

RESULTS

GEOGRAPHY OF KALUOBIA
GOVERNORATE

INTRODUCTION TO KALUOBIA GOVERNORATE

Kaluobia governorate in lower Egypt was chosen for the field study where the population is 1,870,132 in 1981.

It is surrounded by the provinces of Cairo and Sharkya at south and eastern south and by provinces of sharkya and Dakahlia at north and eastern north. Also it is surrounded by Menoufia province and Damita branch at west. Fig.(1).

The Capital of kaluobia governorate is Benha where it constitute about 312266 rural and urban inhabitants.

The governorate includes nine sectors and cities (Benha, Kafr Shokr, Kaha, Shebin ELkanatir, El Khanka, Kaluob, the Barriaga and Shubra EL Khena) It is also includes 151 villages fig. (2).

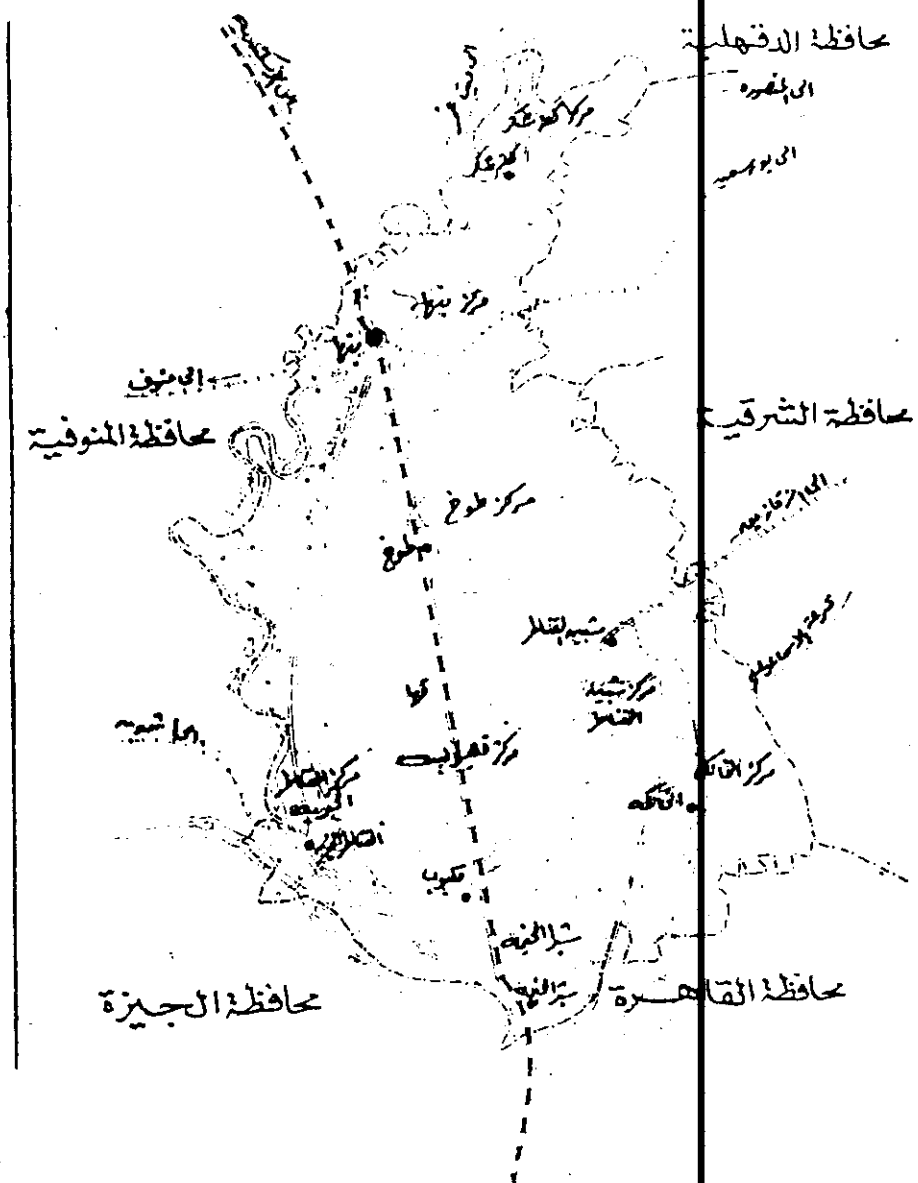


Figure (1) Showing geography of Kaluobia governorate.

محافظة القليوبية

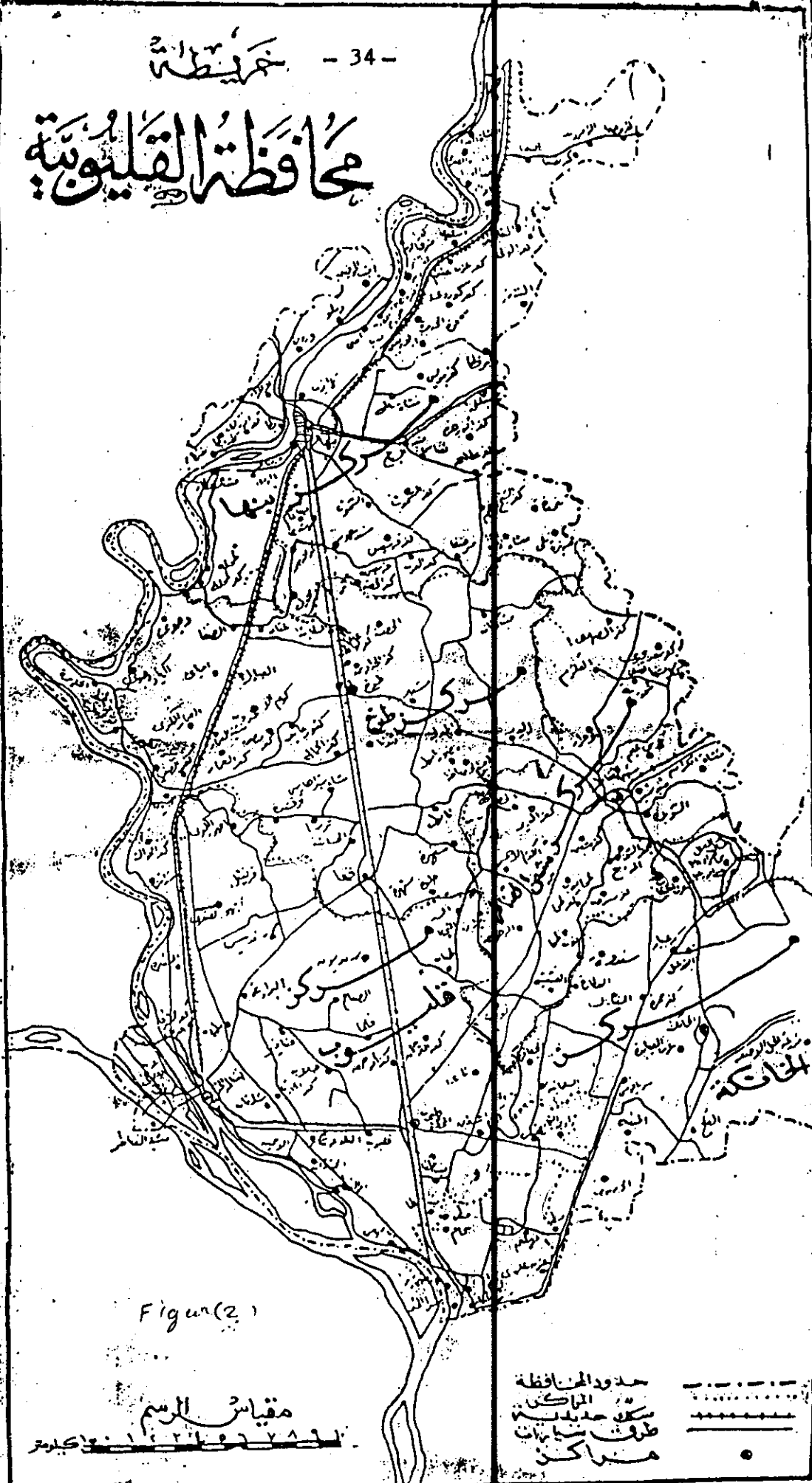


Figure (2)

Figure (2) showing different sectors and towns in Kaluobia governorate.

