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Examination Of Some Risk Factors For The Coronary Heart Disease On The Basis Of Some Control Cases In The City Of Sofia

Running head: Risk factors for the coronary heart disease (CHD)

INVESTIGATOR:

Dr.KrikorBerberyan(1)

(1) Department of Social Medicine, Institute of Medicine, Sofia

Address for contacts;

Dr. Krikor Berberyan. Department of Social Medicine, 8 Byalo More street, Sofia
1527, Bulgaria

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SUMMARY

The epidemiology of the coronary heart disease (CHD) has been the subject of a lot of intensive examinations, at which a number of more or less important risk factors were established, and simultaneously - some other factors are in the process of recognition. Because of the fact, that the morbidity rate for CHD in Bulgaria is one of the highest in the developed countries, it is quite reasonable to expect that the epidemiological examinations within the Bulgarian population will lead to the establishment of high rates of the risk for a great number of risk factors. Moreover, the reasons for the high morbidity of CHD in Bulgaria have still not been well clarified, although the attention is speculatively focussed on the Balkan diet mainly, and not very much - on the life style, as the most probable cause for this fact. Some clinical states are of special interest - for which a dependence on the diet is supposed, namely - the hypercholesterolemia, the diabetes mellitus, the hypertension and obesity. In this study which is in its essence empiric, some elements from the formulation of the discussed problem were included, as well as processing of the inquiries (purpose, tasks and methodology), the process of data collection, the statistical processing of the data collected, and the documentation for the results achieved, in the form of a thesis.

During the last years, the epidemiology of the coronary heart disease (CHD) has been the subject of a lot of intensive inquiries. As a result of the inquiries made, a number of significant and other less significant risk factors were suggested. However, the determination of the risk shall be the subject of a lot of discussions. Simultaneously, some differences exists between the individual populations for which an explanation was not found yet. With this variability of the factors, the role of the diet has still not been adequately explained which is different for the different populations.

Through the limitation or removal of basic risk factors for the CHD, the morbidity of CHD was in a significant grade decreased in a number of countries. As a contrast to this tendency, the morbidity and mortality of CHD in our country has shown a long-year tendency to increase.

We have initiated this study of CHD in Sofia on the basis of some control cases, in order to clarify the significance of some already established risk factors and to set the connection between the disease and some supposed factors of the diet.

MATERIALS AND METHODOLOGY.

In 1994, within a period of 9 months, 250 indoor patients with the coronary heart disease have been interviewed who were treated in the intensive wards of the First and Third City Hospitals of Sofia. The diagnosis of the patients drawn up from their history was made by the physicians of these wards, on the basis clinical, laboratory and electro-cardiographic data. As control cases, 260 patients from the same hospitals were interviewed who were at the same time indoor patients of the hospital, for their sick ears, noses, eyes, or who were taken in for small surgical interventions. In this group, patients with sick cardiovascular systems or with other system diseases, as for example diabetes, blood diseases, renal and hear diseases were not included.

In the questionnaire, information about some selected demographic, social and clinical indicators was given. The data about the blood pressure and the routine tests for the blood sugar and the total cholesterol were drawn up from the p were drawn up from the patients history. In this study, the following factors were included: sex, age, place of residence, education, profession, hereditary taint, systolic blood pressure, diastolic blood pressure, blood glucose, total cholesterol, index of the body mass, smoking, alcohol consumption, coffee consumption and physical load.

In the questionnaire, information about the nutrition habits of the patients was also included - the basic foods in their weekly menu.

RESULTS.

In table 1, the distribution of the cases with CHD and the control cases in accordance with the social and demographic indicators is given. From the table, we can see that in the group of patients with the CHD, men are prevailing. The age grouping shows, as one can expect, an increase of morbidity with the age. As concerns the education, 42.8% are graduates of high schools, and as concerns the profession, the people of physical work are prevailing.

After the clinical form, the patients with CHD are divided, as follows: Angina pectoris, stable form - 14(5.6%); Angina pectoris, unstable form - 40(16.0%); Acute myocardial infarction - 115(46.0%); Post-infarction myocardiosclerosis - 30(12.0%); Atherosclerotic myocardiosclerosis with rhythm disorder - 51(20.4%).

In table 2, the hereditary taints of the investigated patients is reflected. There, one can see that there is a statistically significant connection between the family history and the frequency of cases with CHD.

