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Profile of patients visiting the pediatric emergency service in El-Behera Hospitals

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Profile of patients visiting the pediatric emergency service in El-Behera Hospitals

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Abstract

Background

The emergency department (ED) is an essential component of the medical service offered in any hospital. However, the published information about patients' profile and utilization of emergency services in both developing and developed countries is scarce. Visits caused by nonserious diseases remain a burden on the ED, preventing efficient and effective use of health services and compromising quality.

Aim

This study aimed to characterize the profile of patients visiting the emergency service in El-Behera Hospitals (Damanhour Teaching Hospital, Central Abohommos Hospital, and General Kafr Eldawar Hospital), describing the epidemiology of patient presentations and outcome in the ED.

Patients and methods

This is a descriptive study reporting the profile of patients visiting the ED for three months from January to March 2019. The EDs served children up to the age of 18 years. A junior physician first examines patients on a 24-h basis. The ED offered diagnostic services in the form of basic laboratory tests and imaging as well as brief therapeutic measures. The data were collected from the ED sheet initiated by the first examiner and completed by the ED senior. Forms were first checked for adequacy and completeness. The data included the following: demographic characteristics such as age/sex and season. Clinical history included symptoms/diagnosis and outcome within the first 24 h of presentation. Patients with previously diagnosed chronic conditions were noted. The outcomes, including discharge from the ED, whether discharge on treatment or follow-up, referral, hospital admission, or mortality, were also noted. Our cases were collected by visiting the ED for 2 h in the morning, 2 h in the evening, and 2 h at night. Every visit was once per week for three months in the three study hospitals. During the time of the visit, the investigator was able to examine most children coming for health service. Only those who were missed were in circumstances when the frequency of patient visits was overwhelming.

Results

The total number of registered ED visits during the study period (3 months) at El-Behera Hospitals (Damanhour Teaching Hospital, Central Abohommos Hospital, and General Kafr Eldawar Hospital) was 130 500 patients; the number of registered pediatric ED visits during this period was 29 340 (22.5%) patients. The sample of our study represented 600 patients by collecting random sample through regular visits to ED. Infants (1 month to 1 year) represented the largest age group (52.5%), and boys represented the majority of cases (51.5%). The main presentation was cough (25%) and respiratory distress (21%), followed by fever (15.5%), diarrhea (11%), wheezy chest (11.5%), and then convulsion (4%). Long-term illnesses were predominantly bronchial asthma (9%), hemolytic anemia (1%), congenital heart disease (0.5%), down syndrome (0.5%), and failure to thrive (0.5%). The overall mortality rate was 0.

Conclusion

Infants younger than 1 year are the largest group attending ED, representing 315 (52.5%) cases. Respiratory emergencies are the leading cause of attending ED, representing 390 (65%) cases. Rural attendees are more than urban [375 (62.5%) vs 225 (37.5%)]. Chronic disorder is one of the causes of attending ED. The rate of hospitalization is low at 72 (12%) cases. The case fatality rate is 0%. Most patients attended ED in the evening, representing 285 (47.5%) cases.

Keywords: Acute respiratory infections, emergency medical services, epidemiology

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INTRODUCTION

The emergency department (ED) is an essential component of the medical services offered in any hospital. The available literature suggests that children account for ~4–10% of all emergency medical services offered in the USA. Visits caused by nonserious diseases remain a burden on the ED, preventing efficient and effective use of health services and compromising quality [1].

There has not been much published information about the utilization of emergency services in both developing and developed countries. The availability of data would help to initiate guidelines for comparison with practices of others, to identify failures, to bring forward solutions, and to elaborate a strategy for promoting first-line emergency services. Despite continued calls for additional research in the area of pediatric emergency medical services, there remain significant limitations in the available demographic characteristics, utilization rates, and outcomes of pediatric patients using the ED [2].

Although some ill children were treated in children's hospitals or large pediatric units of medical centers, the vast majority were brought to a community hospital ED [3].

Updated information on patient characteristics and common conditions associated with pediatric EDs visits might provide additional insight into the unique needs of the pediatric population and assist community EDs in improving their pediatric care resources [4].

AIM

The present study was intended to characterize the profile of patients visiting the ED in El-Behera Hospitals (Damanhour Teaching Hospital, Central Abohommos Hospital, and General Kafr Eldawar Hospital), describing the epidemiology of patient presentations and outcome in the ED.