It is interesting to know that cultivation is concentrated in Kafr Shokr, Benha, Toukh, the Barriage and Kaluob while industrial distriction are Shobra El Khema and many other industrial areas like Abu Zaabal, Khanka, Kaha and Kaluob.

The excellent position makes it an important centre for transportation and contain a network of different means of transportation in the form of trains, buses, all of them make travelling from any site to the capital is very easiy also a good connection between the goverorate and other governorates make it not only the catchment area of Benha fever hospital but other sites from other governorates are considered as catchment areas of Benha fever hospital.

It is interesting to show in the following tables and figures the demographic parameters of the population in kaluobia governorates as follow.

Table (1) age distribution in different sectors and towns. From table (2) and figure (3) it is clearly the number of villages in each sector or city. In table (3) and figure(4) it is noticed the distribution of population in both rural and urban areas in different sectors of kaluobia governorate. In table 4,5 and figure(5) it is shown the pattern of health services in kaluobia governorate.

Table (1) : Age distribution of different sectors in
kaluobia.

Sector	12 Year	12 Year and below 65	65 Y and more	Total
Kafrshokr	25246	51200	3721	80167
Benha	87333	183072	9118	279523
Toukh	78262	149738	8398	236398
Kaha	4785	9256	332	14373
Shēbin Elkanat	62699	121523	6130	190352
El Khanka	49388	99965	3778	153131
Kaluob	62021	117888	5044	184953
Shubra Elkhema	143832	245370	4498	393700
The Barriaga	47515	89817	4077	141409
Total	561081	1067829	45046	1674006

Table (2) : Number of villages in each sector in kaluobia governorate.

Séctor	NO	No. of vill ages
Kafir Shokr	1	18
Benha	1	35
Toukh	1	31
Kaha	1	7
Shebin Elhan	1	19
El Khanka	1	13
Kaluob	1	12
The Barriaga	1	12
Shubra Elkhema	1	4
Total	9	151

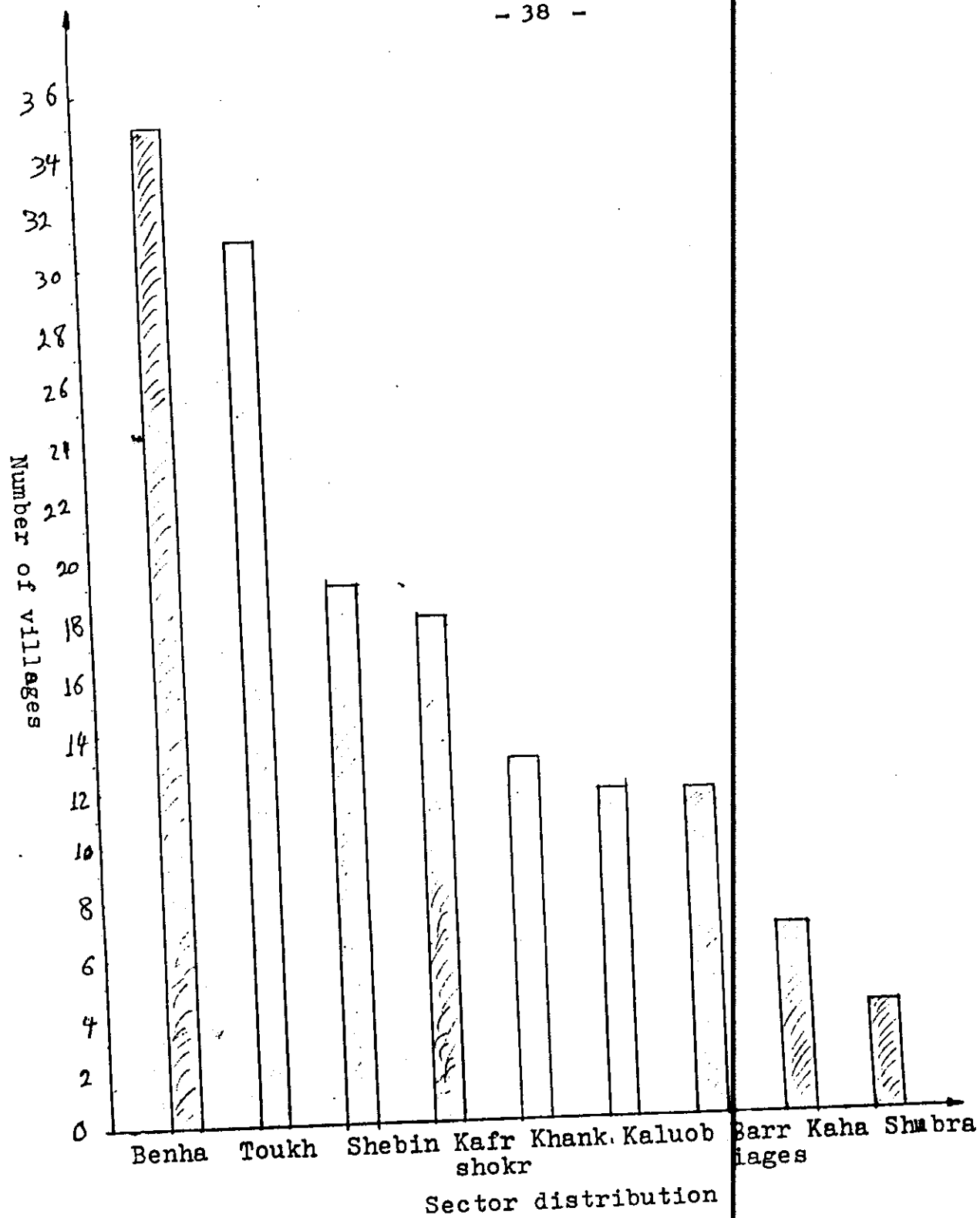
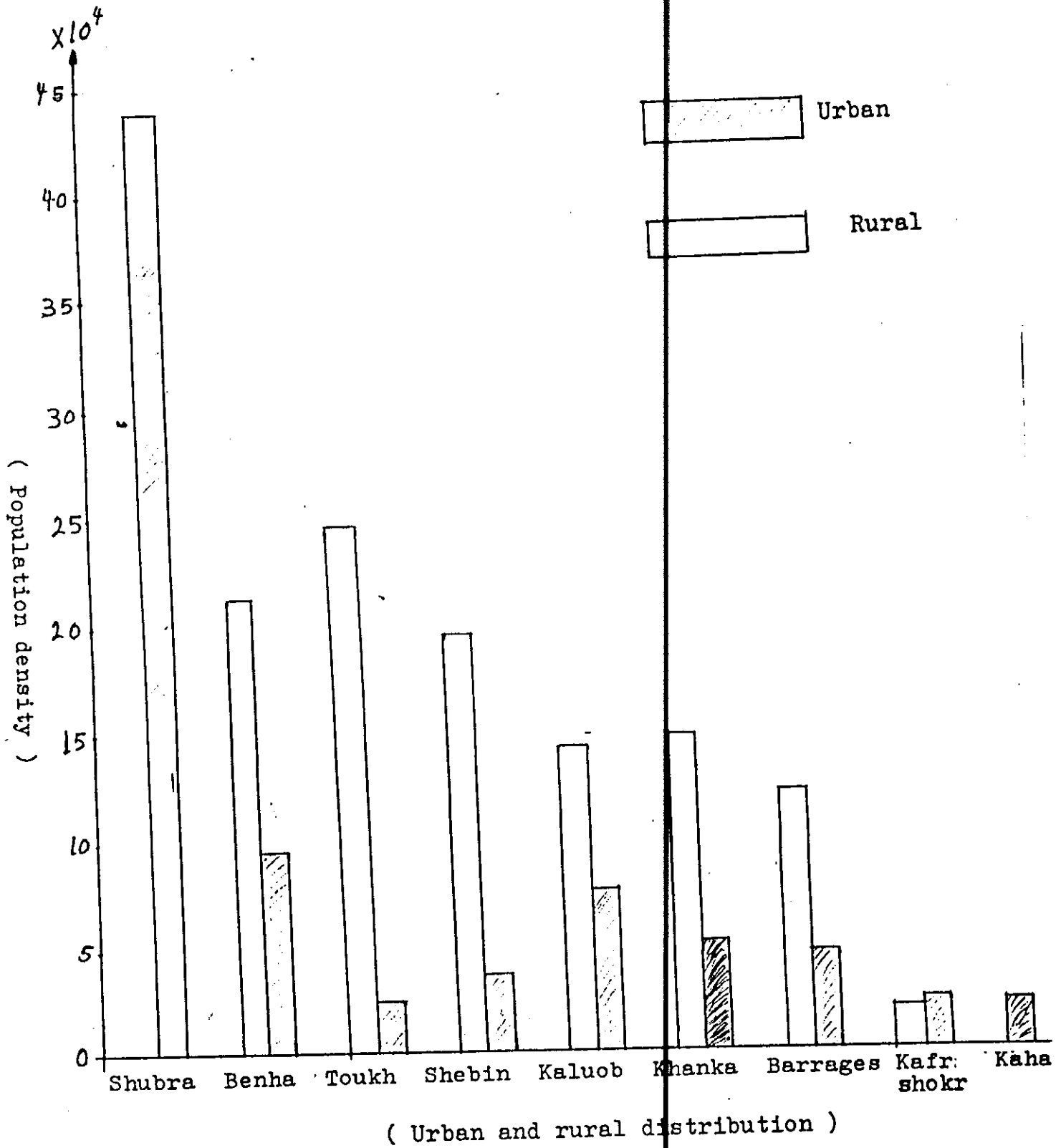


