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Outcome Pattern of Surgical Care: A General Surgical Disease Perspective in a Teaching Hospital in Southern Nigeria

Rex Friday Ogoronte A Ijah[1*], Itekena E Wakama[4], Ibifuro A Green[3] and Joy N Chris-Chinedu[2]

[1]Department of Surgery, PAMO University of Medical Sciences, and Consultant General Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

[2]Statistician, Rivers State University Teaching Hospital, Port Harcourt, Nigeria.

[3]General Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Nigeria

[4]Department of Surgery, Rivers State University, and Consultant General Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

[*]**Corresponding author:** Ijah RFOA, Senior Lecturer, Department of Surgery, PAMO University of Medical Sciences, and Consultant General Surgeon, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria, Tel: +2348033953290; E-mail: rexijah@gmail.com

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Abstract

Background: Globally about two billion people are unable to have access to surgical care services, and the outcome of surgical care is of prime importance to the success of overall health delivery to society. The aim of this study therefore was to evaluate the outcome pattern of General Surgery disease care at the Rivers State University Teaching Hospital in the year 2021.

Materials and Methods: A descriptive retrospective study was carried out among all general surgery patients who were admitted at the Surgery Department of the Rivers State University Teaching Hospital within the study period, using hospital admission and discharge registers.

Results: There were 196 total ward admissions out of which 121 (61.7%) patients were treated and discharged, 23 (11.7%) signed against medical advice (9 males; and 14 females), 22 (11.2%) absconded (10 males; 12 females), and 30 (12.2%) died (16 males and 14 females). The mean age of patients involved in signing against medical advice was 42.8years with 22 females and 12 males. The mean age of absconders was 41.2 years seen among 17 males and 14 females, and acute appendicitis, breast diseases, hernia, and intestinal obstruction were the common pathological conditions among absconders.

Conclusion: About two-third of patients admitted, treated, paid their bills and were discharged. However, about one-tenth of patients discharged against medical advice, another one-tenth absconded, and 15.3% died while on admission. Males were more likely to abscond, and females were more likely to sign against medical advice.

Keywords: ***Outcome pattern; General surgery perspective; RSUTH; Port Harcourt; Nigeria***

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1. Introduction

The outcome of surgical care is of prime importance, and has been evaluated by several measures including Surgical Apgar Score (SAS) [1] and the surgical complication outcome (SCOUT) score, [2] etc. - predicting the risk of major postoperative complications, which are likely to affect eventual outcome. The volume of cases done has been used as a measure of quality of surgical care, although this has been criticized in favor of prospectively monitored and properly risk-adjusted outcomes [3]. Other indices of the outcome of surgical care services are patients discharged after successful treatment; patient absconding from treatment; patient signing or discharge against medical advice (DAMA); or patients ending their life journey in the hospital - death. In other words, this implies - they appreciated care and paid, they ran away without payment, they opted for alterative care, they died while receiving care. This perspective in a way showcases how other aspects of society inter-relates with surgical care services.

Patients and relatives signing hospital discharge forms against medical advice have been reported with incidence in some studies varying from 0.7% to 21% [4]. When properly documented, it is known to provide the healthcare giver with significant legal protection from liability risks [5]. Although several reasons may be responsible for this phenomenon, it is worrisome when this action is taken on behalf of somebody else - e.g. a minor with obvious possible negative risks as documented in a case report in Port Harcourt [6]. When a patient leaves a medical center without the knowledge or permission of the service provider it is regarded as absconding [7]. A study in Iran reported occurrence of 0.4% among admitted patients [7]. It is an occurrence that is known to be associated with some financial, social, health and medico-legal implications, with consequent potential increase in the workload of hospital staff and security [7-9]. Although absconding is commonly observed among psychiatric patients [10,11], it has also been reported among non-psychiatric admissions. In Nigeria, patients absconding have been severally reported: among breast cancer patients in South-West Nigeria [12], childhood burns patients in Zaria [13], neurosurgical disease patients in South-West Nigeria [14], etc.

Globally about two billion people are known or reported to be unable to have access to surgical care services [15], and there are few studies on patient absconding and signing against medical advice. Willful deviations from access and usage of available surgical care services occur as occasional experiences. We observed in practice that these occasional occurrences were becoming frequent, necessitating factual documentation that could provide information for improvement of the overall health system. The aim of this study therefore was to evaluate the outcome pattern of General Surgery disease care at the Rivers State University Teaching Hospital in the year 2021.