In table 3, some already established risk factors are presented, allocated to a normal and a pathological area, according to their levels. In this table, we can see that a significant part of the indicators tracked, as for example: blood pressure, blood glucose, total cholesterol and index of the body mass for the patients with CHD, have been grouped in the pathological zone. Their average values analyzed by means of the t-test of Student-Fischer have been presented in table 4 and table 5. Looking at both

tables we can see that, for almost all groups of both sexes, there is a statistically significant difference between the blood pressure, the blood glucose, the total cholesterol and the index of the body mass on one part, and the frequency of patients with CHD, on the other part.

The smoking, alcohol consumption, coffee consumption and physical load of the patients have been reflected in table 6. The distribution in respect to the levels has been made in accordance with the loading grade of the patients. The data about the individual indicators with the cases with CHD and the control cases presented in table 6 were compared by means of the χ^2 -test.

For the smoking indicator, the total number of smokers and non-smokers for the cases with CHD - 59/94 was compared with the number of smokers and non-smokers for the control cases - 55/92. An insignificant difference was seen: $\chi^2 = 0.04$; $p > 0.10$. With the similar analysis for the women with CHD, respectively - 11/86, and for the control cases - 32/81, a statistically dependent reverse connection of $\chi^2 = 9.24$ was stated; $p < 0.01$. This paradoxical result is probably due to the circumstance that, with the group of female control cases, the episodic smokers and smokers of small quantities of cigarettes are prevailing. Finally, the group of smokers smoking more than 20 cigarettes per day was analyzed, together for men and women, respectively for the cases with CHD - 26/180 and for the control cases - 8/173. A significant difference of $\chi^2 = 8.09$; $p < 0.01$ was stated.

Using the data about the alcohol consumption, we have analyzed the column with the consumers of greater quantities of alcohol - more than two glasses daily. This quantity is equivalent to over 100 ml of brandy per day. The result was $\chi^2 = 0.14$; $p > 0.10$, i.e. the difference is not significant. When we analyzed the column for the consumers of a moderate quantity of alcohol - 1 or 2 glasses daily which is equivalent to about 50 to 100 ml of brandy per day we have stated a tendency for making a connection. However, the difference proved to be insignificant, i.e. $\chi^2 = 2.99$; $p > 0.05$.

When we analyzed the data about the coffee consumption, no statistically significant differences were stated. For the consumption of one or two cups of coffee daily we received $\chi^2 = 2.49$; $p > 0.10$, and for the consumption of more than three cups of coffee daily - $\chi^2 = 0.14$; $p > 0.10$, respectively.

When comparing the data from the column for the physical load of up to 10 hours weekly and for the non-loaded cases having CHD - 16/163, and for the control cases - 61/114, a statistically significant difference of $\chi^2 = 34.93$; $p > 0.00$ was stated. With the similar comparison of the column for the physical load of more than 10 hours weekly for the cases having CHD - 71/163, and for the control cases - 85/114 respectively, the connection proved to be again a significant one, but not so very much marked, namely $\chi^2 = 7.14$; $p < 0.01$.

In table 7, 8 and 9, some foods have been presented which are included in the weekly menu of the patients with CHD and the control cases. The consumption is subdivided into three regimes: [1] consumers of small quantities of the respective food - once a week; [2] consumers of moderate quantities of the food - two or three a week; [3] consumers of increased quantities of the food - 4 to 7 times a week.

In the next table 10, the data about the patients consuming increased quantities of the food shown in column 3 of tables 7, 8 and 9 have been compared using the χ^2 test.

In table 7 we can see that, about the foods comprising mainly proteins, an interview was taken concerning the consumption of meat, sausages, eggs and fish. Out

of these foods, the meat is most consumed. This product is included in the daily menu of about 70-75% of all the patients. Fish is least consumed. In table 10 we can see that, when comparing the data about the increased consumption of proteins from the two groups, there is a reverse connection between the consumption of eggs and sausages and the frequency of the CHD.

As concerns foods with carbohydrate contents mainly, we have taken interviews about the consumption of bread, potatoes, rice and pasta (spaghetti, macaroni, etc.). The data about the food have been presented in grams for a daily consumption, as follows: [1] up to 300 grams daily; [2] from 300 to 600 grams daily; [3] more than 600 grams daily. From tables 7 and 8 we can see that in both groups of patients with CHD and control cases, there is an increased consumption of products comprising carbohydrates, especially of bread and potatoes, the analysis of table 10 shows the existence of a reverse connection between the potato consumption and the frequency of CHD. For the remaining products of this group, there are no data about a significant connection.

