PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B BIOLOGICAL SCIENCES

A Clinical Survey of Yemenite and Kurdish Jews in Israel

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II. A clinical survey of Yemenite and Kurdish Jews in Israel

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A clinical examination was carried out on 75% of the population aged 20 to 30 in two villages of Kurdish Jews and three of Yemenite Jews. Seventy-six Yemenite and 119 Kurdish Jews were examined. There were 91 women and 104 men.

The subjects were classified as 'fit' or 'unfit', the unfit being those subjects who were considered to be unsuitable for undergoing the tests of physical work capacity and response to a standardized heat test. Thirty of the 195 subjects were classified as unfit.

Dental health was assessed by recording the number of decayed (d.), missing (m.) and filled (f.) teeth (d.m.f. index). There was a higher d.m.f. index amongst the Kurdish Jews than amongst the Yemenite Jews; the dental health in both communities was satisfactory.

Although there were many different pathological conditions observed, the commonest were cardiovascular and enlargement of the spleen or liver. Respiratory diseases were rare.

The principal object of this study was to examine all the volunteer subjects and to decide whether a particular individual was or was not fit enough to take part in physiological investigations of physical working capacity and of temperature regulation. The objectives and research plan have been described by Edholm & Samueloff (1973, this volume).

The pathological findings reported in this paper were based solely on a single clinical examination, as there were no further investigations.

Methods

The volunteers were examined by a physician during March to May 1968. Special forms (based on the recommendations in the *I.B.P. Handbook* (Weiner & Lourie 1969) were prepared for the recording of the medical history, demographic details, results of the clinical examinations and laboratory findings. Details of smoking habits, consumption of alcohol and use of narcotic drugs were also recorded. Urine samples were examined for proteins and sugar, using Labstix (Ames); venous blood samples were taken using vacutainers. Haematocrit and haemoglobin values were determined at the Central Negev Hospital at Beer Sheva.

All subjects had their teeth examined and the decayed (d.), missing (m.) and filled (f.) teeth were noted. The sum of these in an individual represents the d.m.f. index.

The ability of subjects to undertake the physiological tests was assessed by excluding those suffering from the following conditions: cardiovascular diseases, including rheumatic heart disease, diastolic pressure above 90 mmHg, heart murmurs and severe varicose veins; history of chronic nephritis; albuminuria; anaemia, including post-partum anaemia; hepatosplenomegaly; glycosuria; obstructive pulmonary disease; allergic dermatitis; pellagroid changes; scoliosis; cervical syndrome; congenital dislocation of the hip; traumatic amputation; schizophrenia, oligophrenia; alcoholism; severe obesity, severe degree of weight loss; albinism.

Some subjects were excluded who had minor degrees of several of these conditions, although each one would have been inadequate to label the subject as 'unfit'.

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Results

A total of 195 subjects in the age group 20 to 30 were examined, including 91 women and 104 men. No one smoked pipes or cigars, and only a few women smoked cigarettes; however, 30 % of the men smoked, the majority having 10 to 12 cigarettes a day. There were differences between the villages; in two of the Kurdish villages (Eshbol and Paame Tashaz) 50 % of the men smoked, and in the third Kurdish village (Pattish) only 12 % smoked. The amount of alcohol consumed was apparently negligible; however, the subjects' statements cannot have been reliable as the village shops had large stocks of beer, wine and spirits (mainly arak) and considerable quantities were sold every week, particularly before the Sabbath. At least two of the subjects were confirmed alcoholics. None of the subjects admitted using narcotics.

The results of the dental examination are set out in table 1. Since the distribution of the d.m.f. index was highly skewed, with the largest number of subjects having a score of 0, i.e. no decayed, missing or filled teeth, the average figure for particular communities is misleading when the significance of differences is required. Contingency tables were used; amongst the Yemenite Jews there was no difference between men and women, but there were significantly lower indices in the male Kurdish Jews compared with the women.

Table 1. The d.m.f. index

	male		female		total male + female	
village	d.m.f. index	d.m.f. ratio	d.m.f. index	d.m.f. ratio	d.m.f. index	d.m.f. ratio
Yemenite Jews						
Bitha	22	1.1	27	1.04	49	1.0
Peduim	19	1.7	14	1.07	33	1.37
Kurdish Jews						
Pattish	65	2.3	61	3.2	126	2.7
Eshbol	81	4.5	119	6.0	200	5.2
Paamez Tashaz	58	2.9	39	2.8	97	2.85

The d.m.f. index represents the sum of decayed, filled and missing teeth of all subjects.
The d.m.f. ratio represents the average d.m.f. index for each subject.

Pulse rates and blood pressures, recorded during the clinical examination, are set out in table 2, and in table 3 the haematocrit and haemoglobin values. The men had significantly lower pulse rates than the women ($P < 0.01$) but there were no significant differences between the two communities in either pulse rate or blood pressure. Men had significantly higher haemoglobin values than women, amongst both the Kurdish and Yemenite Jews, and the men in the two communities did not differ from each other. The Yemenite Jewish women had significantly lower levels of haemoglobin than the Kurdish Jewish women.

