

**STATE OF BAHRAIN
MINISTRY OF HEALTH
DIRECTORATE OF PUBLIC HEALTH
NUTRITION UNIT**

**SOCIAL AND ECONOMIC FACTORS
AFFECTING
FOOD CONSUMPTION IN BAHRAIN**

Abdulrahman O. Musaiger

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IN BAHRAIN

By

Abdulrahman Obaid Musaiger, B.Sc., MPH, Dr. P.H (Nutr)., MRSH.
Head of Nutrition Unit .

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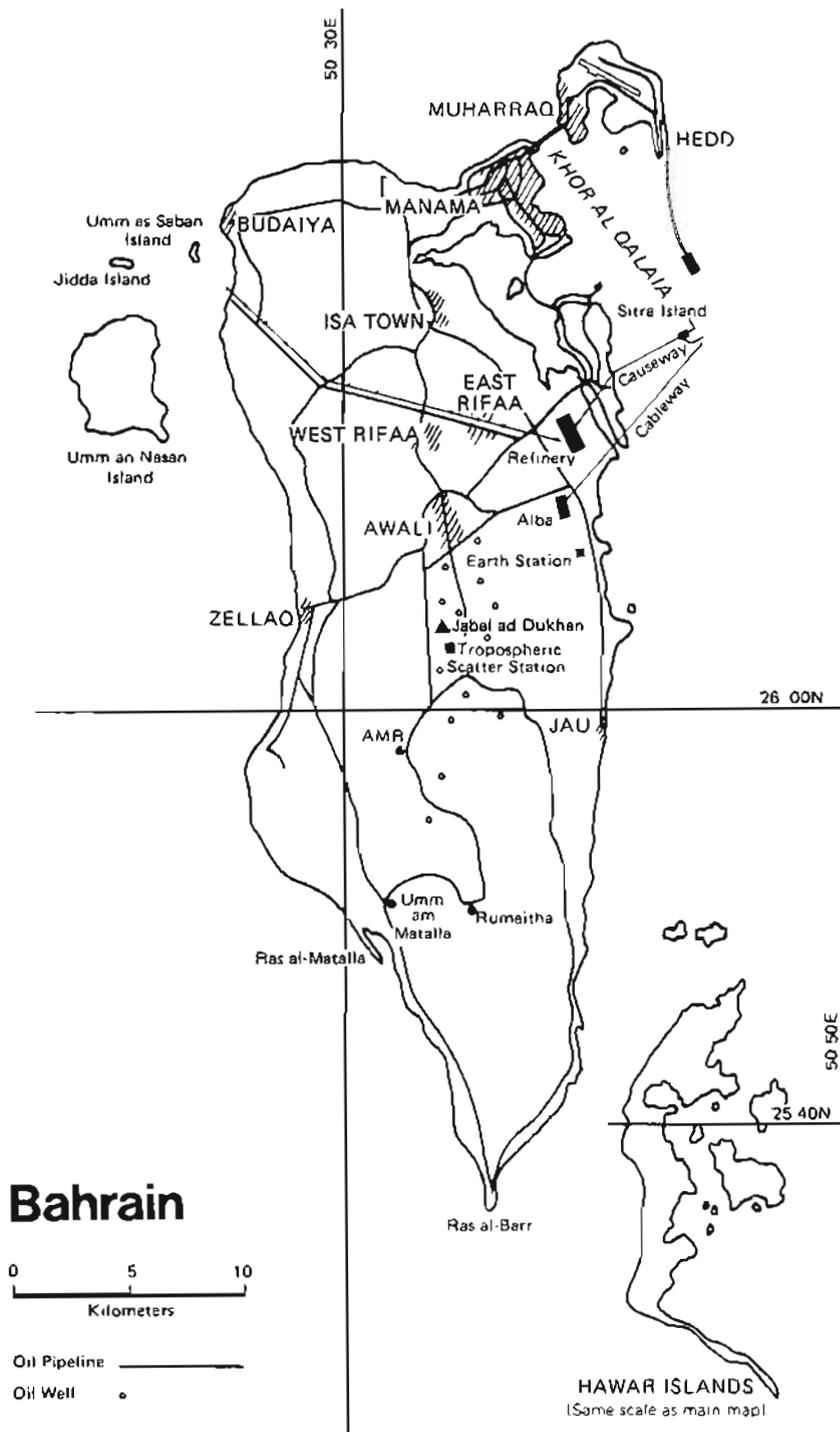
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I. BACKGROUND ABOUT BAHRAIN

Bahrain is one of the 7 Arab Gulf States. The total area is about 258.49 square miles. The state consists of an archipelago of small islands (about thirty) situated about half way down the Gulf - some fifteen miles from the coast of Saudi Arabia.

There are six principal islands in the Bahrain group. The largest is Bahrain Island, on which Manama City, the capital, is located. Oil fields, the important sea-port (Mina Sulman) and most of the big and small industrial complexes are found on this island.

Climate:

Bahrain's climate is warm and sunny throughout most of the year. Mean monthly temperatures vary from about 17°C to almost 35°C in July and August. Humidity is high with the maximum mean monthly values exceeding 80 percent throughout the year.

Population:

The population in 1978 was estimated at about 341,700 of whom about three quarters are Bahraini's and the balance are expatriates from the Middle East, Asia and Europe.

Data from the 1971 census shows changes in Bahrain's population structure. The rate of growth increased from 2.34% for 1941-50 to 3.64% between 1965-71. The rate of growth for non-Bahrainis reached its peak between 1959-65 and then began to decrease between 1965-71. The growth rate for the whole population was 4.10% between 1959-65, but had decreased to 2.88% between 1961-71 as a result of the decrease in the non-Bahraini rate of growth during that period.