From table 8 it is evident that 80-90% of the interviewed people include in their daily menu vegetable oils - sunflower oil. The analysis has shown a reverse connection between the consumption of sunflower oil and the frequency of CHD. On the contrary, there is a direct connection between the consumption of margarine, and the frequency of CHD (see table 10).

Milk and milk products have been abundantly included in the daily menu of most of the interviewed people. The consumption of cheese is showing a tendency for a reverse connection with the frequency of CHD but there are no data about its significance (table 10).

From table 9, the plentiful inclusion of vegetables and fruits in the daily menu of the interviewed people is also obvious. However, the statistical analysis has not shown a connection between the consumption of vegetables and fruits and the frequency of CHD.

And finally, in table 9 the inclusion of cooking salt in the daily menu has been reflected. The data have been presented in three regimes: [1] consumption of up to 6 grams of salt daily - meals and products with limited contents of salt are being consumed; [2] consumption of 6 to 12 grams of salt daily - meals with relatively moderate contents of salt are being consumed; [3] consumption of more than 12 grams of salt daily - meals with increased contents of salt are being consumed. The statistical analysis has shown a clearly expressed connection between the consumption of salt and the frequency of CHD, namely $\chi^2 = 11.75$; $p < 0.00$ (table 10).

DISCUSSION.

The information in this study, as already seen from the above introduction, was gathered by interviewing indoor patients from two city hospitals in Sofia. The data were given in a generalized way, because of the following considerations.

1. These data are concerning a population residing in the city of Sofia and the near vicinity.

2. The questionnaire made and the clinical-laboratory methods of study applied were unified for two hospitals.

3. In case we interpret the data separately, small groups will be formed which are not convenient for an analysis.

This work does not have the pretension to be full. In it, some of the already established or supposed risk factors have been omitted.

Out of the above disclosed data we can see that about 30-40% of the total number of patients with CHD are hereditary tainted. These results are in compliance with the publications in the literature indicating the family history as being the leading risk factor for the CHD.

In this study, the connection between the increased blood pressure, the increased value of the blood glucose and the total cholesterol and the high index of the body mass on the one part and the frequency of CHD on the other part, has been specially underlined. These examinations are also in compliance with the literature where we find a direct dependence between the increased blood pressure, the increased level of the blood glucose and the total cholesterol, and the frequency of incidents with cardiovascular diseases. A special stress is laid on the role of the arterial hypertension as a basic risk factor for the CHD. It has been stated that, even with a slight decrease of the increased blood pressure, the morbidity of cardiovascular diseases is remarkably decreased.

At present, there are convincing evidences in the literature about the casual connection between the body mass and the CHD. Bulgaria is a country with a high incidence of obesity and this obesity appears to be a serious or an indirect factor for the CHD.

Out of the analysis made with smokers it becomes clear that - for the patients interviewed, a dependence between smoking and the CHD was stated solely with the people smoking more than 20 cigarettes per day. On the contrary, the total juxtaposition between smokers and non-smokers failed to show a clear connection between the groups of cases with CHD and the control cases.

The interpretation of the reverse connection between smoking and CHD in women is also interesting. It is possible that in this case we have only an apparent dependence because with the female control cases those smoking episodically and smokers of small quantities of cigarettes were prevailing. These data are giving us the reason to indirectly accept that the risk with smoking is increasing with the increase of the number of cigarettes smoked.

The available data in the literature are clearly and unequivocally stating that the risk of CHD with smokers is four times as high as of the one with the non-smokers.

As regards smoking, Bulgaria was the "European leader" and took the third place in the world, for the period 1984-1986. In respect to the alcohol consumption, the most often existing point of view says that a moderate consumption of drinks which is equivalent to about 33 grams pure alcohol per day has a cardioprotective effect for the CHD. On the contrary, the ill-use of greater quantities of alcohol is in itself a risk factor. In the material analyzed by us, no connection between the alcohol consumption and the CHD was stated. However, the view was formed in the last years that taking of much coffee represents a significant risk factor for this disease. In the data collected and analyzed by us, there is no connection between the CHD and the consumption of coffee - both in cases with consumption of moderate quantities, and in cases with ill-use of coffee.

