The case load of urological surgery and reported postoperative outcome in selected Mogadishu hospitals

The Case Load of Urological Surgery And Reported Post Operative outcomes January 1 – July 1 2015) in two hospitals in Mogadishu

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Declaration

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully written this project based on truth and cited all activities and duties that I undertook while on attachment. I therefore declare that this material is original.

Name: Abdulfatah Abdullahi Jama

Approval

I certify that this thesis project has been done by **Mr Abdulfatah Abdullahi Jama** under my supervision and is now ready for the submission to you my dear mentors and to Somali Swedish research cooperation.

Dedication

I would like to dedicate to My Dear Parents, My Father **Mr.Abdullahi Jama Hassan**, My Mother **Shukri Sheikh Abdullahi Jama Bare** and to My Dear Brothers and Sisters.

Also I would like to dedicate to my friends and to all people throughout the world.

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Abbreviations

HIV: Human Immunodeficiency Virus

AIDS: Acquired Immunodeficiency Syndrome

UNICEF: United Nations Children's Fund

LMICs: Low- and middle-income countries

AUA: American Urologic Association

MDG: Millennium Development Goals

BAUS: British Association of Urological Surgeons

Abstract

Background: Surgical disease is inadequately addressed globally, and emergency conditions requiring surgery contribute substantially to the global disease burden.[1]
Urology is the surgical specialty that is concerned with the diagnosis and treatment of diseases of the genitourinary tract.
Although surgery has long been considered an essential component of health systems and is practiced universally, it has been a neglected part of global health initiatives.

Aim of the study: was to decrease the case load of urological Surgery and to improve the outcome of urological operations at hospitals in Mogadishu Somalia.

Methodology: a retrospective cross sectional study of all patients that attended and had surgical management from January **1** to June **30 2015** in two selected Mogadishu Hospitals, the data source was secondarily from surgical records of selected hospitals.

Results: showed that those aged between 30 to 44 years were most operated with frequency of 337 and percentage 39.3%, while those aged more than 75 years were the lowest being operated with frequency 34 and percentage 4%, also showed that that most of the patients operated in the selected hospitals during the specific period were improved with **91.6%,** the remaining **8.4%** were died.

Conclusion: A total of **857** patients were operated in the selected two hospitals (Osman Fiqi Hospital and Mogadishu City Hospital) for the period between 1st January 2015 to 1st July 2015, The case load of Urological surgery in the selected two hospital for the specified period between 1st January to 1st July 2015 was **27%.**

For the outcome of the operations this study revealed that most of the patients improved after surgery with percentage **91.6%,** the remaining **8.4%** were died.

Chapter One: Introduction

1.1: Introduction

Surgery is an ancient medical specialty that uses operative manual and instrumental techniques on a patient to investigate or treat a pathological condition such as a disease or injury, to help improve bodily function or appearance or to repair unwanted ruptured areas (for example, a perforated ear drum).

A surgical disease is one that requires some form of localized intervention such as surgery. Surgical diseases are inadequately addressed globally, and emergency conditions requiring surgery contribute substantially to the global disease burden.[1]

Conditions that can be treated by surgery pose a considerable health burden, many are attributable to immediately life- or limb-threatening conditions that necessitate emergency surgery.[2]

Although surgery has long been considered an essential component of the health system and is practiced universally, it has been a neglected part of global health initiatives.

Nearly a decade ago, 234 million major operations were performed annually worldwide. [3]

Despite the burden of disease, two billion people, namely those living below the poverty line in low- and middle-income countries (LMICs), continue to lack access to surgical care. This is particularly important to people requiring emergency

surgery, because minutes or hours of delay before treatment have a profound impact on potential disability and chance of survival.[4]

Urology is the surgical specialty that is concerned with the diagnosis and treatment of diseases of the genitourinary tract, including the adrenal glands, and the male reproductive organs. The American Urologic Association (AUA) has recognized 7 subspecialty areas in urology including pediatric urology, urologic oncology, renal transplantation, male infertility, calculi, female urology (urinary incontinence and pelvic outlet relaxation disorders), and neurourology (voiding disorders, urodynamic evaluation of patients, and erectile dysfunction or impotence). Other subspecialty areas are urologic trauma and reconstruction.

