

International Journal of Sciences: Basic and Applied Research (IJSBAR)



ISSN 2307-4531
(Print & Online)

<http://gssrr.org/index.php?journal=JournalOfBasicAndApplied>



Characteristics of Patients Admitted to Medical Ward of a Referral Hospital in a Developing Country

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Abstract

Communicable diseases are the main reasons of admission to medical ward of developing countries. In contrast, non-communicable diseases are the main reasons for hospital admission in the developed countries. However, there is a rise in the prevalence of the non-communicable diseases in the developing countries. Unfortunately, data on reasons for admission to the medical wards of low income countries are deficient. This study assessed the commonest causes of admission to medical ward, the socio-demographic profile and the length of stay of patients admitted to a referral hospital in Sudan. This research was a descriptive, hospital based study conducted in Al-ban Jadeed Teaching Hospital in the period between July 2009 and February 2010. All patients admitted to the medical ward by one unit from the 4 medical units during the study period were included. Patients' medical data were retrieved from the medical record department. Information about age, sex, common diagnosis, affected system and the duration of hospital stay were obtained. The data were then analyzed by using SPSS. A total of 438 patients were studied. 46.1 were males while 53.9% were females. The mean age of patients was 43.06 years. Below 50 years of age represents 61.4% of the study population. Of all patients, 63.2% were admitted for less than 5 days and 76.3% were discharged safely with a good health. Of total admission, 30.8% were due to gastrointestinal problems. Infections affecting different systems accounted for the most admissions (44.3%), mainly gastroenteritis (24.4%). Stroke was the commonest disease among male and gastroenteritis was the commonest among female. The results show that Infectious diseases remain a problem in Sudan. These diseases can be prevented by improving indoor pollution and awareness of people.

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The increase in the prevalence of the non communicable diseases is a another problem requiring programs that spread the awareness among population about the importance of early detection, strict follow up and management of these diseases.

Keywords: medical ward, developing countries, patients, admission, characteristics

1. Introduction

In Sudan, the health indicators are poor. The life expectancy at birth is 56 years, and the disability-adjusted life expectancy is around 43 years [1]. Communicable diseases are the leading cause of morbidity and mortality with high vulnerability to outbreaks [2]. The annual health statistical report by the National Health Information Center of the Sudanese Federal Ministry of Health (F.M.O.H) in 2007 stated that the commonest causes of admission to the medical wards from the commonest to the less common are: malaria, pneumonia, gastroenteritis, asthma and diabetes [3].

This poor health situation in Sudan is further complicated by the epidemics taking a grip in the neighbouring countries and the free movement across the porous borders [4]. Therefore, communicable diseases seem to be the commonest cause of hospital admission in Sudan and in other similar developing countries [5].

This pattern of diseases admitted to medical ward in low income countries is different from that of the developed countries [6]. In which, non communicable diseases such as cardiovascular diseases, stroke, cancer and diabetes are the most common causes of admission [7, 8,9].

However, it's worth noting that in cities of the developing countries, for example Khartoum, there is a rapid rise in the prevalence of the non- communicable diseases namely cardiovascular diseases, diabetes and cancer [8]. This is attributed to the changes in the socio-economic status, socio demographic profile and to acquisition of the lifestyle related risk factors [10].

This study looked at data of patients admitted to the medical ward of a referral hospital in the local east of the Nile, at Khartoum state. The main objectives were to investigate:

1. The socio-demographic profile of patients
2. The commonest causes of admission to the medical ward
3. The commonest systems involved
4. The outcome and length of stay

2. Materials and methods

This was a retrospective cross-sectional hospital based study conducted in Al Ban Jadeed Teaching Hospital, at Khartoum stat, Sudan in the period from July 2009 to February 2010.

Al Banjadeed Teaching Hospital was created at 1986. At first, it was a health center model, and then at 1988 it became a rural hospital. 9 years ago it became a referral hospital after rehabilitation by the Federal Ministry of Health (F.M.O.H).

The hospital is a training center for medical students of the University of Medical Sciences and Technology, along with other nursing and paramedical students. The hospital contains 265 beds with doctors in the four major specialties namely: Medicine, Surgery, Pediatrics and Obstetrics and Gynecology. In addition, the hospital offers service in other specialties like ophthalmology, orthopedics, and dermatology. The main diagnostic modalities are: routine laboratory investigations, radiology, microbiology and histopathology. The medical department in the hospital has four units with four consultants, 2 registrars, 8 general practitioners (G.P) and 16 house officers, each unit takes the duty of two days a week plus 1 to 2 additional days every month to cover the 7 days of the week.