The immobilization represents a risk factor for the CHD. In the literature, there are studies proving the reverse proportional dependence between the intensive physical load at the working place and the frequency of the CHD. Recently, publications are appearing which are concentrating their attention on the physical load in the leisure time. With this study, there is an obvious connection with the CHD both for a physical load up to 10 hours in a week, and for greater loads. The dependence with the first regime of loading is more clearly expressed.

The nutrition regimen was presented in a relative general plan. Out of the results achieved, our attention was attracted by the following points:

1. In the menu of the interviewed people, an optimum quantity of proteins and relative greater quantities of carbohydrates (bread, potatoes) are included, milk and milk products, vegetables, fruits and cooking salt.

2. A statistically significant direct connection between the consumption of milk, margarine, cooking salt, and a reverse connection between the consumption of vegetable oils, eggs, sausages, potatoes on the one part, and the frequency of the CHD on the other part is available.

It is known that the incidence of the CHD is due to the obstruction of the blood vessels caused by atherosclerotic patches and thrombosis. Lately, hypotheses are being launched which assume that atherosclerotic process could be effected by factors of the diet. The existence of seven dietical factors is reported, two of which are provoking the atherosclerotic process and five of which are protecting this process. The quantitative and the qualitative interrelation between these factors is accepted as an index for the atherogenesis. As provoking factors, the atherogenic and thrombogenic saturated fat acids are accepted, and as protecting factors - the unsaturated fat acids of the linolic and linolenic acids, the mono-unsaturated fat acids, the dietic fibers and antioxidants.

The analysis of the data about the nutrition menu is given a hint that the vegetable oil, sausages and potatoes should have a cardioprotective effect. Probably, this fact is due to the unsaturated fat acids, the dietic fibers and antioxidants comprised in these products. And reversibly, we should expect a provoking effect with the consumption of margarine and milk. In respect to this last interpretation however, there is no evidence material in the literature.

It is quite curious that, at the beginning of this century, our country was famous for its centenarians. Then, most probably, in respect to the index of mortality as a result of cardiovascular diseases, we took a diametrically controversial position in comparison to the present one. During the same time, the great Russian scientist I. Mechnikov marked the relation between the long life of the Bulgarian population and the antagonistic role of *Bacillus Bulgaricom*, in our yogurt against the putrefaction saprophytes in the large intestine.

In spite of the fact that this concept was later contested, we feel obliged to recall some points from this period, not a long time ago. Then, our country was not industrialized; our population used to live in the villages mainly and used to eat ecologically clean foods (bread, meat) processed without the use of artificial fertilizers, etc.; the non-refined vegetable oil was used for cooking, and not the vegetable oil which is heat treated and refined by means of sodium hydroxide which is being used nowadays; huge quantities of molasses and treacle were consumed instead of the refined sugar, etc.

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Table 1. Distribution of 250 cases of coronary heart disease and 260 control cases, after social and demographic factors.

Groups	Cases with coronary heart disease		Control cases	
	number	%	number	%
Sex				
male	153	61.2	147	56.5
female	97	38.8	113	44.5
Age				
≤ 49 years	24	9.6	114	43.8
50-59 years	44	17.6	56	21.5
60-69 years	81	32.4	61	23.5
≥ 70 years	101	40.4	29	11.2
Residence				
Sofia	204	81.6	190	73.1
places > 2000 inhab.	35	14.0	56	21.5
places < 1999 inhab.	11	4.4	14	5.4
Education				
< 7 years	78	31.2	56	21.5
8-12 years	65	26.0	107	41.2
> 12 years	107	42.8	97	37.7
Profession				
specialists	66	26.4	62	23.8
workers	106	42.6	98	37.7
clerks	57	22.8	65	25.0
others	21	8.4	35	13.5

Table 2. Distribution of 250 cases of coronary heart disease and 260 control cases, after hereditary factors.

	Male				Female			
	CHD		Control case CHD		CHD		Control case CHD	
	number	%	number	%	number	%	number	%
Tainted	58	37.9	29	19.7	40	41.2	21	18.6
Non-tainted	95	62.1	116	80.3	57	58.8	92	81.4
χ^2 - test	12.04; p: 0.00				13.00; p: 0.00			

Table 3. Distribution of 250 cases of coronary heart disease and 260 control cases, after clinical and medicinal factors.