The urologic surgeon has a wide variety of practice options ranging from general urology to a variety of subspecialty options. Most urologists have a very general practice and perform a wide variety of surgical operations both in terms of complexity and disease state.

Urology is different from many other surgical specialties in that the diseases that urologists treat and the interventions provided require lengthy, even lifelong follow-up evaluation.**[5]**

Urologists generally establish long-term relationships with their patients.

In urology there is overlap with other specialties including general surgery, internal medicine, gynecology, and pediatrics. **[6].(** CDR reference)

Due to the epidemiological transition surgery will have an increasing role in public health. In view of its complexity and risks, an understanding of the quantity and

distribution of surgical interventions is therefore essential to guide efforts to improve its safety and redress shortages of such services. WHO's patient safety programme aim to estimate number of major operations undertaken worldwide to describe their distribution, and to assess the importance of surgical care in global public-health policy**.[7]**

Common conditions treated by urologists are renal stone, prostate and bladder cancer, bladder prolapse, hematuria (blood in the urine), erectile dysfunction, intestinal cystitis (painful bladder syndrome), overactive bladder and prostatitis and BPH (swelling of the prostate glad**)**

1.2: Problem Statement

The burden of surgical disease, although not well quantified, is potentially immense. It is estimated that 2-3 billion people (approximately one third to one half of the world's population) have no access to basic surgical care. **[8]** According to the 2002 World Health Report, surgical conditions account for 11% of total lost years of healthy life **[9].**

This study is relevant to the health system in Somalia, as it during the last decades been weak, Urologic surgery is a major part of the surgical workload in many of our hospitals but the volume of clinical workload has not been extensively reported, and the proportion of the urological surgery out of the total surgical workload in is unknown.

Understanding the scale and scope of urological surgery is important in developing health systems to adequately address the regional burden of urological surgery in limited-resource settings and development of sustainable and regionally appropriate urologic care.

1.3: Aim

The aim of this study is to decrease the case load of urological Surgery and to improve the outcome of urological operations at hospitals in Mogadishu, Somalia. The specific aims are to estimate the case load of urological surgery by type of surgery and to identify the patient's postoperative outcome.

