

Final considerations and perspectives

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The Cardiovascular Disease Survey gave a large amount of information about our lifestyles and, in particular, about the risk factors for cardiovascular diseases. It confirmed the high prevalence of hypertension and diabetes in the Seychelles population.

The symposium, organized as a follow up to the survey, gave us an opportunity to examine the information and discuss in a serious and scientific manner, the implications of these findings. It was also the first time that we had brought together international and local experts to define strategies for the control of cardiovascular diseases.

It is clear that, by the end of the symposium, our expectations have been met. We have, as we planned, defined strategies that are specific to the conditions of the Seychelles and appropriate for our needs, for the control of hypertension, diabetes and lipid disorders.

But we have achieved much more than that. In the process of conducting the survey, and in planning and directing the symposium, we have created a strong and dynamic team of health workers, committed to the task of providing health services and all health workers with the necessary information and support in the control of cardiovascular diseases.

We have brought together international experts and local health workers. During the few days of the meeting, the amount and value of the information, knowledge and experiences exchanged

cannot be measured. The Seychelles may not be in the forefront of research and intervention in cardiovascular diseases, but that is not a reason for the health professionals not to have available to them the latest information and ideas. The visitors also welcomed the opportunity to learn from their Seychellois colleagues.

Another notable achievement in the symposium was the participation of experts from other sectors such as those involved in education, information, food production and marketing and youth leaders, in a workshop on the promotion of healthier lifestyles. The exchanges between health and the other sectors, and the practical support offered for the health programmes were remarkable.

The symposium must not be seen as an end in itself, but as part of a process of development in research, education and development of the services. The symposium has served as a mean of education, as a stimulus for further studies, but, more importantly, as a firm base for the implementation of well-planned and appropriate action. In the weeks, months and years ahead, the real test of the success of the symposium will be how to make use of the dynamism of the team, the information and the knowledge acquired, and the intersectoral support offered, in developing and improving our services and mobilizing our people in living in a more healthy fashion and in controlling cardiovascular diseases.

Results

Tab. 1. Initial screening and participation rate to the survey.

Age	25-34	35-44	45-54	55-64	Total
Men					
Sampled from Census 1987	138	166	173	175	652
<i>Dead</i>	2	0	4	9	15
<i>Abroad</i>	6	8	5	3	22
Eligible	130	158	164	163	615
<i>Inadequate address available</i> ¹	11	13	7	17	48
<i>Refusals</i>	25	31	19	27	102
Examined	105	127	145	136	513
Participation rate (%)	80.8	80.4	88.4	83.4	83.4
Women					
Selected from Census 1987	147	169	165	176	657
<i>Dead</i>	0	0	1	5	6
<i>Abroad</i>	6	7	2	0	15
Eligible	141	162	162	171	636
<i>Inadequate address available</i> ¹	15	9	7	11	42
<i>Refusals</i>	18	19	17	14	68
Examined	123	143	145	157	568
Participation rate (%)	87.2	88.3	89.5	91.8	89.3

¹ Individuals for whom 2 consecutive convocation letters could not be delivered by the postal services.

Sample

Tab. 2. Socio-demographic and health characteristics of the participation to the survey.

	Men		Women	
	Cases (n)	Prevalence ¹ (%)	Cases (N)	Prevalence ¹ (%)
Total	513	100	568	100
Average age	45.2	—	45.0	—
Ethnic features				
Black	340	66.3	390	68.6
Mixed	109	21.3	129	22.7
White	47	9.1	40	7.0
Indian	13	2.5	6	1.2
Asiatic	4	0.8	3	0.5
Geographical features				
Born in the Seychelles	495	96.4	555	97.7
Never been abroad	305	59.5	403	71.0
Abroad 0–2 years	115	22.4	91	16.0
Abroad > 2 years	93	18.1	74	13.0
Present work				
Unskilled, housewife	207	40.3	370	65.1
Labourer	18	3.5	10	1.8
Skilled manual	122	23.8	24	4.2
Office worker	47	9.2	40	7.0
Professional	46	9.0	66	11.6
Present employment status				
Working full time	404	78.7	271	47.7
Working regularly part-time	10	2.0	24	4.2
Employee	298	58.1	259	45.6
Employer	7	1.4	0	0
Self-employed	114	22.2	26	4.6
Unemployed	94	18.3	283	49.8
Health				
'Feels in good health'	384	74.9	370	65.1
Never visited a doctor	50	9.8	45	7.9
Visited a doctor > 10 times	262	51.1	302	53.2
Presently medically followed-up	87	17.0	130	22.8
Presently medically unfit to work	54	10.5	78	13.7
Presently taking oral medicine	88	17.1	199	35.0
Oral contraceptive	—	—	44	—
Anihypertensive drug	32	—	62	—
Analgesic drug	11	—	21	—
Anti-asthmatic drug	5	—	16	—
Anti-acid drug	7	—	9	—

¹ All prevalences refer to the total number of male and female participants respectively.

Body Mass Index

Tab. 3. Body mass index: Mean, standard deviation (SD) and percentiles of weight (kg).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	105	69.5	10.4	55	57	68	83	86
35-44	127	71.1	12.4	52	57	69	90	96
45-54	145	68.9	13.0	54	55	67	86	91
55-64	136	66.3	10.7	50	54	67	81	88
Women								
25-34	123	60.1	13.2	44	46	57	75	80
35-44	143	69.2	15.1	49	51	67	89	96
45-54	145	68.4	14.1	47	52	66	85	92
55-64	157	69.4	13.9	48	52	68	86	94

Tab. 4. Body mass index: Mean, standard deviation (SD) and percentiles of height (cm).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	105	174.2	7.1	163	166	174	184	185
35-44	127	172.3	6.8	161	163	173	181	183
45-54	145	172.2	7.1	161	164	172	180	184
55-64	136	169.1	7.7	157	159	169	179	183
Women								
25-34	123	161.0	6.1	151	153	161	168	170
35-44	143	160.5	7.3	149	151	162	168	173
45-54	145	159.1	7.2	149	150	159	167	169
55-64	157	158.6	6.6	148	151	158	167	169

Tab. 5. Body mass index: Mean, standard deviation (SD) and percentiles of body mass index (kg/m²)¹.

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	105	22.9	3.3	18.7	19.3	22.6	27.8	28.6
35-44	127	23.8	3.5	18.6	20.0	23.6	28.7	29.4
45-54	145	23.1	3.9	18.2	19.1	22.7	27.8	28.7
55-64	136	23.7	4.3	17.3	18.4	22.7	28.5	32.0
Women								
25-34	123	23.2	5.1	17.6	18.3	21.6	29.1	32.8
35-44	143	26.8	5.6	19.3	20.5	25.8	35.1	37.2
45-54	145	27.0	5.6	19.2	20.3	26.2	34.2	37.1
55-64	157	27.5	5.2	19.5	21.4	26.9	34.3	35.3

¹ BMI = weight/(height)².

Tab. 6. Body mass index: Prevalence (%) of overweight¹ and obesity².

Age	25-34	35-44	45-54	55-64	25-64 ^a
Men					
Overweight	10.5	16.5	11.0	14.0	12.4
Obesity	3.8	4.7	2.8	6.6	4.2
Women					
Overweight	17.9	39.2	36.6	43.9	30.5
Obesity	8.9	29.4	26.9	33.1	20.9

¹ BMI > 27.8 kg/m² for males, BMI > 27.3 for females.² BMI > 30.^a Standardized for population aged 25-64 years.Tab. 7. Body mass index: Prevalence of obesity (BMI > 30) in national surveys¹.

Country	Age group	Men	Women
Seychelles	25-34	3.8	8.9
	35-44	4.7	29.4
	45-54	2.8	26.9
	55-64	6.6	33.1
Costa Rica	20-25	0	2.8
	40-45	5.7	14.4
Honduras	20-25	0	1
	40-45	2.8	6.0
Nicaragua	20-25	2.3	3.0
	40-45	3.1	16.4
Trinidad (urban)	40	-	32.0
	70	-	27.0
Canada	-	8.5	9.3
USA	-	12.0	15.0
Italy	15-44	4.8	3.9
	45-64	9.9	11.1
Netherlands	20-34	1.9	2.0
	35-49	4.2	5.0
United Kingdom	20-34	4.0	4.7
	35-49	7.9	8.6
	50-64	7.4	14.3
Australia	25-34	4.0	5.7
	35-44	6.2	7.5
	45-54	10.2	11.0
	55-64	9.6	12.5

Data (except for the Seychelles) from *The global prevalence of obesity: An initial overview of available data*. Wld Hlth statist quart 1988; 41:251-254.

Tab. 8. Body mass index: Comparison of mean value (\pm SD) and prevalence (%) of clinical, biological, occupational and ethnic features in obese and non obese men and women¹.

	Men			Women		
	Obese	Non obese	p	Obese	Non obese	p
Number of cases	74	148	—	128	128	—
Age	46.2 \pm 10.6	46.2 \pm 10.6	o	48.3 \pm 10.3	47.9 \pm 10.1	o
Body mass index (kg/m ²)	30.0 \pm 3.3	21.3 \pm 2.1	***	34.5 \pm 3.6	21.6 \pm 4.3	***
Systolic blood pressure (mm Hg)	147 \pm 24	132 \pm 21	***	144 \pm 27	126 \pm 20	***
Diastolic blood pressure (mm Hg)	97 \pm 14	85 \pm 14	***	93 \pm 15	81 \pm 15	***
Actual hypertension ² (%)	58.1	22.9	*	47.7	14.8	***
Cigarette smoking (%)	39.2	61.5	***	4.7	15.6	*
Total cholesterol (mmol/l)	5.62 \pm 1.39	4.78 \pm 1.19	***	5.91 \pm 1.21	5.34 \pm 1.20	**
Hypercholesterolemia ³ (%)	23.0	7.4	o	32.0	17.1	*
HDL-cholesterol (mmol/l)	1.16 \pm 0.29	1.56 \pm 0.53	***	1.30 \pm 1.26	1.44 \pm 0.37	**
Triglycerides (mmol/l)	1.34 \pm 0.95	0.91 \pm 0.58	***	1.14 \pm 0.95	0.85 \pm 0.48	**
Atherogenic index	5.07 \pm 1.51	3.38 \pm 1.44	***	4.81 \pm 1.48	3.93 \pm 1.37	***
Apoprotein A1 (g/l)	1.30 \pm 0.28	1.47 \pm 0.39	**	1.39 \pm 0.32	1.42 \pm 0.32	o
Apoprotein B (g/l)	1.31 \pm 0.34	0.94 \pm 0.36	***	1.29 \pm 0.37	1.13 \pm 0.39	***
Lipoprotein (a) (mg/l)	294 \pm 341	330 \pm 340	o	320 \pm 449	354 \pm 531	o
0 major risk factor ⁴	18.9	27.7	***	35.9	58.6	**
1 major risk factors ⁴	47.3	54.7	***	44.5	35.2	o
2 major risk factors ⁴	28.4	15.5	o	18.6	6.2	o
3 major risk factors ⁴	5.4	2.1	o	1	0	o
Glucose (mmol/l)	6.16 \pm 2.41	5.31 \pm 2.17	**	5.96 \pm 2.59	5.21 \pm 2.31	*
Diabetes mellitus ⁵ (%)	14.8	2.5	o	10.7	2.8	o
No exercise at work (%)	28.3	18.2	o	7.0	9.3	o
Light exercise at work (%)	36.5	23.0	o	21.8	18.7	o
Heavy exercise at work (%)	21.6	37.1	***	13.3	24.2	o
Practicing sport (%)	10.8	8.8	o	3.9	1.6	o
Black (%)	63.5	77.0	***	80.4	68.0	o
Mixed (%)	21.6	12.8	o	14.1	22.7	o
White (%)	9.5	7.4	o	4.7	8.6	o
Indian or Asiatic (%)	5.4	2.8	o	0.8	0.7	o

¹ Obese men: BMI > 27; obese women: BMI > 30.

Non obese men and women: BMI < 25. The non obese men and women are matched for age.

² Systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.

³ Total cholesterol > 6.5 mmol/l.

⁴ Major risk factors for cardiovascular diseases: actual hypertension, cigarette smoking, hypercholesterolemia.

⁵ As defined according to the criteria of the National Diabetes Data Group.

Blood Pressure

Tab. 9. Blood pressure: Mean systolic blood pressure (mm Hg) from 3 consecutive measurements.

Age	25-34	35-44	45-54	55-64	Total
Men (n)	105	127	145	136	513
1st reading	133.9	143.1	147.7	153.4	145.2
2nd reading	124.8	132.8	138.5	143.8	135.6
3rd reading	128.7	130.7	137.1	142.6	134.2
Difference 1-3	5.2	12.4	10.6	10.8	11.0
Women (n)	123	143	145	157	568
1st reading	123.2	136.2	151.0	162.4	144.4
2nd reading	114.0	125.5	136.9	145.8	131.5
3rd reading	113.1	124.4	135.2	143.9	130.1
Difference 1-3	10.1	11.8	15.8	18.5	14.3

Tab. 10. Blood pressure: Mean diastolic blood pressure (mm Hg) from 3 consecutive measurements.

Age	25-34	35-44	45-54	55-64	Total
Men (n)	104	123	143	130	513
1st reading	83.8	90.4	92.7	92.4	90.2
2nd reading	83.5	87.7	91.4	90.4	88.8
3rd reading	82.1	86.9	89.8	89.5	87.4
Difference 1-3	1.7	3.5	2.8	2.9	2.8
Women (n)	123	143	145	157	568
1st reading	77.8	87.6	92.7	95.2	88.6
2nd reading	73.9	83.6	89.5	90.6	84.7
3rd reading	73.5	82.5	87.5	89.9	83.9
Difference 1-3	4.3	5.1	5.2	5.3	4.7

1st reading Blood pressure measured 15-60 minutes after arrival to study centre.

2nd reading Blood pressure measured 30-60 minutes after 1st reading.

3rd reading Blood pressure measured 2 minutes after 2nd reading.

1st reading Blood pressure measured 15-60 minutes after arrival to study centre.

2nd reading Blood pressure measured 30-60 minutes after 1st reading.

3rd reading Blood pressure measured 2 minutes after 2nd reading.

Tab. 11. Blood pressure: Prevalence (%) of individuals with various mid-arm circumference ranges in the survey sample.

	Men (n = 513) (%)	Women (n = 568) (%)
Arm circumference:		
At or below 22	2.1	3.7
22-26	17.7	21.3
26-30	51.3	35.6
30-34	24.0	26.4
34-38	4.1	10.0
Above 38	0.8	3.0

Tab. 12. Blood pressure: Mean, standard deviation (SD) and percentiles of systolic blood pressure (mm Hg).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	105	124.3	16.3	101	107	120	150	156
35-44	127	131.5	17.4	108	110	130	158	160
45-54	145	137.6	22.0	108	110	136	165	172
55-64	136	143.1	25.1	107	114	140	174	181
Women								
25-34	123	113.6	13.4	94	99	111	130	135
35-44	143	125.0	17.7	100	105	123	147	152
45-54	145	136.5	27.8	109	110	130	170	195
55-64	157	145.1	25.4	109	115	144	177	194

Tab. 13. Blood pressure: Mean, standard deviation (SD) and percentiles of diastolic blood pressure (mm Hg).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	105	82.7	12.9	66	69	80	102	108
35-44	127	87.3	13.4	65	72	86	105	109
45-54	145	90.6	15.0	70	72	89	110	122
55-64	136	89.9	13.7	68	74	90	108	117
Women								
25-34	123	73.8	8.7	60	62	72	88	95
35-44	143	83.7	14.7	65	68	83	97	102
45-54	145	88.1	14.4	70	72	85	107	116
55-64	157	90.2	14.8	69	74	89	109	120

Tab. 14. Blood pressure: Prevalence (%) of individuals with various ranges of diastolic blood pressure (mm Hg).

Age	25-34	35-44	45-54	55-64	25-64 ^a
Men (n)	105	127	145	136	(12110)
< 90	75.2	59.8	51.0	49.3	64.3
90-104	15.2	28.4	33.1	39.0	24.2
105-114	6.7	8.7	8.3	6.6	7.5
> = 115	2.9	3.1	7.6	5.1	4.0
Women (n)	123	143	145	157	(11508)
< 90	95.1	69.9	59.3	52.2	75.3
90-104	4.9	25.2	27.6	33.8	18.6
105-114	0	2.8	6.9	7.0	3.6
> = 115	0	2.1	6.2	7.0	2.5

^a Standardized for the population group aged 25-64 years.

Tab. 15. Blood pressure: Prevalence (%) of hypertension.

	Number of subjects	Hypertension (WHO criteria ¹)		Actual hypertension ²	
		Prevalence	95% confidence interval	Prevalence	95% confidence interval
Men	513	—	—	—	—
25–34	105	14.3	7.5–21.1	15.2	8.2–22.2
35–44	127	26.0	18.2–33.8	29.9	21.8–38.0
45–54	145	34.5	26.6–42.4	35.2	27.3–43.1
55–64	136	33.1	25.0–41.2	39.0	30.6–47.4
25–64 ^a	(12110)	21.9	15.3–30.1	24.0	18.7–34.0
Women	568	—	—	—	—
25–34	123	1.7	0–5.0	3.3	0–6.5
35–44	143	14.0	8.2–19.8	18.2	11.7–24.7
45–54	145	26.9	19.1–34.7	32.4	24.7–40.1
55–64	157	36.3	29.9–42.7	39.0	30.6–47.4
25–64 ^a	(11508)	15.3	8.9–18.2	18.3	12.6–24.0

¹ Non smokers are matched for age and randomly selected from the sample.

² Systolic blood pressure ≥ 160 or diastolic blood pressure ≥ 95 or under antihypertensive medication.

³ As defined according to the national Diabetes Data Group criteria.

Tab. 16. Blood pressure: Percentage (%) of awareness, antihypertensive medication and control of hypertension among actual hypertensives ¹.

	Number of hypertensives	Unaware ²	Aware, untreated ³ uncontrolled ⁴	Aware, treated, controlled ⁵	Aware, treated,
Men					
25–34	16	56.2	37.5	0	6.3
35–44	38	50.0	18.4	13.2	18.4
45–54	51	52.9	27.5	17.6	2.0
55–64	53	37.7	30.2	13.2	18.9
Total	158	47.5	27.2	16.5	8.9
Women					
25–34	4	25.0	25.0	0	50.0
35–44	26	38.5	19.2	19.2	23.1
45–54	47	25.5	19.1	38.3	17.1
55–64	72	37.5	13.9	27.8	20.8
Total	149	33.6	16.7	28.9	20.8

¹ Actual hypertensives Persons having systolic blood pressure (≥ 160 mm Hg) or elevated diastolic blood pressure (≥ 95 mm Hg) or under antihypertensive medication.

