Statistical Report: Disease Diagnoses at Birzeit Women's Charitable Society Clinic During One Year 1 October 1984 to 30 September 1985

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1. Introduction

This report presents a summary of the analysis of the clinic records of Birzeit Women's Charitable Society between October 1, 1984 and September 30, 1985. For each patient treated the doctor entered the following information in the clinic record book:

1. Date of treatment
2. Age of patient
3. Gender of patient
4. Place of residence (origin) of patient
5. Disease(s) diagnosed (no precoded categories).

When a year's data had been collected, the results were coded and analysed manually. The following presents a summary of the results of this analysis.

This unstructured method of data collection was chosen in order to collect information with which to plan a more efficient recording and classification system.

For the purposes of this preliminary report, the diseases were grouped into the following categories:

Disease Category	Percentage of Total Diagnoses
1. Respiratory	35.0
2. Gastrointestinal	12.3
3. Musculoskeletal	9.7
4. Urinary	9.2
5. Skin	7.8
6. Nervous system	4.5
7. Trauma	3.0
8. Ear	2.7
9. Cardio-vascular	2.7
10. Eye	2.3
11. Blood	1.9
12. Other infections	1.0
13. Reproductive	0.9
14. Other	6.9
Total Number of Diagnoses (including primary and secondary diagnoses)	6781

The following diagnoses were predominant in each group:

1. Respiratory

Tonsillitis
Pharyngitis
Common cold/cough
Upper respiratory tract infection
Bronchitis
Bronchial asthma
Bronchio-pneumonia
Influenza
Laryngitis

2. Gastrointestinal

Gastro-enteritis
Gastritis
Enteritis
Diarrhoea
Ascariasis
Amoebiasis (entamoeba histolytica)
Entamoeba coli
Hymenolepis nana
"Intestinal pain" (undiagnosed)
Giardia lamblia

3. Musculoskeletal

Arthritis
Muscle pain (general)

4. Urinary

Urinary tract infection

5. Skin

Impetigo
"Rash"
Tinea species
Scabies
Eczema
Urticaria
Dermatitis
Herpes

6. Nervous

Headache
Dizziness
Sciatica

7. Trauma

Cuts
Burns
Bites
Other

8. Ear

Otitis media

9. Cardio-vascular

Chronic heart failure
Hypertension
Piles

10. Eye

Conjunctivitis
Blepharitis
Trachoma
Correction problems

11. Blood

Anaemia

12. Other Infectious Diseases

Chickenpox
Measles
Mumps
Hepatitis

13. Reproductive System

Period irregularities

14. Other

Rheumatic arthritis
Mouth infections
Ulcers
Hernias

2. Results

2.1 Origin of Patient

Table 1 categorises the data by origin of patient. The results do not differ considerably between villages, suggesting that the overall disease frequencies may be fairly representative for this region. The ranges in Table 1 are:

Disease category	Range (per cent)*
Respiratory	27 - 35
Gastrointestinal	7 - 15
Musculoskeletal	7 - 13
Urinary	9 - 19
Skin	5 - 12
Nervous	4 - 7
Trauma	1 - 4
Ear	1 - 4
Cardio-vascular	0.8 - 7.3
Eye	0.2 - 2.9
Blood	2.0 - 4.3
Other Infections	0 - 2.4
Reproductive	0.4 - 1.9
Other	3.1 - 14.4

(* Excluding students as they are an age-biased population)

Moreover, the pattern is not dissimilar from that reported by Giacaman in her study of the three villages Abu Shkheidem, Burham and Kobar, where disease patterns were measured by a household questionnaire without physical examination (1).