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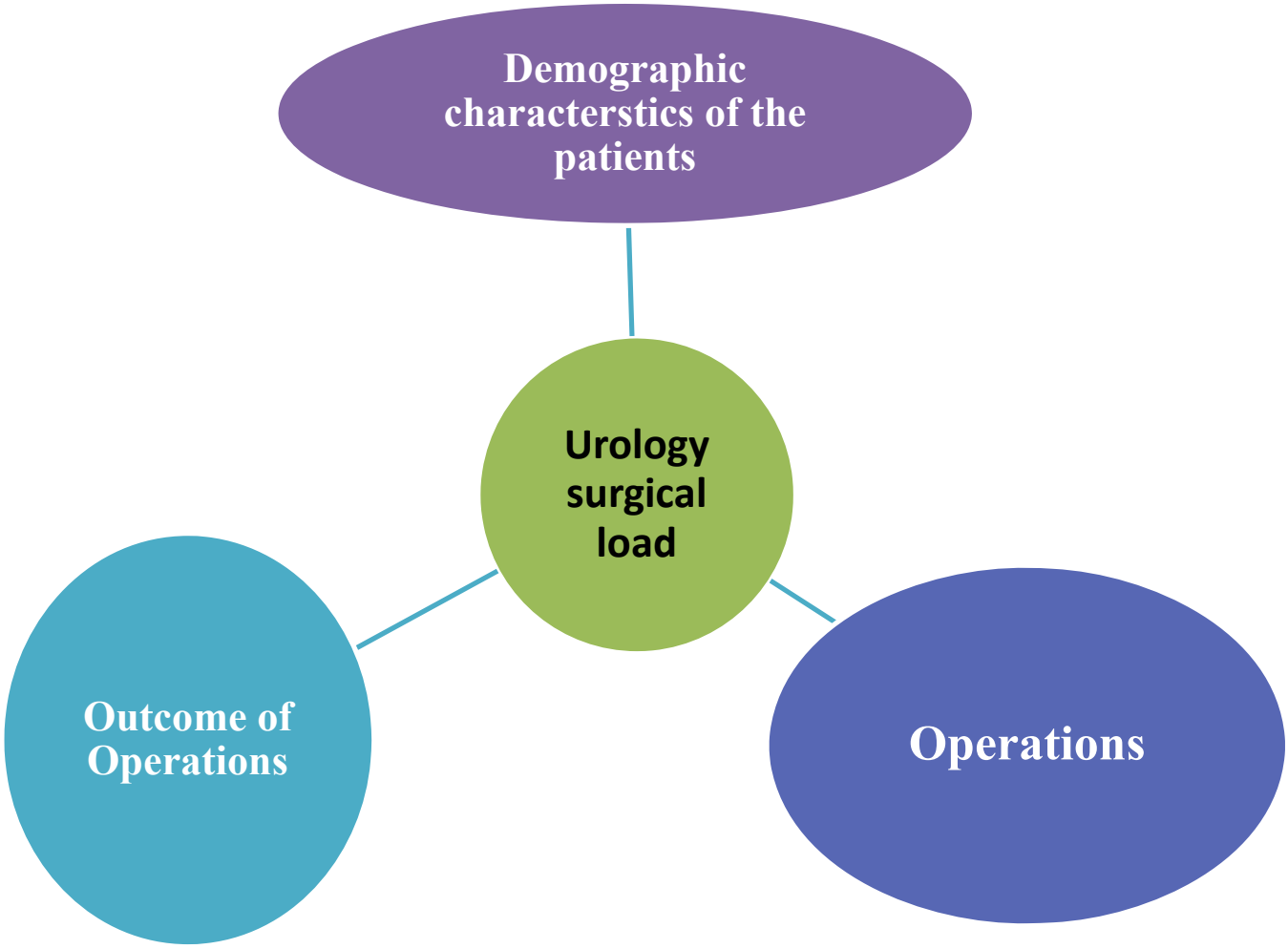
1.4: Conceptual frame work



2: Literature review

Global surgical burden

Surgical services have long been recognised to be an essential, often expensive, component of the public health system. Surgery is performed in every setting from the most resource rich to the most resource limited, and the need has increased greatly with the shifting disease pattern. However, little is known about the actual worldwide volume and availability of surgical care since only anecdotal evidence exists.

One-third to one-half of the world population (2-3 billion) lacks basic surgical care. Surveys from the rural areas of Bangladesh, from India and from urban South America indicate that 10% of all deaths and almost 20% of deaths of young adults are the results of conditions that would have beenamenable to surgery in the industrial world **[10].** In East Africa, in 1984, only 11% of women requiring a caesarean section got it, only 14% of patients with inguinal hernia were surgically treated, while 13% of patients with hernia strangulation were operated accounting for a mortality of somewhat 90% **[11].** Regrettably, this is still factual in 2007, contributing to the 22% probability of death at age 0-15 in sub-Saharan Africa, compared to the 1.1% probability in countries with established market economies.

In 2006, road traffic accidents were responsible for 1.2 million deaths and 50 million injuries in the entire world, yet 85% of these accidents happened in the developing countries **[11].**This is not negligible, considering that traffic-related fatalities were expected to rise by 60% worldwide between 2000 and 2006, with an 80% rise in LMICs. [11].

The burden of urologic diseases on the American public is immense in both human and financial terms and until now has remained largely unquantified. Urologic diseases encompass a wide scope of illnesses of the genitourinary tract, including conditions that are congenital and acquired, malignant and benign, male and

female, medical and surgical. They can occur at any point in the course of human development, from hydronephrosis in utero to urinary incontinence in the elderly

An estimated 2 billion people worldwide lack access to any surgical care and surgical conditions account for 11–30% of the global burden of disease **[12].** Delivery of surgical, and therefore, urological care is a prerequisite for a functioning healthcare system and vital to achieve the new post-Millennium Development Goals (MDG) aim of 'universal health coverage' **[13]**.