According to the last census (1971), 7% of the economically active population were engaged in agriculture and fishing, 14% in industry, 17% in construction, 13% in trade and ancillary professions, 14% in transport and finance and 30% in government and social services.

Oil Industry:

Bahrain's oil industry is small compared with that of her neighbours, with the Bahrain fields producing an average of just 57,000 barrels per day.

However it must be realized that oil production is relatively small and the resources finite, so the government implementing a policy of industrial diversification, and the industrial base of the economy continues to broaden.

Foreign Trade:

Bahrain was, and still is, a very important trading centre especially if we consider the entrepot trade because of its geographical situation in the middle of the Arabian Gulf and because of various facilities provided in its marine and air ports.

In the year 1977 it was found that exports and imports have increased by 15% and 14% respectively, compared with the previous year. This of course is due to the huge increase in the size of its commercial exchange with the outer world as an inevitable result of the development in the Bahraini economy year after year.

Agriculture:

Farming is an ancient occupation for inhabitants of Bahrain. The national census of 1959, 1965 and 1971 found that over this period a steady decline of 1.22% per annum in the number of economically active persons in agriculture. However due to the influx of labour into urban industries the average decline of the rural work force as a proportion of the total population was 4.8% per annum.

The dominant crops in Bahrain are date palms, vegetables and allalfa. Among vegetables, tomatoes are grown in about one third of the total area. All of these crops are not adequate for local consumption.

Health:

The five year plan for health calls for an improvement in the doctor/patient ratio to 1 per 1,000, instead of 1 per nearly 2,000 and an increase in hospitals beds from 4.5 to 7.5 per 1,000.

In preventive health the incidence of poliomyelitis, meningococcal infection, viral hepatitis and diphtheria is very low. Malaria is still a health problem, 592 cases were reported in 1977 compared to 573 in 1976 but there were no deaths. Most cases are imported (98%).

It was found that the leading causes of death in Bahrain in the order listed (excluding symptoms and ill-defined conditions) were diseases of the circulatory system and diseases of the respiratory system .

Education:

Regular education in Bahrain started in 1919 with the opening of first boys primary schools. In 1928 the first girls primary school was opened.

It is interesting to note that in comparison with other areas of the Arab World, Bahrainis relatively well placed in the literary league with a literary rate for all over 10 years of age of 38.3%.

II. SOCIAL AND ECONOMIC FACTORS AFFECTING FOOD CONSUMPTION IN BAHRAIN

The present pattern of food consumption in Bahrain compares favourably with many other developing countries. Progressive industrialization in Bahrain has brought increased purchasing power to households, with the result that the consumption of low-cost carbohydrate foods has decreased gradually. The consumption of animal protein foods and fruits has increased with the resultant amelioration of nutritive value of the diet.

Bahraini food patterns are more dependable on imported and convenience foods. Generous and varied food supplies are available in the market and Bahraini families meal patterns are likely more varied. About 46.8% of the total annual family expenditure is on foods, of which 18% for cereals and cereal products, 15% for meat and eggs, 13% for fish, 12% for fruits and nuts, 7% for milk and milk products, 6% for vegetables and 29% for other foods (table 1).

Changing Economy:

Industrialization has influenced the food consumption in Bahrain. Despite the problems of climate, soil and land availability, Bahrain was self-sufficient in fruit and vegetable production until the advent of the oil industry in 1930's. Many laborers left agriculture, fishing and pearl diving for better paying jobs in the oil industry. The government is more interested in developing the industrial and commercial sectors and is neglecting agricultural development. This led to a decline the agricultural and fishing products with the result of more dependable on imported foods.

BAHRAINI HOUSEHOLD FOOD CONSUMPTION IN 1975

Table (1): Percentage of expenditure on different food items of Bahraini household (1975).

Food items	% of food expenditure	% of total expenditure
Cereals and cereal products	17.7	8.3
Meat and eggs	15.4	7.2
Fish	13.2	6.2
Milks	7.4	3.5
Fruits and nuts	11.8	5.5
Vegetables	6.6	3.1
Legumes	2.1	1.0
Sugar and syrup products	3.5	1.7
Spices and salts	2.1	0.9
Oil and fat	3.1	1.4
Tea, coffee and cocoa	2.2	1.1
Beverages	4.6	2.1
Tobacco and tobacco products	2.8	1.3
Other foods	7.5	3.5
Total	100.0	46.8

Table (2): Bahrain food expenditure during 1975 - 1977 in thousand dinars.

Sections	1975	1976	1977
Food and live animals	19817	30865	34409
Beverages and tobacco	3993	5993	7769
Animal and vegetable oils and fats	478	602	617
Total	24,288	37,460	42,795

Table (3): Food Consumption (tonnes)
for the years 1974 - 1977

a = imports

b = local products

Food items	1974	1975	1976	1977
1. Fresh vegetables				
a.	13209	16143	13589	19998
b.	6649	6347	6235	6500
2. Fresh_fruits ⁽¹⁾				
a.	21137	23714	26191	21454
b.	2163	2247	2372	2487
3. Milk				
a.	11150	12024	16433	19699
b.	3290	3320	3350	3380
4. Poultry meat				
a.	1860	1994	4385	3937
b.	286	731	1176	1756
5. Eggs ⁽²⁾				
a.	33.58	35.64	39.36	27.27
b.	18.67	17.84	20.00	35.00
6. Cattle (live) ⁽³⁾				
a.	n.a.	2027	2695	1196
b.	-	-	-	-
7. Beef				
a.	-	48	5	314
b.	116	129	125	129
8. Sheep ⁽³⁾ (live)				
a.	n.a.	30420	66929	45503
b.	-	-	-	-

(1) exclusive of dates (2) in millions (3) in numbers.