2. Materials and Methods

2.1 Study area

The study was carried out in Port Harcourt, the capital of Rivers State, South-South zone of the Federal Republic of Nigeria.

2.2 Study sites

The study site / setting were admission locations of the Surgery Department of the Rivers State University Teaching Hospital - the Accident & Emergency Department, and the surgical wards.

2.3 Research design

A descriptive retrospective study was carried out.

2.4 Study population

All general surgery patients who were admitted at the Surgery Department of the Rivers State University Teaching Hospital within the study period were included in the study.

2.5 Sample Size Determination

All identified patients were included in the study

2.6 Sampling method

Total population of general surgery cases found in the registers were used.

2.7 Study instrument

The registers of the Accident and Emergencies Department, and General Surgery Wards were used to obtain data to be imputed into a proforma designed for the study.

2.8 Bias

General Surgery patients outside the stated settings were not captured in this study.

2.9 Validity/Reliability of instrument

The study data was scrutinized by all the authors for authenticity or otherwise before use.

2.10 Summary/Outcome measures

Demographics, number of patients treated and discharged, number of patients who signed against medical advice, number of patients who absconded, and number of patients the died.

2.11 Data analysis

Data obtained was formed into tables and analysed using the Microsoft Excel Spreadsheet, and the Statistical Package for Social Sciences (SPSS).

3. Results

TABLE 1 shows the outcome of admissions to the Accident and Emergency Department for General Surgery cases for the year 2021. Out of a total of 372 General surgery emergencies patients attended to, 235 (63.2%) were males and 135 (36.8%) were

females. Three hundred and forty-three (92.2%) were treated and discharged (or admitted to the ward), 11 (3%) signed against medical advice, 9 (2.4%) absconded, and 9 (2.4%) died.

TABLE 1. **Accident and Emergency Admissions and Outcome (n = 76).**

S/N	OUTCOME	NUMBER		
		Male	Female	Total
1	Treated & Discharged or Admitted to Ward	219	124	343 (92.2%)
2	Discharged Against Medical Advice	3	8	11 (3%)
3	Absconded	7	2	9 (2.4%)
4	Died	6	3	9 (2.4%)
TOTAL		235 (63.2%)	137 (36.8%)	372 (100%)

The outcome of General Surgery admissions is shown in TABLE 2. There 96 (49%) males and 100 (51%) females out of the 196 total admissions. One hundred and twenty-one (64.0%) patients were treated and discharged, 23 (11.7%) signed against medical advice (9 males; and 14 females), 22 (11.2%) absconded (10 males; 12 females), and 30 (15.3%) died.

TABLE 2. **Wards Admissions and Outcome (n = 196).**

S/N	OUTCOME	NUMBER		
		Male	Female	Total
1	Treated and Discharged	61	60	121 (61.7%)
2	Discharged Against Medical Advice	9	14	23 (11.7%)
3	Absconded	10	12	22 (11.2%)
4	Died	16	14	30 (15.3%)
TOTAL		96 (49.0%)	100 (51.0%)	196 (100%)

TABLE 3 shows the total number and type of General Surgery patients that signed against medical advice (both A/E and Wards). The mean age of patients involved in signing against medical advice was 42.8 years. There were 22 (64.7%) females and 12 (35.3%) males. Patients who had goitre, acute appendicitis, intestinal obstruction, and breast disease were more involved in signing forms against medical advice.

TABLE 3. **General Surgery Patients that Discharged Against Medical Advice (n = 34).**

S/N	TYPE OF CASE	NUMBER			
		Male	Female	Total	Mean Age (Years)
1	Goitre	2	5	7	47.4
2	Breast Disease	-	4	4	45
3	Gallstone Disease	-	3	3	46.3
4	Peptic Ulcer Disease	-	2	2	29
5	Gastric Tumour	1	1	2	39
6	Intestinal Obstruction	4	2	6	32.8
7	Acute Appendicitis	2	4	6	25.2
8	Other Acute Abdomen	2	1	3	37.3
9	Colonic Tumour	1	-	1	83
TOTAL		12 (35.3%)	22 (64.7%)	34 (100%)	42.8

TABLE 4 highlights the total number and the type of General Surgery (pathological conditions) patients who absconded. There were 17 (54.9%) males and 14 (45.1%) females. The mean age of absconders was 41.2 years. Acute appendicitis, breast diseases, hernia, and intestinal obstruction were the common pathological conditions among patients who absconded.