2015 represents the 25th anniversary of Urolink as a sub-committee of BAUS. The original Urolink mission statement is to promote and encourage the provision of appropriate urological expertise and education worldwide with particular emphasis on the materially disadvantaged' remains pertinent today, as there is increasing international recognition of the importance of surgery as the 'neglected step-child of global public health' **[14]**.

3. Methodology

3.1 Research design

This is a retrospective cross-sectional study of all patients that attended and had surgical management from January **1** – July 1 2015.

3.2 Study area

The study was carried out in two hospitals in Mogadishu.

- **Osman Fiqi and Mogadishu City Hospital are two** private hospitals located in Hodan District, Mogadishu, Somalia, Both hospitals includs outpatient and in-patient departments, surgical departments, lab and pharmacy departments with Somali, Syrian and Egyptian doctors with different specialties.

3.3: Study population

All patients operated January 1 – July 1 2015 in the selected Mogadishu Hospitals. Criteria for selection of hospitals were:

- Large number of patients
- Perform different types of operations
- Perform high advanced operations specially urologic surgery
- Accessibility of health records.

3.4: Study Variables

Dependent variable Urologic surgical diseases

Independent Variables and their definitions include:

- Age, gender, hospital, disease for the operation, type of the operation, method of the operation and postoperative conditions.

Definition of Variables

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- **Disease for the operation:** condition under operation
- **Type of the operation:** Emergency or elective surgery.
- **Method of the operation:** Open surgery or laparoscopic surgery.
- **Postoperative conditions:** patient's condition or outcome after operation (Improvement and discharge from the hospital or death within the hospital after operation).

3.5: Data collection method

Data were collected through a structured questionnaire from the hospital operation record register using a questionnaire containing questions on patient's demographic characteristics, disease for, type of and method of operation and postoperative conditions (appendix)

3.6: Ethical consideration

The study was conducted after obtaining ethical clearance from Benadir University Ethical committee as well as Research and Ethics committee at the Ministry of Health, Somali Federal Republic.

The doctors of the selected hospitals assured that all data they provided is used for the purpose of academic research and the patient's identities would not be presented.

3.7: Statistical analysis

Data analysis was carried out using **SPSS version 21.**.

4- Results is section contains analysis of variables and their interpretation.

During the study period 857 (442 women and 415 men) were operated. The patient's mean age was 42 years (Range: 2-95 years). The majority (76%, n=650) was operated at Osman Fiqi hospital (figure x).

Table 4.2: Age group of patients

Age Group		Frequency	Percent
	0-14	38	4.4
	15-29	133	15.5
	30-44	337	39.3
	45-59	208	24.3
	60-74	106	12.4
	>75	34	4.0
	Total	857	100.0

the above table shows that those aged between 30 to 44 years were most operated with frequency of 337 and percentage 39.3%, while those aged more than 75 years were the lowest being operated with frequency 34 and percentage 4%.

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Table 4.4: Number of patients operated January 1 to June 30 by age group, sex and hospital.

Age group	Hospital				
	Osman Fiqi			Mogadishu City	
	Women	Men		Women	Men
0-14	11	24		1	2
15-29	40	60		12	21
30-44	138	111		48	40
45-59	108	45		34	21
60-74	35	48		13	10
≥ 75	2	28		0	4
Total	334	316		108	99

The above cross tabulation table indicates that a **650** out of total were operated in **Osman Fiqi** hospital at **75.8%** (334 were female and 316 were males), the remaining out of total were operated in **Mogadishu City** hospital at **24.2%** (108 were females and 99 were males).furthermore man and women aged between 30 to 44 years of were the most being operated while those man and women aged more than 75 years were the least one being operated.