The incidence of abnormalities and disease is given in table 4. Although there were many categories, three conditions accounted for approximately half the cases of disease; cardiovascular disorders, anaemia, and hepato-splenomegaly. The only case of respiratory disease was a subject who had asthma. Out of the 195 subjects examined, 29 were excluded as 'unfit' and a further 12 women were excluded as they were pregnant, leaving 154 subjects classified as 'fit'. There were 19 'unfit' out of 91 women (21 %) and 10 men out of 104 (9.5 %). The Yemenite Jews had 12 % 'unfit' and the Kurdish Jews 16.5 %, and for all the subjects there were 14.5 % 'unfit'.

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TABLE 2. PULSE RATES (BEATS/min) AND BLOOD PRESSURES (mmHg) MEASURED DURING CLINICAL EXAMINATION

	pulse rate				blood pressure							
					systolic				diastolic			
	female		male		female		male		female		male	
village	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Yemenite Jews												
Bitha	85	7.6	76	8.6	127	16.0	127	10.0	84	9.0	80	6.2
Peduim	80	7.0	76	9.4	117	8.7	123	9.0	76	6.5	77	9.3
Kurdish Jews												
Pattish	90	10.0	94	11.4	119	10.9	115	42.0	70	7.8	77	7.9
Eshbol	85	6.6	80	8.3	122	14.8	127	12.4	76	7.4	75	9.1
Paamez Tashaz	83	8.5	76	10.6	112	12.8	115	10.8	76	7.8	73	9.5

TABLE 3. HAEMATOCRIT AND HAEMOGLOBIN LEVELS

	haematocrit (%)				haemoglobin (%)			
	female		male		female		male	
village	mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Yemenite Jews								
Bitha	37	8.0	40	19.0	12.2	1.2	13.6	2.2
Peduim	37	1.2	41	3.0	12.7	2.1	14.6	2.6
Kurdish Jews								
Pattish	35	8.3	40	2.2	12.5	1.9	13.7	2.2
Eshbol	38	9.0	43	4.2	13.5	2.3	15.5	1.7
Paamez Tashaz	38	6.6	43	8.0	13.4	1.7	15.3	2.6

TABLE 4. NUMBER OF 'FIT', 'UNFIT' AND PREGNANT SUBJECTS

	female				male		
			classified			classified	
village	examined	pregnant	'unfit' incl. pregnant	'fit'	examined	'unfit'	'fit'
Yemenite Jews							
Bitha	26	4	7	19	25	3	22
Peduim	13	2	5	8	12	1	11
Kurdish Jews							
Pattish	19	4	7	12	28	2	26
Eshbol	19	2	7	13	18	2	16
Paamez Tashaz	14	0	5	9	21	2	18
total	91	12	31	61	104	10	93

The subjects examined represented 76% of the population in the age group 20 to 30 living in the five villages. Subsequent to the clinical examination, the records kept in the village clinics were checked and additional details were obtained from the physicians and nurses in charge of the clinics about the state of health of the remaining 24% of the population. There were 10 'missing' subjects who would have been classified as 'unfit'. These included three cases

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of congenital dislocation of the hip, five described as mentally defective, one case of gastric ulcer and one man in hospital with a fractured leg. There were two women in the delivery ward. The remainder included 20 men and two women absent on military duty who could be assumed to be healthy, leaving 28 'missing' subjects for whom there was no evidence of ill-health. The morbidity of the missing subjects was therefore assessed to be 16 % (10 out of 62). In the whole population of 257 in the age group 20 to 30, the morbidity amongst the women was 19 % and 11.5 % in the men.

Discussion

It was expected that people in the age group 20 to 30, living in rural conditions with the majority engaged in farming, would have a high standard of physical health. The fact that 15 % of the population who were examined had evidence of disease or disability sufficient for exclusion from the proposed physiological tests was surprising. An obvious question was whether the particular communities concerned were exceptional or not, but it has proved difficult to find published evidence with which to compare the present findings since in the majority of surveys only older age groups have been examined. Within Israel, Y. Yodfat (personal communication) has recently completed a survey in Bet Shemesh, a town 60 km north of Beer Sheva, whose 8000 inhabitants come from North Africa, Iraq, Iran and eastern Europe. In the age group 20 to 30, 11.6 % of the 500 men and 10.1 % of the 620 women had a definite clinical disability, between one-third and one-half due to rheumatic heart disease. No cases of enlarged spleen or liver were observed, in contrast to the findings in the Kurdish and Yemenite Jews.

The ethnic groups living in Bet Shemesh probably differ in various ways from the Kurdish and Yemenite Jews but appear to have a comparable incidence of morbidity, bearing in mind the difficulty of standardizing clinical examinations. Trussell & Elinson (1959) found an incidence of 13 % of disabling illness in the age group 15 to 24 in members of a rural community in the U.S.A. It may be tentatively concluded that the incidence of 15 % morbidity in the Kurdish and Yemenite Jews is not exceptional in a rural community.

The dental health of both the Kurdish and Yemenite Jews could be described as good. The differences in the d.m.f. between the two communities may be due to dietary dissimilarities (Bavly 1973, this volume). The incidence of rheumatic heart disease in these subjects was similar to those reported by Markowitz & Kuttner (1965). There was no evidence of tuberculosis, malaria, schistosomiasis or malnutrition, all of which were common amongst the Yemenite Jews when they migrated to Israel in 1949–51. This may be due to the extensive screening of the new immigrants at that time and the effective preventive measures which were taken.

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