TABLE 4. **General Surgery Patients that Absconded (n = 31).**

S/N	TYPE OF CASE	NUMBER			
		Male	Female	Total	Mean Age (Years)
1	Goitre	-	1	1	34
2	Breast Disease (Benign and Malignant)	-	5	5	35.3
3	Gallstone Disease	2	-	2	53
4	Peptic Ulcer Disease	-	1	1	48
5	Gastric Tumor	2	-	2	51.5
6	Gunshot Injuries	1	-	1	31
7	Intestinal Obstruction	3	1	4	43
8	Acute Appendicitis	3	4	7	24.5
9	Hernia (Inguinal and Incisional)	2	2	4	42.3
10	Colonic Tumour	1	-	1	71
11	Vaginal Hydrocele	3	-	3	19.7
TOTAL		17 (54.9%)	14 (45.1%)	31 (100%)	41.2

The mortality figures and type of General Surgery (pathological Conditions of) patients is shown in TABLE 5. There were 22 (56.4%) males and 18 (43.6%), with a mean age of 40.2%. Perforated peptic ulcer disease, other acute abdomen (colonic tumors and gallstone diseases), and metastatic breast cancer were the common diseases conditions that led to mortality among our patients.

TABLE 5. **General Surgery Patients that Died (n = 39).**

S/N	TYPE OF CASE	NUMBER			
		Male	Female	Total	Mean Age (Years)
1	Gunshot Injuries	4	1	5	29.6
2	Perforated Peptic Ulcer Disease	6	5	11	34.2
3	Intestinal Obstruction	3	1	4	35
4	Metastatic Breast Cancer	0	8	8	47.5
5	Other Acute Abdomen (Colonic Tumours and Gallstone Diseases) and Burns	9	2	11	54.6
TOTAL		22 (56.4%)	17(43.6%)	39 (100%)	40.2

TABLE 6 reveals the comparison of Accident & Emergency and the wards admissions and outcomes. A Pearson's chi-squared test was carried out to ascertain whether Accident & Emergency and wards admissions outcomes in RSUTH were related. However, it was observed that the p-values of these outcomes (treated and discharged, discharged against medical advice, absconded, and died) were "0.000", with their positive chi-squares (450.162, 641.176, 652.673, and 533.445). The null

hypothesis was rejected there was significant difference between admissions outcomes from accident & emergency and the wards.

TABLE 6. **Comparison of Accident and Emergency and Wards Admissions and Outcome.**

S/N	Outcomes	Accident and Emergency		Wards Admission		D.F	P-value	Chi-square
		Male	Female	Male	Female			
1	Treated & Discharged or Admitted to Ward	219 (93%)	124 (91%)	61 (64%)	60 (60%)	9	0.000	450.162
2	Discharged Against Medical Advice	3 (1%)	8 (6%)	9 (9%)	14 (14%)	9	0.000	641.176
3	Absconded	7 (3%)	2 (1%)	10 (10%)	12 (12%)	9	0.000	652.673
4	Died	6 (3%)	3 (2%)	16 (17%)	14 (14%)	9	0.000	533.445
Total		235	137	96	100			

4. Discussion

"Sankofa", a word among the Akan people of larger Ashanti (or Asante) tribe in Ghana West Africa, means: "to retrieve", "go back for it", etc. The applied meaning is "to profit in the present from experiences of the past to prosper in the future" [16]. Our study therefore looks back at outcome of what we have done in general surgical practice amidst the local challenges, to see what we can learn, for improvement of the future. Almost two-third of General Surgery emergencies seen were males. This finding agrees with the outcome of Eastern and Western Nigerian studies were males were in the majority of surgical emergencies [17-19]. However, it differs from one Eastern Nigerian study (Nnewi) done about 20years ago where women were twice more involved in surgical emergencies, implying a change in pattern [20].

Out of the total burden of General Surgery patients, about 92% of the emergency cases were treated & discharged or transferred to the ward, and a similar trend applies also to ward admitted patients where about 61.7% of the patients were treated and discharged. The expression: "well done thou good and faithful servant" is known to be awarded for good job after evaluation of work done amidst challenges encountered. To what extent this can be applied here is uncertain when the determinants of outcome of surgical services do not entirely reside within the ambit of the practicing general surgeons. More especially in our environment where timely patients' presentation, affordability of services and enabling environment for practice are begging for attention. Although 61.7% appears to be a pass mark, it could be improved upon. This outcome is similar, although relatively lower, to the findings of 76% in another study done in Enugu Nigeria where 66.6% of patients were treated and discharged home without any permanent disability, and 9.4% were discharged home with permanent disabilities [17].

