

Demographic Characteristics of Hospitalised Patients with Diabetes in Bahrain

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ABSTRACT

The demographic characteristics of patients with diabetes who were admitted to Salmaniya Medical Centre for the period 1980-1982 were reviewed and analysed. The results show that the majority of diabetics were more than 50 years of age. 88% of the diabetics were Bahraini and most of the reported cases were in the urban areas. For the year 1982, it was found that the percentage of Bahraini female diabetics was higher than males in all age groups, except in the less than 10 years age group and those older than 49 years of age.

Proper health education for the public and training of the physicians on dietary management of diabetes are strongly recommended to control diabetes in the community.

In programmes designed to alleviate health problems, an important preliminary activity is the collection and analysis of basic background data on health status. Information available from record files in hospitals or health centres is valuable if collected and carefully interpreted. It could be a useful indicator for the trend of certain diseases. For this reason we collected the information related to hospitalised patients with diabetes as this disease is considered one of the major public health problems in Bahrain.

Diabetics run a greater risk of developing complications. Studies in other countries showed that 50% of patients who developed diabetes during their

youth died by the age of 50 years, because of nephropathy, cardiovascular diseases or other complications¹. Vascular complications which effect the eye make diabetes one of the leading causes of blindness. Pregnant diabetics are also faced with health problems, as they may have premature babies characterised by high birth weight when compared with normal newborns². It was found that the life expectancy of diabetics at all ages is less than that of non-diabetics, even if there are no complications with diabetes¹.

For these reasons information on the incidence and causes of diabetes in Bahrain is essential in order to establish effective preventive and curative programmes for diabetes. Unfortunately, there is no published data on diabetes in Bahrain. Therefore, the aim of this paper is to provide baseline data on some of the demographic characteristics of hospitalised patients with diabetes.

METHODS

The data for this study was obtained from the Salmaniya Medical Information System. Data related to diabetes was correlated with age, sex, nationality and place of residence of hospitalised patients with this disease.

All patients with diabetes as the first diagnosis were included in the study, for the period 1980-1982. Patients with diabetes as the second and third diagnosis were excluded from the study in order to avoid duplication and overlapping of the results. All types of diabetes were included in one group, since information on types of diabetes was not available in the records.

RESULTS

The age distribution of hospitalised diabetics is shown in Table 1. It is clear from this table that a

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high percentage (39.6%) of the diabetics belonged to the age group 50 years and over. While the distribution of the diabetics by other age groups was almost the same for 1982. However for the years 1980 and 1981, the percentages of diabetics who belonged to the less than 10 years age group were very low compared to 1982.

Table 1

**Age distribution of hospitalised diabetics
(1980 - 1982)**

Age (years)	1980		1981		1982	
	No.	%	No.	%	No.	%
< 10	1	0.8	3	2.2	23	11.1
10 - 19	14	11.9	23	17.2	20	9.7
20 - 29	6	5.1	13	9.7	28	13.5
30 - 39	8	6.8	13	9.7	30	14.5
40 - 49	17	14.4	24	17.9	24	11.6
50 +	72	61.0	58	43.3	82	39.6
Total	118	100.0	134	100.0	207	100.0

With regard to the sex distribution, we found that the prevalence of diabetes was higher among females than males. In 1982, 58.4% of the diabetics were females compared to 41.6% which were males (Table 2).

Table 2

**Sex distribution of hospitalised diabetics
(1980 - 1982)**

Sex	1980		1981		1982	
	No.	%	No.	%	No.	%
Male	49	41.5	54	40.3	86	41.6
Female	69	58.5	80	59.7	121	58.4
Total	118	100.0	134	100.0	207	100.0

It is interesting to note that the majority of the diabetics were Bahrainis. For instance, in the year 1982, 87.9% of the diabetics were Bahrainis (Table 3). This may be due to the following; (a) the high proportion of Bahraini population compared to expatriates, (b) most of the non-Bahrainis are young, male and belong to less developed countries which are characterised by low incidence of diabetes.

Table 3

**Nationality distribution of hospitalised diabetics
(1980 - 1982)**

Nationality	1980		1981		1982	
	No.	%	No.	%	No.	%
Bahraini	104	88.1	109	81.3	182	87.9
Non-Bahraini	14	11.9	25	18.7	25	12.1
Total	118	100.0	134	100.0	207	100.0

The geographical distribution of hospitalised diabetics for the period 1980-1982 is illustrated in Table 4. The prevalence of diabetes was very high in urban areas as compared to the rural areas. In 1982, 30.4% of the diabetics belonged to Muharraq city, and approximately the same percentage (30%) was reported in Manama city (the capital). While the prevalence in rural areas was very low; 1.9% for Western region, 3.4% for Sitra, and 3.4% for Northern region.