Figure (3) : Showing number of villages in each sector of Kaluobia.

Table (3) : Urban and rural distribution of population
(Census 1981):

Sector	Urban	Rural	Total
Kafrshokr	211.1	7748	89587
Benha	99416	212850	312266
Toukh	22660	241439	264099
Kaha	16057	-----	16057
Shabin Elkanatr	28570	184077	212647
El.Khanka	36174	134894	171068
Kaluob	70088	136532	206620
The Barriaga	39894	11079	157973
Shubra Elkhema	439815	-----	439815
Total	764775	1105357	1870132



(Urban and rural distribution)
Figure (4): Showing population distribution in urban and rural areas in different sectors .

Table(4) : Pattern of health services(H.S) in rural areas.

Type of health	No. of H.S.	No of beds
Rural Hospital	2	76
Health unit	29	472
Peripheral.H.U	73	--
Health centre	9	--
Total	113	648

Table (5) : Distribution of health services and number of beds in Kaluobia governorate.

Health service	No	No of beds
Training hospital	1	350
General hospital	1	160
Central hospital		497
Chest hospital	2	428
Fever hospital	5	195
Ophthalmic hos.	2	84
Peripheral oph.	6	50
Leprotic hosp.	1	1200
Periph. Leprotic	4	----
Psycatric hos.	1	2447
Peripheral psyc.	1	16

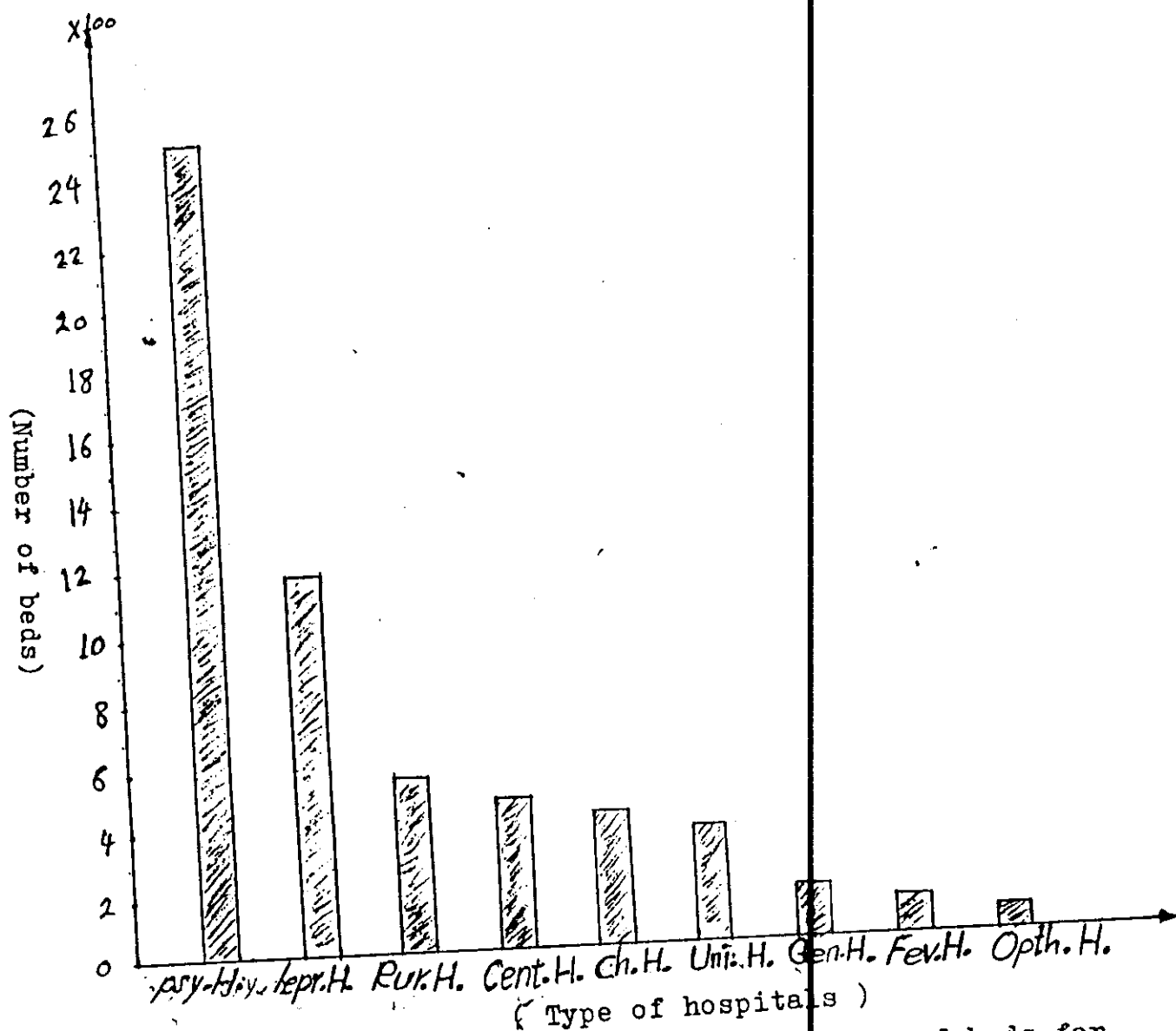


Figure (5): showing the distribution of beds for different types of hospitals in Kaluobia governorate.

