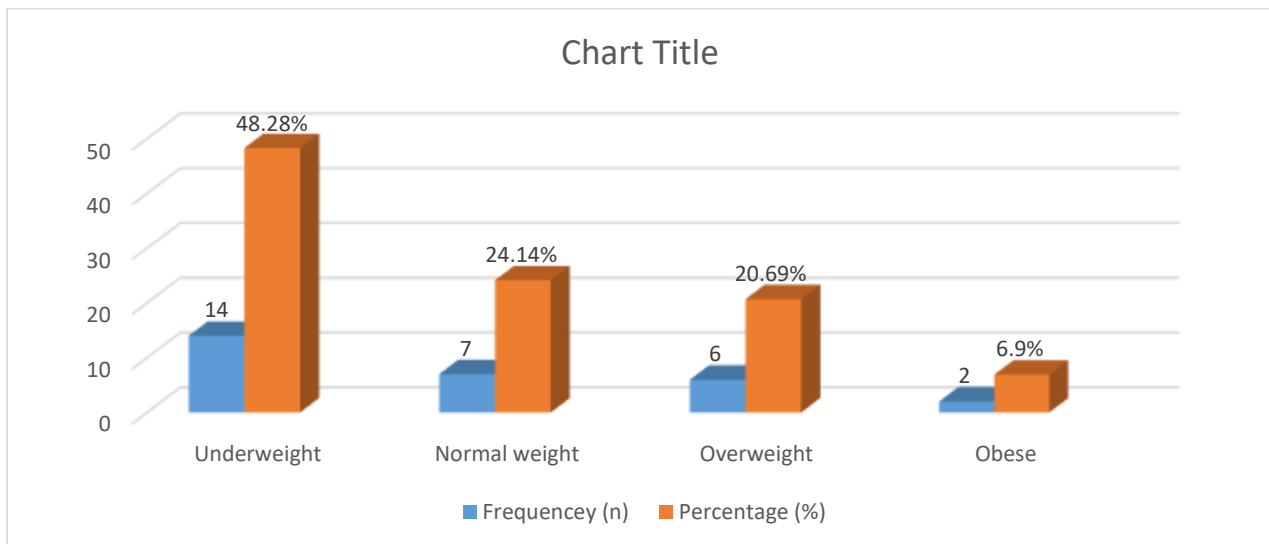
Parameter	Frequency (N)	Percentage (%)
<b>Education Level</b>		
None	182	47.40
Primary	94	24.48
Secondary	71	18.48
Post-secondary	37	9.64
<b>Occupation</b>		
Formally employed	70	18.23
Business	103	26.82
Peasant existence	211	54.95
<b>Residence</b>		
Rural	312	81.25
Urban	72	18.75

Most of the surgical patients (71.88%) had either primary level or no form of formal education at all. Only 71 (18.48%) had completed secondary schooling while only 37 (9.64%) had gone beyond secondary school. This is further reflected by their employment status as indicated by the statistics that only 70 (18.23%) had some sort of formal employment. The rest were either into personal businesses (26.82%) or were peasants (54.95%). Most of the surgical patients hailed from a rural setup while only 18.75% lived in urban areas. These three parameters could be used as a rough indicator of the general socioeconomic status of most of the respondents.



**Figure 1: Average Duration of Postop Hospital Stay (N=384)**

Most of the surgical patients stayed for between 1 and 2 weeks postoperatively. 86 were discharge just within a week of their surgeries, 269 within two weeks and 29 stayed beyond two weeks. It follows, therefore, that the incidence of prolonged duration of hospital stay (More than two weeks' stay) was 7.55% and among these, one complication or the other led to prolongation of their stay.



**Figure 2: BMI and Delayed Postoperative Recovery (N=29)**

BMI deviation from the normal range was associated with a delay in the postop recovery and prolongation of the duration of postop hospital stay. Of those with delayed postop recovery, only 7 (24.14%) were within the normal BMI range while the rest had some derangements in BMI. Being underweight (48.28%) was associated with increased delay in recovery, followed by being overweight (20.69%) and lastly being obese (6.9%).

**Table 2: Prevailing Comorbidity & Prolongation of Hospital Stay (N=29)**

Parameter	Yes (N, %)	No (N, %)	Total
❖ Age (Older Than 60 Yrs)	18 (62.07%)	11 (37.93%)	<b>29 100%</b>
❖ Comorbidity	22 (75.86%)	7 (24.14%)	<b>29 100%</b>
❖ Type of Comorbidity			
HIV/AIDS	15 (68.18%)		
Anemia	3 (13.64%)		
Diabetes	10 (45.46%)		
Hypertension	1(4.55%)		

As from the table above, it is evident that HIV/AIDS and Diabetes were the common comorbid conditions associated with delay in postop recovery. Anaemia and history of hypertension were the other comorbid conditions. Age older than 60 years was the other significant contributor.

### DISCUSSION

A total of 384 respondents took part in the study with a response rate of a 100%. Most of the postop patients were elderly rural peasant males with minimal or no formal education whatsoever. The incidence of delayed postop recovery/prolonged postop hospital stay was about 8% with a deranged nutritional status (overweight, underweight or obese), comorbidities, older age (> 60 years) and low socioeconomic standing were all significantly associated with delayed postop recovery and a prolonged postop hospital stay. Our study findings support those of so many other previous studies – studies like those by [9-15] among others. Just like in the study by [16], malnutrition is a recognized risk factor for increased post-op morbidity and mortality especially in the elderly and cancer patients [17]. Malnutrition leads to infections and poor wound healing; tissue regeneration is a nutrient and energy-intensive process. Infections and poor wound healing complicate the clinical outcome and is a very significant problem especially in abdominal surgeries [18]. Comorbid conditions such as HIV/AIDS have also been shown to increase risks to as high as 10.1% among patients undergoing orthopaedic surgeries and emergency procedures [19]. Differing reports do exist though on this. (Kurmish et al., 2012) reported that corticosteroid-induced immunosuppression did not significantly affect fracture healing suggesting other factors at play among HIV/AIDS patients.

### CONCLUSION

Older age, low socioeconomic status, poor nutritional status and underlying comorbid conditions were significantly associated with postoperative recovery among surgical patients at FPRRH.

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