PATIENTS AND METHODS

Study design

This was a descriptive study of the registered visits to the pediatric ED of El-Behera Hospitals (Damanhour Teaching Hospital, Central Abohommos Hospital, and General Kafr Eldawar Hospital) for 3 months from January to March 2019.

Study settings

- (1) The pediatric EDs in every hospital (Damanhour Teaching Hospital, Central Abohommos Hospital, and General Kafr Eldawar Hospital) consist of a room for receiving cases for

history taking, examination, and guidance for management; a room for rehydration; room for oxygen therapy and nebulization; a room for life-threatening conditions and poisoning (for resuscitation, gastric lavage and monitoring); and a room for receiving surgical and orthopedic conditions.

- (2) The pediatric EDs contain all types of fluids; medications of resuscitation; analgesia; antiemetics; antiepileptic; and instruments such as for stitching, nasogastric tubes, endotracheal tubes, catheters, syringes, and others.
- (3) The EDs served children up to the age of 18 years.
- (4) Patients are first examined by a junior physician.
- (5) The ED offered diagnostic services in the form of basic laboratory tests and imaging as well as brief therapeutic measures.
- (6) In addition, more significant short-term periods of observation and or hospital management (<24 h) were offered.
- (7) By the end of the 24 h, they would have been either discharged with treatment or admitted.

Data collection

Our data were collected from the ED sheet initiated by the first examiner and completed by the ED senior. Forms were first checked for adequacy and completeness. The data included the following:

- (1) Demographic characteristics: age/sex and season.
- (2) Clinical history: symptoms/diagnosis and outcome within the first 24 h of presentation.
- (3) Patients with previously diagnosed chronic conditions were noted.
- (4) The outcome, including discharge from the ED, whether discharge on treatment or follow-up, referral, hospitals admission, or mortality, was also noted:
 - (a) Our cases were collected by visiting the ED for 2 h in the morning, 2 h in the evening, and 2 h at night. Every visit was once per week for three months in the three study hospitals, and the following table demonstrates the number of visits and patient's examination in the three study hospitals.

During the time of the visit, the investigator was able to examine the majority of children coming for health service. Only those who were missed were in circumstances when the frequency of patient visits was overwhelming.

Time of the study

- (1) The study was conducted from January to March 2019.

Inclusion criteria

The following were the inclusion criteria:

Table 1: Number of patient according to timing and number of visits

Hospitals	Number of visits	Time of visits (h)	Number of patients examined (n=600)		
			At morning (8 a.m.)	At evening (2 p.m.)	At night (8 p.m.)
Damanhour Teaching Hospital	12	24	39	57	51
Central Abohommos Hospital	12	24	48	117	69
General Kafr Eldawar Hospital	12	24	36	111	72
Total	36	72	123	285	192

- (1) Age, from birth up to 18 years.
- (2) Sex, both sexes were included.
- (3) Acute diseases and exacerbations on top of chronic diseases.

- (5) The patients and/or parents have the right to withdraw from the study at any time.
- (6) The authors have declined there being any conflict of interest regarding the study and publication, and no financial support was reported.

Exclusion criteria

The following were the exclusion criteria:

- (1) Surgical cases.
- (2) Burns.
- (3) Orthopedic cases.

Ethical considerations

- (1) The aim of the study was explained to the parents of each participant before collection of the data.
- (2) Verbal consent was taken from parents of each participant in the study.
- (3) Privacy of all data was assured.
- (4) Approval of the Local Ethical Committee was obtained before the study.

Methods of selection

The samples were collected randomly through regular visits to the ED, with three visits (2 h each) every week for 3 months in the three study hospitals.

RESULTS

The total number of registered ED visits during the study period (3months) at El-Behera hospitals (Damanhour Teaching hospital, Central Abohommos hospital and General Kafr Eldawar hospital) was 130500 patients, the number of registered pediatric ED visits at this period was 29340 patients (22.5%).The sample of our study represented 600 patients by

Table 2: Correlation between the three study hospitals and the number of patients examined and time of arrival during the study period (3 months)

	Hospital			χ^2	P	Significance
	Damanhour Teaching Hospital	Central Abohommos Hospital	General Kafr Eldawar Hospital			
Number of patients examined (total no.=600)						
At morning (8 a.m.)	39	48	36	5.497	0.064	NS
At evening (2 p.m.)	57	117	111	5.964	0.051	NS
At night (8 p.m.)	51	69	72	1.247	0.536	NS

This table shows that there was no statistically significant correlation between the three study hospitals and number of patients examined and time of arrival.

