The Impact of Family Size on Morbidity at a Primary Care Health Centre in Bahrain

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ABSTRACT

TO assess the relationship between family size and morbidity this study was carried out on 238 families in a primary care health centre in the State of Bahrain. One hundred and twenty nine families had five or more members. An inverse relationship was found between family size and the number of visits to the health centre mainly for infectious deseases of the skin, eye and upper respiratory tract, particularly in children. Crowding and low level of sanitation, education, personal hygiene and socio-economic status are the possible explanation.

INTRODUCTION

Family size has been shown to be related to certain variables. A relationship between family size, religion and education has been reported by the World Health Organization in a study carried out in Beirut in 1976. However studies regarding family size and intelligence were controversial[1,2].

In the literature, a relationship between family size and children's health has been reported. A number of studies found that children of large families tend to have high incidence of growth retardation, malnutrition and infectious diseases[1,2,3].

An inverse relationship was found between the number of visits to physicians and family size. Children of the first birth order visited the physician more often than others[5].

This study is the first of its kind in the State of Bahrain and probably the Gulf region. Two hundred and thirty eight families were chosen in a primary care health centre in an attempt to understand the effect of family size on morbidity.

METHODOLOGY

The Shaikh Sabah Health Centre, one out of three primary care health centres located in the Capital, Manama and serving a population of 25,000 was selected. A 10% simple random sample of family folders was chosen using the table of random digits from the families registered in 1981. The sample yielded two hundred thirty eight families and one thousand two hundred twenty three individuals.

An abstract form was designed consisting of two parts; part one having the basic identification data including the date of registration and occupation of the head of household. Each member was given a rank with age and sex recorded. Part two contained the rank, dates and reasons for all visits of each member in a period of twenty months starting June 1980 and ending February 1982.

The family folder did not yield any information on the education and occupation of the family members. The addresses were incomplete except for the area of residence because of the 1980 National Addressing Programme which totally changed the addresses in the country. Hence, it was difficult to contact the study group at their residence for further information.

Families were divided into two groups, large size having five members and more (type I) and small size having less than five (type II). Diseases were classified according to the International classification of Health problems in Primary Care[6]. The data was recorded on code sheets and then was manualy analysed. All visits to the health centre during the study period were considered in the analysis and several variables were examined with respect to family size.

RESULTS

The sample had 129 families of type I with a population of 900 of which four hundred sixty eight (52%) were males. Type II families were 109 with a population of 323 of whom 47.4% were males. The results were statistically significant for both males ($P < 0.0005$) and females ($P < 0.0005$) with respect to age and family size (Table I). The average number of visits to the health centre by type I families

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was 27.4 compared to 8.3 visits by type II. The difference was statistically significant at the five percent level (Table 2).

Although the difference in the distribution of families of type I and II by area of residence was not statistically significant, about one third of type I families came from Sagaiya and Nabeh Saleh. Further more, the distribution of the number of visits by family size and area of residence showed that type I families had more visits particularly from Nabeh Saleh (14.6%) and Jufair (24.9%) (Table 3).

Table 4 shows a statistically significant difference ($0.008 < P < 0.005$) in the number of visits by family size and nationality.

When the occupation of head of household was examined with respect to family size, no statistically significant difference was found between the two types. However, when the number of visits was added a highly significant difference ($P < 0.0005$) was noted (Table 5).

A detailed study of the number of visits for Diseases/Signs and symptoms was done. The difference in the average number of visits for infectious diseases was statistically significant ($P < 0.05$) between the two types of families. Conjunctivitis, skin infection, otitis media and chicken pox were mainly responsible for this difference (Table 6).

A highly statistically significant difference was noted when the number of visits for certain groups of diseases were analysed with respect to age. Diseases of the skin, digestive and nervous systems were highest in the age group below twenty years. Out of the total number of visits for the skin and the digestive system, type-I families had 81% and 75% respectively (Table 7). However the age group 10 - 19 years ranked highest with respect to upper respiratory tract infection and symptoms, signs and ill defined conditions (Table 8).

DISCUSSION

The aim of the study was to show whether family size has any impact on morbidity. The study revealed higher number of individuals belonging to type-I families than that of type-II. Out of 238 families 129 had five members and more.

When the area of residence was considered, Jufair, Nabeh Saleh and Sagaiya showed large number of families of type-I with a high percentage of visits. An explanation to this is that these areas are relatively poor compared to other sections in the catchment area of the health centre. Hence, the educational level is most probably low and the family planning practice is not popular.

The number of visits to the health centre by type-I families was about 78% of the total number of visits with an average of 27.4 compared to 8 by type-II families. This difference is possibly due to crowding which enhances the transmission of communicable diseases. This is evident by the high percentage of infectious diseases (17.6%) in type-I families compared to 10.9% by type-II, and particularly in children. Khan, et. al. (1981) found similar results in that large size families had more infections of the skin and upper respiratory tract, gastro-enteritis and worm infestation[3]. Tomar (1980) reported that the health problems of children is directly related to the number of sibling and adults in a family[4].

The relatively high number of visits for diseases of the skin, digestive and nervous system and sense organs in type-I families below twenty years, particularly skin infections, gastro-entritis, conjunctivitis and otitis media, support the hypothesis that communicability and personal contact are responsible for the transmission of these diseases mainly in children. The low level of education, sanitation and personal hygiene might be the predisposing factor for this finding.

The recording of signs, symptoms and ill-defined conditions by the physician was high in type-I families. The underlying cause for this phenomena is probably that women having several children tend to take them to the health centre when one or more is sick. The mother's attitude can be explained by her belief that it is beneficial to have her children examined whenever she visits the health centre for any reason. Further more, physicians tend to record symptoms and signs more frequently than diseases.

The findings of this study encourage further research to evaluate the relationship between socio-economic status level of education, environmental sanitation and family size. Family planning and accurate recording of diagnosis should be investigated.

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TABLE 1

The Distribution of Males and Females by Age and Family size

Age (Years)	**Males**				**Females**			
	Type I		*Type II*		*Type I*		*Type II*	
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
0 - 9	95	20.3	35	22.9	85	19.6	42	24.7
10 - 19	159	34.0	10	6.5	135	31.3	16	9.4
20 - 29	81	17.3	25	16.4	79	18.2	49	28.8
30 - 39	25	5.3	37	24.2	57	13.3	24	14.1
40 - 49	48	10.3	24	15.6	36	8.3	13	7.7
50 - 59	43	9.2	12	7.9	23	5.3	17	10.0
60 - 69	14	3.0	7	4.5	6	1.4	3	1.8
70 —	3	0.6	3	2.0	11	2.6	6	3.5
Total	**468**	**100.0**	**153**	**100.0**	**432**	**100.0**	**170**	**100.0**
	$X^2_7 = 79.9$		P < 0.0005		$X^2_7 = 35.96$		P < 0.0005	

TABLE 2

The Distribution of the Number of Visits by Family size

	Type I	*Type II*
No. of Records	129	109
No. of Visits	3,536	902
Average No. of Visits	27.4	8.3
Standard Deviation	23.4	9.4
	Z = 19.1	P < 0.05