	Male				Female			
	CHD		Control case CHD		CHD		Control case CHD	
	number	%	number	%	number	%	number	%
Systolic blood pressure								
< 130 mm Hg	32	20.9	84	57.1	20	20.6	71	62.8
130-139 mm Hg	22	34.4	34	23.1	12	12.4	17	15.0
140-159 mm Hg	46	30.0	27	18.4	37	38.1	23	20.4
> 160 mm Hg	53	34.7	2	1.4	28	28.9	2	1.8
Diastolic blood pressure								
< 85 mm Hg	61	39.9	98	66.7	46	47.4	80	70.8
85-89 mm Hg	6	3.9	21	14.3	3	3.1	16	14.2
90-99 mm Hg	41	26.8	21	14.3	27	27.8	15	13.3
> 100 mm Hg	45	29.4	7	4.7	21	21.7	2	1.7
Blood glucose								
< 5,5 mmol/l	65	42.5	119	81.0	34	35.1	95	84.1

5.5-7.2 mmol/l	39	25.5	27	18.4	28	28.9	17	15.0
> 7.2 mmol/l	49	32.0	1	0.6	35	36.0	1	0.9
Total cholesterol								
< 5.7 mmol/l	93	60.8	105	71.4	37	38.2	89	78.8
5.7-6.7 mmol/l	29	18.9	40	27.2	27	27.8	24	21.2
> 6.7 mmol/l	31	20.3	2	1.4	33	34.0	0	0.0
Body mass index								
< 20 kg/m ²	3	2.0	5	3.4	2	2.1	16	14.1
20-24.9 kg/m ²	38	24.8	64	43.5	32	33.0	61	54.0
25-29.9 kg/m ²	76	49.7	70	47.6	43	44.3	30	26.6
> 30 kg/m ²	36	23.5	8	5.5	20	20.6	6	5.3

Table 4. Test of Student-Fischer of the clinical and medicinal factors for the coronary heart disease (men).

	CHD cases			Control cases			p-value
	n	x	SD	n	x	SD	
Systolic blood pressure (mm Hg)							
< 49 years	16	137	13.4	55	119	16.1	<0.00
50-59 years	31	137	10.6	38	125	8.3	<0.00
60-69 years	52	149	23.0	34	131	10.1	<0.00
≥ 70 years	54	149	27.0	20	131	10.0	<0.05
Diastolic blood pressure (mm Hg)							
< 49 years	16	93	12.6	55	75	14.6	<0.00
50-59 years	31	84	18.7	38	77	6.6	<0.05
60-69 years	52	90	12.7	34	80	7.3	<0.00
≥ 70 years	54	89	9.5	20	82	10.5	<0.05
Blood glucose (mmol/l)							
< 49 years	16	5.4	1.3	55	4.9	1.1	<0.00
50-59 years	31	7.4	3.8	38	4.7	0.9	<0.00
60-69 years	52	9.2	12.7	34	8.2	7.3	>0.10
≥ 70 years	54	8.8	9.5	20	8.2	10.5	>0.10
Total cholesterol (mmol/l)							
< 49 years	16	6.18	1.39	55	4.89	1.68	<0.00
50-59 years	31	6.01	1.62	38	5.28	0.28	<0.00
60-69 years	52	5.38	1.40	34	5.04	0.36	>0.10
≥ 70 years	54	5.24	1.50	20	5.10	0.40	>0.10
Body mass index (kg/m²)							
< 49 years	16	26.0	5.1	55	21.0	9.8	>0.10
50-59 years	31	27.7	2.4	38	24.4	6.9	<0.00
60-69 years	52	28.0	3.8	34	25.9	3.1	<0.00
≥ 70 years	54	25.7	4.3	20	25.8	3.7	>0.10

Table 5. Test of Student-Fischer of the clinical and medicinal factors for the coronary heart disease (women).

	CHD cases			Control cases			p-value
	n	x	SD	n	x	SD	
Systolic blood pressure (mm Hg)							
< 49 years	8	137	20.8	59	113	16.3	<0.00
50-59 years	13	142	22.9	18	124	10.2	>0.10
60-69 years	29	145	25.8	27	134	13.6	>0.10
≥ 70 years	47	153	19.2	9	128	12.4	<0.00
Diastolic blood pressure (mm Hg)							
< 49 years	8	94	13.8	59	72	5.8	<0.05
50-59 years	13	86	13.7	18	77	8.7	<0.05
60-69 years	29	88	9.9	27	82	9.3	>0.05
≥ 70 years	47	87	12.8	9	79	10.5	>0.05
Blood glucose (mmol/l)							
< 49 years	8	5.8	2.4	59	4.5	1.0	>0.10
50-59 years	13	6.6	2.9	18	4.5	0.7	>0.10