Table 3: Comparison of demographic characteristic in the three study hospitals

Hospital	Sex		χ^2	P	Significance
	Male	Female			
Damanhour Teaching Hospital	90	57	0.006	0.937	NS
Central Abohommos Hospital	133	101	3.522	0.061	NS
General Kafr Eldawar Hospital	146	73	3.888	0.049	S
Total	369	231			

Hospital	Age group				χ^2	P	Significance
	<1 month	1 month-	12 months-	5-18 years			
Damanhour Teaching Hospital	9	80	50	8	3.165	0.367	NS
Central Abohommos Hospital	16	120	77	21	0.274	0.965	NS
General Kafr Eldawar Hospital	14	115	65	25	2.822	0.420	NS
Total	39	315	192	54			

Hospital	Residence		χ^2	P	Significance
	Rural	Urban			
Damanhour Teaching Hospital	77	70	8.506	0.004	S
Central Abohommos Hospital	144	90	0.151	0.697	NS
General Kafr Eldawar Hospital	154	65	8.998	0.003	S
Total	375	225			

This table shows that there was a statistically significant correlation between residence and Damanhour Teaching Hospital and General Kafr Eldawar Hospital. This table shows that there was no statistically significant correlation between age group and the three study hospitals. This table shows that there was a statistically significant correlation between residence and Damanhour Teaching Hospital and General Kafr Eldawar Hospital. S, significance.

collecting random sample through regular visits to ED. Infants (1month-1year) represented the largest age group (52.5%), and boys represented the majority of cases (51.5%). The main presentation was cough (25%) and respiratory distress (21%), followed by fever (15.5%), diarrhoea (11%), wheezy chest (11.5%) and then convulsion (4%). Long term illnesses were predominantly bronchial asthma (9%), hemolytic anaemia (1%), congenital heart disease (0.5%), down syndrome (0.5%) and failure to thrive (0.5%). The overall mortality rate was zero. (Tables 1–10 and Figs 1–4).

DISCUSSION

Appropriate information about the profile and outcome of ED visits is required for proper planning, evaluation, and improvement of this integral aspect of health care [5].

Table 4: Presenting symptoms of patients visiting the ED (n=600)*

Symptom	n (%)
Cough	150 (25)
Respiratory distress	126 (21)
Wheezy chest	69 (11.5)
Sore throat and Rhinorrhea	93 (15.5)
Diarrhea	66 (11)
Vomiting	45 (7.5)
Jaundice	12 (2)
Convulsion	24 (4)
Disturbed conscious level	9 (1.5)
Poor feeding	12 (2)
Hypoactivity	6 (1)
Dark urine	9 (1.5)
Renal colic	6 (1)
Bleeding	3 (0.5)
Pallor	21 (3.5)
Headache	3 (0.5)
Tachycardia (palpitation)	3 (0.5)
Joint pain and swelling	3 (0.5)
Fever	93 (15.5)

This table shows that respiratory symptoms represent the main complaint attending ED (56%) then GIT symptoms (20.5%). *Because a patient could have more than one of these symptoms, the sum of the presented symptoms is 783.

The present study was an attempt to throw some light on the profile of patients visiting the EDs in El-Behera Hospitals (Damanhour Teaching Hospital, Central Abohommos Hospital, and General Kafr Eldawar Hospital), describing the epidemiology of patient presentations and outcome in the ED. Our study is considered one of the studies in Egypt that describe the profile of patients attending the ED [1].

A total of 130 500 ED visits were registered over a period of 3 months. Pediatric patients constituted 29 340 (22.5%) patients; this is in contrast to the study of Shah and colleagues, which reported 27.3%.

The total number of cases recruited in our study was 600 patients. It is assumed that the main reason was the short period of study (3 months) and the selection of patients was through random sampling by regular visits to the ED. Another reason may be the huge numbers are not true emergencies attending the ED but rather children requiring primary care services, probably owing to easy access to the emergency services as a result of being free of charges and available 24 h.