HOST FEATURES

Table (6) : Distribution of studied cases according to their final diagnosis.

Final diagnosis of the disease	Number	Percent
G. Enteritis	110	22 .0
V. Hepatitis	86	17 .2
Bronchitis	69	13 .8
Common Cold	64	12 .8
* Tetanus	62	12.4
Bronchopneumonia	38	7 .6
Enterica	27	5 .4
Meningitis	18	3 .6
* Others	26	5 .2
Total	500	100.0

*Tentanus includes tetanus neonatorum and other types.

* Others include puerperal sepsis, mumps, tonsillitis, cellulitis and rheumatic fever.

It is clearly illustrated that the common infectious disease that present in the sample were gastro enteritis, viral hepatitis, bronchitis, common cold, and tetanus representing 22%, 17.2 % , 13.8 % 12,8 % and 12.4 % respectively.

Table (7) : Distribution of the sample according to age

Age in Years	Number	Percent
< 10	280	56.0
10 -	72	14.4
20 -	87	17.4
30 -	33	6 .6
40 +	28	5 .6
Total	500	100.0

It is clearly evident from this table that most of the sample studied (500) was below 10 years representing 56% while those aged 30 years or more representing only 12.2%.

Table (8): Distribution of final diagnosis of studied cases according to age.

Fin.diag. Age in Years	G. enteritis		V. Hepatitis		Acute resp infect.		Tetanus		Enterica		Meningitis		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<10	96	87.3	29	33.7	74	43.3	54	87.1	5	18.5	15	83.3	7	26.9	280	56.0
10-	6	5.5	17	19.8	28	16.4	1	1.6	9	33.3	2	11.1	9	34.6	72	14.4
20-	3	2.7	22	25.6	35	20.5	3	4.8	13	48.2	1	5.6	10	38.5	87	17.4
30-	3	2.7	11	18.8	19	11.1	-	-	-	-	-	-	-	-	33	6.6
40+	2	1.8	7	8.1	15	8.7	4	6.5	-	-	-	-	-	-	28	5.6
Total	110	100.0	86	100.0	171	100.0	62	100.0	27	100.0	18	100.0	26	100.0	500	100.0

* Acute respiratory tract infections including:- Common Cold, Bronchitis and Broncho pneumonia. It is evident from this table that most cases with Gastric enterite, Tetanus and Meningitis were below 10 years of age representing 87.3%, 87.1% and 83.3% while most cases of Enterica were between 20 - 30 years.

Table (9) : Distribution of the sample according to sex.

Sex	Number	Percent
Males	321	64.2
Females	179	35.8
Total	500	100.0

This table shows that most of the sample was males representing 64.2 % while females representing only 35.8 %.

Table(10): Distribution of final diagnosis of studied cases according to sex.

Final diagnosis	Males		Females		total	
	No	%	No	%	No	%
G. enteritis	68	21.2	42	23.5	110	22.0
V. Hepatitis	73	22.8	13	7.3	86	17.2
Acute Resp. iratory	98	30.5	73	40.7	171	34.2
Tetanus	38	11.8	24	13.4	62	12.4
Enterica	19	5.9	8	4.5	27	5.4
Meningitis	11	3.4	7	3.9	18	3.6
Others	14	4.4	12	6.7	26	5.2
Total	321	100.0	179	100.0	500	100.0

$$\chi^2 = 21.0$$

$$P < 0.05$$

It is clearly evident from this table that there was a significant increase of infectious diseases among males than females

Table (11) : Sex distribution of studied cases in relation to age

Sex Age in years		Males		Females		Total	
		No	%	No	%	No	%
< 10		198	70.7	82	29.3	280	100.0
10 -		43	59.7	29	40.3	72	100.0
20 -		46	52.9	41	47.1	87	100.0
30 -		18	54.5	15	45.5	33	100.0
40 +		16	57.1	12	42.9	28	100.0
Total		321	64.2	179	35.8	500	100.0

This table shows that 70.7 % of patients less than 10 years were males while females of the same age group representing only 29.3 %.

Table (12) : Distribution of the sample according to residence.

Residence	Number	Percent
Urban	98	19.6
Rural	402	80.4
Total	500	100.0

It is evident from the table that rural cases formed the majority of the sample representing 80.4 % while urban cases were only 19.6 %.

Table (13) : Relationship between final diagnosis of studied cases and residence.

Residence Final diagnosis	Urban		Rural		Total	
	No	%	No	%	No	%
G. Enteritis	28	25.5	82	47.5	110	100.0
V. Hepatitis	15	17.4	71	82.6	86	100.0
Acute respiratory	36	21.1	135	78.9	171	100.0
Tetanus	4	6.5	58	93.5	62	100.0
Enterica	5	18.5	22	81.5	27	100.0
Meningitis	3	16.7	15	83.3	18	100.0
Others	7	26.9	19	73.1	26	100.0
Total	98	19.6	402	80.4	500	100.0

$$\chi^2 = 11.5$$

$$P > 0.05$$

It is clearly illustrated from this table that there was insignificant increase of infectious diseases among rural areas than in urban areas representing 80.4 and 19.6% respectively.

Table (14) : Duration of illness before admission in relation to residence.

Dur. of illness before adm.	Urban area		Rural area		Total	
	No	%	No	%	No	%
< 1 Week	84	85.7	235	58.5	319	63.8
1 Week -	6	6.1	91	22.6	97	19.4
2 Week -	5	5.1	63	15.7	68	13.6
3 Week +	3	3.1	13	3.2	16	3.2
Total	98	100.0	402	100.0	500	100.0

$$\chi^2 = 26.7$$

$$P < 0.05$$

This table shows that 85.7 % of urban cases had a duration of illness before admission less than one week while in rural cases it represented 58.5 % . On other hand 41.5 % of rural cases had a duration of illness before admission one week or more while in urban cases it represented only 14.3 %. This difference is statistically significant.

Table (15) : Pattern of admission of studied cases in relation to residence.

Pattern of admission	Urban area		Rural area		Total	
	No	%	No	%	No	%
By himself	26	26.5	316	78.6	342	68.4
Other hospitals	14	14.3	20	5.0	34	6.8
Private clinics	58	59.2	66	16.4	124	24.8
Total	98	100.0	402	100.0	500	100.0

$$\chi^2 = 99.3$$

$$p < 0.05$$

It is evident from this table that most of urban cases were admitted from private clinics while rural cases that admitted by this pattern were low representing 59.2 % and 16.4 % respectively and this difference is statistically significant

Table (16) : Distribution of final diagnosis of studied cases according to occupation.