In both the Emergency Department and the surgical wards about a tenth of patients signed the discharge form against medical advice. Our finding of 3% is lower than that reported in Makurdi Nigeria where 12.3% of surgical emergency patients signed against medical advice [17]. However, signing against medical advice among our ward admitted patients with 11.7%, share similarity with the Makurdi study. Among all the patients who signed against medical advice, there were more than twice as many females than males, and goitre, acute appendicitis, intestinal obstruction, and breast diseases were the surgical pathologies common in this group. Among others, could avoidance of ill-feelings from perceived inability to pay for services have led these patients to act the way they did? This experience has been reported in literature among Nigerian patients [21]. It could also be

that the care environment was judged not conducive - a possibility among the well-to-do patients. Could it also be that the delays in rendering services to patients occasioned by delayed laboratory tests or shortage / inadequacy in the number of attending hospital staff have pushed the patients to sign against medical advice? Financial, social, health, legal reasons reported to be associated with this pattern of patients' behaviour [7].

However, majority of these patients appear to be in no physical danger (no cardiovascular instability) and give no reason for signing against medical advice [4]. More so, signing the discharge register against medical advice was more among ward admitted patients, who were relatively stable. This may to apply to our patients as most of them were goitre, acute appendicitis, intestinal obstruction (partial), and breast disease which may not immediately threaten life. A similar tenth of our patients absconded at the wards (11.2%), with male preponderance in Emergency Department and ward combined. Perforated peptic ulcer disease, other abdominal conditions (colonic tumors and gallstone diseases), and metastatic breast cancer were the surgical pathologies that were common among absconders. Similar reasons that prompted some patients to sign against medical advice may also apply here.

Mortality among General Surgery patients was about a tenth (2.4%) at Emergency Department, and 15.3% among ward admitted patients. Our ward finding is relatively higher compared to crude mortality rate of 8.3% reported in Lagos Nigeria [22], and Enugu Nigeria [17]. Delayed presentations of acute abdomen and complications of metastatic breast cancer were the common disease conditions. Similar observation was reported in Lagos Nigeria among breast cancer patients in malignancy-related deaths [22]. Lack of health insurance coverage among our general surgery patients that leaves patients and relatives with no choice than to pay out of pocket, not only partly accounts for delayed presentation to health facility, but also responsible for delay in rendering needed surgical care.

It is common experience to see patients who could not afford to pay the direct medical expenses of needed laboratory tests before surgery, cost of drugs to be purchased by patients, and cost of hospital admissions / surgery. The issue of affordability of medical care by majority of the people in our setting partly and strongly account for mortality among our patients. There is need for further studies on patient characteristics and absconding / discharge against medical advice in our environment. The reasons for the relatively high figures among our patients also need to be explored in further studies.

5. Limitations

The source of data for this study is the admissions and discharge registers and not patients' case notes or folders, and hence could not give fine details of treatment of individual cases. It is therefore subject to the merits and demerits of this source of data collection.

6. Conclusion

The normal course of care among admitted patients: admission - treatment - payment - discharge, was observed only among two-third of patients. About one-tenth of patients signed the discharge form against medical advice, another one-tenth absconded from hospital before discharge, and 15.3% died while on admission. Males are more likely to abscond from hospital than females, and females are more likely to sign against medical advice than men.

7. Recommendations

There is need for urgent functional health insurance coverage to reduce the tendency or potential for mortality, absconding, and signing against medical advice among our General Surgery patients. Additionally, public health education and advocacy is needed to encourage early presentation and compliance with medical treatment.

8. Acknowledgement

Dr Chisom Christian Nwamadi participated in obtaining the data form the registers of the respective sections of the hospital. We therefore appreciate this contribution that enabled the smooth conduct of this research.

9. Ethical Considerations

This study involved only contact with medical records and no contact with the individual patients. Confidentiality of information was maintained in the process of data collection. The approval of the Research Ethics Committee of the Rivers State University Teaching Hospital was obtained.

10. Source of Funding

Study was funded by the researchers.

11. Conflict of Interest

None declared.

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