In our study, the rural attendance to the ED was more than urban. This may be owing to the low socioeconomic level in rural areas, where people attend to the ED owing to easy access

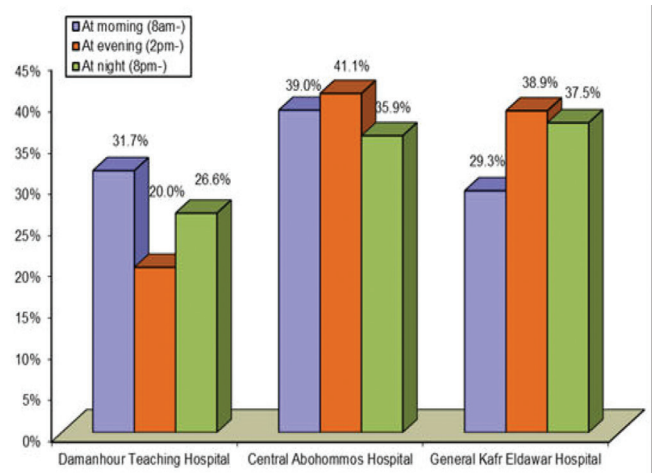


Figure 1: Correlation between the three study hospitals and the number of patients examined and time of arrival during the study period (3 months).

Table 5: Correlation between respiratory diseases and sex distribution among the studied group

Respiratory system	Sex [n (%)]		χ^2	P	Significance
	Male	Female			
Bronchiolitis	90 (24.4)	60 (26.0)	0.063	0.802	NS
Pneumonia	9 (2.4)	6 (2.6)	0.005	0.944	NS
Bronchial asthma	33 (8.9)	21 (9.1)	0.001	0.975	NS
Stridor	6 (1.6)	6 (2.6)	0.228	0.633	NS
Pertussis	3 (0.8)	0	0.629	0.428	NS
URTI	75 (20.3)	30 (13.0)	1.766	0.184	NS
Common cold	21 (5.7)	27 (11.7)	2.314	0.128	NS
TTN	0	3 (1.3)	1.605	0.205	NS

This table shows that there was no statistically significant correlation between the respiratory diseases and sex. URTI : Upper respiratory tract infection, TTN: Transient tachypnea of the newborn

Table 6: Correlation between respiratory diseases and the age in the studied group

Respiratory system	Age group [n (%)]				χ^2	P	Significance
	0 day to 1 month	>1 month to 1 year	>1 to 5 years	>5 to 18 years			
Bronchiolitis	0	141 (44.8)	9 (4.7)	0	46.287	0.000	HS
Pneumonia	0	12 (3.8)	3 (1.6)	0	1.764	0.623	NS
Bronchial Asthma	0	3 (1.0)	45 (23.4)	6 (11.1)	25.975	0.000	HS
Stridor	0	0	12 (6.3)	0	8.673	0.034	S
Pertussis	0	0	3 (1.6)	0	2.136	0.545	NS
URTI	0	21 (6.7)	51 (26.6)	33 (61.1)	38.646	0.000	HS
Common cold	0	39 (12.4)	9 (4.7)	0	6.388	0.094	NS
TTN	3 (7.7)	0	0	0	14.457	0.002	HS

This table shows that there was a highly statistically significant correlation between (bronchiolitis, bronchial asthma, stridor, URTI, and TTN) and the age of the studied group.

Table 7: Correlation between acute diseases made at the ED and sex distribution among the studied group

	Sex [n (%)]		χ^2	P	Significance
	Male	Female			
Gastroenterology and nutrition					
Gastroenteritis with dehydration	48 (13.0)	18 (7.8)	1.316	0.251	NS
Hepatitis A	0	3 (1.3)	1.605	0.205	NS
Failure to thrive	3 (0.8)	0	0.629	0.428	NS
Neonatal jaundice	3 (0.8)	6 (2.6)	1.021	0.312	NS
Hematology					
Iron deficiency anemia	12 (3.3)	0	2.555	0.110	NS
Hemolytic anemia	15 (4.1)	0	3.210	0.073	NS
Hemorrhagic disease of newborn	6 (1.6)	0	1.265	0.261	NS

This table shows that there was no statistically significant correlation between acute diseases made at the ED and sex.