Table 4.5: conditions have been operated

Conditions have been operated		Frequency	Percent
	Cholithiaisis	**91**	10.6
	K.stone	19	2.2
	Bladder stone	40	4.7
	Bladder prolapsed	6	.7
	Uterine Prolapse	11	1.3
	Varicocel	50	5.8

	Hypospedia	21	2.5
	Myoma	20	2.3
	BPH	61	7.1
	Hemorrhoid	45	5.3
	Anal fistula	20	2.3
	Hernia	48	5.6
	Ovarian cyst	12	1.4
	Vaginal cyst	10	1.2
	Hysterectomy	17	2.0
	Abcess	22	2.6
	Fibroma	8	.9
	Bladder cancer	1	.1
	Amputation	8	.9
	Lipoma	63	7.4
	Hydrocel	30	3.5
	Goiter	36	4.2
	Appendix	18	2.1
	Trauma	55	6.4
	Fracture	34	4.0
	Tonsilitis	46	5.4
	Abdominal Mass	23	2.7
	C/S requiring diseases	42	4.9
	Total	857	100.0

The above table indicates that cholithiasis were the most condition for the patients have been operated with percentage **10.6%,** while the least condition for the operation was Bladder Cancer with percentage **0.1%.**

4.6: Type of the Operation

Table 4.5.1: type of the operation being performed

Type of operation		Frequency	Percent
	Emergancy	155	18.1
	Elective	702	81.9
	Total	857	100.0

The above table indicates that most of operations performed were elective form with percentage **81.9%,** the remaining **18.1%** were Emergency form.

Table 4.7: Methods of operation

Methods for operation		Frequency	Percent
	Open surgery	727	84.8
	Laparoscopy	130	15.2
	Total	857	100.0

The above mentioned table reveals that most of operations performed were Open Procedure with percentage **84.8%,** the remaining **15.2%** were Laparoscopy procedure.

Table 4.8: Type of anesthesia being used for the operation

Type of anesthesia		Frequency	Percent
	General	271	31.6

	Spinal	502	58.6
	Local	84	9.8
	Total	857	100.0

The above mentioned table indicates that most of the operation were under spinal anesthesia with **58.6%,** followed by general anesthesia with **32.6%,** the remaining were on local anesthesia with **9.8%.**

Table 4.9: Outcome of the operated patients

Outcome of the operated patient		Frequency	Percent
	Improved and discharged	785	91.6
	Death	72	8.4
	Total	857	100.0

The above table shows that most of the patients operated in the selected hospitals during the specific period were improved with **91.6%,** the remaining **8.4%** were died.

Table 4.10: Type of operation by gender and the age of the patients

Type Of Operations by the Gender and the age of the patients - Cross tabulation								
Type Of Operation	Age of the patients							Total
	0-14	15-29	30-44	45-59	60-74	>75		

Emergency	**Gender of patients**	**Male**		19	27	9	3			59
		Female		19	66	10	1			96
	Total			**38**	**93**	**19**	**4**			**155**
Elective	Gender of patients	**Male**	26	62	124	57	55	32		356
		Female	12	33	120	132	47	2		346
	Total		**38**	**95**	**244**	**189**	**102**	34		**702**
Total	Gender of patients	**Male**	26	81	151	66	58	32		**415**
		Female	12	52	186	142	48	2		442
	Total		**38**	**133**	**337**	**208**	**106**	**34**		**857**

The above cross tabulation table155 patients out of total 857 were emergency (59 were males, 96 were females) and those aged 30 to 44 were the most being operated as emergency with frequency of 93, furthermore the remaining 702 out of total were operated as elective (356 were males and 346 were females) and those aged 30 to 44 were the most being operated as elective with frequency of 244

Table 4.11: Method of operations by the gender and the age of the patients

Methods of operation by the Gender and the age of the patients - Cross tabulation										
Methods of operation			**Age of the patients**							**Total**
			0-14	15-29	30-44	45-59	60-74	>75		
Open surgery	**Gender of patients**	Male	26	79	145	45	34	15		345
		Female	12	52	167	107	42	2		382
	Total		**38**	**131**	**312**	**152**	**76**	**17**		**727**
Laparoscopy	Gender of patients	Male		2	6	21	24	17		70
		Female		0	19	35	6	0		60
	Total			**2**	**25**	**56**	**30**	**17**		**130**
Total	Gender of patients	Male	26	81	151	66	58	32		415
		Female	12	52	186	142	48	2		442