² Unaware Percentage of hypertensives not being aware of the disease.

³ Aware, untreated Percentage of hypertensives being aware of hypertensive blood pressure, but not under antihypertensive medication.

⁴ Aware, treated, uncontrolled Percentage of hypertensives being aware of hypertension, under antihypertensive medication, and having SBP ≥ 160 mm Hg or DBP ≥ 95 mm Hg.

⁵ Aware, treated, controlled Percentage of hypertensives being aware of hypertension, being under antihypertensive medication, and having SBP < 160 and DBP < 95 mm Hg.

Tab. 17. Blood pressure: Prevalence (%) of hypertension in subjects aged approximately 40–55 in the Seychelles and in developing countries¹.

Region Country	Population basis	Year of survey	Age	Men		Women	
				(n)	Prevalence	(n)	Prevalence
Indian ocean							
Seychelles/Mahé	main island	89	45–54	(145)	35	(145)	27
Africa							
Ethiopia	rural	83	40–49	(42)	11	(31)	3
Nigeria/Bendal	civil servants	77	40–49	(49)	12	(10)	–
South Africa/Zoulou	urban	76	41–50	(80)	20	(83)	41
	rural	76	41–50	(86)	14	(132)	19
Tanzania	rural	78?	45–54	(75)	3	(58)	–
Zaire/Bantou	urban	84	40–49	(21)	33	(34)	15
America							
Brasil/Sao Paulo	city workers	76	45–54	(405)	34	(54)	24
Asia & Western Pacific							
Nepal	rural	81?	51–60	(91)	9	(86)	12
China/Beijing	urban	75	45–54	(880)	9	(995)	10
China/Shanghai	petrochemical	81	50–59	(1754)	16	(217)	12
China/Tibet	rural	79	45–54	(2381)	18	(3241)	20
India/Sundergrarh	rural	81	51–60	(468)	9	(217)	9
Japan/Tsumagoi	rural	83?	50–59	(186)	21	(257)	19
Korea/Kang Wha	rural	82?	50–59	(116)	24	(227)	18
Philippines/Quezon	urban	76	50–59	(82)	22	(98)	13
Europe							
Finland	rural	72	40–49	(699)	32	(716)	37
	rural	77	45–49	(607)	27	(616)	24
	rural	82	45–49	(366)	28	(412)	29

¹ From *Hypertension in developing countries*. Wld hlth quart 1988; 41:141–154.Hypertension defined in all studies for systolic blood pressure (SBP) values ≥ 160 or diastolic blood pressure (DBP) ≥ 95 mm Hg, except for Ethiopia (DBP > 90 mm Hg), Nigeria (no specification) and Finland (SBP ≥ 175 or DBP ≥ 100 mm Hg or under antihypertensive medication). Data for Finland and Japan given for comparison with industrialized countries.

Tab. 18. Blood pressure: Comparison of mean value (\pm SD) and prevalence (%) of clinical, biological, occupational and ethnic features in individuals with or without actual hypertension¹.

	Men			Women		
	Hypertension	No hypertension	p	Hypertension	No hypertension	p
Number of cases	158	158	—	149	149	—
Age (y)	48.8 \pm 10.1	48.7 \pm 10.3	o	52.1	50.6	o
Systolic blood pressure (mm Hg)	158 \pm 20	127 \pm 14	***	160 \pm 27	125 \pm 14	***
Diastolic blood pressure (mm Hg)	103 \pm 12	83 \pm 8	***	101 \pm 15	81 \pm 8	***
Body mass index (kg/m ²)	25.1 \pm 4.5	22.5 \pm 3.3	***	29.4 \pm 5.5	25.7 \pm 5.1	***
Obese ² (%)	9.5	2.3	NS	43.6	17.9	**
Total cholesterol (mmol/l)	5.12 \pm 1.15	5.07 \pm 1.17	o	5.85 \pm 1.22	5.52 \pm 1.54	*
Hypercholesterolemia ³ (%)	13.3	12.7	o	29.5	22.8	o
HDL-cholesterol (mmol/l)	1.38 \pm 0.48	1.51 \pm 0.54	*	1.39 \pm 0.41	1.37 \pm 0.32	o
Atherogenic index	4.13 \pm 1.59	3.71 \pm 1.49	*	4.47 \pm 1.48	4.29 \pm 1.63	o
Triglycerides (mmol/l)	1.34 \pm 1.22	0.96 \pm 0.77	**	1.11 \pm 0.89	0.98 \pm 0.53	o
Apoprotein A1 (g/l)	1.45 \pm 0.51	1.45 \pm 0.40	o	1.43 \pm 0.32	1.40 \pm 0.26	o
Apoprotein B (g/l)	1.10 \pm 0.37	1.03 \pm 0.35	o	1.28 \pm 0.38	1.20 \pm 0.40	o
Lipoprotein [a] (mg/l)	333 \pm 414	290 \pm 325	o	370 \pm 504	322 \pm 481	o
Cigarette smoking (%)	54.4	55.1	o	8.1	14.1	o
Hypercholesterolemia or smoking (%)	52.5	53.8	o	34.9	34.2	o
Hypercholesterolemia and smoking (%)	7.6	7.0	o	1.3	1.3	o
Glucose (mmol/l)	5.88 \pm 2.24	5.22 \pm 1.73	**	6.16 \pm 2.94	5.52 \pm 2.58	*
Diabetes mellitus ⁴ (%)	12.6	2.2	*	12.1	4.3	NS
Daily alcohol intake (g)	69 \pm 103	67 \pm 106	o	9.3 \pm 30.3	10.8 \pm 32	o
Stress at work ⁵ (%)	34.8	37.3	o	10.1	25.5	***
No exercise at work (%)	18.3	12.0	o	4.0	8.7	o
Light exercise at work (%)	31.6	20.2	o	20.1	18.8	o
Heavy exercise at work (%)	30.4	40.5	o	10.0	22.8	*
Practising sport (%)	3.1	8.2	o	3.4	3.4	o
Black (%)	71.5	68.4	o	71.8	77.9	o
Mixed (%)	16.4	18.4	o	19.5	16.7	o
White (%)	5.7	11.4	o	7.4	5.4	o
Indian or Asiatic (%)	6.4	1.8	o	1.3	0	o

¹ Hypertensive: systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.Normotensive: systolic blood pressure $<$ 160 and diastolic blood pressure $<$ 95 and not under antihypertensive medication.² Body mass index (kg/m²) $>$ 30.³ Total cholesterol $>$ 6.5 mmol/l.⁴ According the National Diabetes Data Group criteria.⁵ 'Feeling to be pressed for time' at work.

Tab. 19. Blood pressure: Prevalence of hypertension and awareness of the disease among hypertensive persons in the Seychelles and in selected studies.

Country or Area	Year of survey	Age	Prevalence (%)		Awareness (yes) (%)		Drug treatment (%)		Controlled (%)	
			M	F	M	F	M	F	M	F
Seychelles	1989	35-64	34	31	52	66	28	34	13	20
Bengladesh ¹	early 80s	> 10		7		14				
China ¹ workers	1979	> 20	1	2	68	81				
England, Glasgow ²	1986	35-64	32	25			26	29	14	15
Finland ¹ rural	1972	30-59	30	35	39	66	12	28	2	3
rural	1977	30-59	23	22	71	87	43	68	20	38
rural	1982	30-59	26	21	67	87	41	52	22	28
India ¹ urban	late 70s	20-69	5	5		24				6
rural	late 70s	20-69	5	5		16				4
Philippines ¹ urban (Quezon)	1976-78	> 15	13	10		57		33		18
urban (Davao)			13	11		62		23		8
Sri Lanka ¹ rural	early 80s	> 35		10		47				
USA, Stanford ²	1979-80	35-64	23	17			50	63	33	49
Switzerland, Vaud ²	1984-85	35-64	18	14			41	56	24	34
Zaire ¹ urban (Bantu)	1983-84	> 20	14	7	33	28	17	7	5	0

¹ Hypertension in developing countries. Wld Hlth Statist Quart 1988; 41:141-154.

² The WHO MONICA Project. Wld Hlth Statist Quart 1988; 41:115-140.

Smoking

Tab. 20. Smoking: Prevalence (%) of smokers¹, ex-smokers, never-smokers and average (\pm SD) number of cigarettes smoked per day per smoker.

Age	25-34	35-44	45-54	55-64	25-64 ^a
Men (n)	105	127	145	136	(12110)
Smokers	52.4	44.9	65.5	59.6	53.9
Ex-smokers	8.6	20.5	20.0	27.9	15.7
Never-smokers	39.0	34.6	14.5	12.5	30.4
Cigarettes per day	12.0 \pm 7.9	13.1 \pm 8.0	12.6 \pm 9.6	11.1 \pm 7.9	12.2 \pm 8.2
Women (n)	123	143	145	157	(11508)
Smokers	6.5	10.5	14.5	13.4	10.1
Ex-smokers	4.9	10.0	13.1	11.5	8.7
Never-smokers	88.6	79.5	72.4	75.1	81.2
Cigarettes per day	4.1 \pm 2.9	8.5 \pm 6.2	7.9 \pm 8.2	6.0 \pm 10.7	6.1 \pm 6.0

¹ At least 1 cigarette per day.

^a Standardized for the population group aged 25-64 years.

Tab. 21. Smoking: Comparison of mean value (\pm SD) and prevalence (%) of clinical and biological features in smokers and non-smokers¹.

	Men			Women		
	Smokers	Non-smokers	p	Smokers	Non-smokers	p
Number of cases	186	186	—	62	258	—
Age (y)	45.7 \pm 11.4	45.9 \pm 11.4	o	47.3 \pm 10.9	47.3 \pm 10.7	o
Body mass index (kg/m ²)	18.8 \pm 4.3	22.7 \pm 3.5	***	24.9 \pm 4.9	26.6 \pm 5.2	*
Body mass index > 27 (%)	12.4	21.0	*	32.2	39.8	***
Body mass index > 30 (%)	2.2	8.6	*	9.6	25.9	***
Systolic blood pressure (mm Hg)	134 \pm 22	138 \pm 23	o	128 \pm 19	134 \pm 27	o
Diastolic blood pressure (mm Hg)	87 \pm 15	90 \pm 14	o	83 \pm 11	86 \pm 15	o
Actual hypertension ² (%)	32.0	33.4	o	17.7	31.0	***
Total cholesterol (mmol/l)	4.9 \pm 1.4	5.0 \pm 1.4	o	5.2 \pm 1.2	5.4 \pm 1.4	o
HDL-cholesterol (mmol/l)	1.42 \pm 0.61	1.32 \pm 0.46	**	1.39 \pm 0.44	1.35 \pm 0.42	o
Triglycerides (mmol/l)	1.20 \pm 1.5	1.04 \pm 0.82	o	1.04 \pm 0.57	0.95 \pm 0.66	o
Atherogenic index	3.7 \pm 1.7	4.0 \pm 1.7	o	4.0 \pm 1.5	4.1 \pm 1.5	o
Apoprotein A1 (g/l)	1.42 \pm 0.56	1.31 \pm 0.42	*	1.37 \pm 0.32	1.35 \pm 0.38	o
Apoprotein B (g/l)	1.02 \pm 0.41	1.06 \pm 0.42	o	1.10 \pm 0.36	1.15 \pm 0.39	o
Lipoprotein (a) (mg/l)	330 \pm 437	303 \pm 324	o	351 \pm 429	345 \pm 471	o
With actual hypertension or hypercholesterolemia (%)	33.9	37.1	o	24.2	43.4	***
With actual hypertension and hypercholesterolemia (%)	3.9	4.8	o	1.6	9.2	***
Glucose (mmol/l)	5.3 \pm 1.8	5.4 \pm 2.0	*	5.1 \pm 1.3	5.6 \pm 2.7	***
Diabetes mellitus ² (%)	5.9	6.4	o	6.5	8.0	o
Hemoglobin (g/l)	13.3 \pm 4.5	12.3 \pm 5.2	*	11.4 \pm 4.5	11.9 \pm 4.1	o
Red cell mean corpuscular volume (fl)	83 \pm 27	74 \pm 32	***	79 \pm 31	79 \pm 24	o
Daily alcohol intake (g)	76 \pm 95	50 \pm 97	**	24 \pm 46	7 \pm 24	***

¹ Non smokers are matched for age and randomly selected from the sample.

² Systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.

³ As defined according to the national Diabetes Data Group criteria.

o non significant.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Lipids

Tab. 22. Lipids: Mean, standard deviation (SD) and percentiles of total cholesterol (mmol/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25–34	104	4.8	1.0	3.4	3.7	4.8	6.2	6.5
35–44	123	5.2	1.2	3.4	3.9	5.1	6.9	7.5
45–54	143	5.0	1.1	3.5	3.7	5.0	6.3	6.9
55–64	130	5.1	1.1	3.3	3.9	5.0	6.3	7.0
Women								
25–34	120	4.9	1.0	3.2	3.7	5.7	6.5	6.7
35–44	136	5.2	1.1	3.7	3.9	5.1	6.6	6.9
45–54	142	5.6	1.1	3.9	4.1	5.5	7.1	7.7
55–64	157	5.8	1.2	3.9	4.2	5.8	7.3	8.0

Tab. 23. Lipids: Mean (x), standard deviation (SD) and percentiles of HDL-cholesterol (mmol/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	104	1.41	0.47	0.93	0.98	1.31	2.02	2.36
35-44	123	1.39	0.49	0.81	0.89	1.28	2.01	2.61
45-54	143	1.49	0.59	0.77	0.85	1.44	2.06	2.42
55-64	130	1.44	0.46	0.82	0.91	1.37	2.04	2.44
Women								
25-34	120	1.32	0.31	0.87	0.96	1.26	1.79	1.92
35-44	136	1.41	0.35	0.87	1.00	1.37	1.83	2.11
45-54	142	1.41	0.39	0.82	0.90	1.35	1.91	2.09
55-64	157	1.36	0.37	0.97	0.96	1.29	1.89	2.02

Tab. 24. Lipids: Mean (x), standard deviation (SD) and percentiles of triglycerides (mmol/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	104	1.13	1.23	0.40	0.44	0.76	2.08	2.90
35-44	123	1.18	0.94	0.40	0.43	0.91	2.13	2.66
45-54	143	1.19	1.53	0.45	0.48	0.83	1.76	2.45
55-64	130	0.98	0.62	0.46	0.51	0.81	1.50	2.21
Women								
25-34	120	0.76	0.55	0.34	0.38	0.66	1.19	1.38
35-44	136	0.92	0.83	0.36	0.43	0.75	1.49	1.83
45-54	142	0.90	0.43	0.44	0.48	0.80	1.44	1.80
55-64	157	1.10	0.63	0.49	0.56	0.92	1.83	2.25

Tab. 25. Lipids: Mean, standard deviation (SD) and percentiles of lipoprotein [a] (mg/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	103	301	314	22	30	224	645	807
35-44	122	343	418	19	26	204	777	1085
45-54	141	320	427	23	30	181	739	1152
55-64	130	344	364	23	37	209	856	1081
Women								
25-34	120	325	397	19	28	195	768	915
35-44	136	265	298	22	33	160	618	925
45-54	142	331	448	20	42	171	817	1285
55-64	150	411	571	23	44	248	1083	1497

Tab. 26. Lipids: Mean, standard deviation (SD) and percentiles of apoprotein-A1 (g/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	103	1.43	0.52	0.98	1.06	1.33	1.82	2.16
35-44	122	1.40	0.42	0.93	0.99	1.34	1.94	2.25
45-54	141	1.44	0.40	0.90	1.00	1.42	2.01	2.10
55-64	130	1.42	0.29	1.00	1.07	1.39	1.87	1.98
Women								
25-34	120	1.31	0.30	0.87	0.98	1.27	1.70	1.92
35-44	136	1.40	0.33	0.98	1.05	1.31	1.77	2.13
45-54	142	1.38	0.30	0.97	1.03	1.37	1.74	1.85
55-64	150	1.42	0.28	0.98	1.09	1.42	1.72	1.84

Tab. 27. Lipids: Mean, standard deviation (SD) and percentiles of apoprotein-B (g/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	103	1.01	0.32	0.60	0.66	0.96	1.49	1.54
35-44	122	1.09	0.39	0.57	0.64	1.07	1.69	1.79
45-54	141	1.05	0.36	0.56	0.66	0.99	1.54	1.74
55-64	130	1.08	0.34	0.53	0.60	1.07	1.51	1.60
Women								
25-34	123	1.02	0.30	0.54	0.62	1.00	1.44	1.56
35-44	136	1.11	0.34	0.64	0.69	1.10	1.54	1.68
45-54	142	1.20	0.34	0.65	0.76	1.22	1.67	1.74
55-64	157	1.30	0.41	0.68	0.75	1.28	1.80	1.98

Tab. 28. Lipids: Mean, standard deviation (SD) and percentiles of LDL-cholesterol¹ (mmol/l).

	n	x	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	104	2.99	0.93	1.5	1.8	2.9	4.2	4.6
35-44	123	3.32	1.27	1.4	1.8	3.2	4.9	5.6
45-54	143	3.03	1.16	1.4	1.6	2.9	4.6	5.0
55-64	130	3.22	1.10	1.6	1.9	3.1	4.6	4.9
Women								
25-34	120	3.25	1.03	1.7	1.9	3.2	4.8	5.0
35-44	136	3.37	1.05	1.8	2.0	3.3	4.8	5.1
45-54	142	3.83	1.10	2.2	2.4	3.7	5.4	5.7
55-64	157	3.99	1.16	2.2	2.5	3.9	5.2	5.8

¹ LDL-cholesterol = (total cholesterol) - (HDL-cholesterol) - (triglycerides/2.2). All values in mmol/l.

Tab. 29. Lipids: Mean, standard deviation (SD) and percentiles of atherogenic index¹.

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25-34	104	3.76	1.19	2.0	2.3	3.8	5.3	5.6
35-44	123	4.20	1.72	1.9	2.2	3.8	6.5	7.1
45-54	143	3.86	1.14	1.9	2.1	3.6	6.2	7.0
55-64	130	3.85	1.38	1.9	2.2	3.7	5.9	6.3
Women								
25-34	120	3.90	1.23	2.3	2.5	3.8	5.7	6.0
35-44	136	3.93	1.37	2.2	2.5	3.7	5.8	6.5
45-54	142	4.29	1.46	2.5	2.8	4.0	6.2	7.1
55-64	157	4.49	1.59	2.5	2.9	4.4	6.5	7.8

¹ Atherogenic index = (total cholesterol)/(HDL-cholesterol).