Final diagnosis	G. Enteritis		V. Hepatitis		Acute Resp.		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Administratives	--	--	14	16.3	3	1.8	--	--	2	7.4	--	--	--	--	19	3.8
Manual Skilled	3	2.7	16	18.6	10	5.8	--	--	3	11.1	--	--	4	15.4	36	7.2
*Unskilled	10	9.1	7	8.1	60	35.1	6	9.7	3	11.1	--	--	--	--	86	17.2
House wives	6	5.5	7	8.1	19	11.1	2	3.2	2	7.4	--	--	9	34.6	45	9.0
*Others	41	82.7	42	48.9	79	46.2	54	87.1	17	63.0	18	100	13	50.0	314	62.8
Total	110	100.0	86	100.0	171	100.0	62	100.0	27	100.0	18	100.0	16	100.0	500	100.0

* Unskilled including agricultural workers and labourers.

* Others including infants, children and students.

It is clearly evident from this table that the "Others" group is highly susceptible to infectious diseases especially meningitis, tetanus and gastro enteritis representing (100 % , 87.1% and 82.7 %) respectively.

Table (17) : Pattern of admission of studied cases in relation to occupation .

Pattern of admission Occupation	Themselves		other hosp,		Priv. Clinics		Total	
	No	%	No	%	No	%	No	%
Administratives	2	10.5	11	57.9	6	31.6	19	100.0
Manual skilled.	--	----	4	11.1	32	80.9	36	100.0
*Unskilled ,	82	95.4	--	----	4	4 . 6	86	100.0
House wives..	25	55.6	6	13.3	14	31.1	45	100.0
*Others ,	233	74.2	13	4 . 1	68	21.7	314	100.0
Total	342	68.4	34	6 . 8	124	24.8	500	100.0

*Unskilled including agricultural workers and labourers.

*Others:including infants, children, and students.

It is clearly evident from this table that most of skilled workers (80.9 %) were admitted by a recommendation from private clinics while most of administratives(57.9%) were admitted by a reference from other hospitals.

HOSPITAL UTILIZATION

Table (18) : Monthly distribution of admitted and nonadmitted cases.

Month	No. of adm		No.Of nonadm		Total	
	No	%	No	%	No	%
August	421	14.4	2508	85.6	2929	100.0
September	369	12.3	2637	87.7	3006	100.0
October	335	11.5 %	2578	88.5	2913	100.0
Total	1125	12.7	7723	87.3	8848	100.0

$$\chi^2 = 11.7$$

$$P < 0.05$$

It is clearly evident that the percentage of admitted cases during the period of research (August - October 1985) is significantly lower than non admitted cases.representing 14.4 % , 12.3 % and 11.5 respectively.

Table(19) : Hospital stay in relation to age .

Hosp. stay Age in years	<1 week		1 week -		2 week +		Total	
	No	%	No	%	No	%	No	%
10	197	70.4	69	24.6	14	5.00	280	100.0
10 -	29	40.3	36	50.0	7	9.7	72	100.0
20 -	35	40.2	44	50.6	8	9.2	87	100.0
30 -	10	30.3	11	33.3	12	36.4	33	100.0
40 +	6	21.4	12	42.9	10	35.7	28	100.0
Total	277	55.4	172	34.4	51	10.2	500	100.0

$$\chi^2 = 94.4$$

$$P < 0.05$$

It is noticed from this table that 70.4 % of patients less than ten years had stayed in the hospital less than one week while 21.4 % of patients forty years or more had stayed the same period. This is statistically significant.

Table (20) : Hospital stay inrelation to residence.

Residence Hospital	Urban		Rural		Total	
	No	%	No	%	No	%
< 1 week	60	61.3	217	54.0	277	55.4
1 week -	22	22.4	150	37.3	172	34.4
2 week +	16	16.3	35	8.7	51	100.0
Total	98	100.0	402	100.0	500	100.0

$$\chi^2 = 10.2$$

$$P < 0.05$$

It is clearly evident that 61.3 % of urban cases had stayed in the hospital less than one week while 54 % of rural cases had stayed the same period and this difference is statistically significant.

Table (21) . : Hospital stay of studied cases in relation to different diseases.

Type of disease Hospital stay	< 1week		1 week -		2week +		Total	
	No	%	No	%	No	%	No	%
G. enteritis	88	80	18	16.4	4	3.6	110	100.0
V. Hepatitis	7	8.2	64	74.4	15	17.4	86	100.0
Acute Resp.	132	77.2	33	19.3	6	3.5	171	100.0
Tetanus	38	61.5	16	25.8	8	12.7	62	100.0
Enterica	--	---	16	59.3	11	40.7	27	100.0
Meningitis	--	---	15	83.3	3	16.7	18	100.0
Others	12	46.3	10	38.5	4	15.4	26	100.0
Total	277	55.4	172	34.4	51	10.2	500	100.0

It is clearly evident from this table that 80% of gastroenteritis, 77.2 % of acute respiratory tract infections and 61.5 % of tetanus had stayed less than one week while all cases of enterica and meningitis and most of cases of viral hepatitis had stayed one week or more.

Table (22). : Average length of stay of studied different diseases

Type of disease	Average length of stay
G. Enteritis	5
V. Hepatitis	10
Acute respiratory	6
Tetanus	4
Enterica	11
Meningitis	9
Others	6

This table shows that cases of tetanus and gastroenteritis had the shortest duration of hospital stay (4 and 5 days respectively) while cases of enterica and viral hepatitis had the longest duration of stay (11 and 10 days respectively).

Table (23) Hospital stay in relation to occupation.

Hosp. stay Occupation	<1 Week		1 Week -		2 week +		Total	
	No	%	No	%	No	%	No	%
Administratives	2	10.5	15	79.0	2	10.5	19	100.0
Manual skilled	5	13.9	21	58.3	10	27.8	36	100.0
Unskilled	48	55.8	21	24.4	17	19.8	86	100.0
House wives	19	42.2	17	37.8	9	20.0	45	100.0
Others	203	64.7	98	31.2	13	4.1	314	100.0
Total	277	55.4	172	34.4	51	10.2	500	100.0

$$\chi^2 = 67.5$$

$$P < 0.05$$

It is clearly evident from this table that most cases of "Others" and unskilled (64.7%, 55.8 %) had stayed less than while most cases of administratives and manual skilled (89.5 %, 76.1 %) had stayed one week or more . This difference is statistically significant.

Table (24) : Relation between type of disease and outcome of discharge.

Type of disease	G. enteritis		V. Hepatitis		Acute Resp.		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Improved	88	80.0	71	82.6	160	93.6	21	33.9	24	88.9	16	88.9	24	92.3	404	80.8
Death	10	9.1	6	67.0	4	2.3	37	59.7	--	--	2	11.1	2	---	61	12.2
Escaped	3	2.7	6	7.0	4	2.3	2	3.2	3	11.1	--	---	--	---	18	3.6
Referred	9	8.2	3	3.4	3	1.8	2	3.2	--	---	--	---	--	---	17	3.4
Total	110	100.0	86	100.0	171	100.0	62	100	27	100	18	100	26	100	500	100

It is clearly illustrated from this table that the highest percentage of improvement was among cases of acute respiratory tract infection, the group of other cases, Meningitis and Enterica where they representing 93.6%, 92.3%, 88.9% and 88.9%. On other hand the highest percentage of deaths was among cases of Tetanus (59.7%).