Base on : Hunting Technical Services Limited (1978) : Agricultural potential of the state of Bahrain, Report A., Kuwait Fund of Economic Development.

Table (4) : Expenditure and percent expenditure on different food groups among families with income less than 50 D and above 500 D .

Food Groups	Distribution			Distribution	
	< 50 D.	%	> 500 D.	%	
Wheat and cereal products	0.950	19.7	2.916	15.1	
Meat and eggs	0.691	14.3	3.644	18.9	
Fish	0.868	18.1	1.658	8.6	
Milk and dairy products	0.224	6.7	1.453	7.5	
Fruits and nuts	0.580	12.0	2.712	14.0	
Vegetables	0.270	5.6	1.403	7.3	
Legumes	0.116	2.4	0.403	2.1	
Sugar and sugar products	0.117	3.7	0.719	3.7	
Salt and spices	0.102	2.2	0.358	1.9	
Fat and oils	0.157	3.3	0.528	2.7	
Tea and coffee	0.124	2.6	0.426	2.2	
Beverages	0.134	2.7	1.032	5.3	
Tobacco	0.115	2.3	0.347	1.8	
Others	0.209	4.4	1.720	8.9	
Total		100.0		100.0	

Expenditure on food has increased rapidly during recent years (1975 - 1977). Considering 1975 as a standard year (100%), the expenditure on food increased to 154.2% in 1976 and to 176.2% in 1977 (table 2). These foods are imported from various countries with Australia as the main supplier, followed by China and India (1).

Income:

Income is still one of the most important factors influencing the food consumption pattern. Studies in other countries (2,3,4) have shown that as income increase the expenditure on food decrease. As people grow richer, they spend an increasing proportion of their budget on clothing, transportation and recreation. High income groups tend to purchase higher priced foods such as animal protein foods and fruits.

Musaiger (5) found that the majority of Bahraini households (in Manama City) belonged to the middle income class (67.6%). However the purchasing power of Bahraini household is relatively high, and high priced foods are not a problem for high and middle income groups.

The consumption of nonfresh vegetable and fruit, milk and dairy products, poultry and eggs in Bahrain has increased rapidly in recent years (table 3). This is due to the move to a more western style which has accompanied the increase in personal incomes since the 1973/74 oil price rise (6).

The Family Budget Survey (7) showed that Bahraini family with income less than 50 dinars per month spend 19.7% on wheat and cereal products,

18.1% on fish, 14.3% on meat and eggs, 12.0% on fruit and nuts. In the case of families with income above 500 dinars per month, they spend 18.9% of total expenditure on meat and eggs, 15.9% on wheat and cereal products, 14.0% on fruits and nuts, 8.6% on fish (table 4).

Effects of change in Technology:

Change in technology helped to change the food consumption pattern of Bahraini households. For instance, the comfortable and efficient house, the relatively high socio-economic levels, more electric appliances such as refrigerators and mixers, the use of pressure cookers, new food products and development of food shops especially supermarket.

The introduction of new food products in Bahrain made a big change in food consumption. The most striking example is introduction of broiler frozen chicken, previously chicken was more expensive than beef and lamb but now it has become cheaper than any of them. In 1970, the total domestic consumption of poultry was 1492 tons. While in 1977 it reached 4461 tons (8) table (5).

Most households in Bahrain have refrigerators, both in urban and rural areas. In British, Bains (9) and Hollingsworth (10) reported that households with refrigerators obtained relatively more of their energy from protein and fat and less carbohydrates and higher proportion of their total protein from animal source. Baines (9) concluded that the factors involved were economy, convenience and even prestige.

Table (5): Quantity of poultry imports, domestic products and consumption, 1970 - 1977 (Metric tons).

Year	Imports	Domestic Products	Consumption
1970	1016	476	1492
1971	1086	649	1735
1972	1350	700	2050
1973	1948	763	2711
1974	1862	822	2684
1975	2015	522	2837
1976	2385	850	3235
1977	2937	524	4461

The steady increase in supermarkets in Bahrain made the house depend more on convenience foods. Bucklim (11) explained that supermarkets play an important role in improving standards for food retail services and introducing new products to the market.

Food Price:

Price is a basic factor affecting the consumer purchasing decisions for low income groups. Wilson et al (12) and Robson (13) agreed that price of food affects the quality of that purchased.

It was found that 36.1% of Bahraini housewives agreed that price of food affects the quality and quantity consumed (table 6). Musaiger (5) showed that the top determinates in purchasing food by Bahraini housewives were: quality (72.8%), price (18.9%) and familiarity (6.1%). As the social class increased the importance of the price is decreased. Of housewives 24.0%, 13.2% and 9.6% in low, middle and high social classes respectively answered that the price is the top determinate in purchasing foods (table 7).

Food prices in Bahrain have increased gradually, which may be due to monopolization of market by private sector and general world inflation which affects the local price of foods.

Table (8) shows a comparison between food prices in 1977 and 1978 in Bahrain. It should be noted from this table that price of foods increased between 10% to 300% except for foods subsidised by the government (eg: rice, flour, baby foods, milk and meats).

Table (6) : Effect of food prices on food consumption of Bahraini households.

Effect	Urban		Rural		Total	
	No	%	No	%	No	%
No effect	98	38	17	32.7	115	37.1
Effect on quantity and quality	93	36	19	36.5	112	36.1
Effect on quality	36	14	6	11.6	42	13.6
Effect on quantity	31	12	10	19.2	41	13.2
Total	258	100.0	52	100.0	310	100.0

Musaiger, A.O. (1981) : Food habits in Bahrain; dietary practices and social occasions (In Arabic) .