Tab. 30. Lipids: Prevalence (%) of individuals with low (< 5.2 mmol/l), intermediate (5.2–6.5 mmol/l) and high (> 6.5 mmol/l) total cholesterol level.

Age	25–34	35–44	45–54	55–64	25–64 ^a
Men (n)	104	123	143	130	(12110)
< 5.2	64.4	56.1	58.7	60.0	61.3
5.2–6.5	30.8	31.7	31.5	30.0	31.0
> 6.5	4.8	12.2	9.8	10.0	8.0
Women (n)	120	136	142	151	(11508)
< 5.2	63.3	58.1	35.2	29.8	50.9
5.2–6.5	26.7	30.1	43.7	43.7	32.6
> 6.5	10.0	11.8	21.1	26.5	16.5

^a Standardized for the population group aged 25–64 years.

Tab. 31. Lipids: Prevalence (%) of individuals with low (< 5), intermediate (5–6.5) and high (> 6.5) atherogenic index¹.

Age	25–34	35–44	45–54	55–64	25–64 ^a
Men (n)	104	123	143	130	(12110)
< 5	85.6	69.9	80.4	83.1	80.9
5–6.5	13.5	20.3	11.8	13.1	14.7
> 6.5	0.9	9.8	7.8	3.8	4.4
Women (n)	120	136	142	151	(11508)
< 5	83.3	83.8	78.9	67.5	79.8
5–6.5	14.9	11.8	13.4	23.2	15.4
> 6.5	2.5	4.4	7.7	9.3	4.8

¹ Atherogenic index = (total cholesterol)/(HDL-cholesterol).

^a Standardized for the population group aged 25–64 years.

Tab. 32. Lipids: Prevalence (%) of dyslipoproteinemias according to Fredrickson's classification¹.

Age	25–34	35–44	45–54	55–64	25–64 ^a
Men (n)	104	123	143	130	(12110)
IIa	8.6	17.9	12.6	11.5	11.7
IIb	10.6	13.8	8.4	6.9	11.8
IV	0	0	0	0	0
Women (n)	120	136	142	151	(11508)
IIa	14.2	17.6	28.9	29.9	20.5
IIb	0.8	3.7	4.2	7.0	3.1
IV	0	0	0	0	0

¹ Type IIa: LDL-cholesterol > 4.5 mmol/l and triglycerides < 2 mmol/l.

Type IIb: LDL-cholesterol > 4.5 mmol/l and triglycerides > 2 mmol/l.

Type IV: LDL-cholesterol < 4.5 mmol/l and triglycerides > 2 mmol/l.

LDL-cholesterol = (total cholesterol) – (HDL-cholesterol) – (triglycerides/2.2).

^a Standardized for the population group aged 25–64 years.

Tab. 33. Lipids: Comparison of mean value (\pm SD) and prevalence (%) of clinical, dietary and ethnic features in individuals with high (> 6.5 mmol/l) and low (< 5.2 mmol/l) cholesterol level¹.

	Men			Women		
	High cholesterol	Low cholesterol	p	High cholesterol	Low cholesterol	p
Number of cases	49	98	–	104	104	–
Age (y)	45.5 \pm 10.4	45.5 \pm 10.3	o	49.2	48.9	o
Total cholesterol (mmol/l)	7.27 \pm 0.83	4.39 \pm 0.61	***	7.23 \pm 0.73	4.38 \pm 0.61	***
HDL-cholesterol (mmol/l)	1.34 \pm 0.58	1.43 \pm 0.46	o	1.39 \pm 0.46	1.33 \pm 0.32	o
Triglycerides (mmol/l)	1.81 \pm 1.56	1.02 \pm 0.91	***	1.38 \pm 1.13	0.83 \pm 0.37	***
Atherogenic index	5.98 \pm 1.84	3.36 \pm 1.17	***	5.74 \pm 1.85	3.48 \pm 0.94	***
Apoprotein A1 (g/l)	1.53 \pm 0.51	1.41 \pm 0.33	o	1.50 \pm 0.37	1.31 \pm 0.28	***
Apoprotein B (g/l)	1.67 \pm 0.34	0.89 \pm 0.25	o	1.64 \pm 0.34	0.93 \pm 0.26	***
Lipoprotein (a) (mg/l)	326 \pm 351	342 \pm 446	o	476 \pm 611	252 \pm 303	***
Body mass index (kg/m ²)	25.2 \pm 3.8	22.6 \pm 3.9	***	27.4 \pm 5.4	25.7 \pm 5.4	*
Obesity ² (%)	10.2	5.1	o	35.6	24.0	o
Glucose (mmol/l)	6.06 \pm 2.75	5.12 \pm 1.22	**	6.22 \pm 3.57	5.39 \pm 2.26	**
Diabetes mellitus ³ (%)	16.6	4.2	o	12.2	3.6	o
Systolic blood pressure (mm Hg)	139 \pm 25	135 \pm 22	o	141 \pm 28	130 \pm 24	**
Diastolic blood pressure (mm Hg)	90 \pm 15	89 \pm 15	o	88 \pm 15	84 \pm 15	o
Actual hypertension ⁴ (%)	38.8	36.7	*	36.5	24.0	o
Cigarette smoking (%)	55.1	51.0	*	6.7	17.3	*
Smoker or hypertensive (%)	53.1	48.9	*	41.3	31.7	o
Smoker and hypertensive (%)	20.4	19.4	o	4.8	1.0	o
Fish consumption ⁵	5.12 \pm 1.39	5.44 \pm 1.10	o	5.27 \pm 1.29	5.23 \pm 1.44	o
Meat consumption ⁵	2.41 \pm 1.35	2.13 \pm 1.31	o	2.30 \pm 1.14	2.05 \pm 1.14	o
Eggs consumption ⁶	1.59 \pm 1.35	1.37 \pm 1.09	o	1.32 \pm 1.13	1.09 \pm 1.13	o
Eating eggs every day (%)	30.6	19.4	o	21.2	18.2	o
Daily alcohol intake (g)	35 \pm 45	65 \pm 98	*	6 \pm 23	10 \pm 27	o
Black (%)	42.9	75.5	***	55.8	75.0	o
Mixed (%)	40.8	18.4	o	28.8	17.3	o
White (%)	12.2	3.1	o	11.5	5.8	o
Indian or Asiatic (%)	4.1	3.1	o	3.8	1.9	o

¹ Individuals with low cholesterol level are matched for age and randomly selected from the sample.

² Body mass index (BMI) > 30 .

³ As defined according to the criteria of the National Diabetes Data Group.

⁴ Systolic blood pressure ≥ 160 or diastolic blood pressure ≥ 95 or under antihypertensive medication.

⁵ Arbitrary scale ranging from 0 (less than 2 times a week) to 6 (almost 2 times per day).

⁶ Arbitrary scale ranging from 0 (less than once a week) to 3 (almost every day).

o non significant.

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Tab. 34. Lipids: Correlation coefficients between lipids and other parameters, for men (top value) and women (bottom value).

	Cholesterol	Apo-B	HDL	Apo-A1	Triglycerides	Lp (a)	Age	BMI
Apo-B	0.78**** 0.81****	— —	— —	— —	— —	— —	— —	— —
HDL	0.05 0.09*	— 0.39*** — 0.25***	— —	— —	— —	— —	— —	— —
Apo-A1	0.16** 0.24**	— 0.12* 0.01	0.76**** 0.70****	— —	— —	— —	— —	— —
Triglycerides	0.19** 0.36***	0.26*** 0.43***	— 0.25*** — 0.25***	0.14* 0.07	— —	— —	— —	— —
Lp (a)	0.07 0.21**	— 0.01 0.11*	— 0.05 0.06	— 0.08 0.07	— 0.04 0.04	— —	— —	— —
Age	0.03 0.31***	0.05 0.30***	0.04 0.02	0.01 0.31***	— 0.04 0.20**	0.03 0.09*	— —	— —
BMI	0.24** 0.25***	0.26*** 0.25***	— 0.32*** — 0.12*	— 0.14* — 0.01	0.19** 0.19**	— 0.14* — 0.01	0.03 0.25***	— —
Glucose	0.19** 0.16**	0.26*** 0.17**	— 0.12* — 0.05	— 0.01 0.08	0.26*** 0.17*	— 0.07 0.06	0.22** 0.26***	0.22** 0.21**
Alcohol consumption	— 0.12* — 0.04	— 0.16** — 0.01	0.23** 0.10*	0.18** 0.10*	0.01 0.07	— 0.03 0.01	— 0.03 0.01	— 0.11* — 0.02

HDL HDL-cholesterol.

Lp (a) lipoprotein (a).

BMI body mass index.

* 0.09 to 0.15.

** 0.15–0.25.

*** 0.25–0.50.

**** > 0.50.

*Diabetes mellitus*Tab. 35. Diabetes mellitus: Prevalence of individuals with elevated fasting blood glucose (FBG)¹ and with defined diabetes mellitus².

Age	25–34	35–44	45–54	55–64	25–64 ^a
Men (n)	105	127	145	136	(12110)
FBG > 6.7 mmol/l (%)	1.0	8.7	17.2	14.7	7.2
FBG > 10 mmol/l (%)	0	2.4	3.5	3.7	1.6
Diabetes mellitus (%)	0	5.5	6.2	8.8	3.4
Women (n)	123	143	145	157	(11508)
FBG > 6.7 mmol/l (%)	2.4	4.9	13.1	18.5	7.8
FBG > 10 mmol/l (%)	0.8	1.4	3.4	9.6	2.9
Diabetes mellitus (%)	0.8	2.8	6.9	13.4	4.6

¹ First FBG measurement.² Diabetes mellitus is defined according to the criteria of the National Diabetes Data Group: additional FBG measurements were obtained when required.^a Standardized for the population group aged 25–64 years.

Tab. 36. Diabetes mellitus: Control status in the survey sample.

	Male diabetics	Female diabetics
Total number of cases (n)	28	36
Unaware of their disease (%)	53.6	55.6
Aware, not under medication (%)	21.4	13.8
Aware, under medication (%)	25.0	30.6

Tab. 37. Diabetes mellitus: Recent estimates of the prevalence (%) of non insulin dependent diabetes.

Region of origin/ Population	Country	Age range (years)	Male (%)	Female (%)
Indian Ocean				
Predominantly black	Seychelles	25-64	3.4	4.6
Predominantly indian and asiatic	Mauritius	25-74	7.7	13.0
Africa				
Black/Bantu	Tanzania	> 20	1.3	1.8
Black	Mali	> 15	0.8	1.0
Black	Togo	> 0	0	0
Black	USA	20-74	8.6	11.0
America				
Pima	USA	> 20	32.6	37.2
Mapuche	Chile	> 20	0.4	1.4
South-East Asia				
Indian	Fiji	> 20	13.4	12.6
Indian	South Africa	> 15	7.6	13.5
Indian	Singapore	> 18	9.1	6.1
Chinese	Singapore	> 18	4.3	3.6
Europa				
White	Italy	> 18	6.6	8.8
White	USA	20-74	5.5	7.3
White	Australia	> 25	5.1	3.7
Western Pacific				
Micronesian	Nauru	> 20	24.6	23.9
Micronesian	Kiribati			
Rural		> 20	3.6	3.6
Urban		> 20	8.1	7.4
Melanesian	Fiji			
Rural		> 20	1.7	1.7
Urban		> 20	4.8	8.2
Melanesian	Papua New Guinea			
Highlands		> 20	0	0

Data (except for Seychelles) from Wld Hlth statist. quart. 1988; 41:190-196 and from Diabetes 1990; 39:390-396 (Mauritius). Estimates based on criteria recommended by WHO for all countries except Seychelles (NDDG criteria).

Tab. 38. Diabetes mellitus: Comparison of mean (\pm SD) and prevalence (%) of various clinical and biological parameters in diabetics and non diabetics.

	Men			Women		
	Diabetic	Non-diabetic	p	Diabetic	Non-diabetic	p
Samples ¹						
Number of cases	28	112	—	36	144	—
Age (years)	52.7 \pm 8.5	52.7 \pm 8.4	NS	52.8 \pm 7.8	53.2 \pm 7.8	NS
Clinical parameters						
Body mass index (kg/m ²)	26.8 \pm 4.4	23.6 \pm 4.2	***	30.2 \pm 5.9	27.1 \pm 5.3	**
BMI > 25 (%)	60.7	36.9	**	80.6	63.2	***
BMI > 30 (%)	14.3	5.4	**	38.8	27.7	***
Systolic blood pressure (mm Hg)	156 \pm 23	141 \pm 24	**	149 \pm 24	139 \pm 27	*
Diastolic blood pressure (mm Hg)	99 \pm 12	91 \pm 15	*	93 \pm 14	88 \pm 14	*
Actual hypertension ² (%)	71.4	40.5	**	50.0	38.3	*
Blood parameters						
First fasting blood glucose (mmol/l)	10.9 \pm 3.8	5.0 \pm 0.8	***	13.4 \pm 4.7	5.1 \pm 0.8	***
Total cholesterol (mmol/l)	5.9 \pm 1.6	5.0 \pm 1.1	***	6.0 \pm 1.2	5.9 \pm 1.2	NS
HDL-cholesterol (mmol/l)	1.26 \pm 0.51	1.42 \pm 0.43	NS	1.30 \pm 0.43	1.45 \pm 0.42	NS
Atherogenic index	5.31 \pm 2.17	3.87 \pm 1.53	***	4.89 \pm 1.46	4.36 \pm 1.58	NS
Triglycerides (mmol/l)	1.74 \pm 1.17	1.06 \pm 0.99	**	1.33 \pm 0.93	1.03 \pm 0.82	NS
Apoprotein A1 (g/l)	1.46 \pm 0.39	1.40 \pm 0.32	NS	1.44 \pm 0.36	1.43 \pm 0.31	NS
Apoprotein B (g/l)	1.38 \pm 0.49	1.05 \pm 0.36	***	1.33 \pm 0.41	1.27 \pm 0.35	NS
Lipoprotein (a) (mg/l)	221 \pm 411	310 \pm 356	NS	388 \pm 555	338 \pm 489	NS

¹ Four non-diabetic individuals matched for age were randomly from the survey sample for each diabetic case.

² Systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.

NS Non significant.

* p < 0.05.

** p < 0.01.

*** p < 0.001.

Global data on cardiovascular risk factors

Tab. 39. Risk factors: Proportions (%) of categories of major risk-factors¹ score.

Age	25–34	35–44	45–54	55–64	25–64 ^a
Men	105	127	145	136	(12110)
0 RF	38.1	35.4	18.6	23.5	31.2
1 RF	51.4	43.3	53.8	48.5	49.3
2 RF	9.5	18.9	25.5	25.7	17.7
3 RF	1.0	2.4	2.1	2.2	1.8
Women	123	143	145	157	(11508)
0 RF	81.3	63.6	44.1	32.5	61.8
1 RF	17.9	30.8	43.4	49.7	31.0
2 RF	0.8	5.6	12.4	17.8	7.0
3 RF	0	0	0	0.6	0.2

¹ The considered major risk-factors (RF) for cardiovascular diseases are:

- actual hypertension (systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive therapy);
- cigarette smoking (at least 1 cigarette per day);
- hypercholesterolemia (total cholesterol > 6.5 mmol/l).

^a Standardized for the population group aged 25–64 years.

Tab. 40. Risk factors: Comparison of crude mean (\pm SD) and prevalence (%) of cardiovascular risk factors in urbanized (Victoria) and countryside (South) areas.

	Men			Women		
	Victoria	South	p	Victoria	South	p
Number of subjects (n)	208	185	–	260	178	–
Age range (y)	25–64	25–64	–	25–64	25–64	–
Mean age (y)	45.3 \pm 11.6	44.9 \pm 11.0	NS	44.5 \pm 12.0	45.4 \pm 11.2	NS
BMI (kg/m ²)	23.3 \pm 4.2	22.9 \pm 3.3	NS	26.5 \pm 6.12	25.1 \pm 5.0	*
Obesity ¹ (%)	3.8	3.2	NS	27.3	15.1	***
Systolic blood pressure (mm Hg)	136 \pm 23	137 \pm 22	NS	133 \pm 29	128 \pm 20	NS
Diastolic blood pressure (mm Hg)	88 \pm 15	89 \pm 14	NS	86 \pm 17	83 \pm 13	NS
Actual hypertension ² (%)	31.7	32.5	NS	28.5	25.8	*
Cigarette smoking ³ (%)	54.3	50.2	NS	10.7	9.6	NS
Cholesterol (mmol/l)	5.02 \pm 1.07	4.96 \pm 0.99	NS	5.41 \pm 1.12	5.29 \pm 1.21	NS
Hypercholesterolemia ⁴ (%)	9.6	4.9	NS	14.6	13.8	NS
Fasting blood glucose (mmol/l)	5.59 \pm 1.99	5.11 \pm 1.46	**	5.60 \pm 2.65	5.29 \pm 2.27	NS
Diabetes ⁵ (%)	7.6	4.3	NS	7.3	5.6	NS

¹ BMI > 30.

² Systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.

³ At least 1 cigarette per day.

⁴ Total cholesterol > 6.5 mmol/l.

⁵ As defined according to the National Diabetes Data Group criteria.

Tab. 41. Risk factors: Screening of cardiovascular risk factors (mean value \pm SD).

	n	Body mass index (kg/m ²)	Systolic blood pressure (mm Hg)	Diastolic blood pressure (mm Hg)	Cigarettes smoked per day (n)
Men					
25–34	105	22.9 \pm 3.3	124.3 \pm 16.3	82.7 \pm 12.9	12.0 \pm 7.9
35–44	127	23.8 \pm 3.5	131.3 \pm 17.4	87.3 \pm 13.4	13.1 \pm 8.0
45–54	145	23.1 \pm 3.9	137.6 \pm 22.0	90.6 \pm 15.0	12.6 \pm 9.6
55–64	136	23.2 \pm 4.4	143.1 \pm 25.1	89.9 \pm 13.7	11.1 \pm 7.9
25–64 ^a	(12110)	23.2 \pm 3.6	130.5 \pm 18.7	85.9 \pm 13.5	12.2 \pm 8.2
Women					
25–34	123	23.2 \pm 5.1	113.6 \pm 13.4	73.8 \pm 8.7	4.1 \pm 2.9
35–44	143	26.8 \pm 5.6	125.0 \pm 17.7	83.7 \pm 14.7	8.5 \pm 6.2
45–54	145	27.0 \pm 5.6	136.5 \pm 27.8	88.1 \pm 14.4	7.9 \pm 8.2
55–64	157	27.5 \pm 5.2	145.1 \pm 25.4	90.2 \pm 14.8	6.0 \pm 10.7
25–64 ^a	(11508)	25.4 \pm 5.3	125.9 \pm 19.2	81.5 \pm 12.1	6.1 \pm 6.0

^a Standardized for the population group aged 25–64 years.