Table 1. Disease Frequency (per cent) by Origin of Patient

Disease Category	Origin of Patient								Total Cases
	Student %	Bir Zeit %	Abu Qash %	Kobar %	Abu Shkheidem %	Burham %	'Atara %	Other %	
Respiratory	42.6	37.6	29.5	35.8	28.7	35.3	28.9	26.7	2346
Gastro-intestinal	12.0	10.3	11.1	13.7	14.7	7.9	13.0	13.9	832
Musculo-skeletal	7.0	8.8	11.6	6.9	8.9	6.5	10.6	13.2	649
Urinary	3.1	9.1	13.3	9.5	8.9	8.6	19.3	10.7	613
Skin	10.8	5.5	7.3	10.1	12.7	5.0	5.8	8.1	523
Nervous	6.7	3.6	5.8	4.0	5.1	5.8	4.1	3.9	301
Trauma	5.5	3.1	2.7	1.4	1.3	3.6	1.7	2.1	203
Ear	1.8	2.4	3.1	3.1	2.6	3.6	4.1	1.8	183
Cardio-vascular	1.2	3.3	7.3	0.8	5.7	1.4	1.7	2.2	179
Eye	3.4	2.9	0.2	1.9	2.6	2.9	1.4	1.9	155
Blood	0.4	2.0	1.2	2.1	2.6	4.3	2.4	2.2	130
Other Infections	0.2	0.7	2.4	2.3	0.6	0.0	0.5	1.0	58
Reproductive	0.5	0.4	1.4	1.9	1.9	0.7	1.9	1.3	63
Other	4.8	10.4	3.2	6.6	3.8	14.4	4.6	11.2	546
Total Cases	1264	2307	414	525	157	139	415	1560	6781

Incidence of Reported Illness by Type and Season in Burham, Kobar and Abu Shkheidem, 1981/1982

Type of Illness	Season (Percentage)			
	September	December	March	June
Respiratory Infection	18	29	30	22
Gastrointestinal	20	14	15	21
Eye	5	2	2	5
Skin	6	5	6	6
Reproductive Organ	7	5	6	6
Chronic	7	4	4	7
Others	37	41	37	33
Total Sick	N=196	N=186	N=189	N=210

Source: Giacaman (1).

There emerges a clear pattern of predominance of respiratory and gastrointestinal infections from both this study and that of Giacaman.

The data in Table 1 does not enable precise inferences to be drawn concerning inter-village differences. It is noteworthy, however, that the two villages which do not have a piped water supply (Abu Shkheidem and Kobar) have the highest proportions of gastrointestinal and skin diseases, which suggests a possible link between potable water supply and these diseases.