	Total	**38**	**133**	**337**	**208**	**106**	**34**		**857**

The above cross tabulation table 727 patients out of total 857 were operated as Open Surgery (345 were males, 382 were females) and those aged 30 to 44 were the most being operated as open with frequency of 312, furthermore the remaining 130 out of total were operated as Laparoscopy (70 were males and 60 were females) and those aged 45 to 59 were the most being operated as Laparoscopy with frequency of 56.

Table 4.12: outcome of operations by the gender and the age of the patients

Outcome of the operation by the Gender and the age of the patients – Cross tabulation									
Outcome of the operation			**Age of the patients**						Total
			0-14	15-29	30-44	45-59	60-74	>75	
Improved and discharged	**Gender of patients**	Male	26	78	145	61	51	19	381
		Female	12	47	170	131	43	1	404
	Total		**38**	**125**	**315**	**192**	**94**	**20**	**785**
Dealth	Gender of patients	Male		3	6	5	7	13	34
		Female		5	16	11	5	1	38
	Total			**8**	**22**	**16**	**12**	**14**	**72**
Total	Gender of patients	Male	26	81	151	66	58	32	415
		Female	12	52	186	142	48	2	442
	Total		**38**	**133**	**337**	**208**	**106**	**34**	**857**

The above cross tabulation table785 patients out of total 857 were improved and discharged (381 were males, 404 were females) and those aged 30 to 44 were the most being improved and discheaged with frequency of 35, furthermore the remaining 72 out of total were died (34 were males and 38 were females) and those aged 30 to 44 were the most being died with frequency of 22.

Table 4.13: Disease under Operation by Gender

Disease of the Operation according to Gender of patients Crosstabulation				
Disease Under Operation		Gender of patients		Total
		Male	Female	
	Cholithiasi	31	60	91
	Kidney stone	13	6	19
	Bladder stone	23	17	40
	Bladder prolapse	0	6	6
	Uterine Prolapse	0	11	11
	Varicocele	49	1	50
	Hypospedia	21	0	21
	Myoma	1	19	20
	BPH	61	0	61
	Hemorrhoid	20	25	45
	Anal fistula	9	11	20
	hernia	21	27	48
	Ovarian cyst	0	12	12
	Vaginal cyst	0	10	10

	Hysterectomy	0	17	17
	Abcess	8	14	22
	Fibroma	0	8	8
	Bladder cancer	1	0	1
	Amputation	6	2	8
	Lipoma	33	30	63
	hydrocele	28	2	30
	goiter	7	29	36
	Appendix	12	6	18
	Trauma	21	34	55
	fracture	20	14	34
	Tonsillitis	22	24	46
	Abdominal Mass	8	15	23
	C/S	0	42	42
Total		415	442	857

The above cross tabulation table indicated that the cholithiasis was the most frequent condition under operation about 91 (females about 60 and the males about 31), on the other hand bladder cancer was the least condition under operation with frequency of 1 (Males about 1 , females 0).

Table 4.14: Urological Operations by Gender

Urological of the Operation according to Gender of patients Crosstabulation				
Urological Operations		**Gender of patients**		**Total**
		Male	**Female**	
	Kidney stone	13	6	19
	Bladder stone	23	17	40
	Bladder prolapse	0	6	6
	Varicocele	50	0	50

	Hypospedia	21	0	21
	BPH	61	0	61
	Bladder cancer	1	0	1
	hydrocele	30	0	30
Total		196	32	**228**

The above cross tabulation table indicates that the bladder stone was the most frequent urological disease under operation in terms of gender with frequency of 40 (23 about males and 17 about females), although varicocele was the highest frequent urological operations among the males with frequency about 50.