Tab. 42. Risk factors: Screening of cardiovascular risk factors (mean value \pm SD).

	n	Total cholesterol (mmol/l)	HDL-cholesterol (mmol/l)	Lipoprotein (a) ¹ (mg/l)
Men				
25-34	104	4.8 \pm 1.0	1.41 \pm 0.47	301 \pm 314
35-44	123	5.2 \pm 1.2	1.39 \pm 0.49	343 \pm 418
45-54	143	5.0 \pm 1.1	1.49 \pm 0.59	320 \pm 427
55-64	130	5.1 \pm 1.1	1.44 \pm 0.46	344 \pm 364
25-64 ^a	(12110)	5.0 \pm 1.1	1.42 \pm 0.49	319 \pm 362
Women				
25-34	120	4.9 \pm 1.0	1.32 \pm 0.31	325 \pm 397
35-44	136	5.2 \pm 1.1	1.41 \pm 0.35	265 \pm 298
45-54	142	5.6 \pm 1.1	1.41 \pm 0.39	331 \pm 448
55-64	157	5.8 \pm 1.2	1.36 \pm 0.37	411 \pm 571
25-64 ^a	(11508)	5.3 \pm 1.2	1.36 \pm 0.34	328 \pm 415

¹ 11 missing values.^a Standardized for the population group aged 25-64 years.Tab. 43. Risk factors: Screening of cardiovascular risk factors (prevalence \pm 95% confidence interval).

	n	Obesity ¹ (%)	Hypertension ² (%)	Smoking ² (%)	Diabetes ³ (%)
Men					
25-34	105	3.8 \pm 3.7	15.2 \pm 7.0	52.4 \pm 9.7	0
35-44	127	4.7 \pm 3.8	29.9 \pm 8.1	65.5 \pm 7.9	5.5 \pm 4.0
45-54	145	2.8 \pm 2.7	35.2 \pm 7.9	65.5 \pm 7.9	6.2 \pm 4.0
55-64	136	6.6 \pm 4.3	39.0 \pm 8.4	59.6 \pm 8.4	8.8 \pm 4.8
25-64 ^a	(12110)	4.2 \pm 3.6	21.9 \pm 6.6	53.9 \pm 9.3	3.4 \pm 3.4
Women					
25-34	123	8.9 \pm 5.1	3.3 \pm 3.2	6.5 \pm 4.4	0.8 \pm 1.6
35-44	143	29.4 \pm 7.6	18.2 \pm 6.5	10.5 \pm 5.1	2.8 \pm 2.8
45-54	145	26.9 \pm 7.4	32.4 \pm 7.7	14.5 \pm 5.8	6.9 \pm 4.2
55-64	157	33.1 \pm 7.5	39.0 \pm 8.4	13.4 \pm 5.4	13.4 \pm 5.4
25-64 ^a	(11508)	20.9 \pm 5.5	15.3 \pm 6.4	10.1 \pm 4.6	4.6 \pm 3.5

¹ Body mass index > 30 kg/m².² Systolic blood pressure \geq 160 mm Hg or diastolic blood pressure \geq 95 mm Hg or under antihypertensive medication.³ At least 1 cigarette per day.⁴ As defined according to the criteria of the National Diabetes Data Group.^a Standardized for the population group aged 25-64 years.Tab. 44. Risk factors: Screening of cardiovascular risk factors (prevalence \pm 95% confidence interval).

	n	Hypercholesterolemia ¹ (%)	Hypo HDL-cholesterolemia ² (%)	Elevated level of lipoprotein (a) ³ (%)
Men				
25-34	104	5.8 \pm 4.4	4.8 \pm 4.2	51.5 \pm 9.8
35-44	123	13.8 \pm 6.2	13.8 \pm 6.2	50.8 \pm 9.0
45-54	143	9.8 \pm 5.0	14.0 \pm 5.8	45.4 \pm 8.3
55-64	130	9.2 \pm 5.1	13.1 \pm 5.9	52.3 \pm 8.8
25-64 ^a	(12110)	8.7 \pm 5.4	10.0 \pm 0.5	50.4 \pm 9.1
Women				
25-34	120	12.0 \pm 5.5	9.2 \pm 5.3	48.3 \pm 9.1
35-44	136	14.0 \pm 6.0	10.3 \pm 5.2	40.4 \pm 8.4
45-54	142	14.2 \pm 6.9	11.3 \pm 5.3	42.3 \pm 8.3
55-64	151	26.8 \pm 7.1	10.2 \pm 0.9	53.8 \pm 8.1
25-64 ^a	(11508)	15.3 \pm 6.2	10.6 \pm 0.6	46.8 \pm 0.9

¹ Total cholesterol > 6.5 mmol/l.² HDL-cholesterol < 0.9 mmol/l.³ Lipoprotein (a) > 200 mg/l; 11 missing values.^a Standardized for the population group aged 25-64 years.

Tab. 45. Risk factors: Screening of cardiovascular risk factors (mean value and prevalence) in different population age groups of the Seychelles.

	Population aged 25–64		Population aged 35–64	
	Men	Women	Men	Women
Size of population (n)	12110	11508	6294	6681
Blood pressure				
Systolic blood pressure (mm Hg)	131	126	136	135
Diastolic blood pressure (mm Hg)	86	81	89	87
Actual hypertension ¹ (%)	24.9	19.5	33.9	31.3
Smoking				
Cigarette smoking ² (%)	53.8	10.1	55.3	12.8
Cigarettes per day per smoker (n)	12.2	6.1	12.4	7.6
Cholesterol				
Total cholesterol (mmol/l)	5.0	5.3	5.1	5.5
Cholesterol > 5.2 mmol/l (%)	39.0	47.0	42.1	58.2
Cholesterol > 6.5 mmol/l (%)	8.7	15.3	11.3	17.8
HDL-cholesterol (mmol/l)	1.4	1.4	1.4	1.4
Atherogenic index > 6.5 (%)	4.4	4.8	7.2	7.0
Categories of major risk-factors ³ score				
0 risk factor (%)	32.3	61.9	26.9	47.7
1 risk factor (%)	49.6	31.0	48.0	40.8
2 risk factors (%)	16.4	7.0	22.8	11.6
3 risk factors (%)	1.7	0.1	2.3	0.2
Body mass index				
Body mass index (kg/m ²)	23.2	25.4	23.4	27.0
Body mass index > 30 (%)	4.2	20.9	4.6	29.6
Diabetes mellitus ⁴				
Diabetes (%)	3.4	4.6	7.7	7.4

¹ Systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.

² At least 1 cigarette per day.

³ Major risk factors: actual hypertension, cigarette smoking, hypercholesterolemia.

⁴ As defined according to the NDDG criteria.

Tab. 46. Risk factors: Comparison of cardiovascular risk factors levels¹ in men in the Seychelles and other countries².

Population	Country	Proportion of current smokers (%)	Median body-mass index (kg/m ²)	Median systolic blood pressure (mm Hg)	Median diastolic blood pressure (mm Hg)	Proportion with high blood pressure ² (%)	Median serum total cholesterol (mmol/l)	Proportion with at least 2 major risk factors (%)
Mahé	Seychelles	56.0	23.0	131	88	34.1	5.0	25.2
Perth	Australia	36.0	25.5	131	85	25.1	5.8	21.1
Auckland	New Zealand	34.3	25.4	131	81	20.1	5.7	16.8
Beijing	China	61.1	23.4	126	85	24.6	4.1	15.8
Stanford	USA	43.2	25.6	127	82	23.4	5.3	18.7
Kaunas	USSR	41.7	27.5	134	88	30.4	5.9	25.1
Kuopio Province	Finland	43.4	26.4	145	90	45.3	6.2	41.5
Warsaw	Poland	59.9	26.4	134	87	32.0	6.2	42.6
Czechoslovakia	Czechoslovakia	48.4	27.1	135	85	32.4	6.3	37.9
Glasgow	Scotland	62.2	25.4	134	87	32.0	6.2	42.6
Glostrup	Denmark	61.1	25.4	125	80	14.9	6.2	32.9
Ghent	Belgium	51.8	26.1	126	79	13.0	6.1	22.7
Augsburg (urban)	Germany	39.9	26.8	134	84	27.7	6.2	28.9
Vaud/Fribourg	Switzerland	38.5	25.9	130	81	18.0	6.3	27.3
Haute-Garonne	France	43.1	25.5	130	85	25.7	5.9	26.0
Brianza Area	Italy	47.0	25.5	136	88	31.1	5.6	24.8

¹ Data for all countries standardized for the population group aged 35–64 years and using the world standard population weights.

² Data for other countries from WHO MONICA Project (Wld Hlth statist quart 1988; 41:115–140).

³ Systolic blood pressure \geq 160 mm Hg or diastolic blood pressure \geq 95 mm Hg or under antihypertensive medication.

Tab. 47. Risk factors: Comparison of cardiovascular risk factors levels¹ in women in the Seychelles and other countries².

Population	Country	Proportion of current smokers (%)	Median body-mass index (kg/m ²)	Median systolic blood pressure (mm Hg)	Median diastolic blood pressure (mm Hg)	Proportion with high blood pressure ² (%)	Median serum total cholesterol (mmol/l)	Proportion with at least 2 major risk factors (%)
Mahé	Seychelles	12.7	26.2	131	85	30.4	5.4	11.3
Perth	Australia	22.5	23.8	122	78	19.1	5.7	15.4
Auckland	New Zealand	27.4	23.7	123	76	18.1	5.7	14.5
Beijing	China	19.0	23.9	127	80	21.5	4.2	4.6
Stanford	USA	37.1	23.5	120	79	6.8	5.2	13.0
Kaunas	USSR	5.0	29.3	132	84	30.6	6.0	13.8
Kuopio Province	Finland	14.3	25.9	143	85	37.7	6.2	24.6
Warsaw	Poland	34.7	26.8	138	84	30.9	5.5	17.2
Czechoslovakia	Czechoslovakia	25.1	27.2	133	83	31.3	6.3	27.8
Glasgow	Scotland	52.0	25.5	131	82	25.4	6.4	37.9
Glostrup	Denmark	49.6	23.5	121	76	12.6	6.1	27.8
Ghent	Belgium	25.2	25.2	117	74	16.6	5.9	12.1
Augsburg (urban)	Germany	21.5	25.1	128	80	19.4	6.0	16.4
Vaud/Fribourg	Switzerland	28.3	24.0	123	77	14.0	6.0	18.3
Haute-Garonne	France	18.9	23.6	125	80	17.6	5.7	14.2
Brianza Area	Italy	20.6	24.3	131	83	24.6	5.5	11.2

¹ Data for all countries standardized for the population group aged 35–64 years and using the world standard population weights.

² Data for other countries from WHO MONICA Project (Wld Hlth statist quart 1988; 41:115–140).

³ Systolic blood pressure \geq 160 mm Hg or diastolic blood pressure \geq 95 mm Hg or under antihypertensive medication.

Dietary habits

Tab. 48. Dietary habits: Prevalence (%) of selected dietary habits in obese and non-obese men and women¹.

	Men		Women	
	Obese	Non obese	Obese	Non obese
Number of cases	74	148	128	128
Age (y)	46.2 \pm 10.6	46.2 \pm 10.6	48.3 \pm 10.3	47.9 \pm 10.1
Body mass index (kg/m ²)	30.0 \pm 3.3	21.3 \pm 2.1	34.5 \pm 3.6	21.6 \pm 4.3
Regularly taken meals				
Breakfast	41.9	51.3	35.9	39.1
Midmorning snack	60.8	59.4	58.6	65.6
Lunch	87.8	91.2	82.0	82.8
Midafternoon snack	44.6	33.8	44.5	55.5
Dinner	88.6	97.2	95.3	96.1
Other	10.8	8.9	4.7	5.5
Number of regular taken meals				
Average number	2.5	2.6	2.3	2.4
1 meal	10.8	5.4	21.1	17.2
2 meals	47.3	56.1	39.8	46.1
3 meals	28.4	16.9	21.9	17.2
4 meals or more	13.5	20.2	14.8	18.7
Lunch				
Taken at home	31.1	40.5	67.9	55.5
Brought from home	32.4	25.0	6.2	11.7
From a 'take-away'	6.8	12.8	1.6	3.1
Taken at restaurant	4.1	2.0	2.3	3.9

¹ Obese men: BMI > 27 (kg/m²); obese women: BMI > 30.

Non obese men and women: BMI < 25. The non obese men and women are matched for age.

Tab. 49. Dietary habits: Prevalence (%) and mean value (\pm SD) of dietary habits in obese and non-obese men and women¹.

	Men		Women	
	Obese	Non obese	Obese	Non obese
Number of cases	74	148	128	128
Age (y)	46.2 \pm 10.6	46.2 \pm 10.6	48.3 \pm 10.3	47.9 \pm 10.1
Body mass index (kg/m ²)	30.0 \pm 3.3	21.3 \pm 2.1	34.5 \pm 3.6	21.6 \pm 4.3
Oil used for cooking				
Hydrogenated oil	83.8	85.8	90.6	90.6
Sunflower, maize, olive	6.8	6.8	7.8	7.8
Coconut	2.7	4.7	0	1.6
Oil used for salad				
Hydrogenated oil	79.7	74.3	73.4	75.8
Sunflower, maize, olive	13.5	15.5	18.0	20.3
Fat spread on bread				
Margarine	74.3	67.6	70.3	82.8
Butter	6.8	4.1	8.6	5.5
Fish consumption				
Almost every lunch	77.0	74.3	71.9	71.9
About every other day lunch	8.1	14.9	12.5	11.7
Almost every dinner	83.8	79.7	81.2	81.2
About every other day dinner	9.4	12.8	13.3	14.8
Meat consumption				
Almost every lunch	0	0	0	0
About every other day lunch	13.5	16.9	12.5	13.2
One or two lunches a week	70.0	68.8	71.9	65.6
Almost every dinner	2.7	2.7	1.6	5.5
About every other day dinner	14.8	15.5	15.6	13.3
One or two dinners a week	74.3	70.9	69.5	68.0
Fat never or rarely cut off	45.9	56.8	49.2	48.4
Fat often or always cut off	54.1	42.6	50.7	51.5
Eggs consumption				
About every other day	12.2	18.2	17.2	14.8
Once or twice a week	31.1	21.6	23.4	30.5
Less than once a week	29.7	34.4	43.0	39.1
Fibers ²				
'Gromanze' ³	14.9	10.8	13.3	10.1
1 fruit ⁴	40.5	37.8	45.3	39.8
2 or more fruits ⁴	4.1	4.7	4.6	8.6
Sugar & drinks ²				
Snack ⁵	33.7	22.3	34.4	39.8
Lemonade, cola, orange, cocktail	29.7	31.1	26.6	31.2
Slimline drink	0	1.4	1.6	1.6
Fruit juice	14.9	9.5	18.0	19.5
Tea or coffee with sugar	68.9	64.8	64.1	78.9
Tea or coffee without sugar	12.6	11.5	18.7	10.1
Daily alcohol intake (g)	42 \pm 63	67 \pm 93	6 \pm 26	9 \pm 23

¹ Obese men: BMI > 27 (kg/m²); obese women: BMI > 30.

Non obese men and women: BMI < 25. The non obese men and women are matched for age.

² Prevalence of people having eaten any of the mentioned food the day before the interview.³ Sweet potato, cassava, breadfruit, yam, cocoyam.⁴ Mango, golden apple, orange, pawpaw, dried fruits.⁵ 'Samoosea', 'gato piman', potato chips, banana chips, cassava chips, breadfruit chips, imported snacks (Twisties, etc.).

Tab. 50. Dietary habits: Prevalence (%) of motivations for dietary habits modification in obese and non-obese men and women¹.

	Men		Women	
	Obese	Non obese	Obese	Non obese
Number of cases	74	148	128	128
Age	46.2 ± 10.6	46.2 ± 10.6	48.3 ± 10.3	47.9 ± 10.1
Body mass index (kg/m ²)	30.0 ± 3.3	21.3 ± 2.1	34.5 ± 3.6	21.6 ± 4.3
Dietary change over the past year				
To reduce weight	8.1	3.4	21.8	4.7
To reduce salt intake	2.7	1.4	3.9	0
To reduce sugar intake	5.4	0.7	7.0	5.5
To reduce fat intake	8.1	2.0	6.2	2.3
For healthier eating	9.4	2.0	7.0	5.5

¹ Obese men: BMI > 27 (kg/m²); obese women: BMI > 30.

Non obese men and women: BMI < 25. The non obese men and women are matched for age.

Alcohol consumption

Tab. 51. Alcohol consumption: Proportions of male drinkers (drinkers) and daily average alcohol intake per drinker (alcohol) for the various types of alcoholic drinks available in the Seychelles.

Age	25–34	35–44	45–54	55–64	25–64 ^a
Sample (n)	105	127	145	136	(12110)
Kalou					
drinkers (%)	21.0	23.6	31.0	28.7	24.3
alcohol (g)	40.3	50.0	89.6	57.8	53.1
Baka					
drinkers (%)	17.1	22.0	33.1	29.4	22.4
alcohol (g)	40.4	52.8	83.5	52.4	52.0
Lapire					
drinkers (%)	5.0	10.2	14.4	9.0	8.3
alcohol (g)	52.1	112.3	86.9	70.3	73.6
Beer					
drinkers (%)	65.7	74.8	60.0	58.8	65.8
alcohol (g)	35.7	22.7	18.4	19.8	27.8
Spirit					
drinkers (%)	26.7	27.6	20.0	25.7	25.6
alcohol (g)	17.4	18.1	19.9	16.7	18.9
Wine					
drinkers (%)	5.7	1.6	5.5	2.9	4.4
alcohol (g)	6.7	5.2	6.7	6.5	6.3
Any home brew (kalou, baka, lapire)					
drinkers (%)	26.7	36.2	48.9	40.4	34.3
alcohol (g)	66.9	96.5	138.9	94.5	89.2
Any alcoholic drink					
drinkers (%)	70.5	80.0	75.2	70.6	73.4
alcohol (g)	65.7	71.6	111.0	77.2	76.2

^a Standardized for population group aged 25–64 years.

Tab. 52. Alcohol consumption: Proportions of female drinkers (drinkers) and daily average alcohol intake per drinker (alcohol) for the various types of alcoholic drinks available in the Seychelles.