All patients admitted to the medical ward by one unit during the study period were included. The dependent variables were reason of admissions, and the systems involved .The other variables were sex, age and length of hospital stay. Data were collected from the medical record department in a structured sheet format after taking permission from the hospital committee. The data were analyzed by using SPSS v16.

3. Results

A total of 438 patients' records were reviewed. The mean age was 43 years. Female represents 53.9% of the study population. Below 50 years of age represents 61.4% of the study population. Within which, the most common age group admitted was 20-29yrs (22.4%) (figure1).

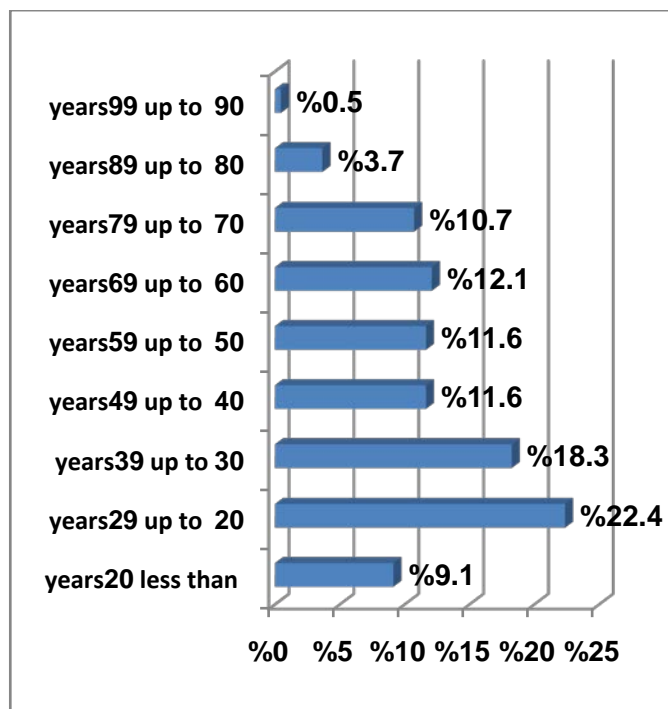


Figure 1: Age distribution of the study population

Gastrointestinal system accounted for 30.8% of all admissions followed by respiratory system (15.5%), cardiovascular (12.6%), central nervous system (10.9%), and endocrine system (7.3%), (Table 1).

Table 1: Distribution of patients according to the affected system

System involved	Number of patients	percentage
Gastrointestinal	135	30.8
Respiratory	68	15.5
Cardiovascular	55	12.6
Neurology	48	10.9
Endocrine	32	7.3
Renal	11	2.5
Hematology	10	2.3
Others	79	18
Total	438	100

Gastroenteritis was responsible for 24.4% of all gastrointestinal diseases and is the commonest disease requiring admission (24.4%) followed by pneumonia (9.1%), stroke (7.5%), hypertension (7.1%) malaria (6.6%) and diabetes (6.6%) (Table 2)

The highest admission per month was on October (17%). The least was on February 2010 (3%).

Table 2: Most common diagnoses of patients admitted to medical ward of Al Ban Jadeed hospital

Disease	Number of patients	percentage
Gastroenteritis	107	24.4
Pneumonia	40	9.1
Stroke	33	7.5
Hypertension	31	7.1
Malaria	29	6.6
Diabetes	29	6.6
Heart failure	23	5.2
Enteric fever	17	3.9
Dyspepsia	16	3.7
Asthma	15	3.4
Anemia	9	2.1
Renal failure	8	1.8
Liver diseases	8	1.8
Poisoning	7	1.6
TB	7	1.6
Uncontrolled epilepsy	7	1.6
Malignancies	6	1.4
Non-specified infections	5	1.1
Meningio-encephalitis	4	0.9
Other for all systems	37	8.5

Table 3: The frequency and percentage of admissions for every month.

Month	Frequency	Percent
6/2009	28	6.4
7/2009	58	13.3
8/2009	69	15.8
9/2009	52	11.9
10/2009	75	17.1
11/2009	51	11.6
12/2009	54	12.3
1/2010	38	8.7
2/2010	13	3
Total	438	100

Infections accounted for the most admissions (44.3%) which include gastroenteritis, pneumonia, malaria, enteric fever, and tuberculosis (Table 2)

Diabetes and its complications, heart failure, malaria and pneumonia showed higher frequency among male. While asthma, complicated hypertension and gastroenteritis showed higher frequency of female admission (Table 5). 277 (63.2%) patients stayed for less than 5 days while 161 (36.8%) stayed for more than 5 days (Table 4).