Table 8: Correlation between acute diseases made at the ED and sex distribution among the studied group (continued)

	Sex		χ^2	P	Significance
	Male	Female			
CNS					
Febrile convulsion	3 (0.8)	9 (3.9)	2.297	0.130	NS
CNS infection	9 (2.4)	3 (1.3)	0.314	0.575	NS
Head trauma	3 (0.8)	0	0.629	0.428	NS
Nephrology					
Nephritis	6 (1.6)	0	1.265	0.261	NS
Infection					
Sepsis	6 (1.6)	15 (6.5)	3.322	0.068	NS
UTI	6 (1.6)	0	0.116	0.733	NS
Endocrine system					
Short stature	3 (0.8)	0	0.057	0.811	NS
Hypocalcemia convulsion	3 (0.8)	0	0.057	0.811	NS
Others					
Arthritis	0	3 (1.3)	1.605	0.205	NS
Poisoning	3 (0.8)	0	0.057	0.811	NS

This table shows that there was no statistically significant correlation between acute diseases made at the ED and sex. CNS, central nervous system.

to the emergency services as a result of being free of charges. Another reason may be owing to low medical services in rural areas. This is in accordance with the rates described in the study of Singh *et al.* [6].

In our study, most patients attended the ED in the evening (2 p.m. to 8 p.m.) [285 (47.5%)], because this is the period after the end of the outpatient clinic services. Another reason may be owing to the end of the work of the parents who come with

children following it. This is in contrast to the study of Ijaz *et al.* [7], which reported 34.8%.

Our study demonstrated that consultation for boys was higher at 369 (61.5%) cases. This may be owing to most cases attending the ED were from rural areas, where boys may be preferable. Several studies have reported similar findings [6–8]. The study showed that most cases attended the ED with their mothers only (41.5%) and mostly with one relative (55.5%). This may have occurred because the largest number of ED visits comprised young children less than 1 year old, who depend on others, mainly their mothers.

The study showed that neonates and infants younger than 1 year accounted for the largest number of ED visits [354 (59%)]. This may be because most common cause of morbidity in our study is acute respiratory infections, which occur mainly in younger children. This is in accordance with rates described in the study of Bazaraa *et al.* [1], which reported 53.8%; Alpern *et al.* [9]; and Karabocuoğlu *et al.* [10], which reported 57.7%.

The most common cause of infant morbidity and mortality worldwide has traditionally been acute respiratory infections [11]. The most common cause of morbidity in our study was respiratory infections (65%). This may be because our study was conducted in winter months. This is in accordance with the study of McDermott *et al.* [12].

Acute bronchiolitis represented 25% ($n = 150$) of the cases in our study. This may be owing to the largest number of ED visits were younger than 1 year, and our study occurred in winter months. This is in comparison with the study of Bazaraa *et al.* [1], which reported 6.8%. Cough, wheezy chest,

and respiratory distress accounted for 45.5% of ED visits in our study, and comparable results had been reported by other several studies [13,14] and are similar to the study of Bazaraa *et al.* [1], which reported 41.7%.

In our study, renal symptoms represented 2.5%. Our findings were in contrast to the study of Bazaraa *et al.* [1], which reported 6.2%.

CNS symptoms represented 8.5%. Our findings were in comparison to the study of Bazaraa *et al.* [1], which reported 9.3%.

In our study, hematological symptoms represented 4.5%. This may be mainly owing to iron deficiency anemia, which could be explained by the low education and poor nutrition among the cases. This is in contrast to the study of Bazaraa *et al.* [1] which reported 17.9%.

The study showed that fever represented 12%. Moreover, this occurred because the most common cause of morbidity in our study was acute respiratory infections. This is in comparison to the study of Bazaraa *et al.* [1], which reported 9.8%.

Our study showed that acute diarrheal disease was reported in 11% ($n = 22$) because our study was done in winter months. This is in comparison to the study by Bazaraa *et al.* [1], which reported 1.9%.

The study showed that pneumonia represented 2.5%. This is in contrast to the study done by Bazaraa *et al.* [1], which reported 27.6%.