Age	25-34	35-44	45-54	55-64	25-64 ^a
Sample (n)	123	143	145	157	(11 508)
Kalou					
drinkers (%)	3.3	7.0	10.3	5.1	5.8
alcohol (g)	36.2	27.8	27.7	31.5	31.9
Baka					
drinkers (%)	0.8	4.2	8.3	6.4	4.0
alcohol (g)	59.2	52.3	41.5	39.0	50.8
Lapire					
drinkers (%)	0.8	2.1	2.1	1.3	1.4
alcohol (g)	19.0	15.8	98.9	66.3	40.5
Beer					
drinkers (%)	22.0	26.6	18.6	23.6	22.6
alcohol (g)	11.7	5.9	14.8	7.7	10.4
Spirit					
drinkers (%)	8.1	7.7	12.4	8.9	9.0
alcohol (g)	7.1	5.9	19.3	6.5	9.2
Wine					
drinkers (%)	3.3	2.1	2.8	1.3	2.6
alcohol (g)	5.9	5.8	2.8	3.1	4.8
Any home brew (kalou, baka, lapire)					
drinkers (%)	4.1	8.4	12.4	8.9	7.5
alcohol (g)	44.6	53.3	67.6	55.3	52.8
Any of above					
drinkers (%)	25.2	30.8	26.9	29.3	27.4
alcohol (g)	20.4	21.5	50.7	25.1	27.4

^a Standardized for population group aged 25-64 years.

Tab. 53. Alcohol consumption: Daily consumption of alcoholic drinks (Drink) and correspondent alcohol amount (Alcohol) per capita of population aged 25-64 years.

	Men		Women	
	Drink (dl)	Alcohol (g)	Drink (dl)	Alcohol (g)
Kalou	1.81	12.9	0.27	1.9
Baka	1.48	11.6	0.25	2.0
Lapire	0.64	6.1	0.06	0.6
Beer	4.41	18.3	0.58	2.4
Spirit	0.13	4.8	0.02	0.8
Wine	0.04	0.3	0.01	0.1
Total	-	53.7	-	7.8

Tab. 54. Alcohol consumption: Proportions of subjects (%) consuming regularly more than 50 g, respectively 100 g of alcohol per day.

Age	25-34	35-44	45-54	55-64	25-64 ^a
Men (n)					
More than 50 g (%)	36.2	33.9	43.5	38.9	37.3
More than 100 g (%)	14.3	17.3	27.0	18.4	17.6
Women (n)					
More than 50 g (%)	4.1	4.2	9.0	5.1	5.3
More than 100 g (%)	0.8	1.4	4.8	2.6	2.0

^a Standardized for population group aged 25-64 years.

Tab. 55. Alcohol consumption: Proportions of drinkers (Drinkers) of home-made, commercialized and any alcoholic drinks and correspondent daily consumed alcohol amounts (Alcohol) in relation with work status.

	n	Home made alcoholic drinks ¹		Commercialized alcoholic drinks ²		Any alcoholic drinks	
		Drinkers (%)	Alcohol (g)	Drinkers (%)	Alcohol (g)	Drinkers (%)	Alcohol (g)
Men							
Unskilled manual	220	49.6	126.4	65.5	26.2	67.7	109.2
Skilled manual	117	43.8	100.2	78.5	28.0	81.8	80.6
Office worker with intermediate qualification	121	29.9	57.9	78.8	31.8	78.6	53.5
Professional	44	6.8	62.5	56.8	37.9	59.1	40.5
Women							
Unskilled manual, housewife	308	13.3	64.9	18.8	13.4	30.4	40.8
Skilled manual	25	8.0	32.4	48.0	11.2	48.0	6.6
Office with intermediate qualification	97	4.1	15.2	34.0	10.8	34.0	12.6
Professional	67	3.0	33.5	23.9	11.5	25.3	14.8

¹ Kalou (fermented palm sap juice), baka (fermented sugar cane juice), lapire (fermented fruit or vegetable juice).

² Beer, spirit, wine.

Tab. 56. Alcohol consumption: Comparison of mean (\pm SD) and prevalence (%) of clinical, biological, ethnic and occupational features in drinkers and non-drinkers¹.

	Men			Women		
	Drinkers	Non-drinkers	p	Drinkers	Non-drinkers	p
Samples						
Number of cases (n)	199	128	—	158	410	—
Mean age (y)	45.8 \pm 11.0	45.6 \pm 12.1	o	45.2 \pm 11.6	44.9 \pm 11.6	o
Daily alcohol intake (g)	141 \pm 112	0	***	24 \pm 42	0	
Clinical features						
Body mass index (kg/m ²)	22.7 \pm 3.2	23.6 \pm 4.4	*	25.6 \pm 5.1	26.6 \pm 5.9	*
Systolic blood pressure (mm Hg)	136 \pm 20	133 \pm 25	o	133 \pm 25	130 \pm 25	o
Diastolic blood pressure (mm Hg)	90 \pm 13	86 \pm 15	*	85 \pm 14	84 \pm 15	o
Actual hypertension ² (%)	33.2	25.8	**	23.3	27.8	***
Cigarette smoking (%)	63.8	2.3	***	24.0	6.8	o
Blood features						
Hemoglobin (g/l)	14.3 \pm 1.8	14.4 \pm 1.7	o	13.0 \pm 1.4	13.0 \pm 1.4	o
Red cell mean corpuscular volume (fl)	91 \pm 9	87 \pm 7	**	88 \pm 7	86 \pm 6.4	o
Glucose (mmol/l)	5.3 \pm 1.7	5.3 \pm 2.1	o	5.5 \pm 2.4	5.4 \pm 0.1	o
Total cholesterol (mmol/l)	4.9 \pm 1.0	5.2 \pm 1.2	*	5.3 \pm 1.1	5.5 \pm 1.2	o
HDL-cholesterol (mmol/l)	1.60 \pm 0.61	1.22 \pm 0.33	***	1.42 \pm 0.40	1.36 \pm 0.35	o
Atherogenic index	3.4 \pm 1.4	4.3 \pm 1.6	***	4.0 \pm 1.1	4.3 \pm 1.5	*
Triglycerides (mmol/l)	1.12 \pm 1.29	0.98 \pm 0.59	o	1.00 \pm 0.82	0.90 \pm 0.56	o
Apoprotein A1 (g/l)	1.54 \pm 0.49	1.27 \pm 0.24	***	1.46 \pm 0.33	1.35 \pm 0.29	**
Apoprotein B (g/l)	0.98 \pm 0.33	1.13 \pm 0.37	**	1.11 \pm 0.35	1.19 \pm 0.38	*
Lipoprotein [a] (mg/l)	300 \pm 370	338 \pm 391	o	296 \pm 363	410 \pm 470	o
Ethnic features						
Black (%)	75.9	56.3	***	73.4	68.8	***
Mixed (%)	16.6	25.8	o	19.0	24.1	***
White (%)	6.0	9.4	o	5.7	7.6	***
Indian or Asiatic (%)	1.5	8.5	o	1.8	1.5	o
Work status						
Unskilled manual, housewife (%)	54.3	43.7	***	60.1	69.5	o
Skilled manual (%)	24.1	17.2	**	6.3	3.4	o
Office worker with intermediate qualification (%)	17.6	22.7	o	22.8	15.1	*
Professional (%)	4.0	16.4	*	10.8	12.0	**

¹ Male drinkers: average daily alcohol consumption greater than 50 g.
Female drinkers: average daily alcohol consumption greater than 0 g.
Male and female non-drinkers: no regular alcohol consumption.

² Systolic blood pressure \geq 160 or diastolic blood pressure \geq 95 or under antihypertensive medication.

o non significant.
* p < 0.05.
** p < 0.01.
*** p < 0.001.

Tab. 57. Alcohol consumption: Per adult annual consumption of alcohol (liters) in the Seychelles and other countries¹.

1. Luxembourg	17.6	11. Denmark	12.4
2. France	16.6	12. Australia	11.5
3. Spain	16.4	13. New Zealand	10.6
4. West Germany	14.8	14. Netherlands	10.3
5. Seychelles	14.6 ^a	15. Canada	10.0
6. Belgium	13.5	16. United States	9.7
7. Switzerland	13.5	17. Poland	9.2
8. Austria	13.5	18. United Kingdom	9.1
9. Czechoslovakia	13.2	19. Finland	8.9
10. Italy	13.0	20. USSR	7.3

¹ Data for all countries except the Seychelles from *International survey on alcoholic beverage taxation and control policies, Brewers Association of Canada, Ottawa, 7th ed. 1989.*

^a Men 25.1 liters; women 3.5 liters.

Asthma

Tab. 58. Asthma: Prevalence (%) of individuals with history of asthma.

Age	25-34	35-44	45-54	55-64	25-64 ^a
Men (n)	105	127	145	136	(12110)
With asthma	7.6	18.9	16.6	11.8	12.1
With asthma onset before age of 20	7.6	18.1	15.9	11.0	11.9
Women (n)	123	143	145	157	(11508)
With asthma	20.3	18.9	21.4	17.2	19.7
With asthma onset before age of 20	20.3	16.8	18.6	11.5	17.7

^a Standardized for population aged 25-64 years.

Tab. 59. Asthma: Incidence of asthma in relation with month period.

Cases	Month(s) associated with increased asthma incidence ¹												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Asthmatic men													
Total	72												
Without history of specific period	64												
With history of specific period	8	0	1	3	2	0	0	1	0	0	0	2	2
Asthmatic women													
Total	109												
Without history of specific period	91												
With history of specific period	18	2	1	2	3	3	2	4	3	3	3	3	1

¹ Several months may be answered by one asthmatic individual.

Blood hemoglobin

Tab. 60. Hemoglobin: Mean, standard deviation (SD) and percentiles of hemoglobin (g/l).

	n	Mean	SD	Percentiles				
				5%	10%	50%	90%	95%
Men								
25–34	94	15.0	1.2	13.2	13.5	14.9	16.4	16.8
35–44	117	14.4	1.4	11.5	13.1	14.7	16.0	17.2
45–54	134	14.4	1.3	12.1	12.7	14.5	15.4	16.6
55–64	117	14.2	2.1	10.8	12.4	14.4	16.5	16.8
Women								
25–34	112	12.9	1.2	11.1	11.6	13.0	14.3	14.9
35–44	128	12.9	1.2	10.8	11.4	13.0	14.4	14.7
45–54	135	12.7	1.4	10.0	11.1	12.9	14.2	15.2
55–64	134	10.9	1.4	10.9	11.5	13.1	14.6	15.4

Serum HTLV-1 antibody

Tab. 61. HTLV-1: Prevalence (%) of anti-HTLV-1 serum antibody.

Age	25–34	35–44	45–54	55–64	25–64 ^a
Men (n)	104	123	142	132	(12110)
With HTLV-1 antibody	1.9	3.2	4.9	9.9	3.7
Women (n)	121	136	144	153	(11508)
With HTLV-1 antibody	5.8	2.2	11.2	13.7	7.4

^a Standardized for population group aged 25–64 years.

Tab. 62. HTLV-1: Prevalence of anti-HTLV-1 antibody in relation to socio-demographic features.

	Samples (n)	Cases (n)	Prevalence (%)
Total	1055	73	6.9
Sex			
Men	501	26	5.2
Women	554	47	8.5
Living place			
Town area (Victoria area)	486	36	7.4
Countryside (South Mahé)	360	18	5.0
Urbanized countryside (North Mahé)	209	19	9.1
Ethnic features			
Black	721	58	8.0
Mixed	227	10	4.4
White	81	4	4.9
Indian	19	1	5.3
Asiatic	7	0	0
Geographical features			
Never been abroad	694	52	7.5
Abroad 0–2 years	199	9	4.5
Abroad > 2 years	162	12	7.4
Born abroad	28	1	3.6
Work status			
Unskilled, housewife	594	54	9.1
Office worker & skilled manual	353	17	4.8
Professional	108	2	1.9

Tab. 63. Population prevalence of major risk factors according to sex and age, Seychelles 1989.

Risk factor	Men (%)		Women (%)	
	25–64	35–64	25–64	35–64
Hypertension	24.9	(33.9)	19.5	(31.3)
Cigarette smoking	53.8	(55.3)	10.1	(12.8)
Obesity (BMI > 30)	4.2	(4.6)	20.9	(29.6)
Cholesterol > 5.2 mmol/l	39.0	(42.1)	47.0	(58.2)
Cholesterol > 6.5 mmol/l	8.7	(11.3)	15.3	(17.8)
HDL-cholesterol < 0.9 mmol/l	9.9	(13.7)	10.0	(10.6)
Total/HDL-cholesterol > 6.5	4.4	(9.8)	4.8	(7.0)
Lipoprotein (a) > 200 mg/l	50.4	(49.3)	46.8	(44.8)

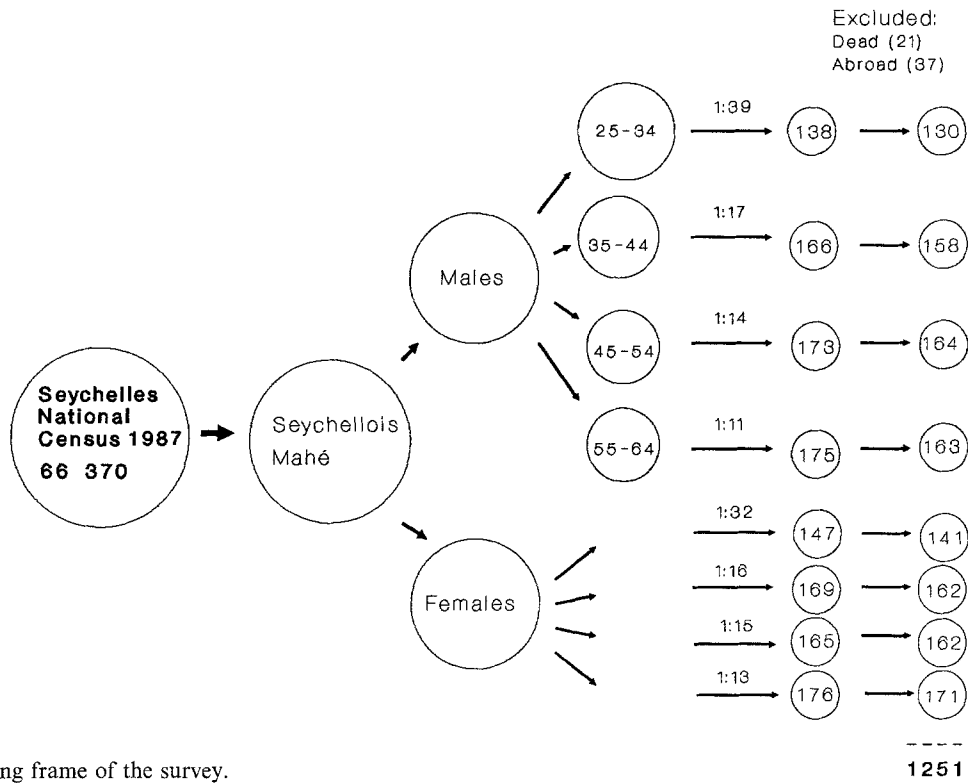


Fig. 1. Sampling frame of the survey.

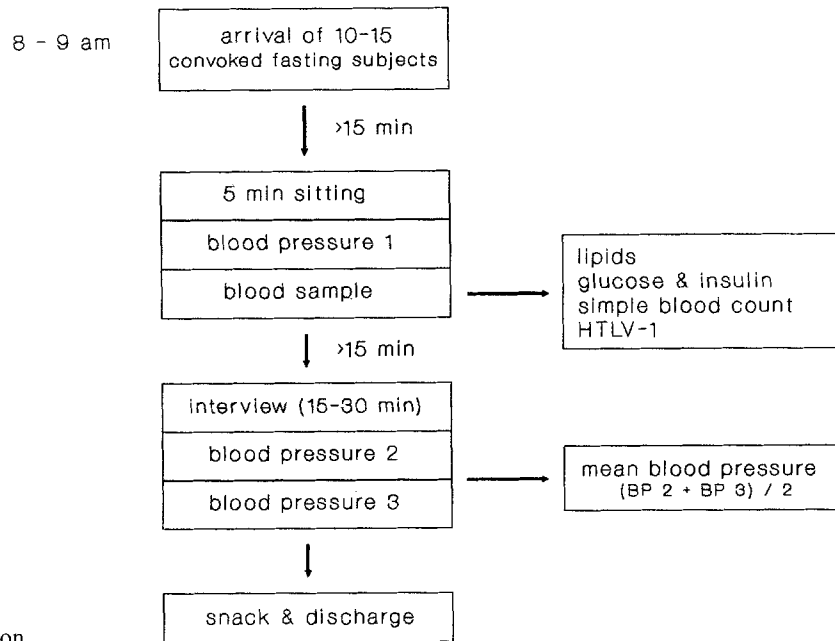


Fig. 2. Data collection.

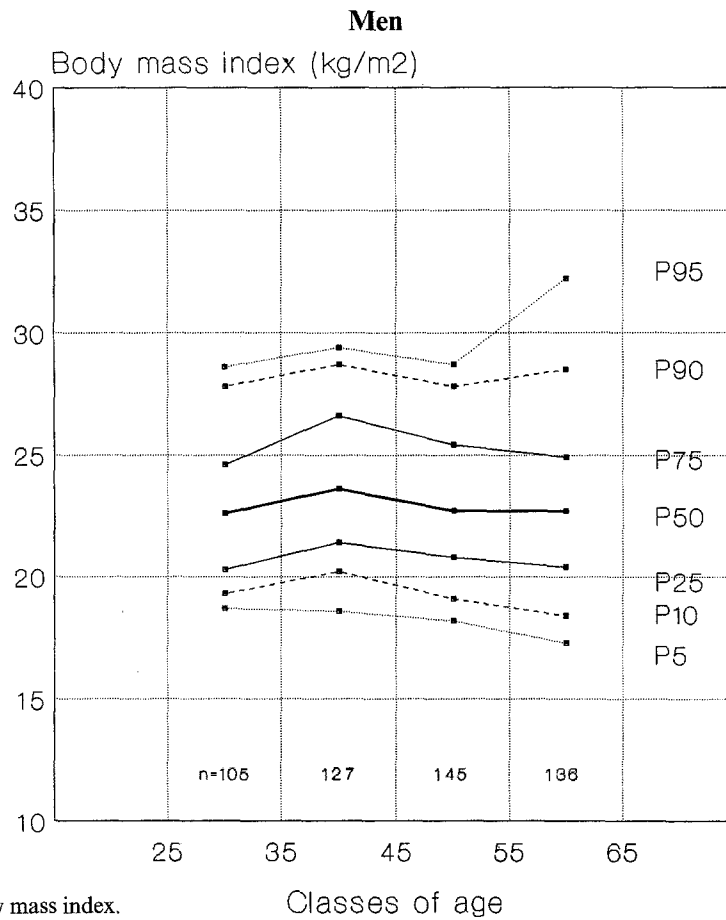


Fig. 3. Percentiles of body mass index.