Table 5 presents the age and sex distribution of Bahraini hospitalised diabetics for the year 1982. Generally, the percentages of female diabetics were higher than males in all age groups, except in the less than 10 years age group and those older than 49 years of age. For the less than 10 years age group, the proportion of males (19.5%) was almost two and a half times the proportion of females (7.3%). However, for those older than 49 years of age the proportion of males and females were 44.5% and 41.8%, respectively.

Table 4**Geographical distribution of hospitalised diabetics (1980 - 1982)**

Geographical Area	1980		1981		1982	
	No.	%	No.	%	No.	%
Hidd	3	2.5	6	4.5	6	2.9
Muharraq	33	28.0	34	25.4	63	30.4
Manama	37	31.5	48	35.8	62	30.0
Jiddhafs	9	7.6	7	5.2	16	7.7
Northern Area	5	4.2	6	4.5	7	3.4
Sitra	5	4.2	3	2.2	7	3.4
Central Area	3	2.5	3	2.2	5	2.4
Isa Town	10	8.5	14	10.4	18	8.7
Riffa	10	8.5	12	9.0	19	9.2
Western Area	3	2.5	1	0.8	4	1.9
Total	118	100.0	134	100.0	207	100.0

Table 5**Age and sex distribution of hospitalised Bahraini diabetics for the year 1982**

Age (years)	Male		Female		Total	
	No.	%	No.	%	No.	%
<10	14	19.5	8	7.3	22	12.1
10 - 19	6	8.3	14	12.7	20	11.0
20 - 29	6	8.3	13	11.9	19	10.4
30 - 39	7	9.7	15	13.6	22	12.1
40 - 49	7	9.7	14	12.7	21	11.5
50 +	32	44.5	46	41.8	78	42.9
Total	72	100.0	110	100.0	182	100.0

DISCUSSION

The present study showed that diabetes was more common among patients in urban areas, particularly those living in Manama and Muharraq cities. This may be attributed to the lifestyle in cities where the

people are less active, obese and consume high energy foods.

The statistics of the Ministry of Health showed that cardiovascular diseases are the leading causes of death in Bahrain³. Atherosclerosis occurs earlier and more extensively in the diabetic¹. This means that diabetes in its association with atherosclerosis may be one of the leading causes of death among Bahrainis. Food habits and environmental factors are the main determinants of atherosclerosis. In Bahrain the diet is characterised by a high proportion of fat and refined sugar, and low in fibre, which may be largely responsible for the high incidence of atherosclerosis as well as an explosion of new cases of diabetes.

The prevalence of diabetes was higher among older patients, and females (Tables 1 and 2). It is well known that diabetes occurs more commonly among overweight people, the elderly and women. The reasons for the differences between sexes are still unclear. Multiple pregnancies contribute to the development of diabetes among women. Also, as women live longer than men, they are more likely to develop diabetes⁴. Bahraini women, in general, have a high risk of developing diabetes, possibly due to their obesity, inactivity and diet.

The prevalence of diabetes has increased sharply among children less than 10 years of age during the period 1980-1982 (Table 1). In some children infection of the pancreas by a virus such as mumps or influenza may be responsible for diabetes⁴. The incidence of these two diseases are high in Bahrain. The Ministry of Health reported 1852 cases of mumps and 4475 cases of influenza for the year 1984³.

Several measures should be taken to control diabetes in the community, including proper health education for the public and patients, as well as training of health workers in dietary management of diabetes. As there is a shortage of dieticians in Bahrain, physicians should be well instructed on the dietary aspects of diabetes. A training programme on dietary management of diabetes should be established as soon as possible. This will help to update the knowledge of health workers on treatment of diabetes, in addition to making uniform the advice given by such workers. Physicians in health

centres should be given a high priority to enroll in such programmes, since the health centres have no therapeutic nutrition department.

CONCLUSION

The high prevalence of diabetes among hospitalised patients indicates an urgent need for running an effective health educational programme, to increase the awareness of the people toward prevention of such disease. Information regarding loss of weight physical exercise and sound food habits are essential components of educational programmes.

Medical records should have sufficient information such as socio-economic background of the patient,

type of diabetes, complications and treatment measure. Further studies on incidence and causes of diabetes in Bahrain are highly recommended, so that specific measures can be taken to control the disease.

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