Table 4: The frequency and percentage of duration of stay.

Duration of Stay	frequency	percent
Short stay (<5 days)	277	63.2
Long stay (>5days)	161	36.8
Total	438	100

Table 5: diagnosis versus patients' gender.

	Disease	Gender		Total
		Male	Female	
Diagnosis	Gastroenteritis	39 (8.9%)	68(15.5%)	107 (24.4%)
	Pneumonia	24(5.5%)	16(3.6%)	40 (9.1%)
	Stroke	22(5%)	11(2.5%)	33(7.5%)
	Hypertension	12(2.7%)	19(4.4%)	31(7.1%)
	Diabetes	17(3.9%)	12(2.7)	29(6.6%)
	Malaria	16(3.6%)	13(3%)	29(6.6%)
	Heart failure	12(2.7%)	11(2.5%)	23(5.2%)
	Enteric fever	8(1.8%)	9(2.1%)	17(3.9%)
	Dyspepsia	4(0.9%)	12(2.7%)	16(3.6%)
	Asthma	9(2.1%)	6(1.3%)	15(3.4%)
	Anemia	4(0.9%)	5(1.2%)	9(2.1%)
	Renal failure	7(1.6%)	1(0.2%)	8(1.8%)
	Liver diseases	4(0.9%)	4(0.9%)	8(1.8)
	Poisoning	3(0.7%)	4(0.9%)	7(1.6%)
	TB	3(0.7%)	4(0.9%)	7(1.6%)
	Uncontrolled epilepsy	5(1.2%)	2(0.4%)	7(1.6%)
	Malignancies	4(0.9%)	2(0.4%)	6(1.3%)
	Non-specified infections	3(0.7%)	2(0.4%)	5(1.2%)
	Meningio-encephalitis	3(0.7%)	1(0.2%)	4(0.9%)

4. Discussion

It is observed that infections of different systems accounted for the most admissions (44.3%), mainly gastroenteritis, pneumonia, malaria, tuberculosis and enteric fever. This is consistent with FMOH report with minor variation in the order of infections [3]. It, perhaps, reflects the poor economic status, poor hygiene and poor sanitation facilities available for most of the study population. The result is in line with findings of other studies carried out in Southwest Ethiopia [5] and Nipal [11]. On the other hand, this pattern of cases contradicts with that of developed countries. For instance, In 2007, in the United States of America the most common reason for admission were pneumonia, congestive heart failure, and coronary atherosclerosis, where in Australian and Hong Kong it was cardiovascular diseases 29%.11 and 30.3% respectively [9, 12, 13, 6].

More than 60% of patients admitted to the medical wards were below 50 years of age. This is in keeping with other studies done in in Ethopia in which young age was predominant [14]. In contrast, in Nigeria, South Africa and Nipal they were most above 45 years of age [14, 15, 5]. This variation could be explained by the differences in the age profile among population of these countries.

Interestingly (22.4%) were belonging to the young age group 20 to 29 years. This age group tends to be more interactive either with the society or the environment than the other groups which make them at risk of catching infections.

Although communicable diseases represent the dominant cause of admission to the medical ward of AI ban jaded hospital, there is a significant group of patients admitted with non-communicable diseases (NCDs). For example, Stroke, hypertension, heart failure and diabetes which all represent more than (26%) of the admission. This is higher than what previously described by Federal Ministry of Health Report [3]. The double burden of non-communicable and communicable diseases in developing countries can interact adversely leading to more clinical complications [16]. Interestingly, Studies have shown that Malnutrition and infection in early life increase the risk of chronic NCDs in later life, and in adult life [16].

The majority of patients (63.2%) were admitted for short period (less than 5 days), probably because most of them presented with problems that required immediate management and were discharged once their conditions stabilized. This is a good economical sign as the longer the stays, the higher the cost.

5. Conclusions

Infectious diseases remain a significant problem in Sudan and probably most of the developing countries. These diseases can be prevented by improving indoor pollution and awareness of people. However, there is increase in the prevalence of the non communicable diseases like hypertension and stroke. This could be a reflection of the epidemiological transition that has accompanied economic and social development. We should therefore prepare the infrastructure needed to deal with such an important cause of chronic disease.

Acknowledgements

We extend a heartfelt appreciation to the hospital administration and to all staff members who took time out of their days to help us finishing this project.

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