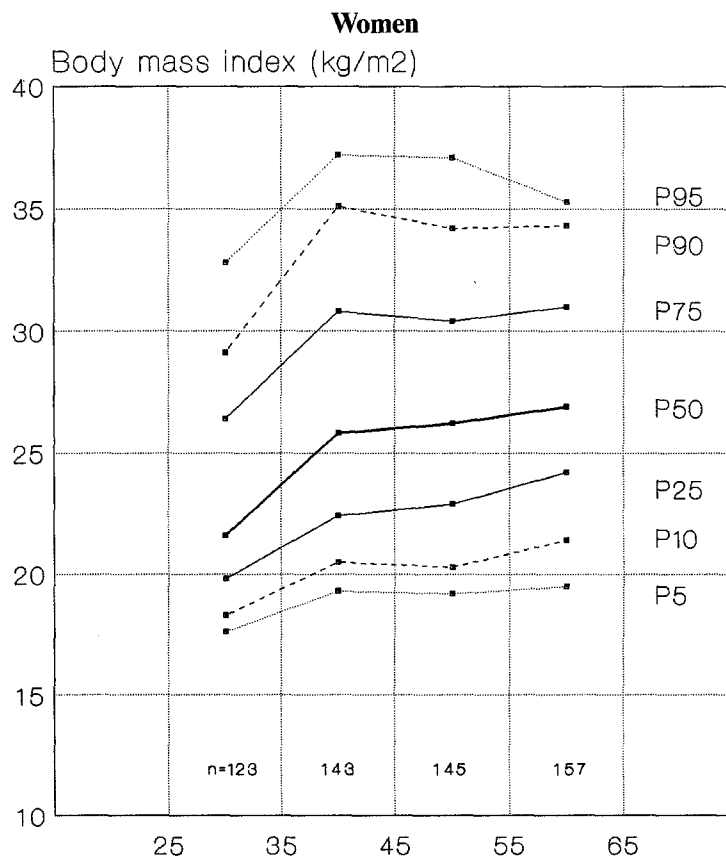


Fig. 4. Percentiles of body mass index.

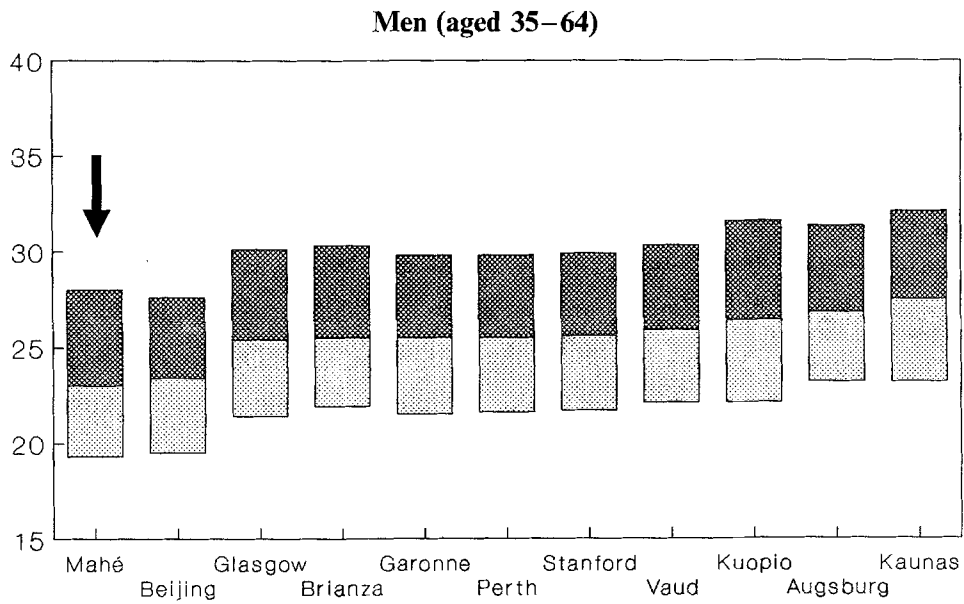


Fig. 5. Body mass index in Mahé and other populations (Wld hlth statist quart 1988; 41:115–140). Age-standardized 10th, 50th and 90th percentiles.

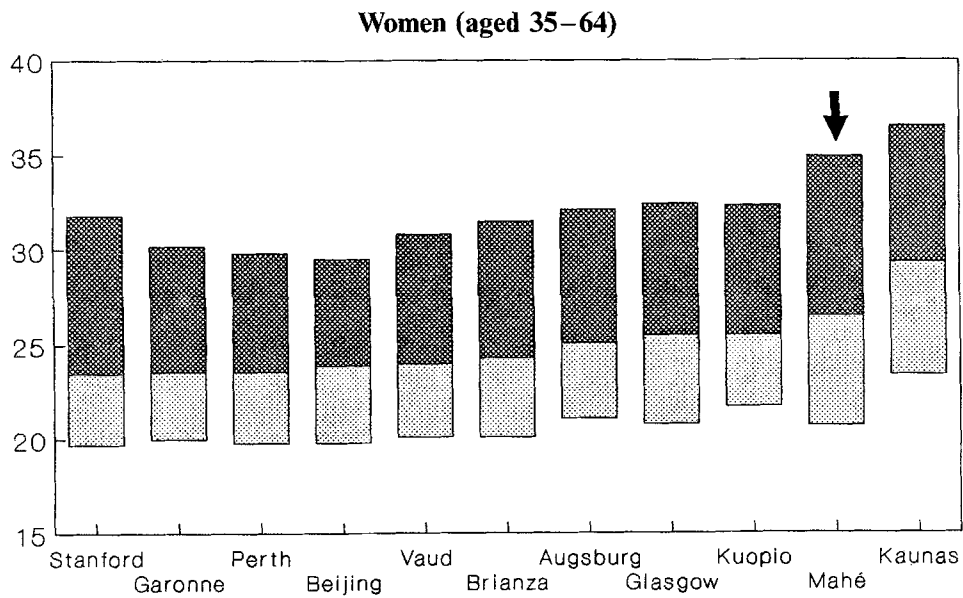


Fig. 6. Body mass index in Mahé and other populations (Wld hlth statist quart 1988; 41:115–140). Age-standardized 10th, 50th and 90th percentiles.

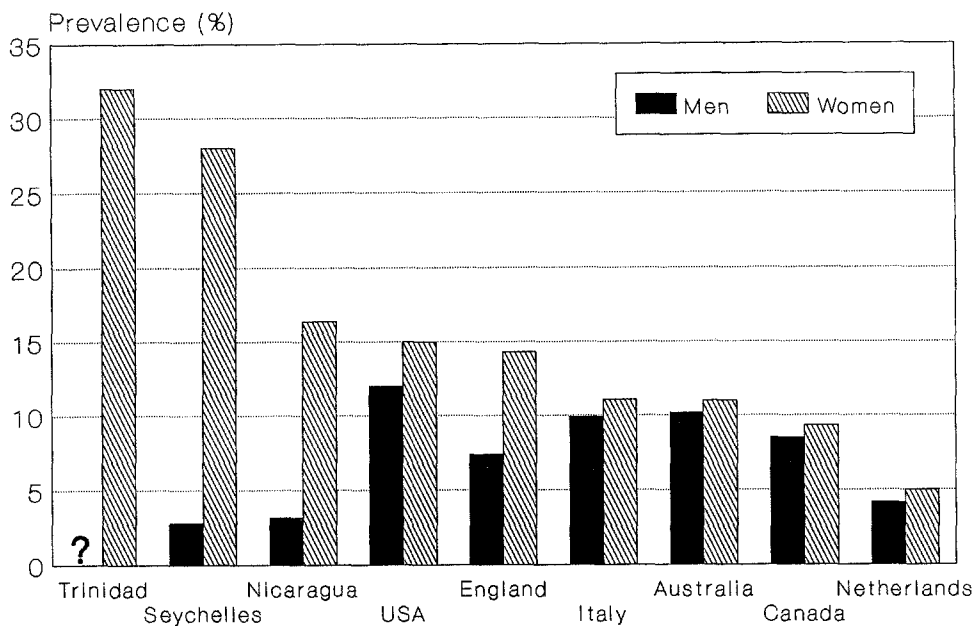


Fig. 7. Prevalence of obesity (BMI > 30) in national surveys (Wld hlth statist quart 1988; 41:251-254 (except for the Seychelles)). Age 40-50 approximately.

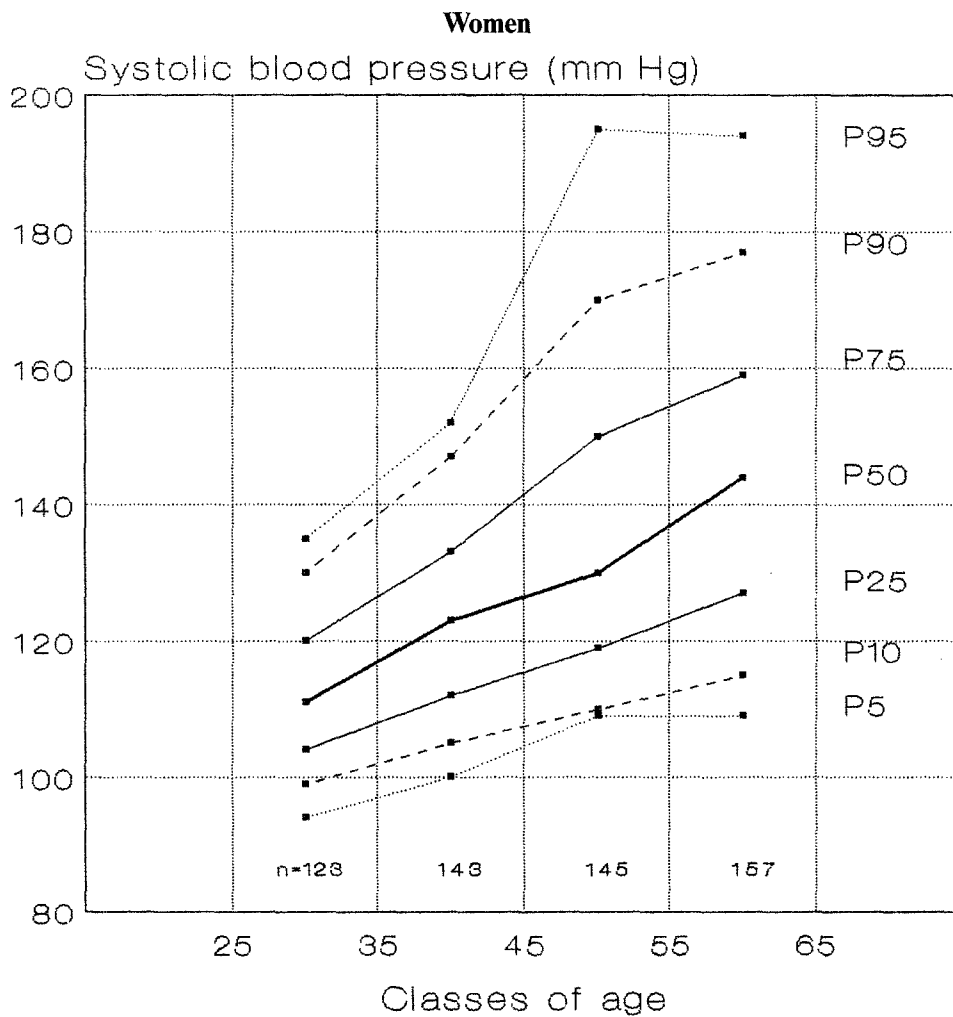


Fig. 8. Percentiles of systolic blood pressure.

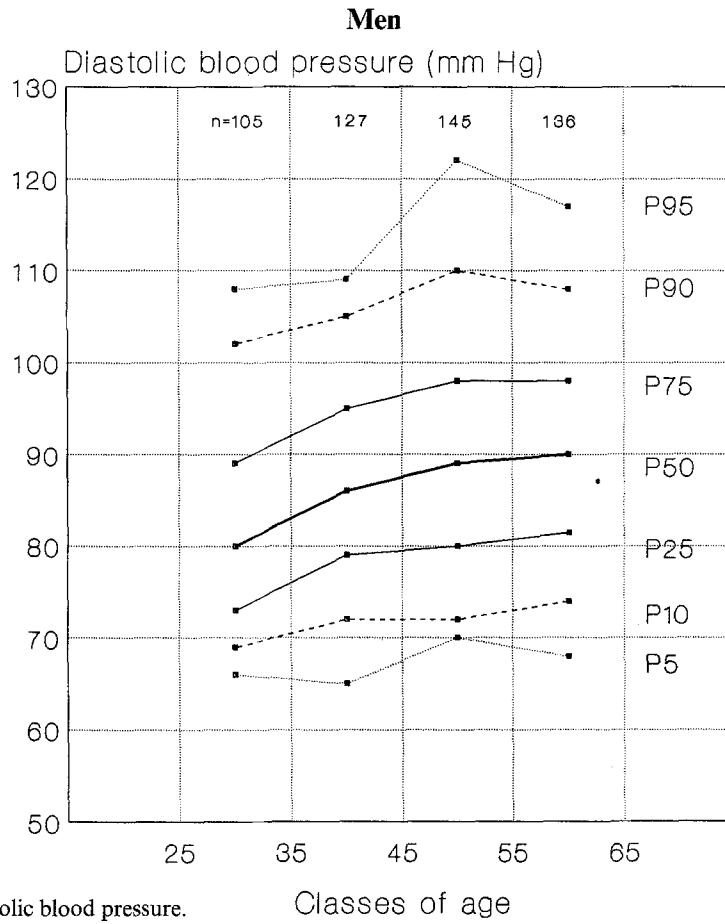


Fig. 9. Percentiles of diastolic blood pressure.

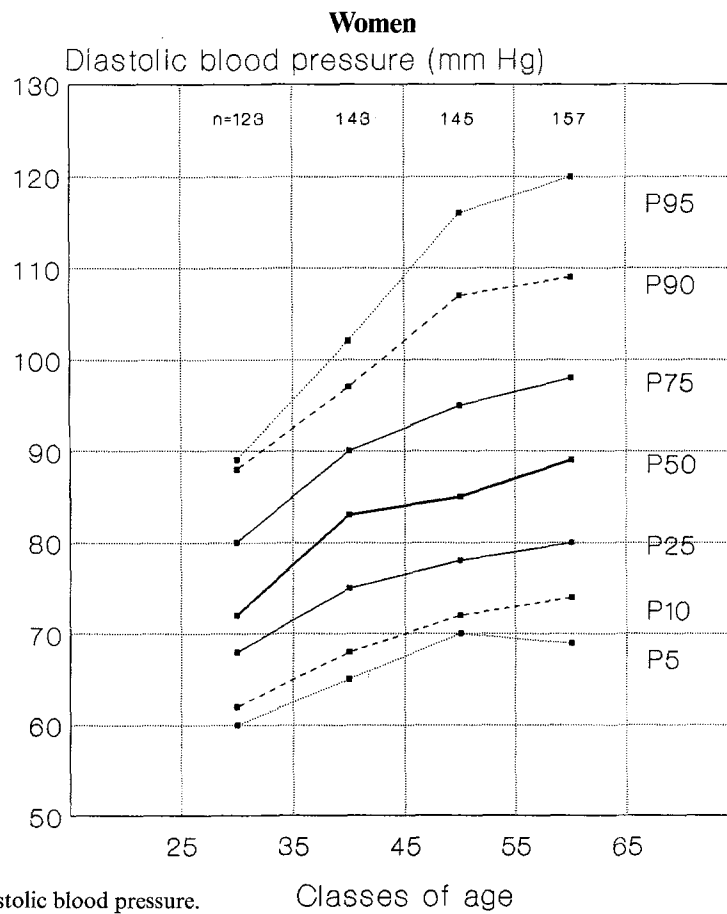


Fig. 10. Percentiles of diastolic blood pressure.

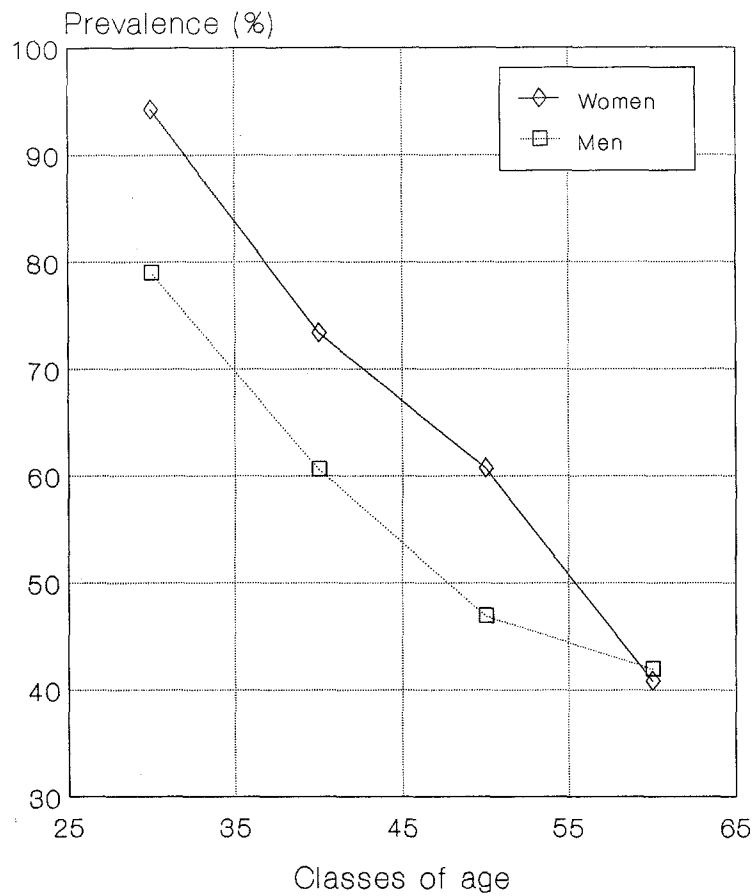


Fig. 11. Prevalence of normotensives (SBP \leq 140 and DBP < 90 mm Hg).