Table 9: Outcome of the studied group

Outcome	$n=600$ [n (%)]
Hospitalization	72 (12)
Discharged on home treatment	213 (35.5)
Follow up in the special clinic	240 (40.0)
Referred to other specialties	9 (1.5)
Referred to other hospitals	36 (6.0)
No abnormality detected	30 (5)
Mortality	0

This table shows that patients follow up in specialized clinic represented (40%), that discharge on home treatment represented (35.5%), the majority of patients came to the ED (75.5%) treated in these hospitals, 6% of studied group showed no abnormality and mortality rate was 0.

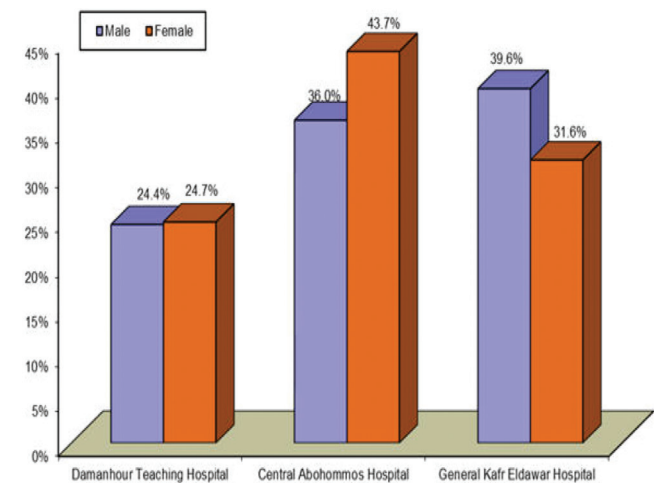


Figure 2: Correlation between sex and the three study hospitals.

Table 10: Correlation between hospitalization of studied group and sex

	n	Sex [n (%)]		χ^2	P	Significance
		Male	Female			
PICU admission	18 (3.0)	12 (3.3)	6 (2.6)	0.070	0.791	NS
NICU admission	12 (2.0)	9 (2.4)	3 (1.3)	0.314	0.575	NS
Ward admission	42 (7.0)	30 (8.1)	12 (5.2)	0.627	0.428	NS

This table shows that there was no statistically significant correlation between hospitalization of studied group and sex.

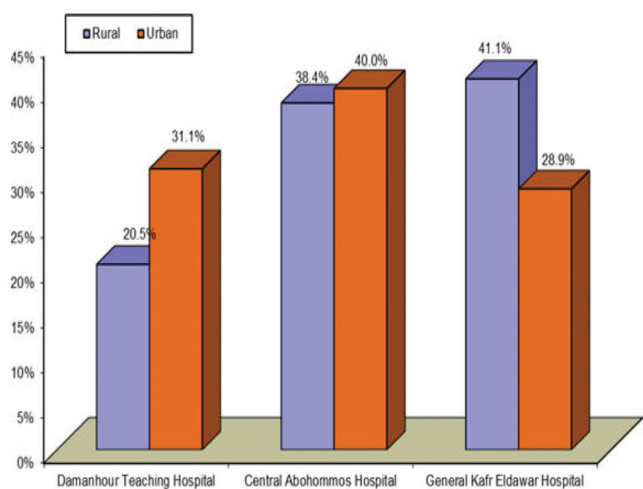


Figure 3: Correlation between residence and the three study hospitals.

The study showed that URTI and common cold were the most common respiratory-related ED diagnosis and represented 25.5% ($n = 51$). This may be because our study was conducted in winter months. This is in accordance with the study by McDermott *et al.* [12] and in contrast to the study of Bazaraa *et al.* [1], which reported 1.1%.

Our study showed that croup represented 2%. This is in accordance with the study by Bazaraa *et al.* [1]. This study showed that febrile seizure represented 2%, which occurs in the age group of 6 months to 5 years. This is because it occurs in an age-related manner.

Urinary tract infection represented 1% in our study. This is in contrast to the study by Bazaraa *et al.* [1], which reported 2.1%. The study showed that CNS infection represented 2%, whereas poisoning represented 0.5%. This is in contrast to the study of McDermott *et al.* [12]. This may be owing to the presence of poison centers. Nephritis represented 2% in our study. This in contrast to the study of Bazaraa *et al.* [1], which reported 3.2%.

The study showed that patients attending the ED with known chronic disorders represented 11.5%. This is in contrast to the study by Bazaraa *et al.* [1], which reported 21%. In our study, asthma represented only 9% of known morbidities.