2.2 Age of Patient

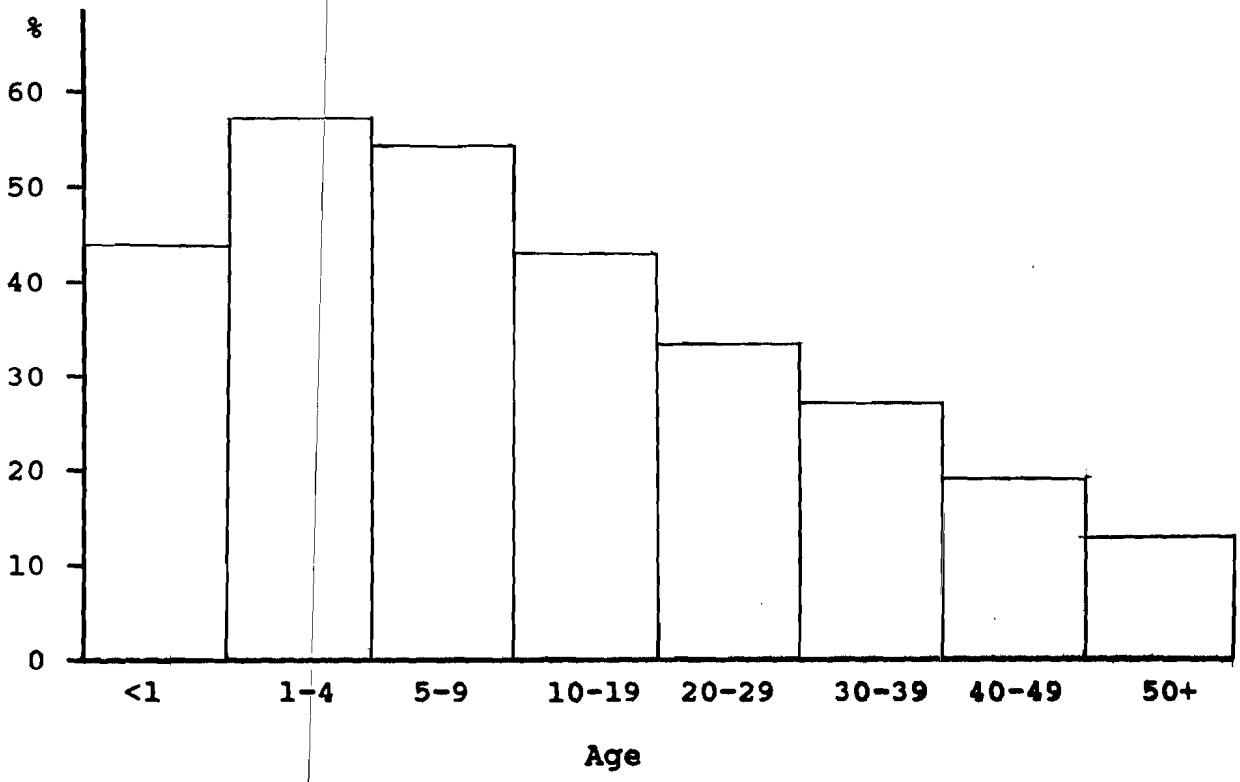
2.2.1 Respiratory Diseases

The relative frequency of respiratory diseases showed a tendency to decrease with age, from about 50% in the under-tens decreasing to 12% in the over-fifties. (See Table 2 and Figure 1.)

Table 2. Disease Frequency (per cent) by Age of Patient

Disease Category	Age (years)								Total Cases
	<1 %	1-4 %	5-9 %	10-19 %	20-29 %	30-39 %	40-49 %	50+ %	
Respiratory	44.0	56.3	53.6	43.5	33.7	25.1	19.0	12.1	2346
Gastrointestinal	26.9	12.7	8.8	9.6	13.5	10.8	11.0	10.2	832
Musculoskeletal	0.2	0.3	1.8	5.6	8.4	14.8	14.6	23.1	649
Urinary	7.7	5.4	6.2	7.4	9.8	16.6	13.3	9.3	613
Skin	9.5	10.9	11.2	10.0	8.3	4.8	4.7	3.1	523
Nervous	0.0	0.1	1.0	4.7	7.8	5.0	5.8	5.5	301
Trauma	0.0	2.7	3.6	5.0	4.2	4.3	1.3	1.3	203
Ear	7.0	5.4	3.6	2.4	2.0	0.8	1.9	1.1	183
Cardio-vascular	0.2	0.1	0.6	1.0	1.4	1.0	3.2	9.0	179
Eye	1.4	1.1	1.0	3.2	2.5	3.3	1.1	3.0	155
Blood	1.4	1.6	2.2	1.7	2.6	3.0	2.1	1.3	130
Other Infections	0.9	1.9	2.4	1.7	0.1	5.0	0.0	0.1	58
Reproductive	0.2	0.2	0.4	1.5	1.2	2.0	1.1	0.6	63
Other	0.6	1.4	3.4	2.6	4.7	3.5	21.1	20.4	546
Total Cases	443	906	498	1169	1484	398	536	1347	6781