Table (7) : Top determinants in purchasing food by housewives according to social class (in Bahrain).

Social Class	Top determinates												Total	
	Price		Quality		Advertisements		Familiarity		Friends advice		Others*		No.	%
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Low	176	24.0	504	68.8	1	0.1	38	5.2	12	1.6	2	0.3	733	100.0
Middle	46	13.2	273	78.2	0	0.0	26	7.4	2	0.6	2	0.6	349	100.0
High	17	9.6	140	78.6	4	2.2	13	7.3	1	0.6	3	1.7	178	100.0
Total	239	18.9	917	72.8	5	0.4	77	6.1	15	1.2	7	0.6	1260	100.0

* Others include: Salesman advice and store image.

Table (8) : Comparison between prices of some food products in 1977 and 1978.

Food Products	Origin	Unit (Kg.)	Price (B.D.)	
			June 1977	June 1978
<u>Cereals and cereal products:</u>				
Rice	Pakistan	50	8.400	8.900
Wheat	Iraq	1	0.150	0.165
Wheat flour	Bahrain	50	4.000	4.000
Bread	Bahrain	1 poece	0.010	0.020
<u>Meats:</u>				
Beef	-	1	0.700	0.825
Mutton	-	1	0.900	1.000
<u>Fishes:</u>				
Fresh fish	Bahrain	1	1.200	1.500
Salted fish	Bahrain	1	1.200	1.200
Canned fish (sardine)	Denmark	0.106	0.225	0.225
<u>Eggs and poultry products:</u>				
Chicken (local)	Bahrain	1	0.700	0.800
Frozen chicken	Denmark	1	0.650	0.715
Eggs (local)	Bahrain	1Doz.	0.500	0.500
Eggs (imported)	Australia	1Doz.	0.350	0.400
<u>Milk and dairy products:</u>				
Fresh cow milk	Bahrain	1	0.300	0.330
Evaporated milk (carnation)	U.S.A.	1 tin (0.70)	0.075	0.080

Continued (Table 8)

Food Products	Origin	Unit (Kg.)	Price (B.D.)	
			June 1977	June 1978
Dried milk (Nido)	Swiss	2.497	2.945	2.945
Cream (Nestle)	Swiss	1 tin (0.170)	0.150	0.125
Yoghurt	Bahrain	1 tin	0.060	0.070
Butter (Falcon)	Australia	0.340	0.400	0.450
Cheese (Kraft)	Australia	0.340	0.410	0.410
<u>Baby foods:</u>				
Rusks (Farlene)	U.J.	0.250	0.700	0.750
Rusks (Farleys)	U.K.	0.200	0.700	0.725
Mixed foods (Beach nut)	U.K.	0.135	0.100	0.120
Formula (lactogen)	Swiss	0.454	0.810	0.810
<u>Fruits and nuts:</u>				
Orange	Lebanon	1	0.500	0.500
Lemon	Lebanon	1	0.500	0.550
Banana	Somalia	1	0.450	0.450
Apple	Africa	1	0.500	0.500
Watermelon	Iraq	1	0.600	0.800
Dates (dried)	Saudi Arabia	1	0.150	0.600
Mango	India	1	1.500	1.500
Pistachio	Iran	1	1.800	2.800
Almonds	Iran	1	2.000	4.400

Continued (Table 8)

Food Products	Origin	Unit (Kg.)	Price (B.D.)	
			June	June
			1977	1978
<u>Vegetables :</u>				
Potatoes	Lebanon	1	0.250	0.300
Onions	Pakistan	1	0.150	0.250
Tomato (local)	Bahrain	1	0.300	0.400
Tomato (imported)	Lebanon	1	0.300	0.500
Cucumber	Bahrain	1	0.700	0.800
Green pepper	India	1	1.600	1.600
<u>Pulses:</u>				
Lentils	India	1	0.500	0.700
	Iraq	1	0.500	0.600
Chick pea	Australia	1	0.400	0.600
<u>Sugar and syrups:</u>				
Sugar	-	1	0.260	0.260
Honey (Bama)	U.S.A.	0.450	0.625	0.625
Jams (Edfina)	Egypt	0.450	0.250	0.300
Sesame sweet	Bahrain	1	0.200	0.900
<u>Spices and salt:</u>				
Black pepper	India	1	1.500	1.400
Chilli	India	1	0.800	1.000
Curcuma	India	1	0.600	1.000

Continued (Table 8)

Food Products	Origin	Unit	Price (B.D.)	
			June	June
			1977	1978
Cloves	India	1	3.600	4.500
Cardamon	U.S.A.	1	4.500	6.000
Saffarom	Iran	Tola	0.700	0.900
Ginger	India	1	1.200	1.600
Salt (Nezo)	Holland	1	0.125	0.150
<u>Oil and fats:</u>				
Animal fat (two cows)	Holland	4.540	1.800	1.800
Plant ghee (Shah pasand)	Iran	4.540	1.500	1.500
Corn oil (coroli)	Singapore	4.540	2.000	2.000
Corn Oil (Mazolla)	U.S.A.	0.907	0.800	0.800
<u>Beverages:</u>				
Tea Bags (Lebton)	India	1	1.200	1.500
Tea Bags (Brok pond)	India	1	1.200	1.600
Tea	Calcutta	1	1.000	1.500
Coffe (Nescaffe)	Swiss	0.560	0.550	0.700
Mineral water (Saha)	Lebanon	1 litre	0.300	0.250
Carbonated beverages	Bahrain	1 bottle	0.050	0.050
Orange juice (white lily)	Japan	1 tin	0.075	0.075
Pinapple juice (Nacrissus)	China	0.200 (1 tin)	0.075	0.100
Tomato juice (Hunts)	U.S.A.	0.781 (1 tin)	0.100	0.100

Based on: Price records, Directorate of Commerce, Bahrain.