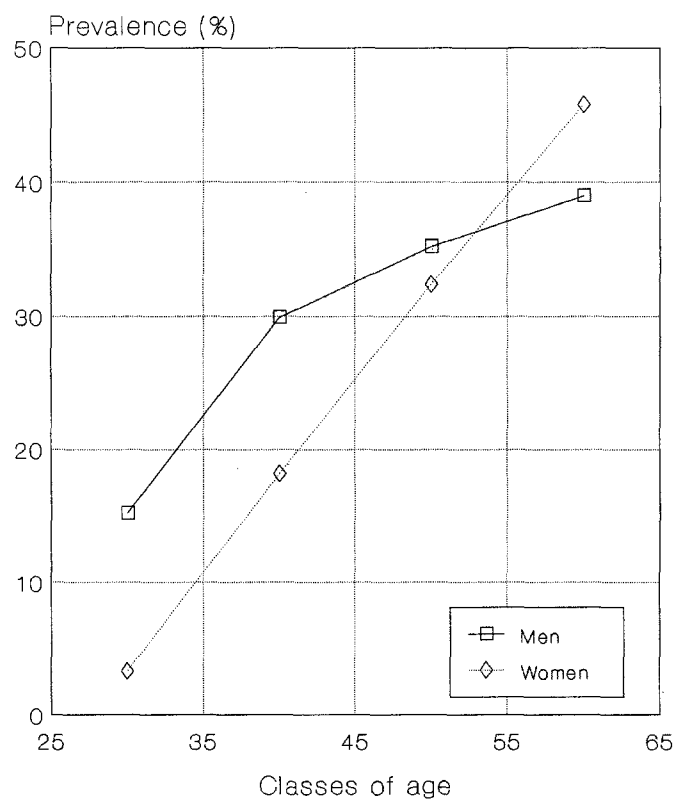


Fig. 12. Prevalence of actual hypertensives (BP \geq 160/95 or under medication).

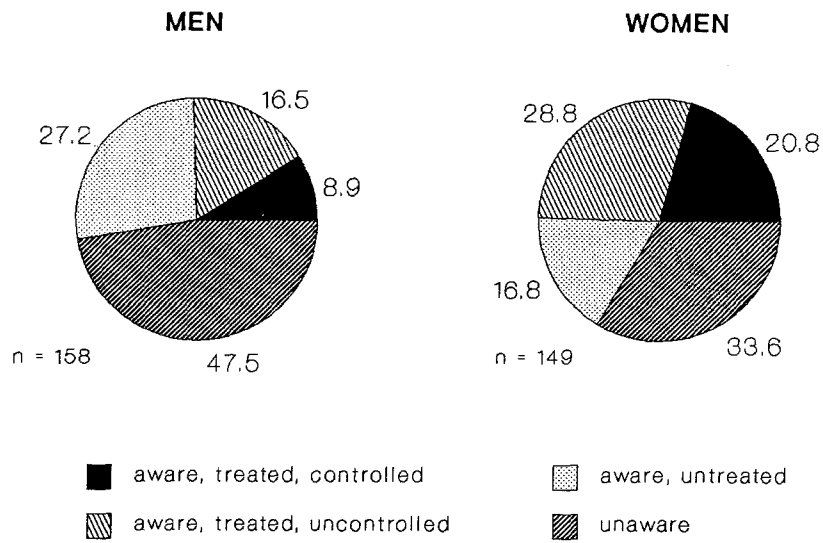


Fig. 13. Prevalence of awareness, treatment and control of hypertension among actual hypertensives of the sample.

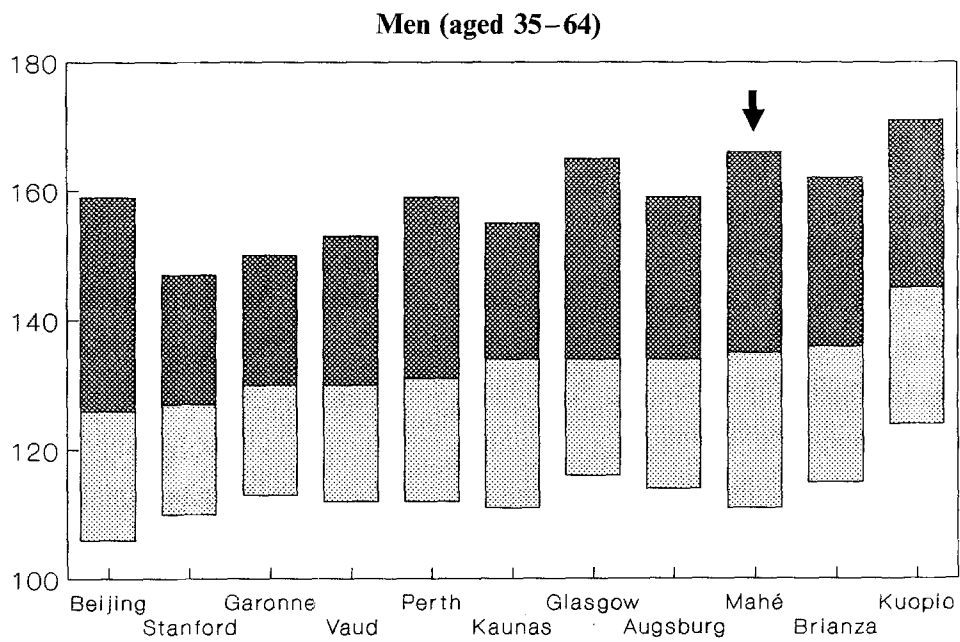


Fig. 14. Systolic blood pressure in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140). Age-standardized 10th, 50th and 90th percentiles.

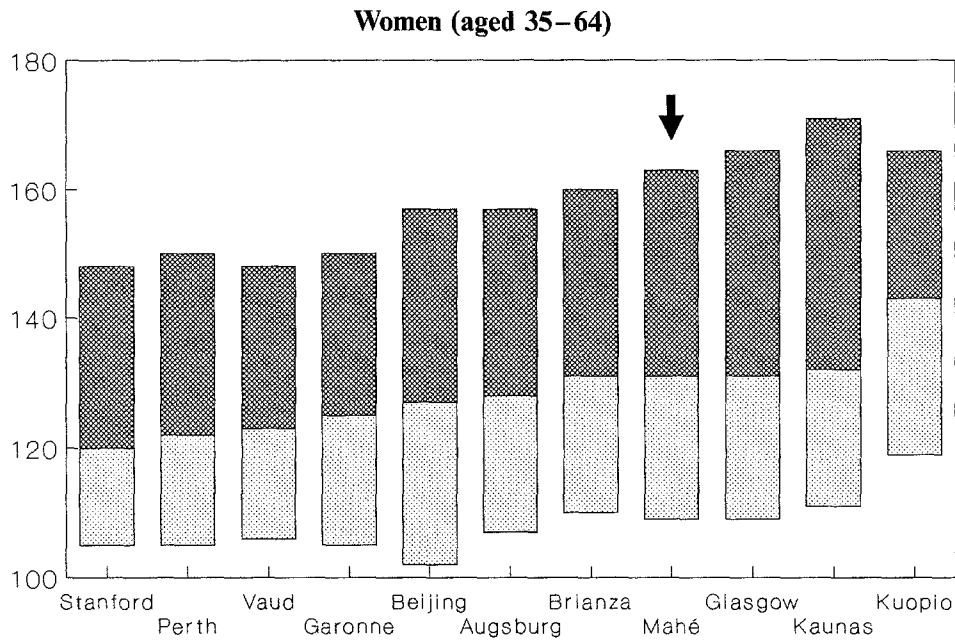


Fig. 15. Systolic blood pressure in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140). Age-standardized 10th, 50th and 90th percentiles.

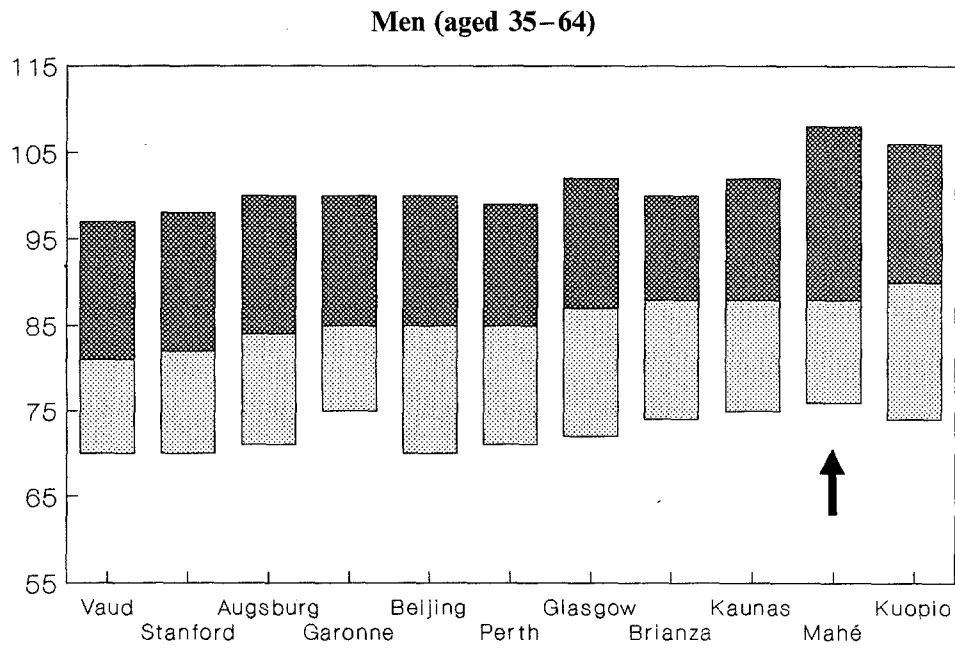


Fig. 16. Diastolic blood pressure in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140). Age-standardized 10th, 50th and 90th percentiles.

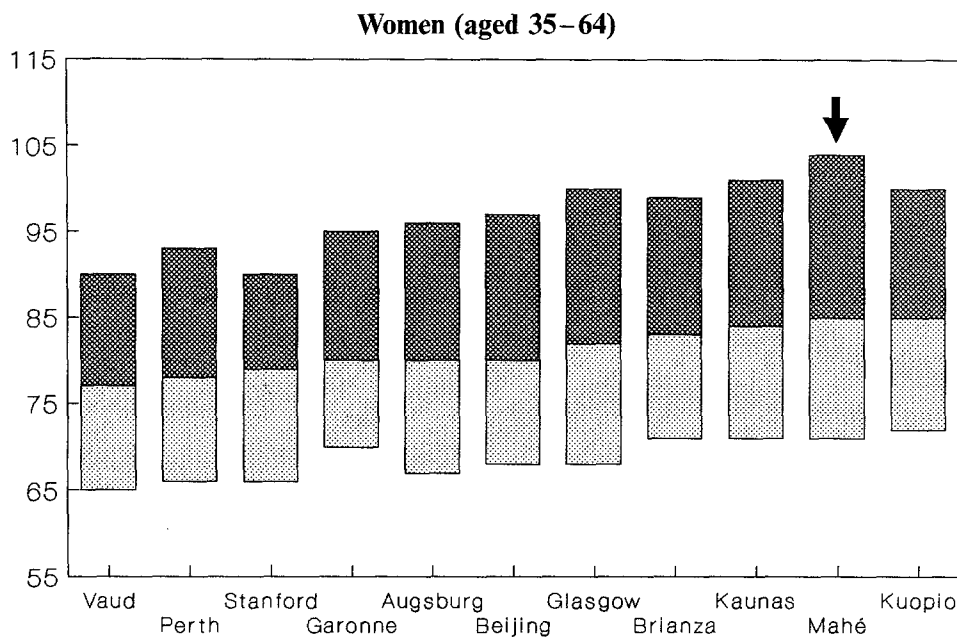


Fig. 17. Diastolic blood pressure in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140). Age-standardized 10th, 50th and 90th percentiles.

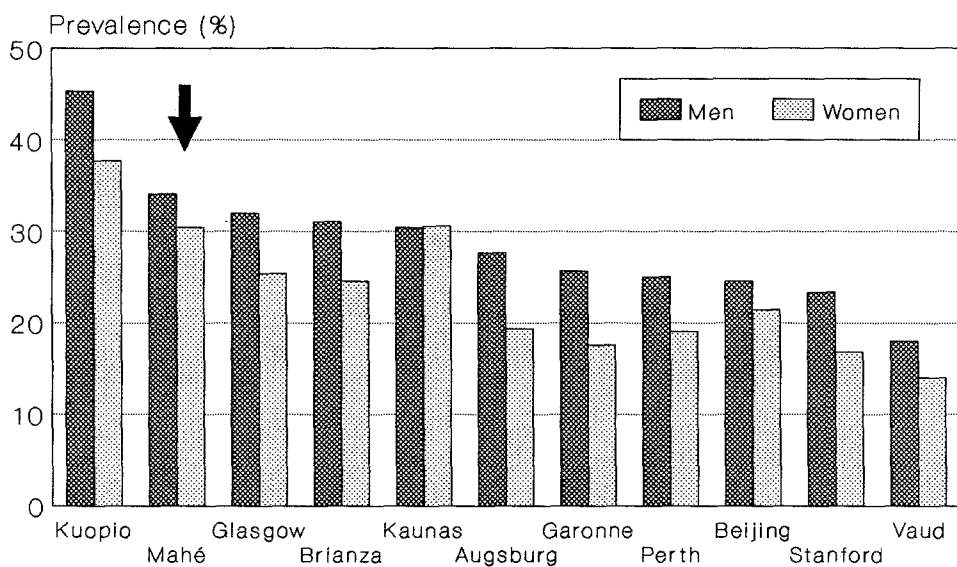


Fig. 18. Prevalence of actual high blood pressure in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140) (individuals aged 35-64).

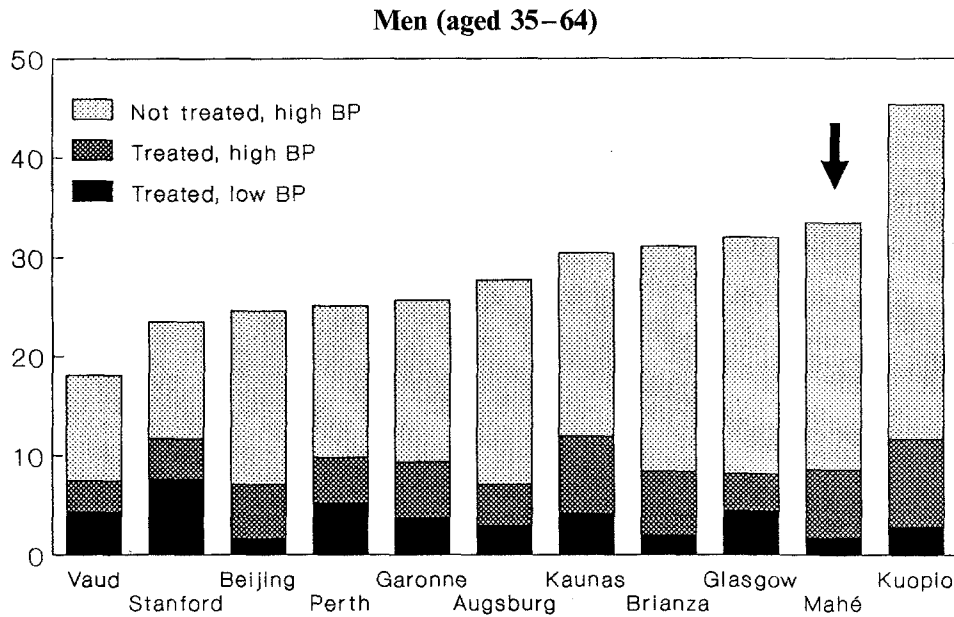


Fig. 19. Percentages of categories of blood pressure index in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140).

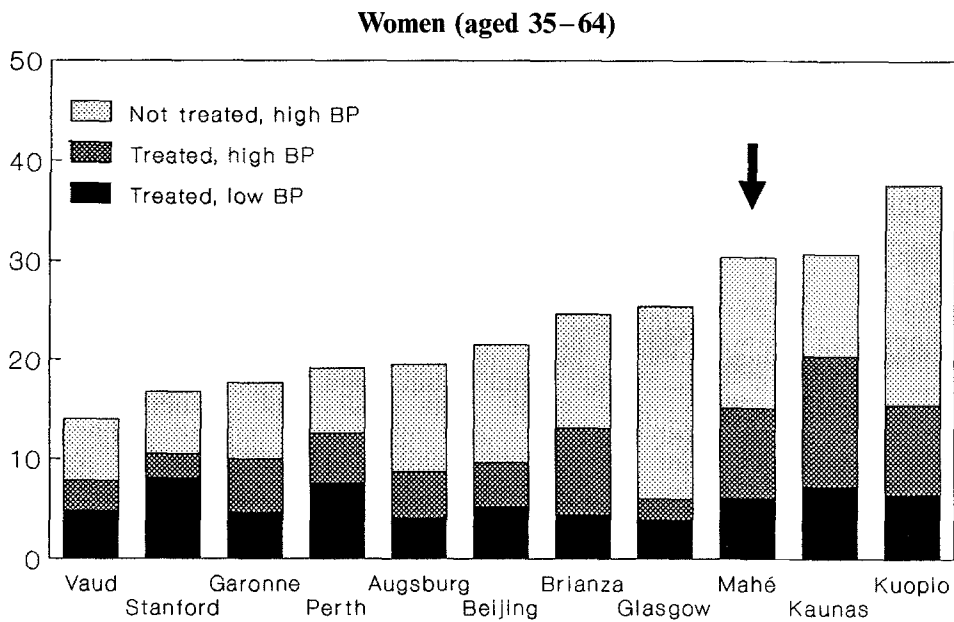


Fig. 20. Percentages of categories of blood pressure index in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140).