Figure 1. Percentage of Respiratory Diseases by Age



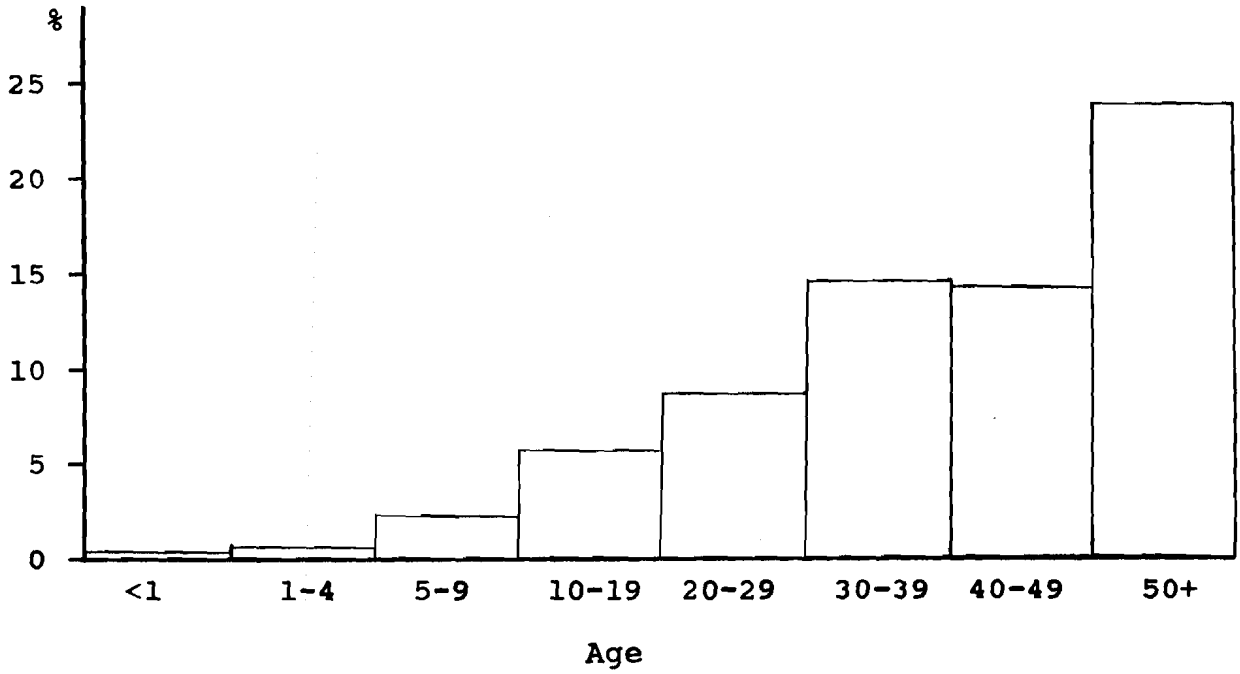
2.2.2 Gastrointestinal Diseases

Gastrointestinal diseases showed no clear tendency with age, other than for the under one year age group which had double the relative frequency of any other age group. This result is not surprising given that very young children are more prone to intestinal infections.

2.2.3 Musculoskeletal Diseases

This category showed a clear increase in relative frequency with age. The main disease in this group, arthritis, is known to increase in prevalence with age.

Figure 2. Percentage of Musculoskeletal Diseases by Age



2.2.4 Urinary Diseases

Urinary diseases tended to increase slightly in relative frequency with age, but were present in all age groups. The specific disease was almost exclusively urinary tract infection. This disease is clearly a major public health problem in the area, perhaps relating to personal hygiene practices.

2.2.5 Skin Diseases

Skin diseases tended to decrease in relative frequency with age, falling from around 10% in the under-twenties to 3% in the over-fifties. This may be a reflection of real prevalence differences but may well also relate to a decreased reporting tendency with age.

2.2.6 Ear Diseases

Ear diseases showed a greater relative frequency in children than in adults (see Table 2), perhaps suggesting a greater susceptibility of young children to ear infections.

2.3 Gender of Patient

58% of diagnoses were on women, giving an overall bias to the data. Despite this bias several patterns emerged:

(a) 72% of musculoskeletal diagnoses were females: this was mainly due to a large number of older women coming to the clinic with arthritis.

(b) 78% of urinary diseases were female patients, as women tend to be more at risk from urinary tract infections than men.

(c) Cardio-vascular and blood categories also tended to affect more female patients (74% and 78% respectively).

Table 3. Disease Frequency (per cent) by Gender

Disease Category	Male %	Female %	Total Cases
1. Respiratory	51	49	2346
2. Gastrointestinal	45	55	832
3. Musculoskeletal	28	72	649
4. Urinary	22	78	613
5. Skin	54	46	523
6. Nervous	35	65	301
7. Trauma	69	31	203
8. Ear	51	49	183
9. Cardio-vascular	26	74	179
10. Eye	56	44	155
11. Blood	22	78	130
12. Other Infections	50	50	58
13. Reproductive	5	95	63
14. Other	26	74	546
Total	42	58	6781

2.4 Season

The objective of tabulating the diagnoses by month was to look for any seasonal patterns in the data. A main problem in data interpretation, however, is the fact that the tendency to report disease is also seasonal: in very hot months people may be less likely to travel, particularly during Ramadan when many are fasting. This kind of factor may camouflage any real seasonal trends. Student attendance was also seasonal. Notwithstanding these problems, the data suggested a seasonality in respiratory and gastrointestinal diseases (Table 4). The percentage of respiratory diseases was on average higher in the winter months (November, December, January) than in the summer months (June, July, August). Conversely, the percentage of gastrointestinal diseases was higher in summer than in winter.

Table 5 and Table 6 do not show any clear seasonal patterns by origin or age of patient for gastrointestinal diseases, except that the seasonal trend for gastrointestinal diseases is most pronounced in the under one year age group.

Similarly, the most pronounced seasonality in respiratory disease is exhibited by the under one year age group (see Table 7).