60-69 years	29	7.5	4.6	27	4.6	1.3	>0.05
≥ 70 years	47	7.3	1.4	9	4.7	0.7	<0.00
Total cholesterol (nmol/l)							
< 49 years	8	6.11	1.28	59	4.87	0.68	>0.10
50-59 years	13	6.65	0.32	18	5.10	0.36	<0.00
60-69 years	29	6.68	1.70	28	5.70	0.93	>0.10
≥ 70 years	47	6.22	1.60	9	5.46	0.49	>0.10
Body mass index (kg/m²)							
< 49 years	8	27.9	4.1	59	22.3	4.3	<0.00
50-59 years	13	28.2	3.8	18	24.2	4.1	<0.00
60-69 years	29	26.0	3.9	27	23.6	3.6	<0.05
≥ 70 years	47	25.9	4.1	9	25.0	3.7	>0.10

Table 6. Distribution of 250 cases of coronary heart disease and 260 control cases, after the life-style factors.

	Male				Female			
	CHD		Control case CHD		CHD		Control case CHD	
	number	%	number	%	number	%	number	%
Tobacco smoking								
non-smoker	94	61.4	92	62.6	86	88.7	81	71.7
1-10 cig/day	4	2.6	18	12.2	1	1.0	10	8.8
11-20 cig/day	32	20.9	30	20.4	7	7.2	21	18.6
> 20 cig/day	23	15.1	7	4.8	3	3.1	1	0.9
Alcohol consumption								
< 1 glass/day	106	69.3	97	66.0	91	93.8	93	82.3
1-2 glass/day	26	17.0	27	18.4	4	4.1	18	15.9
> 2 glass/day	21	13.7	23	15.6	2	2.1	2	1.8
Coffee consumption								
< 1 cup/day	80	52.3	74	50.3	63	64.9	53	46.9
1-2 cup/day	55	35.9	56	38.1	30	30.9	46	40.7
> 2 cup/day	18	11.8	17	11.6	4	4.1	14	12.4
Physical load								
Not loaded	79	51.6	59	40.1	84	84.6	55	48.6
< 10 hour/day	13	8.4	30	20.4	3	3.1	31	27.4
> 10 hour/day	61	40.1	58	39.5	10	10.3	27	24.0

Table 7. Distribution of the weekly menu for some foods.

	Male				Female			
	CHD		Control case CHD		CHD		Control case CHD	
	number	%	number	%	number	%	number	%
Meat								
1 per week	19	14.2	18	13.8	9	10.7	11	11.2
2-3 per week	15	11.2	22	16.9	31	36.9	20	20.4
4-7 per week	100	74.6	90	69.3	44	52.4	67	68.4
Sausages								
1 per week	58	43.3	58	44.6	64	64.3	27	27.6
2-3 per week	33	24.6	23	17.7	10	11.9	40	40.8
4-7 per week	43	32.1	49	37.7	20	23.8	31	31.6
Eggs								
1 per week	66	49.3	63	48.5	51	60.7	43	43.9
2-3 per week	36	26.9	37	28.5	25	29.8	24	24.5
4-7 per week	32	23.8	30	23.0	8	9.5	31	31.6
Fish								
1 per week	127	94.8	118	90.8	78	92.9	86	87.7
2-3 per week	6	4.5	10	7.7	5	6.0	9	9.2
4-7 per week	1	0.7	2	1.5	1	1.1	3	3.1

Bread									
< 300 g/day	17	12.7	11	8.4	25	29.8	31	31.6	
300-600 g/day	47	35.1	59	45.4	34	40.4	47	48.0	
> 600 g/day	70	52.2	60	46.2	25	29.8	20	20.4	
> 30 kg/m ²	36	23.5	8	5.5	20	20.6	6	5.3	
Potatoes									
1 per week	25	18.6	28	21.5	31	36.9	13	13.2	
2-3 per week	45	33.6	43	33.1	27	32.1	34	34.7	
4-7 per week	64	47.8	59	45.4	26	31.0	51	52.1	
Rice									
1 per week	72	53.7	77	59.2	46	54.8	64	65.3	
2-3 per week	45	33.6	43	33.1	31	36.9	26	26.5	
4-7 per week	17	12.7	10	7.7	7	8.3	8	8.2	

Table 8. Distribution of the weekly menu for some foods.