Table 4.15: Outcome of the operations according to gender and the hospital being performed

Hospital by which operation being done			**Gender of patients**		Total
			Male	Female	
Osman Fiqi Hospital	**Outcome of the operation**	improved and discharged	287	302	589
		death	**29**	**32**	**61**
	Total		316	334	650
Mogadishu City Hospital	Outcome of the operation	improved and discharged	94	102	196
		death	**5**	**6**	**11**
	Total		99	108	207
Total	Outcome of the operation	improved and discharged	381	404	785
		death	34	38	72
	Total		415	442	**857**

The above cross tabulation table650 patients out of total 857 were operated in Osman Fiqi Hospital 589 of nthem were improved (287 were males, 302 were females) and 61 of them were died (29 were males and 32 were females), furthermore the remaining 207 out of total were operated in Mogadishu Hospital 196 of them were improved and discharged (94were males and 102 were females) and 11 of them were died (5 were males and 6 were females).

So, to find out the case load of Urological surgery in the selected hospitals from 1st January 2015 to 1st July 2015 we sum all of urological operations divided by total operation during that period which will be the following:

Case Load Of urologic surgical =

$$\frac{\text{The Sum of all Urological operations}}{\text{Total operations}} \times 100$$

The sum of operations (kidney stone + Bladder Stone + Benign prostatic hyperplasia + Bladder prolapsed + Varicocele + hydrocele + hypospedia + Bladder cancer.)

$$= \frac{19+40+6+50+21+61+30+1}{857} \times 100$$

$$= 228/857 \times 100$$

$$= \quad 27\%$$

Means the case load of Urological surgery in key selected hospitals were **27%.**

To find out specific Urology condition we calculate as the fallowing:

BPH load = 61/228× 100 = 27%

Means 27% of all urological operation in the selected hospitals during specified period was due to **BPH**.

5- Discussion, Conclusions, Recommendations

5.1: Discussion

This study revealed that 857 operations were performed in the selected two hospitals from 1st January 2015 to 1st July 2015, although cholithiasis was the most frequent operations.

This study revealed that appendicectomy were **2.7%** which is different other study in Gonder, Ethiopia, Katisso and Messele4 noted that acute appendicitis accounted for 17.32% of emergency abdominal operations, the possible explanation for the difference is due to population size they used in other study**.[15]**

Also this study revealed that frequency of Hernia operation was **5.6%** this nearly similar with no marked difference to study in Khartoum Sudan for the frequency of hernia operations which was 8.6 %. **[16]**

The study also showed that the most frequent urological operations were Benign prostatic hypertrophy operation which was **7.1%,** this nearly similar to the study in Nmadu Neigeria in which PBH operations were 10.2%**[17]**

the overall surgical mortality rate of this study was **8.4%** which is similar to the study in Nmadu Neigeria for the overall surgical mortality and it's about 8%.**[17].**

Limitation

The limitations of this study include the fallowing

- Availability of recent literature toward the case load of urological surgery
- Although the data of this study was secondary, much time needed for the completeness of operation records.

5.2: Conclusions

A total of **857** patients were operated in the selected two hospitals (Osman Fiqi Hospital and Mogadishu City Hospital) for the period between 1st January 2015 to 1st July 2015.

The case load of Urological surgery in the selected two hospital for the specified period between 1st January to 1st July 2015 was **27%.**

The study revealed that **51.6%** (442 out of total patients operated in the selected hospitals) were Females; the remaining **48.4%** were Males.
Also indicated that most of the patients were operated in Osman Fiqi Hospital with percentage **75.8%,** the other **24.2%** were operated in Mogadishu City Hospital.
This study mentioned that **cholithiasis** were the most condition for the patients have been operated with percentage **10.6%,** while the least condition for the

operation was Bladder Cancer with percentage **0.1%,** with BPH predominant Urological Surgery and it is about **7.1%.**

For the outcome of the operations this study revealed that most of the patients improved after surgery with percentage **91.6%,** the remaining **8.4%** were died.