Table 4. Disease Frequency (per cent) by Month

Disease Catgory	Month											
	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	June %	July %	Aug %	Sept %
Respiratory	34.1	39.7	41.4	40.9	33.7	34.2	31.1	37.2	36.1	26.0	31.5	29.0
Gastro-intestinal	12.0	11.6	11.9	8.9	9.5	13.3	5.6	11.5	18.8	17.0	15.8	13.7
Musculo-skeletal	13.8	8.9	8.7	9.3	10.7	11.5	9.9	6.5	11.1	13.0	4.7	8.0
Urinary	8.0	8.7	5.7	9.9	14.9	6.6	6.4	10.0	10.0	11.4	6.8	11.7
Skin	8.0	11.0	8.7	5.6	5.1	6.0	7.6	8.3	8.8	5.1	11.2	8.6
Nervous	3.0	3.1	6.0	4.0	5.5	6.6	7.6	4.4	3.3	2.5	2.0	2.4
Trauma	3.2	4.0	2.8	1.3	2.9	2.2	3.2	2.2	1.7	3.9	5.2	3.1
Ear	1.1	2.7	2.5	5.6	2.3	2.7	1.9	0.0	1.1	4.7	0.8	3.6
Cardio-vascular	2.3	2.5	2.8	2.1	3.6	1.9	3.6	4.2	0.6	3.0	2.3	2.2
Eye	5.7	1.1	2.0	1.4	1.2	0.5	3.0	2.5	4.4	0.7	0.5	3.2
Blood	1.4	0.6	0.5	1.6	1.5	1.5	0.9	1.9	1.7	3.7	5.0	2.9
Other Infections	0.2	0.9	0.8	0.3	1.3	0.3	1.4	1.9	2.1	1.6	0.3	0.5
Repro-ductive	0.2	0.5	1.2	2.0	1.0	0.8	0.5	0.8	0.6	0.8	1.0	1.0
Other	7.0	4.7	5.0	7.1	6.8	12.0	17.3	9.6	0.6	7.0	12.9	10.1
Total Cases	561	644	645	802	524	637	660	365	184	573	599	592

Table 5. Percentage of Gastrointestinal Diseases by Origin of Patient and Month

Origin	Month											
	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	June %	July %	Aug %	Sept %
Student	13.8	8.9	10.0	12.5	9.7	16.5	11.1	14.0	0.0	6.5	13.3	18.5
Bir Zeit	5.7	12.0	12.1	10.3	8.9	12.0	6.7	7.0	17.6	17.6	13.6	11.7
Abu Qash	11.8	9.3	17.8	6.4	7.0	10.7	6.3	17.4	12.5	15.6	13.8	8.3
Kobar	10.9	18.0	16.7	5.6	8.3	5.9	10.2	17.9	9.1	16.4	26.7	6.1
Abu Shkheidem	19.0	15.4	9.5	0.0	10.0	0.0	16.7	16.7	50.0	4.0	33.3	21.4
'Atara	20.0	8.0	17.2	5.4	17.9	12.9	16.2	10.0	25.0	11.1	11.4	10.0
Other	17.6	13.6	11.4	5.8	8.8	16.7	12.1	9.5	52.6	20.6	15.0	17.4
Total Cases	67	74	77	71	50	85	66	39	32	97	95	81

$$\% = \frac{\text{Number of gastrointestinal diagnoses}}{\text{Total number of diagnoses}} \times 100$$

Table 6. Percentage of Gastrointestinal Diseases by Age of Patient and Month

Age Group	Month												Total Cases
	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	June %	July %	Aug %	Sept %	
<1	17.9	38.0	15.4	8.5	16.7	0.0	14.3	28.6	50.0	44.3	45.6	40.3	119
1-4	13.6	11.4	16.7	5.6	6.9	8.7	9.6	14.1	17.9	16.1	19.4	13.4	115
5-9	9.7	6.1	9.1	8.5	0.0	7.0	13.0	3.1	12.5	10.6	13.5	10.5	44
10-19	0.5	12.6	9.4	8.0	9.0	9.3	9.6	1.9	14.7	9.5	2.7	8.3	112
20-29	14.7	8.7	14.7	12.3	6.7	19.0	10.3	16.1	4.3	20.8	13.3	15.7	200
30-39	2.1	7.8	14.3	10.5	38.5	13.3	10.0	11.1	11.1	25.0	13.0	8.3	43
40-49	5.6	14.0	6.1	12.3	1.9	11.7	19.2	6.5	28.6	6.8	17.9	9.3	59
50+	11.1	9.0	10.1	5.5	10.1	15.8	7.4	8.1	13.3	11.3	10.3	9.2	140
Total Cases	67	74	77	71	50	85	66	39	32	97	95	81	832

$$\% = \frac{\text{Number of gastrointestinal diagnoses}}{\text{Total number of diagnoses}} \times 100$$