Recently in 1974 an Office of Supply and Price in the Ministry of Commerce and Agriculture was established. The function of this office is to fix realistic maximum prices for common food items, and to monitor their application by trades throughout Bahrain. Fixed prices for an increasing number of foods are now issued to traders at regular intervals. Prices for fruit and vegetables which are less stable, are issued daily and published in the local newspapers.

Occupation:

The influence of different occupations on food consumption is primarily depend on the level of income of such occupation. In Egypt, it was showed (4,14) that a family with a head and/or housewife having a higher income occupation consumes animal protein foods and fruits, and less carbohydrate foods.

The Household Budget Survey (7) demonstrated that Bahraini food expenditure differed according to the occupation of the head of the household. Household heads with high occupations had less food expenditure than household heads with low occupations (table 9).

Population Growth :

The population of Bahrain has grown rapidly in the last twenty years. In 1950 total population was 109,650, while in 1971 it reached 216,078. The population in 1978 was estimated at about 341,700. The annual rate of growth for period 1950-59 was 3% and reached 3.6% for period 1965-71 (8).

The fact that both the number of people and their buying power have been increasing is important, because it means an expanding market of food products. However this growth has not been uniform.(15).

Table (9): Household food expenditure according to occupation of household head.

Occupation	% of food expenditure
No job	52.9
Professional, technical and related workers	40.3
Administrative, executive and managerial workers	36.5
Clerical workers	43.4
Sales workers	47.8
Service workers	44.9
Farmers, fishermen and related workers	48.5
Average	46.8

Apparently over the last six years the rate of increase in Bahrain's domestic food production (mainly vegetables) has failed to match the rate of increase in demand. This must be due to a combination of an increase in population and an increase in consumption per head - predominantly the former (6).

Population by Age and Sex:

The age and sex structures of the population play an important role in the food consumption pattern, because different ages and sexes have different dietary behaviour and need different amounts of nutrients (16).

In Bahrain, Musaiger (17) found that there are differences **in the food** consumption and preferences among school pupils. He found that **the** consumption of milk, eggs and cheese at breakfast was more among girls than boys in elementary and preparatory schools, while school boys skipped breakfast less than girls (tables 10 & 11). Preparatory school boys preferred milk, yoghurt, carbonated beverages, cheese, fruits and butter and jams more than girls. Only ice-cream was preferred more by girls (table 12).

Household Size:

The fact that large households more often include young children means that they use more food and spend more than small households, but the share of each member is less (12,18).

In Bahrain, the Household Budget Survey (7) showed that the percentage of food expenditure increases as household size increases (table 13). It was observed that the majority of Bahraini households were medium and large. These findings agree with those of Musaiger (5). He found that

41% and 44% of households belonged to the medium and large household categories respectively. Also that 63% of low social class households were large households. This means that food intakes of these households depend mainly on low priced foods to satisfy the large number of members.

Method of serving the food is also affected by household size. In Bahrain many families particularly in the rural sector separate the diet into two divisions, one of the best quality and quantity presented to the men, the other to the women. The children under seven usually eat with the women. This division decreases the chance of mother and children getting their recommended allowances, especially in large families. Sometimes the whole family eats together from the same plate. In this case (especially in large families) the older members can get more high protein foods and give a little chance to children, because these foods, such as meat or fish, is served in little amount on the rice.

Musaiger (19) found that 71.6% of the Bahroini households eat together, 13.2% separate the sexes (table 14). Alowia and Jonjihy (20) found that in rural areas in Bahrain, 76.8% of the households eat together and 23.2% separate the sexes (table 15). About 68.7% divided the food equally between males and females, while the rest (31.3%) give the males more food (table 16).

Immigrants:

The influence of immigrants on food consumption can be seen in many parts of the world. The emigrants carry their established food habits to a new home, they retain their food habits in so far as the native food resources permit, but their diet gradually conforms to the food resources of the new homeland (21).

Table (10) : Contents of breakfast of preparatory and elementary students in Bahrain.

Area	Sex	Contents of breakfast						
		Milk with milk %	Tea %	Tea %	Eggs %	Cheese %	Yoghurt %	Butter %
Preparatory Schools								
Manama	M	30	48	5	19	33	1	5
	F	33	37	3	25	39	2	11
Mubarraq	M	10	62	3	34	27	3	11
	F	23.5	52	2	44	38	2	9
Isa Town	M	35	47	7	12	21	0.4	0.4
	F	45	31	4	25	35	0.4	6
Rifa'a	M	5	80	2	23	28	-	10
	F	20.5	58	5	33	37	0.6	12.5
Jidhafs	M	68	15	2	4.5	19	0.4	-
	F	70	9	4	16	29	1	5
Sitra	M	14	63	14	4	26	-	0.7
Total	M	27	51	5	20	27	1	6
	F	34	40	3	30.5	37	1.5	9
Grand Total		27	51	4	25	31.5	1	8
Elementary Schools								
Total	M	9	77.5	8	17	23	1	5
	F	15	78.5	3	26.5	46	2	8
Grand Total		12	78	6	22	34	1.5	7

Table (11) : Distribution of students of preparatory and elementary schools according to breakfast intake (in Bahrain).