Our findings were also in accordance with the study of Bazaraa *et al.* [1], which reported 10%, but in contrast to the study of Ceballos-Martinez *et al.* [15], which reported 20.3%. Hemolytic anemia (G6PD Deficiency) represented 2.5% of our study, which occurs in male only. The main reason was that G6PD deficiency is a sex-linked recessive disorder, which is seen mainly in males. This is in contrast to the study of Bazaraa *et al.* [1], which reported 11%. Congenital heart diseases represented 0.5%; this is in contrast to the study by Bazaraa *et al.* [1], which reported 23.3%.

The study showed that the rate of hospitalization was 12%. It is assumed that the main reason was that most patients attending the ED are not true emergencies. Another reason may be the short period of our study. This is in contrast to

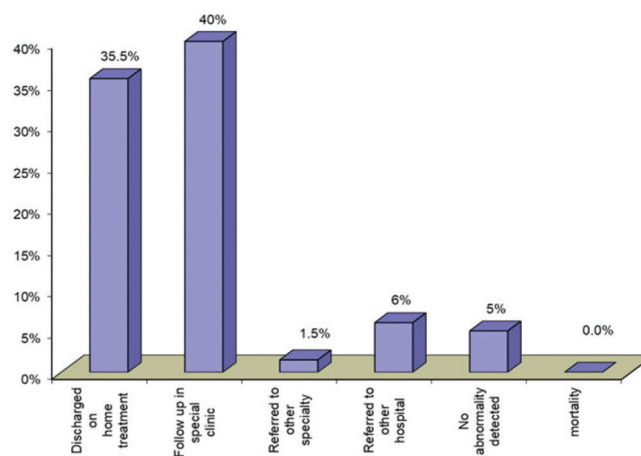


Figure 4: Outcome among the studied group.

the admission rate described in a study done in Australia by Acworth *et al.* [16], which reported (24%), and by Bazaraa *et al.* [1], which reported 35%, but equal to that found in a national survey in the USA [17], which reported 12%.

Our study had demonstrated that the mortality rate was 0%. This occurred because of the short period of our study and the small number of the patient sample. This was in contrast to the studies by Bazaraa *et al.* and Claudet *et al.* [1,18], which were associated with higher rates of mortality, probably because of a longer period of study and a larger patient sample.

Our study showed that patients discharged from the ED were 83%; this was in contrast to the study of Bazaraa *et al.* [1], which reported 64.1%. This study showed that 40% of the patients attending the ED followed up in the outpatient clinic; this is in contrast to the study of Bazaraa *et al.* [1] which reported 19.7%. Patients discharged on home treatment represented 35.5%; this is supported by the findings of the study by Bazaraa *et al.* [1]. Overall, 6% of the patients were referred to other hospitals, which is similar to the study of Bazaraa *et al.* [1], and 1.5% of patients were referred to a subspecialist, which is in contrast to the study of Bazaraa *et al.* [1].

Our study had demonstrated that the rate of PICU admission was 3%. This is in accordance with findings described by Bazaraa *et al.* [1].

The study showed that the rate of NICU admission was 2%, which occurs in an age-related manner (<29 days). This is in accordance with the study of Bazaraa *et al.* [1].

The study showed that the rate of general ward admission was 7%. This was in contrast to the study of Bazaraa *et al.* [1], which was associated with higher rates of general ward admission; this may be owing to a longer period of study and larger patient sample.

CONCLUSION

- (1) Infants younger than 1 year are the largest group attending ED.

- (2) The respiratory emergencies are the main cause of attending ED.
- (3) Rural attendees are more than urban ones.
- (4) Most patients were attending ED in the evening.
- (5) The case fatality rate is 0%.
- (6) Chronic disorder is one of the causes of attending ED.
- (7) The rate of hospitalization is low.

Recommendations

We recommend the following:

- (1) A proposal to make the emergency ticket a small fee with the exception of cases of accidents, burns, coma, fractures, and convulsion, to reduce the vast numbers attending to ED without emergency.
- (2) Working to increase the numbers of emergency doctors to overcome the vast numbers of frequent cases, which leads to raising the level of medical services.
- (3) Media awareness for citizens to provide state services and attention to ways to prevent infectious diseases.

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Conflicts of interest

There are no conflicts of interest.

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