Table 7. Percentage of Respiratory Diseases by Month and Age of Patient

Age Group	Month											
	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	June %	July %	Aug %	Sept %
<1	57.1	41.4	59.0	40.4	52.1	77.4	46.4	42.9	10.0	32.7	38.6	26.9
1-4	59.1	57.1	60.0	60.6	72.2	59.4	57.7	67.2	50.0	51.8	52.4	39.2
5-9	48.8	59.2	61.4	57.4	51.4	48.8	50.0	81.3	62.5	44.7	44.2	55.3
10-19	38.7	41.3	50.1	50.7	38.2	49.3	37.5	51.9	29.4	36.5	28.4	50.0
20-29	33.6	43.3	39.9	47.2	30.7	27.6	33.3	22.6	30.4	28.7	23.9	24.1
30-39	29.8	31.4	25.0	31.6	23.1	26.7	25.0	11.1	22.2	7.1	24.4	55.5
40-49	16.7	18.0	18.2	27.2	19.2	18.3	13.5	16.1	14.3	6.8	33.3	18.6
50+	10.2	17.9	12.1	13.1	7.8	17.7	12.6	9.3	16.7	6.7	15.4	8.4
Total Cases	191	254	267	327	117	218	205	134	65	148	189	171

$$\% = \frac{\text{Number of respiratory diagnoses}}{\text{Total number of diagnoses}} \times 100$$

Table 8. Percentage of Respiratory Diseases by Month and Origin of Patient

Origin	Month											
	Oct %	Nov %	Dec %	Jan %	Feb %	Mar %	Apr %	May %	June %	July %	Aug %	Sept %
Student	36.6	48.2	46.2	52.2	41.9	34.6	31.6	50.0	25.0	51.6	28.9	29.6
Bir Zeit	36.1	45.8	47.3	37.6	38.6	42.3	38.0	39.1	50.0	26.5	31.4	32.4
Abu Qash	32.4	30.2	24.4	34.0	20.9	28.6	31.3	43.5	12.5	20.0	51.7	25.0
Kobar	52.2	33.3	23.8	46.3	33.3	41.2	24.5	32.1	36.4	29.5	36.0	32.7
Abu Shkheidem	23.8	30.8	33.3	7.1	30.0	16.7	33.3	33.3	33.3	36.0	26.7	35.7
Burham	20.0	12.5	90.0	47.6	44.4	50.0	22.2	33.3	33.3	21.4	38.9	15.4
'Atara	33.3	32.0	20.7	18.9	12.5	33.9	37.8	55.0	41.7	14.8	31.4	18.3
Other	25.0	25.8	39.0	29.7	36.9	25.0	21.5	24.8	21.1	18.4	25.7	24.9

$$\% = \frac{\text{Number of respiratory diagnoses}}{\text{Total number of diagnoses}} \times 100$$

3. Conclusions

The results of this report provide a general indication of patterns of disease diagnoses at the study clinic. The findings have been incorporated into the design of a new record-keeping system which will allow more detailed analysis.

Specifically, the results indicated the following:

1. The majority of diseases were infectious. Respiratory and gastrointestinal diseases were the most common.

2. There was some evidence of seasonality in diseases, gastrointestinal diseases peaking in summer, respiratory diseases peaking in winter. This tendency was most pronounced in infants under one year of age.

3. Urinary tract infection in women was a common complaint.

4. Hypertension and anaemia were also common complaints among women.

5. Various trends in relation to age were exhibited:

   The percentage of respiratory diseases decreased with age;
   The percentage musculoskeletal diseases increased with age;
   The percentage of ear diseases decreased with age;
   The percentage of skin diseases decreased with age.

6. Other common complaints were diabetes and arthritis, particularly among older patients.

The overall ratios did not vary considerably between villages, suggesting that the aggregate figures are fairly reliable.

Reference

(1) Giacaman R., A Profile of Life and Health in Three Palestinian Villages, Community Health Unit, Birzeit University, Bir Zeit, 1985.

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