Area	Sex	Breakfast intake		
		Daily	Frequently	None
		Preparatory	Schools	
		%	%	%
Manama	M	70	27	3
	F	58	40	2
Muharraq	M	78	20.5	1.5
	F	64	32.5	3.5
Isa Town	M	70	28.5	1.5
	F	59	34.5	6.5
Rifa'a	M	8.0	20	-
	F	65	32	3
Jidhafs	M	74	24	2
	F	69	28	3
Sitra	M	75	25	-
Total	M	74	24	2
	F	61	36	3
Elementary Schools				
Total	M	73.5	26	0.5
	F	65	30.5	4.5

Table (12) : Preferences for certain foods among preparatory school students in Bahrain.

Area	Sex	Food preferred								
		Milk %	Yoghurt %	Soft drink %	Sambosa %	Cheese %	Ice-cream %	Fruit %	Butter & Jam %	
Madarana	M	68	51	64	41	60	69	74	50	
	F	34	25	48	32	49	72	60	24	
Muharraaq	M	70	55	64	36	74	71	62.5	58.5	
	F	45	36	48.5	33	55.5	83	61	32	
Isa Town	M	65	57	58	27	51	54	63	48.5	
	F	39	24	37	21	52	56	53	26	
Jidhafis	M	64	54	58.5	34	54	47	60	52	
	F	47	28	41	23	43	60	54	31	
Rifaa	M	71	60	71	46	69	74.5	74	45	
	F	51	32	49	28	47	72	68	30	
Sitra	M	64	48.5	57	28	63	42.5	54	57	
Total	M	68	54	63	37	64	64	67	53	
	F	44	39	46	30	51	72.5	60	28	
Grand Total		57	43	55	34	58	67	64	41.5	

Table (13): Household food expenditure according to household size.

Household size	% of food expenditure
2 - 4	33.7
5 - 9	46.9
More than 9	49.5
Average	46.8

Table (14) : Separation of family members while dining in urban and rural areas of Bahrain.

Way of Serving	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Women and men together	185	71.7	37	71.2	222	71.6
Women and men separately	29	11.3	12	23.1	41	13.2
Husband and wife separate from other members	16	6.2	2	3.8	18	5.8
Every member separately	14	5.4	1	1.9	15	4.9
The head of the family separate from other members	14	5.4	-	-	14	4.5
Total	258	100.0	52	100.0	310	100.0

TABLE (15) SEPARATION OF SEXES WHILE DINING IN RURAL AREAS OF BAHRAIN.

Way of serving	No.	%
Women and men together	106	76.8
Women and men separately	32	23.2
Total	138	100.0

Table (16) : Division of food between the sexes in rural areas of Bahrain.

Table (16) : Division of food between the sexes in rural areas of Bahrain.

Division the food	No.	%
Equally between men and women	122	68.7
Men receive a greater quantity	16	31.3
Total	138	100.0

According to 1971 census, Indian and Pakistanies represent 31.7% of the foreign population in Bahrain, while Iranians represent 14.2% (8). There are many Indian and Pakistani dishes (eg: Sambosa, Chapati, Nashif and Kema) which were brought by Indian and Pakistani immigrants and have become popular dishes for the Bahraini community. The wide use of spices and curry in cooking is an indication of the influence of those emigrants on Bahraini food practices. According to the Household Budget Survey (7), spices and salts amount to 2% of the total household food expenditure.

Iranian immigrants have their influence too. They have introduced very popular foods such as Mehiawa, yoghurt, Shishkabab and the wide use of onions.

Urban and Rural Differences:

Urbanization is an important factors increasing food expenditure. The movement of rural populations to urban sectors cause an increase in percapita food expenditure which are due to an increase in purchasing power.

The percentage of urbanization in most Arabian Gulf States doubled within a quarter of a century. This percentage increased in Kuwait from 51% in 1950 to 90% in 1974. In Qatar it increased from 50% to 76.5%, while in the Emerates it increased from 25% to 64.1% during the same period. In Bahrain the percentage of urbanization was already high in 1950; it was 71% (the highest percentage in the Arab World). This percentage increased to 78.5% during the next quarter of a century (1950-1974) - (22).

The distribution of population by urban-rural sectors shows that Bahrain is basically an urban society. Musaiger (23) showed that there is no difference in type of breakfast between urban and rural areas of Bahrain (table 17). Whereas at lunch fruit was consumed only in the urban area (table 18). Meat or chicken stew, bread and tea with milk constituted the main supper in urban area, while tea with milk, bread, cheese and/or eggs were the main supper in rural area (table 19).

Education:

Educational level of both housewife and husband have a potent effect on the food consumption. Studies in other countries (25,26,27) showed that more highly educated housewives provided a better diet than those who were less educated.

In Bahrain, Musaiger (23) showed that the majority of housewives (69%) had low educational level and demonstrated that the consumption of high protein foods and fruits was higher among high educated housewives than the lower educated (table 20).

Regarding the father, Arroy et al (27) found that the educational level of the father (in the United States) influenced the dietary behaviour of the family. They explained that higher education of the father influences the variety and complexity of the diet by virtue of better job and income.

A Household Budget Survey (7) indicated that the percentage of food expenditure of Bahraini households has a negative association with the educational level of the household heads (table 21).

Table (17): Types of breakfast according to urban and rural areas of Bahrain

Breakfast	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Not intake	4	1.5	4	7.7	8	2.6
Tea with milk + bread	7	2.7	9	17.3	16	5.2
High protein breakfast [*]	247	95.8	39	75.0	286	92.2
Total	258	100.0	52	100.0	310	100.0

* High protein breakfast includes: Tea with milk+cheese and/or eggs.