Table (25) : Relation between hospital stay and out come of discharge.

Hosp. Stay Outcome	< 1 week		1 week —		2 week +		Total	
	No	%	No	%	No	%	No	%
Improved	210	52.0	154	38.1	40	9.9	404	100.0
Death	54	88.5	4	6.6	3	4.9	61	100.0
Escaped	7	38.9	6	33.3	5	27.8	18	100.0
Referred	6	35.3	8	47.1	3	17.6	17	100.0
Total	277	55.4	172	34.4	51	10.2	500	100.0

$$\chi^2 = 39.3$$

$$P < 0.05$$

It is clearly noticed that 52 % of improved cases were discharged after a hospital stay less than one week while 88.5 of dead cases were discharged after the same period of stay.

On the other hand 48 % of improved cases had stayed one week or more while only 11.5 % of dead cases had stayed the same period. This difference is statistically significant.

Table (26) : Relation between Residence and outcome of discharge.

Residence Outcome	Urban		Rural		Total	
	No	%	No	%	No	%
Improved	75	18.6	329	81.4	404	100.0
Death	11	18.0	50	82.0	61	100.0
Escaped	5	27.8	13	72.2	18	100.0
Referred	7	41.2	10	58.8	17	100.0
Total	98	19.6	402	80.4	500	100.0

$$\chi^2 = 6.2$$

$$P > 0.05$$

It is clearly illustrated that 82 % of dead cases were from rural areas while only 18 % were from urban areas and this difference is statistically insignificant.

Table (27) :Case fatality rate of different diseases among studied cases.

Type of diseases	Number of cases	Number of deaths	Case fatality rate
G. enteritis	110	10	9.1 %
V. Hepatitis	86	5	5.8
Acute Respiratory	171	4	2.3
Tetanus	62	37	59.7
Enterica	27	---	---
Meningitis	18	3	0 .06
Others	26	2	7 .7
Total	500.	61	12.2

It is clearly illustrated from this table that case fatality rate of tetanus(59.7 %) is higer than those of other infectious diseases.

Table (28) : Monthly distribution of admitted and discharged cases.

Month	Nb. of admitted		No. of discharged	
	No.	%	No.	%
August	421	37.4	414	37.9
September	369	32.8	357	32.7
October	335	29.8	320	29.4
Total	1125	100.0	1091	100.0

This table shows that total number of admitted cases during the period of research (August -- october 1985) were 1125 whil total number of discharged cases during the same period were 1091.

Table (29) : Percent of provisional and final diagnosis of studied cases.

Type of disease	Provis. diag		Final diag	
	No	%	No	%
G. Enteritis	110	22.0	110	22.0
V. Hepatitis	86	17.2	86	17.2
Bronchitis	48	9.6	69	13.8
Common cold	32	6.4	64	12.8
Tetanus	62	12.4	62	12.4
Bronchopneumonia	38	7.6	38	7.6
Enterica	80	16.0	27	5.4
Meningitis	18	3.6	18	3.6
Others	26	5.2	26	5.2
Total	500	100.0	500	100.0

It is clearly evident from this table that there is no difference between provisional and final diagnosis except in cases that provisionally diagnosed as enterica where 16% of cases were provisionally diagnosed as enterica, only 5.4 % of them were finally diagnosed as enterica.

Table (30) : Relationship between requested and performed laboratory investigations.

Type of inves.	Requested	Performed	Ratio of fulfilment
	No	No	
Urine and stool	268	252	94.0
Blood count	160	135	84.4
Widal test	94	51	53.1
Chest, X ray	146	74	50.7
C.S.F. analysis	21	12	57.1
Bilirubin	81	8	9.9
Liver function tests	71	2	2.8

It is clearly evident from this table that ratio of fulfilment for urine & stool and blood count was very high representing 94 %, 84.4 % while in other specific tests this ratio was low.

Table (31) Indices of hospital bed utilization.

Hospital Indices	
1 - Average length of stay	6 days
2 - Bed occupancy rate	90 %
3 - Bed turn over rate	13.6

It is observed from this table that the average length of hospital stay in the three months of research was 6 days, bed occupancy rate 90 % and bed turn over rate 13.6.

THE CATCHMENT AREA OF BENHA FEVER HOSPITAL

Table (32) : Distribution of rural cases within Kaluobia Governorate .

Rural area	No of cases	%	Rural area	No of cases	%	Rural area	No of cases	%
Benha District :								
Bata	27	5.4	Marsafa	8	1.6	K. El Shagr Ibrahim	5	1.0
Warwarah	21	4.2	Batawda	7	1.4	Meet Asem	5	1.0
Meet El Hofein	20	4	Sheblanga	7	1.4	K. Manaker	5	1.0
Atriyb	17	3.4	Sandanhour	6	1.2	Bekera	4	0.8
Al Shemout	17	3.4	Meet El Sebah	6	1.2	Talbant	4	0.8
K. El Gazzar	15	3.0	Nokbas	6	1.2	Gamgaraha	4	0.8
Al Ramalaha	14	2.8	Tahla	6	1.2	K. Abu Zekri	4	0.8
Damallow	12	2.4	Degwa	5	1.0	K. Mounes	3	0.6
Meet El Attar	11	2.2	Barkata	5	1.0	K. Mansour	3	0.6
K. Atalla	9	1.8	K. Amer	5	1.0	K. Abu Zahra	3	0.6
Meet Rady	8	1.6	K. Farses	5	1.0	Belly	1	0.2
			K. Saad	5	1.5	Subtotal	283	56.6

Continuous :

Rural area	No of cases	%	Rural area	No of cases	%	Rural area	No of cases	%
Toukh District :			Kafr Shukr District:			Kaluob District:		
Al Amaar	5	1.0	El Shokr	5	1.0	Sendyon	2	0.4
Meer Kanaana	5	1.0	K. Meafa	4	0.8	Ezbet Zaki	2	0.4
Emyui	3	0.6	El Monshia	3	0.6	Subtotal	4	0.8
Shubra Hares	3	0.6	Monsh. Diab	3	0.6	Shebin El Kanater D		
Moshtoher	3	0.6	K. Ali	3	0.6	El Farokia	2	0.4
Subtotal	19	3.8	Subtotal	18	3.6	El Bakly	2	0.4
						Subtotal	4	0.8
						Total	328	65.6

This table shows that the total rural cases from Kaluobia Governorate formed 65.6 % of total cases and 56.6 % of total cases were from Benha district.

Table (33): Distribution of rural cases outside
Kaluobia Governorate.

Rural area	No of cases	%	Rural area	No of cases	%
Quesna District:			Meet El Apsi	2	0.4
Meet Bera	9	1.8	Subtotal	43	8.6
Absheish	7	1.4	El Bagour District:		
Arab El Ramel	4	0.8	Mesharief	8	1.6
Shubra Bekhum	3	0.6	Masged El Khader	6	1.2
Bera El Agouz	3	0.6	Istanha	6	1.2
Shamandeil	3	0.6	Ezbet Abu basha	4	0.8
Shubra Kobala	3	0.6	Subk	3	0.6
K.Zein El Dein	3	0.6	Subtotal	27	5.9
A shleim	2	0.4	Minia El Kamh Dist:		
Begareim	2	0.4	El Azizia	4	0.8
Monshit Damallow	2	0.4	Subtotal	4	0.8
			TOTAL	74	14.8

This table shows that the rural cases of Quesna district had the highest percentage where it formed 8.6 % of total cases, while rural cases from Minia El Kamh district only formed 0.8 % of total cases.