5.3: Recommendations

The recommendations for the study include the fallowing:

- Increasing number of qualified surgical doctors to fulfill the gap
- Improving the quality of surgical doctors through training in order to provide appropriate surgical care.
- For the hospitals they have to have good infrastructure and consider Urological surgery as public health importance for special department in order to deliver sustainable Urologic care
- To consider MOH as separate sector for urological surgery and have to prepare and train qualified Surgical doctors with skills for the seek of provision of appropriate regionally sustainable Urologic care.

Reference

1: King M, Bewes P, Cairns J, Thornton J. Background to surgery.

2: Primary Surgery (Vol. 1). Oxford, Oxford University Press, 2003.

3: Johna S. The rural surgeon: an endangered species. *World J Surg 2006; 30: 267-8.*

4: Hagopian A, Thompson MJ, Fordyce M, Johnson KE, Gary

Hart L. The migration of physicians from sub-Saharan Africa

to the United States of America: measures of the African

brain drain. Human Resources for Health 2004, 2: 17-22.

5: Nordberg E, surgery in Eastern Africa: the met and unmet needs, AMREF Discussion paper number 3(mimeo) Nairobi, AMREF, 1982.

6: Nordberg E surgical operations in East Africa, EAMJ 1990: (suppl.) 67-83.

7-World Health Organization (2009) Global Initiative for Emergency and Essential Surgical Care (GIEESC). Available: http://www.who.int/ surgery/globalinitiative/en/. Accessed 5 February 2009.

8-Contini S (2007) Surgery in developing countries: why and how to meet surgical needs worldwide. Acta Biomed 78:4–5

9- Basic surgery training to save lives and prevent disability. WHO, 2007. http://www.who.int/mediacentre/mews/notes/2007/2007/np 30/en/print.html. Accessed 7 Nov 2007.

10- 1.King M, Bewes P, Cairns J,Thornton J. Background to surgery. In: Primary Surgery (Vol. 1). Oxford, Oxford University Press,2003: 1

11: Nordberg EM. Incidence and estimated need of caesarean section,inguinal hernia repair,and operation for strangulated hernia in rural Africa.Br Med J 1984; 289 (6437): 92-3.

12- Debas HT, Gosselin RA, McCord C, Thind A. Surgery. In Jamison DT, Breman JG, Measham AR, George A, Claeson M, Evans DB, Jha P, Mills A, Musgrove P eds, Disease Control Priorities in Developing Countries, 2nd edn, Washington, DC: World Bank, 2006: 1245–59

13- Meessen B, Malanda B; Community of Practice "Health Service Delivery". No universal health coverage without strong local health systems. Bull World Health Organ 2014; 92: 78–78A

14--Farmer PE, Kim JY. Surgery and global health: a view from beyond the OR. World J Surg 2008; 32: 533–6

15-Kattiso B, Messele G. Acute appendicitis in Ethiopia. East Afr Med J 1996 73 : 251-4.

16- Ahmed ME. Acute abdomen in Khartoum. East Afr Med J 1986 63;850-2

17- Nmadu PT. The pattern of geriatric surgical admissions in Zaria, Nigeria. East Afr Med J 1994 71;146-8.

Questionnaire

Questionnaire About case load urological surgery and reported post operative conditions in the selected two hospitals for the specified period of time

PART I. SOCIODEMOGRAPHIC DATA

1. Age……..
2. Gender
    a. Male ( )
    b. Female ( )
3. HOSPITAL IN WHICH OPERATION BEING DONE

    A) OSMAN FIQI HOSPITAL ( )

    B) MOGADISHU CITY HOSPITAL ( )

PART II: OPERATIONS

1- CONDITION UNDER OPERATIONS ----------

2- TYPE OF THE OPERATION

- - EMERGENCY SURGERY ( )
- -ELECTIVE SURGERY ( )

3- METHODS OF THE OPERATIONS

- OPEN SURGERY ( )
- LAPAROSCOPY ( )

4- TYPE OF ANESTHESIA BEING USED FOR THE OPERATION

- GENARAL ANESTHESIA ( )
- SPINAL ANESTHESIA ( )
- LOCAL ANESTHESIA ( )

PART III : POST OPERATIVE CONDITION

POST OPERATIVE CONDITION

- Improved and discharged ( )
- Death ( )