Table (18): Types of lunch according to urban and rural areas of Bahrain

Lunch	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Rice + high protein foods *	227	88.0	52	100	279	90.0
Rice + high protien foods + fruits	31	12.0	-	-	31	10.0
Total	258	100.0	52	100.0	310	100.0

* High protein foods include fish or meat or chicken.

Table (19): Types of supper according to urban and rural areas of Bahrain

Supper	Urban		Rural		Total	
	No.	%	No.	%	No.	%
Not intake	7	2.7	1	1.9	8	2.6
Tea with milk + bread	5	1.9	8	15.4	13	4.2
Tea with milk + bread + cheese and/ or eggs	75	29.1	14	27.0	89	28.7
canned vegetables + tea with milk + bread	61	23.6	8	15.4	69	22.3
Rice + meat	4	1.6	11	21.1	15	4.8
Meat or chicken stew + bread + tea with milk	106	41.1	10	19.2	116	37.4
Total	258	100.0	52	100.0	310	100.0

Table (20) : Types of lunch according to the educational level of the Bahraini housewives.

Type of lunch	Educational Level							
	Low		Middle		High		Total	
	No	%	No	%	No	%	No	%
Rice + high protein foods	200	93.9	34	89.5	44	74.6	278	89.7
Rice + high protein foods + fruits	13	6.1	4	10.5	15	25.4	32	10.3
Total	213	100.0	38	100.0	59	100.0	310	100.0

Table (21): Household food expenditure according to educational level of the household head

Educational level	% of food expenditure
Illiterate	50.9
Read only	47.4
Read and Write	46.1
Primary	44.3
Intermediate	44.5
Secondary	40.6
Institute	38.2
University	36.1
Highest educational level	26.2
Average	46.8

Women Employment:

In 1976 it was estimated that 6.2% of Bahraini female population aged 15 and over are in the labour force (28). This percentage is relatively high compared to other Arabian Gulf States (table 22).

In Bahrain due to the gradual increase in employment of housewives, they are unable to give full attention to their domestic activities (particularly in the nuclear family). Hence they may resort increasingly to the use of housemaids, servants, and convenience foods. It was found that 36.2% of employed Bahraini housewives declared that their work interferes in food preparation in home (table 23). In Egypt, Al-hadad (29) showed that the demand for convenience foods increased as the percentage of working housewives increased.

In Bahrain, a number of specialised employment agencies have begun to import foreign housemaids and servants.

Musaiger (5) demonstrated that the households in Bahrain with employed housewives depend more on both husband and wife in food purchasing than households with unemployed housewives (table 24).

Age of the Head of the Household:

The age of individual affects his food habits, attitudes, needs and interests. Young people tend to be more receptive to new ideas and acquire new food habits. Older people may be more resistant to change.

A Household Budget Survey (7) showed that Bahraini household food expenditure is influenced by the age of the head of the household. The highest food expenditure was among households with a head aged 15-24 years and over 65 years, while the lowest food expenditure was among the 25-34 years category (table 25).

Beliefs and Attitudes:

Beliefs and attitudes are a complex component in determination of food pattern. Food may be prohibited for a certain age and sex because it is believed that it may cause diseases or good or evil. In Bahrain, Musaiger (30) found that farmers believe that nuts (especially pistachio) increase their fertility. They believe that gelatin, which used in jelly, is made from pig bones and any pig products are forbidden in Islam, so they did not eat jelly.

There is a widespread belief in Bahrain that tomato juice increase the amount of blood. Perhaps this because tomato juice is a thick red juice which look like blood.

Religion is one of the most important factors affecting food intake in a certain society. The various religions of the world have a profound influence on food consumption. In every religion there are some regulations and beliefs which concern food. In Bahrain for example, the month of Muharam is sacred for the shias. Often the shia eat more meat and fish during this month.

Table (22): Percentage of females in labour force in countries of Western Asia⁽¹⁾.

Country	Year	% of females in labour force
Syria	1973	20.4
Yemen Dem. Republic	1973	18.5
Lebanon	1970	17.3
Yemen Arab Re.	1975	12.1
Kuwait	1970	6.9
Jordan	1971	5.7
Bahrain	1976 ⁽²⁾	6.2
Iraq	1975	4.0
Qatar	1975	2.2
U.A.E.	1968	1.8
Saudi Arabia	1966	1.1

(1) Ministry of Labour and Social Affairs (1977) : Social indicators for Bahrain.

(2) Directorate of Statistics (1979) , Bahrain.

Table (23) : Effect of employment of Bahraini housewives on the preparation of food.

Effect	No.	%
No effect , have housemaid	10	14.5
No effect , no housemaid	34	49.3
Some effect	25	36.2
Total	69	100.0

Musaiger, A.O. (1981) : Food habits in Bahrain, unpublished report.

Table (24): Household food purchaser according to employment of housewives
(in Bahrain).

Employment	Bought by								Total	
	Housewife		Husband		Both		Relative and friends		No.	%
	No.	%	No.	%	No.	%	No.	%		
Unemployed	123	11.7	602	57.3	189	18.0	136	13.0	1050	100.0
Employed	44	21.0	40	19.0	111	52.9	15	7.1	210	100.0
Total	167	13.2	642	51.0	300	23.8	151	12.0	1260	100.0

$$\chi^2_3 = 155.845$$

Table (25): Household food expenditure according to the age of the household head.

Age (years)	% of food expenditure
15 - 24	49.5
25 - 34	43.2
35 - 49	48.4
50 - 64	47.6
65 -	49.5
Average	46.8

Ramadan is the most important month for all Muslims. The Muslim fast during this month from sunrise until sunset. There are only two meals each day during Ramadan, the sunset and the sunrise meals. The sunset meal (Al-fator) usually consists of a wider variety of dishes than the sunrise meal (Al-Sahor).