Table (34) : Distribution of urban cases.

urban area	No of cases	%
Benha	78	16.4
Kafr Shukr	9	1.6
Toukh	7	1.2
Shebin El Kanater	2	0.2
Minia El Kamh	2	0.2
Total	98	19.6

This table shows that the urban cases from Benha city had formed the highest percent age among the urban cases where they formed 16.4 of total cases.

Table (35) : Mean duration of stay and standard deviation of rural cases within
Kaluoobia Governorate .

Rural area	mean of stay	S.D	Rural area	mean of stay	S.D	Rural area	mean of stay	S.D
Benha District:			Barkata	3.2	1.7	Shubra Hares	7.9	4.6
Bata	7.4	5.9	K. Amer	4.5	2.5	Koshk	7.1	3.9
Warwaraha	9.9	5.2	K. Farses	4.2	2.2	Subtotal	6.7	4.5
Meet El Hofein	4.6	2.6	K. Saad	3.8	3.3	Kafr Shukr Dist.:		
Atriyb	7.5	5.6	K. El Shelkh	6.6	4.4	El Shokr	6.3	3.5
Al Shemout	7.1	4.3	Meet Asem	5.8	3.4	K. Tesfa	3.1	1.8
K. El Gazzar	9.8	4.9	K. Manaker	6	4.9	EL Monshia	2.9	1.4
Al Ramalaha	11.1	5.9	Bekera	3.7	1.2	Monshia Diab	9.5	8.6
Damallow	7.4	6.6	Talbant	8.3	2.1	K. Ali	5.5	2.1
Meet El Attar	6.7	4	Gamgaraha	4	3.7	Subtotal	6.8	5.2
K. Atallaha	10.6	6.3	K. Abu Zekri	4.8	1.6	Kaluoob District:		
Meet Rady	5	4.7	K. Moues	7.8	5.8	Sendyon	7.2	4.2

Continuous:

Rural area	mean of stay	S.D	Rural area	mean of stay	S.D	Rural area	mean of stay	S.D
Marsafa	6.4	5.6	K. Mansour	6.5	2.9	Ezbet Zaki	9	6.1
Batmda	5.2	2.1	K. Abu Zahra	7.5	3.8	Subtotal	8.4	5.9
Sheblanga	4	2.1	Belly	0.5	zero	Sh.El Kanater Dist.		
Sandanhour	3.7	2.7	Subtotal	6.1	5.6	El Faroka	5.3	3.1
Meet El Sebah	6.8	4.3	Toukh District :			Ezbet El Bakly	9.2	7.6
Nokbas	5.5	4.1	Al Amaar	5.2	4.3	Subtotal	11.3	9.5
Tahla	4.8	3.3	Meet Kenana	4	2.9			
Degwa	4.9	3.1	Emyai	6	2.8			

This table shows that Shebin El Kanater district had the longest mean duration of stay 11.3 while that of Benha district is the shortest where it represented 6.1 .

Table (36) : Mean duration of stay and standard deviation of rural cases outside Kaluobia Governorate.

Rural area	mean of stay	S.D	Rural area	mean of stay	S.D
Quesna District:			Meet El Absi	5.6	3.2
Meet Berah	7.2	4.2	Subtotal	6.7	4.1
Absheish	8.8	1.7	El Bagour Dist.:		
Arab El Ramel	6.3	4.7	Mesharif	9	4.4
Shubra Bekhum	10.7	6.1	Masged El Khad.	6.7	3.1
Bera El Agouz	7.1	3.3	Istanha	7.3	2.2
Shamandeil	6.5	2.1	Ezbet Abu Basha	6.1	4.8
Shubra Kobala	4.5	2.2	Subk	7.2	2.5
K.Zein El Dein	3.3	0.6	Subtotal	7.3	5.8
Ashleim	6.8	3.2	Minia El Kamh Di		
Begareim	3.9	2.1	El Azizia	8	4.9
Monshit Damallow	9.7	4.6	Subtotal	8	zero

This table shows that mean duration of stay of Minia El Kamh district was the longest where it represented 8 while that of Quesna district was the shortest where it represented 6.7.

Table (37) : Mean duration of stay and standard deviation of urban cases.

urban area	mean of stay	S.D
Benha	5.8	3.8
Kafr Shukr	6.2	4.9
Toukh	6.3	3.7
Shebin El Kanater	10.1	7.7
Minia El Kamh	9.7	6.2

This table shows that cases from Shebin El Kanater had the longest mean duration of stay where it represented 10.1 while cases from Benha had the shortest mean duration of stay 5.8 .

Table (38) : Distribution of rural cases according to their final diagnosis in Kaluobia Governorate .

Rural area	G. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Benha District:																
Bata	7	25.9	9	33.3	2	7.4	3	11.1	2	7.4	2	7.4	2	7.4	27	100
Warwarah	7	33.3	2	9.5	2	9.5	4	19.0	5	23.8	1	4.8	-	-	21	100
Meet El Hofein	3	15.0	4	20.0	3	15.0	6	30.0	1	5.0	1	5.0	2	10.0	20	100
Atriyb	5	29.4	2	11.8	2	11.8	-	-	3	17.6	3	17.6	2	11.8	17	100
Al Shemout	7	41.4	3	17.6	2	11.8	2	11.8	1	5.9	-	-	2	11.8	17	100
K. El Gazzar	7	46.7	3	20.0	4	26.7	-	-	-	-	-	-	1	6.7	15	100
Al Ramelaha	5	35.7	5	35.7	-	-	3	21.4	-	-	1	7.1	-	-	14	100
Damallow	-	-	2	16.7	-	-	10	83.3	-	-	-	-	-	-	12	100
Meet El Attar	4	36.4	2	18.2	2	18.2	1	9.1	1	9.1	1	9.1	-	-	11	100
K. Atalla	1	11.1	5	55.6	2	22.2	1	11.1	-	-	-	-	-	-	9	100
Meet Rady	3	37.5	2	25.0	2	25.0	-	-	-	-	-	-	1	12.5	8	100
Marsafa	3	37.5	3	37.5	2	25.0	-	-	-	-	-	-	-	-	8	100
Batmada	-	-	2	28.6	2	28.6	2	28.6	-	-	1	14.3	-	-	7	100
Sheblanga	3	42.9	-	-	2	28.6	-	-	1	14.3	-	-	1	14.3	7	100
Sandanhour	-	-	2	33.3	2	33.3	-	-	-	-	-	-	2	33.3	6	100

Continous:

Rural area	G. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Meet El Sebah	1	16.7	-	-	-	-	2	33.3	-	-	1	16.7	2	33.3	6	100
Nokbas	2	33.3	-	-	4	66.7	-	-	-	-	-	-	-	-	6	100
Tahla	2	33.3	-	-	3	50.1	1	16.6	-	-	-	-	-	-	6	100
Dogra	2	40	1	20	-	-	1	20	1	20	-	-	-	-	5	100
Barkata	2	40	-	-	3	60	-	-	-	-	-	-	-	-	5	100
K. Amer	2	40	1	20	-	-	-	-	1	20	1	20	-	-	5	100
K. Farses	2	40	-	-	2	40	1	20	-	-	-	-	-	-	5	100
K. Saad	2	40	1	20	2	40	-	-	-	-	-	-	-	-	5	100
K. El Shekh Ibrahim	2	40	2	40	-	-	1	20	-	-	-	-	-	-	5	100
Meet Asem	2	40	-	-	3	60	-	-	-	-	-	-	-	-	5	100
K. Manaker	3	60	-	-	2	40	-	-	-	-	-	-	-	-	5	100
Bekera	2	50	-	-	1	25	-	-	-	-	1	25	-	-	4	100
Talbant	-	-	-	-	4	100	-	-	-	-	-	-	-	-	4	100
Gamgaraha	2	50	-	-	-	-	2	50	-	-	-	-	-	-	4	100
K. Abu Zekri	2	50	-	-	2	50	-	-	-	-	-	-	-	-	4	100
K. Moues	-	-	1	33.3	1	33.3	-	-	-	-	-	-	1	33.3	3	100