	Male				Female			
	CHD		Control case CHD		CHD		Control case CHD	
	number	%	number	%	number	%	number	%
Macaroni and spaghetti								
1 per week	103	76.9	106	81.5	64	76.2	76	77.6
2-3 per week	21	15.7	17	13.1	16	19.0	12	12.2
4-7 per week	10	7.4	7	5.4	4	4.8	10	10.2
Animal fats								
1 per week	105	78.4	104	80.0	70	83.3	66	67.3
2-3 per week	16	11.9	23	17.7	8	9.5	18	18.4
4-7 per week	13	9.7	3	2.3	6	7.2	14	14.3
Milk fats								
1 per week	83	61.9	67	52.5	50	59.5	54	55.1
2-3 per week	39	29.1	52	40.0	29	34.5	34	34.7
4-7 per week	12	9.0	11	8.5	5	6.0	10	10.2
Vegetable fats								
1 per week	3	2.2	3	2.3	17	20.2	4	4.1
2-3 per week	9	6.7	10	7.7	16	19.0	12	12.2
4-7 per week	122	91.1	117	90.0	51	60.8	82	83.7
Margarine								
1 per week	74	55.2	95	73.1	39	46.4	65	66.3
2-3 per week	38	28.3	24	18.5	33	39.3	24	24.5
4-7 per week	22	16.5	11	8.4	12	14.3	9	9.2
Milk								
1 per week	23	17.2	61	46.9	29	34.5	32	32.7
2-3 per week	13	9.7	16	12.3	13	15.5	15	15.3
4-7 per week	98	73.1	53	40.8	43	50.0	51	52.1
Yogurt								
1 per week	23	17.2	20	15.4	11	13.1	20	20.4
2-3 per week	13	9.7	17	13.1	7	8.3	15	15.3
4-7 per week	98	73.1	93	71.5	66	78.6	63	64.3

Table 9. Distribution of the weekly menu for some foods.

	Male				Female			
	CHD		Control case CHD		CHD		Control case CHD	
	number	%	number	%	number	%	number	%
White cheese								
1 per week	12	9.0	16	12.3	20	23.8	8	8.2
2-3 per week	8	6.0	9	6.9	19	22.6	7	7.1
4-7 per week	114	85.0	105	80.8	45	53.6	83	84.7
Yellow cheese								
1 per week	79	59.0	66	50.8	47	60.0	55	56.1
2-3 per week	25	18.7	25	19.2	12	14.3	27	27.6
4-7 per week	30	22.3	39	30.0	25	29.7	16	16.3
Vegetables								
1 per week	7	5.2	4	3.1	5	6.0	1	1.0
2-3 per week	11	8.2	7	5.4	7	8.3	5	5.1

4-7 per week	116	86.6	119	91.5	78	85.7	92	93.9
Fruits								
1 per week	6	4.5	4	3.1	4	4.8	4	4.8
2-3 per week	30	22.4	32	24.6	28	33.3	27	27.6
4-7 per week	98	73.1	94	72.3	52	61.9	67	68.3
Cooking salt								
< 6 g/day	11	8.2	23	17.7	10	11.9	29	29.6
6-12 g/day	80	59.7	71	54.6	52	61.9	50	51.0
> 12 g/day	43	32.1	36	27.7	22	26.2	19	19.4

Table 10, Person test for the increased consumption of some foods, with CHD cases and control cases.

Food	CHD	Control	χ^2	p
Meat	144	157	0.03	>0.10
Sausages	63	80	5.43	<0.05
Eggs	40	61	4.60	<0.05
Fish	2	5	1.28	>0.10
Bread	95	80	0.42	>0.10
Potatoes	90	110	4.24	<0.05
Rice	24	18	1.95	>0.10
Macaroni&Spaghetti	14	17	0.08	>0.10
Animal fats	17	21	0.77	>0.10
Milk fats	173	199	7.66	<0.01
Margarine	34	20	9.48	<0.01
Milk	140	104	15.84	<0.00
Yogurt	164	150	0.56	>0.10
White cheese	159	188	2.48	>0.10
Yellow cheese	55	55	0.03	>0.10
Vegetables	188	211	0.07	>0.10
Fruits	150	161	0.37	>0.10
Cooking salt	65	55	11.85	<0.10