In Bahrain, meat is preferred to fish during Ramadan. The main dishes consumed are Al-haris and Al-tharid. Al-haris consists of boiled wheat mixed with meat, fat and spices. Al-tharid consists of pieces of meat and mixed cooked vegetables served on pieces of bread soaked in tomato sauce.

Food Preferences:

There are many factors which determine food preferences. Religion, age and sex differences, physiological changes, psychological factors, symbolic use of foods, taboos, food fads, social prestige and economic factors, all affect food preferences in all cultures.

In Bahrain, Alowia and Janjihy (20) found that rural housewives preferred pan grilled* fish (20.3%) and roasting chicken (17.4%) more than any other foods (table 26). The explanation which the authors give for preference for pan grilled fish is that it is readily available in coastal rural areas and easy to prepare.

Foods disliked and reasons for disliking such foods in rural areas of Bahrain are shown in table 27. Muhamer (rice with sugar) is the main food disliked by the housewives (29.7%), followed by cooked vegetables (19%). The main reasons given for disliking foods were: too sweet (30.3%) and unfamiliarity (21%).

* Pan grilled refers to the practice of cooking in a pan without oil, over an open flame.

Table (26) : Food preferred by housewives in rural areas of Bahrain (N=138),

<u>Food preferred</u>	<u>Percentage</u>
Pan grilled fish	20.3
Roasted chicken	17.4
Chicken machabous	15.9
Bread	15.2
Meat machabous	14.5
Fried fish	13.8
Meat stew	11.6
Rice	11.6
Fruits	10.1
Eggs	5.1

Table (27) : Foods disliked by housewives and reasons for disliking in rural areas of Bahrain (N=138).

<u>Foods dislike</u>	<u>Percentage</u>
Muhamer	29.7
Cooked vegetables	19.0
Spicy foods	13.0
Maccaroni	7.2
Sweets	4.3
<u>Reason for disliking</u>	
Too sweet	30.4
Unfamiliarity	21.0
Too spicy	13.0
Too salty	5.8
Harmful to the stomach	3.6

Effects of Special Days:

The food consumption pattern changes around the different special days eg: Eid-Alfeter, Eid-Alhaj and Ramadan. Musaiger (30) showed that meat, chicken, nuts, candies and other food luxuries were consumed in large quantities during these occasions in Bahrain.

There are many other individual special days in which the people consume special foods eg: engagement, wedding, griefs etc. Table 28 shows foods consumed during the main social occasions in Bahrain.

Advertising Media:

Advertising has an important influence on the food consumption. Purchase of brand products is markedly affected by the attractive offers made in supermarkets and shops and the persuasive advertising by radio, television, newspapers and magazines. In this advertising the psychological role of foods is utilized by including such terms as heart warming, pleasing, delicious, etc (31).

Jellife (32) stressed that the content of advertising and the techniques used in the Western world are employed in the developing world, with emphasis on convenience and infant foods. The tropical mother, in many cases is even more vulnerable to these forces. She needs and appreciates convenience foods in her kitchen even more than does her sister in western countries.

The fact that Arab Gulf States are rapidly becoming urban has led to an increase of the economic level rather than educational level. The existence of high purchasing power with low educational level made it possible for advertising to play a big role in effecting the beliefs and attitudes of consumers.

In Bahrain, Musaiger (5) found that about 48.5% of housewives purchased the food seen in television advertisements. As the social class increases the purchasing of food seen in television advertisements decreases. Of housewives, 57%, 45% and 20% in low, middle and high social classes respectively were purchasing the food seen in television (table 29). In low social class, 52.8% of housewives believed claims in food advertisements compared to 32.4% and 17.4% of housewives in middle and high social classes respectively.

Table (28) : Foods consume during the main social occasions in Bahrain.

Social occasion	Duration	Main foods consume
Muharam	30 days	Rice, meat or fish.
Ramadan	30 days	Al-haris, Al-tharid.
Wedding	3 days	Gadoo, rice, meat.
Eid-Alfeter	3 days	Rice, meat, fruits, gadoo.
Eid-Alhaj	4 days	Rice, meat, fruits, gadoo.
Griefs	3 days	Rice, meat.

* Gadoo consists of nuts, sweets and fruits.

Table (29): Purchasing the food seen in television advertisements by housewives according to social class (in Bahrain).

Social class	Purchasing						Total	
	Purchase		Sometimes purchase		Not purchase		No.	%
	No.	%	No.	%	No.	%		
Low	418	57.0	233	30.4	92	12.6	733	100.0
Middle	157	45.0	152	43.6	40	11.4	349	100.0
High	36	20.2	115	64.6	27	15.2	178	100.0
Total	611	48.5	490	38.9	159	12.6	1260	100.0

$$X^2 = 88.249$$

III. Conclusion:

The food consumption pattern of Bahraini households is affected by many factors. Industrialization led to a decline the agricultural and fishing products with the result of more dependence on imported foods. Income and prices of foods limited the purchasing power of the households particularly low social classes. The high population growth and family size affect the distribution and quantity of food consumed by different household members. Educational level of housewife and husband has also a potent effect on the food consumption pattern. Immigrants have their influence too. They introduced many dishes which have become popular in the Bahraini community. Television advertising of food products and utensils also plays an important role in modifying the food consumption of Bahraini households.

Many other factors shape the food consumption pattern in Bahrain and affect the nutritional status. Hence, more studies are recommended to determine the actual impact of each of these factors on the nutritional status of the community.

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