Continuous:

Rural area	G. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
K. Mansour	-	-	-	-	-	-	2	66.6	-	-	1	33.3	-	-	3	100
K. Abu Zahra	-	-	-	-	2	66.6	1	33.3	-	-	-	-	-	-	3	100
Belly	-	-	-	-	-	-	1	100	-	-	-	-	-	-	1	100
Subtotal	83	29.3	52	18.2	56	19.6	46	16.8	16	5.6	14	4.9	16	5.6	283	100
Foukh District:																
Al Amaar	2	40	-	-	-	-	2	40	-	-	-	-	4	20	5	100
Meet Kenana	2	40	2	40	-	-	1	20	-	-	-	-	-	-	5	100
Emyai	-	-	2	66.6	-	-	-	-	1	33.3	-	-	-	-	3	100
Shubra Hares	-	-	-	-	2	66.6	-	-	-	-	-	-	1	33.3	3	100
Moshthor	-	-	2	66.6	-	-	1	33.3	-	-	-	-	-	-	3	100
Subtotal	4	21.5	6	31.5	2	10.5	4	20.9	1	5.4	-	-	2	10.5	19	100
K. Shukr District:																
El Shokr	-	-	-	-	4	80	1	20	-	-	-	-	-	-	5	100
K. Tesfa	-	-	-	-	3	75	-	-	-	-	-	-	1	25	4	100
El Monshia	-	-	-	-	2	66.6	1	33.3	-	-	-	-	-	-	3	100
Monsh. Diab	-	-	1	33.3	-	-	-	-	1	33.3	1	33.3	-	-	3	100

Continous:

Rural area	G. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others Total		
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No
K. Ali	-	-	-	-	-	-	-	-	2	66.6	-	-	1	33.3	3
Subtotal	-	-	1	5.5	9	50	2	11.1	3	16.8	1	5.5	2	11.1	18
Kaluob District:															
Sendyon	-	-	1	50	-	-	1	50	-	-	-	-	-	-	2
Ezbet Zaki	1	50	-	-	-	-	-	-	1	50	-	-	-	-	2
Subtotal	1	25	1	25	-	-	1	25	1	25	-	-	-	-	4
Sh.El Kanater Dist:															
El Farokia	-	-	1	50	-	-	1	50	-	-	-	-	-	-	2
El Bakly	1	50	1	50	-	-	-	-	-	-	-	-	-	-	2
Subtotal	1	25	2	50	-	-	1	25	-	-	-	-	-	-	4
TOTAL	91	27.7	62	19.1	67	20.2	54	16.4	23	7.1	15	4.2	20	5.3	328

This table shows that 27.7 % of rural cases that came from Kaluobia Governorate were suffering from gastroenteritis , 20,2 % were suffering from acute respiratory tract infections , 19.1 % were viral hepatitis , while only 4.2 % of cases were meningitis .

Table (39) : Distribution of rural cases according to their final diagnosis outside Kaluobia Governorate.

Rural area	G. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
Quesna District:																
Meet Bera	2	22.2	1	11.1	4	44.4	-	-	-	-	2	22.2	-	-	9	20.9
Absheish	2	28.6	3	42.9	-	-	-	-	-	-	-	-	-	-	7	16.3
Arab El Ramel	-	-	-	-	1	25	2	50	1	25	-	-	-	-	4	9.3
Shubra Bekhum	-	-	1	33.3	-	-	-	-	1	33	1	33	-	-	3	7
Bera El Agouz	-	-	1	33	2	66	-	-	-	-	-	-	-	-	3	7
Shamandeil	-	-	1	33	1	33	1	33	-	-	-	-	-	-	3	7
Shubra Kobala	-	-	-	-	3	100	-	-	-	-	-	-	-	-	3	7
K. Zein El Dein	-	-	-	-	3	100	-	-	-	-	-	-	-	-	3	7
Begareim	-	-	-	-	2	100	-	-	-	-	-	-	-	-	2	4.7
Ashleim	-	-	-	-	-	-	-	-	1	50	-	-	1	50	2	4.7
Monsh. Damalaw	-	-	1	50	-	-	-	-	1	50	-	-	-	-	2	4.7
Meet El Absi	-	-	-	-	1	50	1	50	-	-	-	-	-	-	2	4.7
Subtotal	4	9.3	7	16.3	20	46.5	4	9.3	4	9.3	3	7.0	1	2.3	43	100

Continuous:

Rural area	E. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
El Bagour Dist. :																
Mesharif	2	25	2	25	4	50	-	-	-	-	-	-	-	-	8	29.6
Masged El Knader	1	16.7	-	-	4	66.7	-	-	1	16.6	-	-	-	-	6	22.2
Istanha	-	-	2	33.3	3	50	-	-	-	-	-	-	1	16.6	6	22.2
Ezbet Abu Basha.	-	-	-	-	2	50	2	50	-	-	-	-	-	-	4	14.8
Subk	-	-	1	33.3	2	66.7	-	-	-	-	-	-	-	-	3	11.1
Subtotal	3	11.1	5	18.5	15	55.5	2	74	1	3.8	-	-	1	3.8	27	100
Minia El Kh. Dist.:																
El Azizia	-	-	1	25	2	50	-	-	1	25	-	-	-	-	4	100
Subtotal	-	-	1	25	2	50	-	-	1	25	-	-	-	-	4	100
Total	7	9.4	13	17.5	37	50	6	8.1	6	8.1	3	4.2	2	2.7	74	100

This table shows that 50 % of rural cases outside Kaluobia Governorate were suffering from acute respiratory tract infections, 17.5 % of them were viral hepatitis , and 9.4 % were gastroenteritis while only 23.1 % of them were suffering from other diseases.

Table (40) : Distribution of urban cases according to their final diagnosis .

Urban area	G. Enteritis		V. Hepatitis		Respiratory		Tetanus		Enterica		Meningitis		Others		Total		
	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%	%
Benha	14	17.9	2	2.6	62	79.5	-	-	-	-	-	-	-	-	78	79.6	
Kafr Shukr	-	-	3	33.3	2	22.2	2	22.2	-	-	-	-	2	22.2	9	9.2	
Toukh	-	-	2	28.6	3	42.9	-	-	2	28.6	-	-	-	-	7	7.1	
Shebin El Kanater	-	-	2	100	-	-	-	-	-	-	-	-	-	-	2	2.04	
Minia El Kamh	-	-	1	50	1	50	-	-	-	-	-	-	-	-	2	2.04	
Total	14	14.3	10	10.2	68	69.4	2	2.04	2	2.04	-	-	2	2.04	98	100	

This table shows that 69.4 % of urban cases were suffering from acute respiratory tract infections 14.3 % of them were Gastroenteritis while only 2.04 % of them were suffering from tetanus.