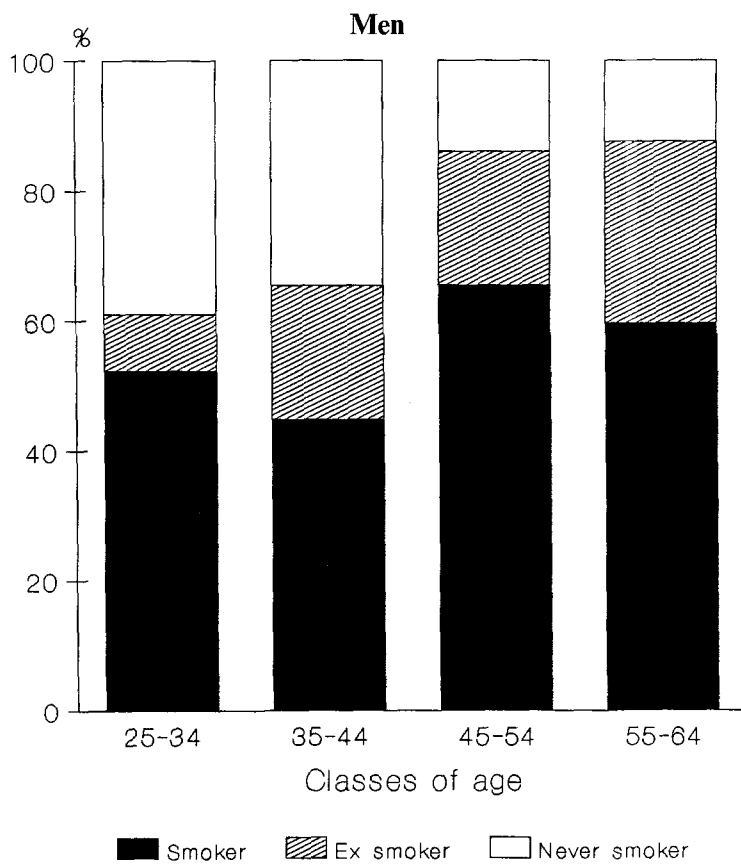


Fig. 21. Prevalence of cigarette smoking.

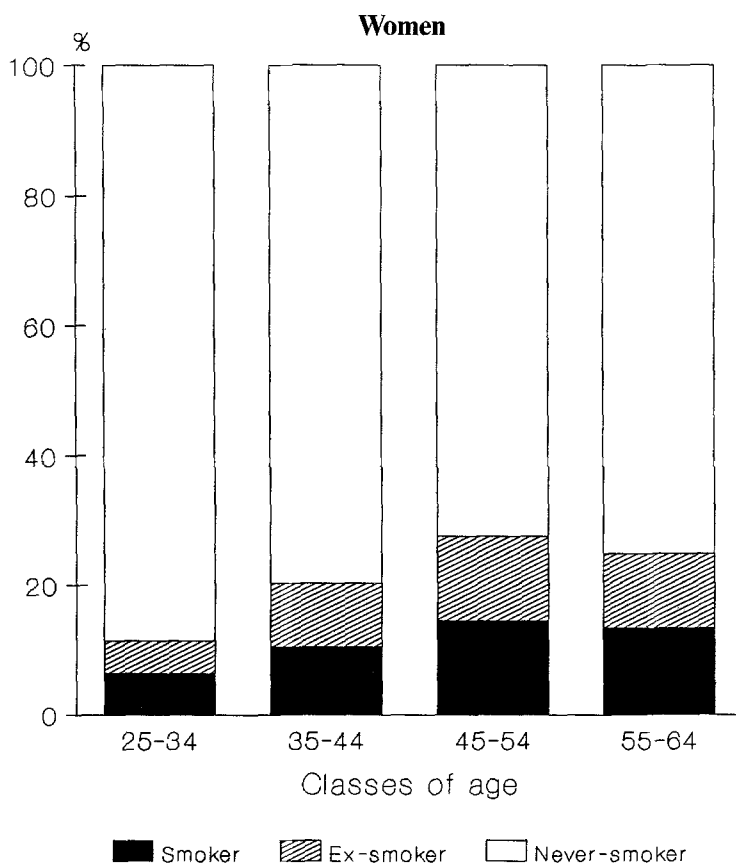


Fig. 22. Prevalence of cigarette smoking.

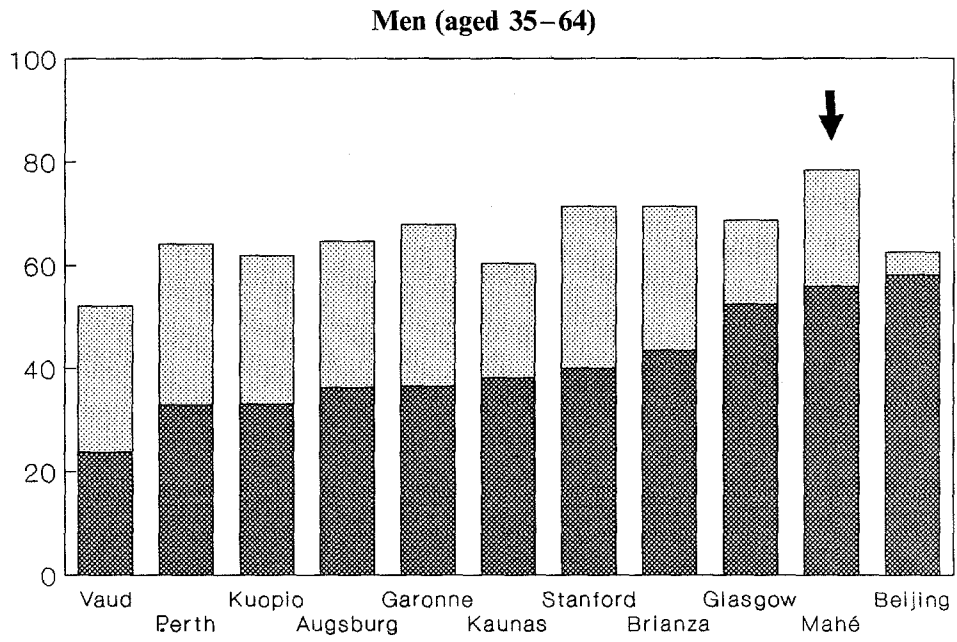


Fig. 23. Proportions of smokers and ex-smokers in Mahé and other populations (Wld hlth statist quart 1988; 41:115–140).

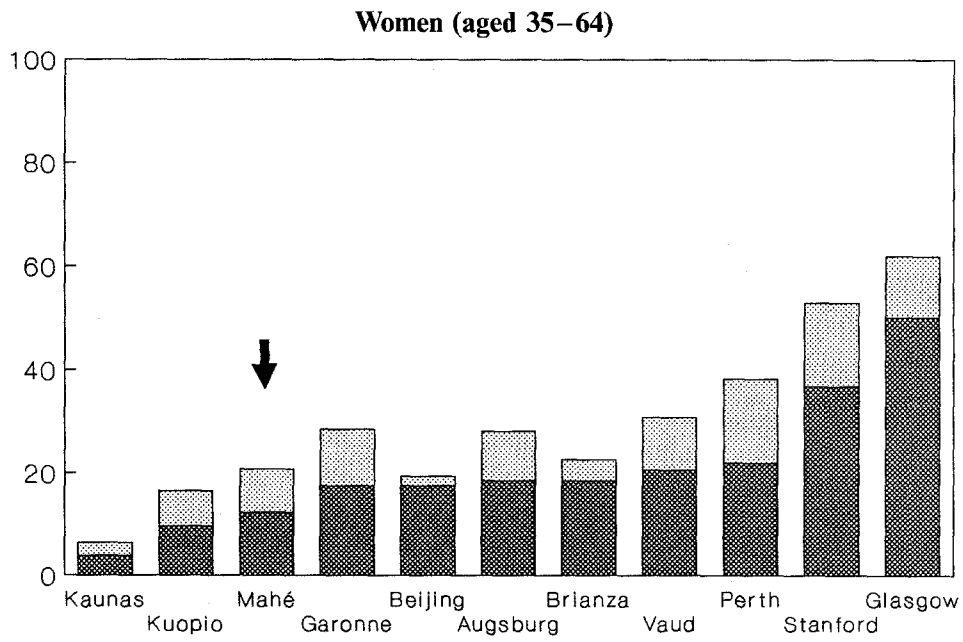


Fig. 23. Proportions of smokers and ex-smokers in Mahé and other populations (Wld hlth statist quart 1988; 41:115–140).

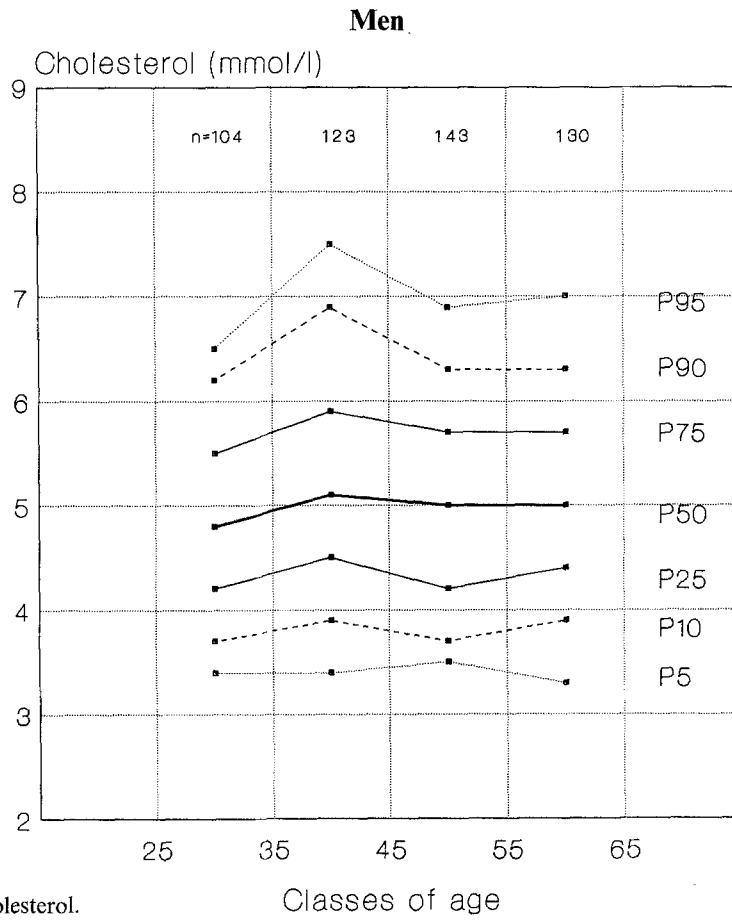


Fig. 25. Percentiles of cholesterol.

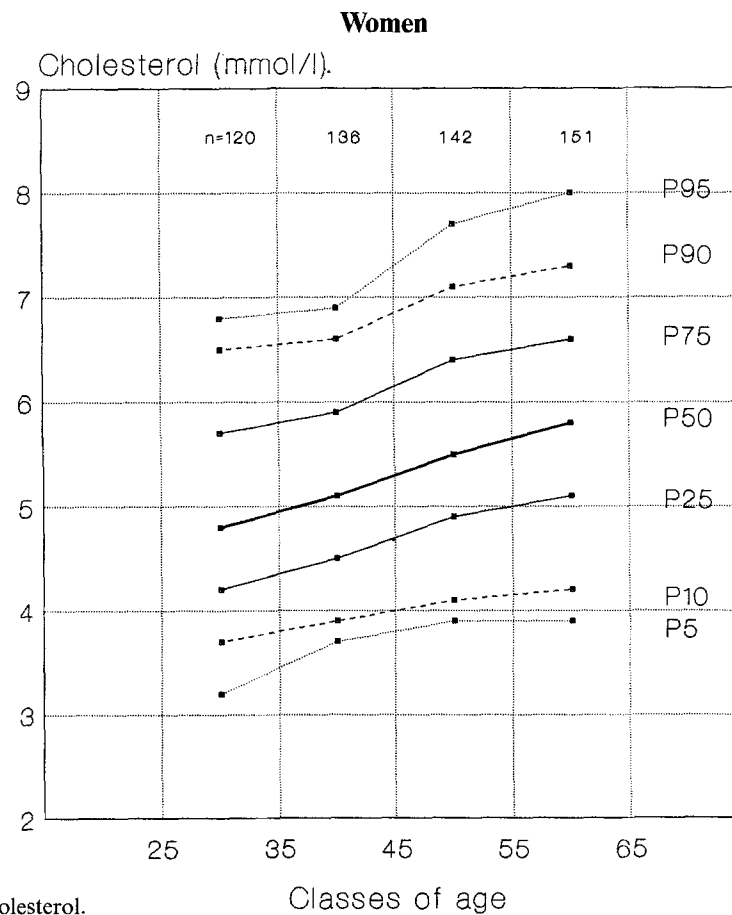


Fig. 26. Percentiles of cholesterol.

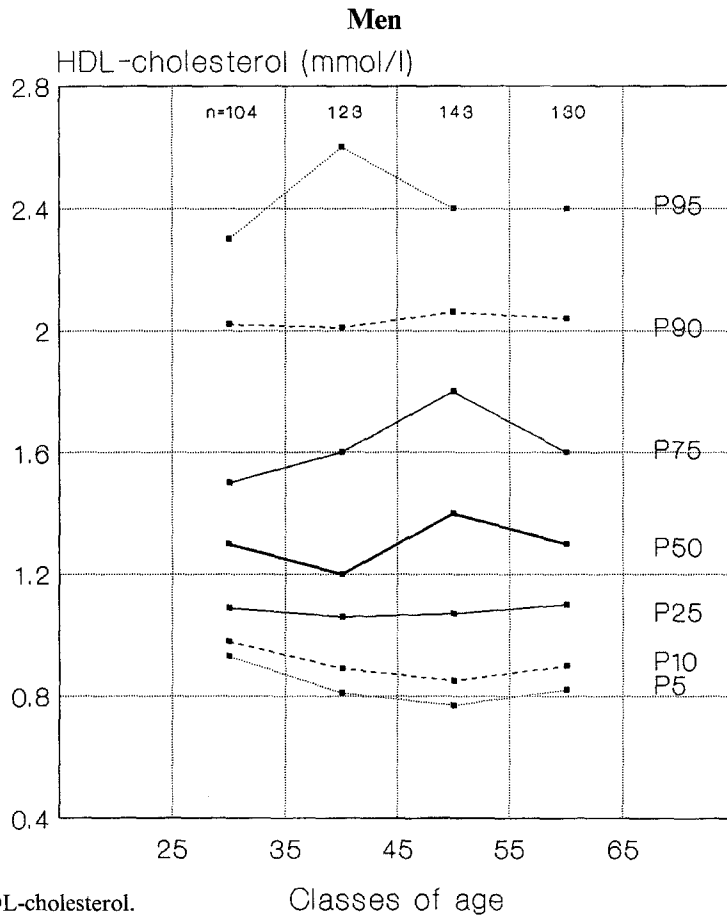


Fig. 27. Percentiles of HDL-cholesterol.

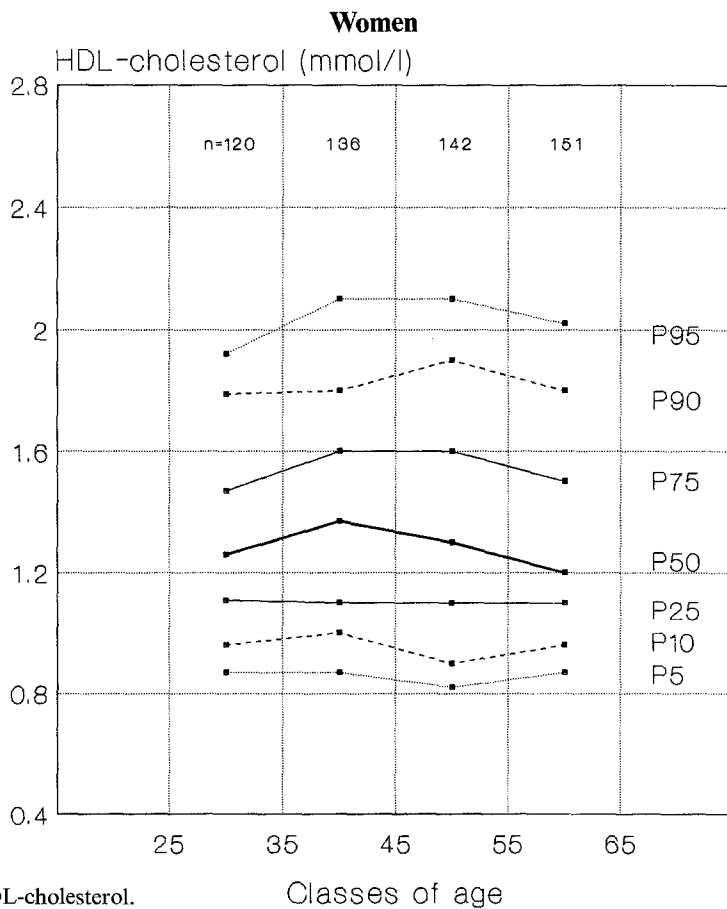


Fig. 28. Percentiles of HDL-cholesterol.

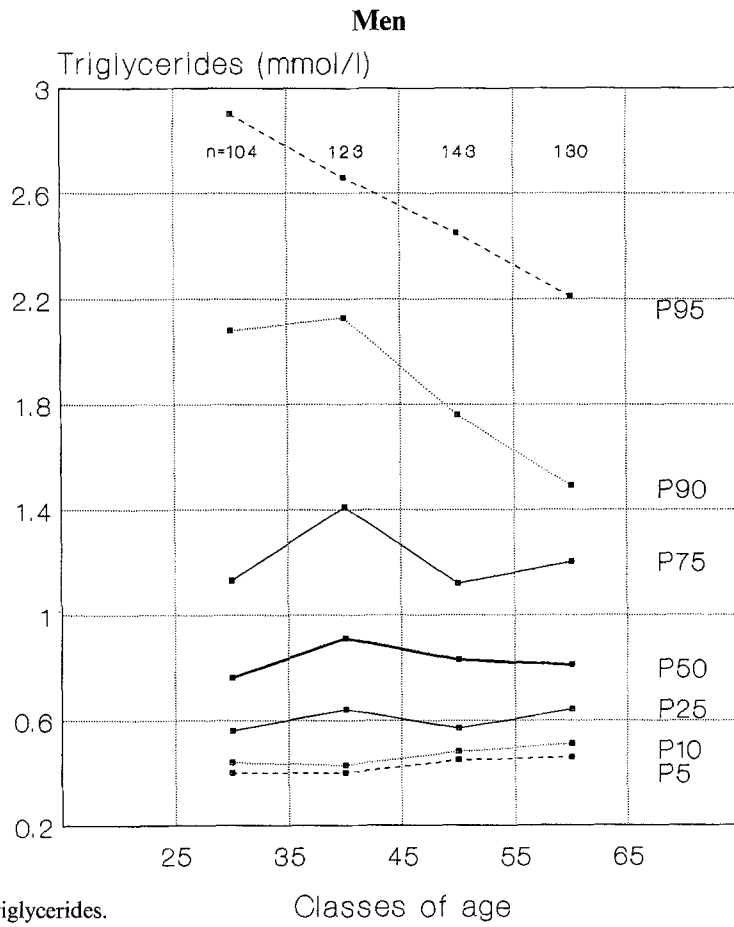


Fig. 29a. Percentiles of triglycerides.

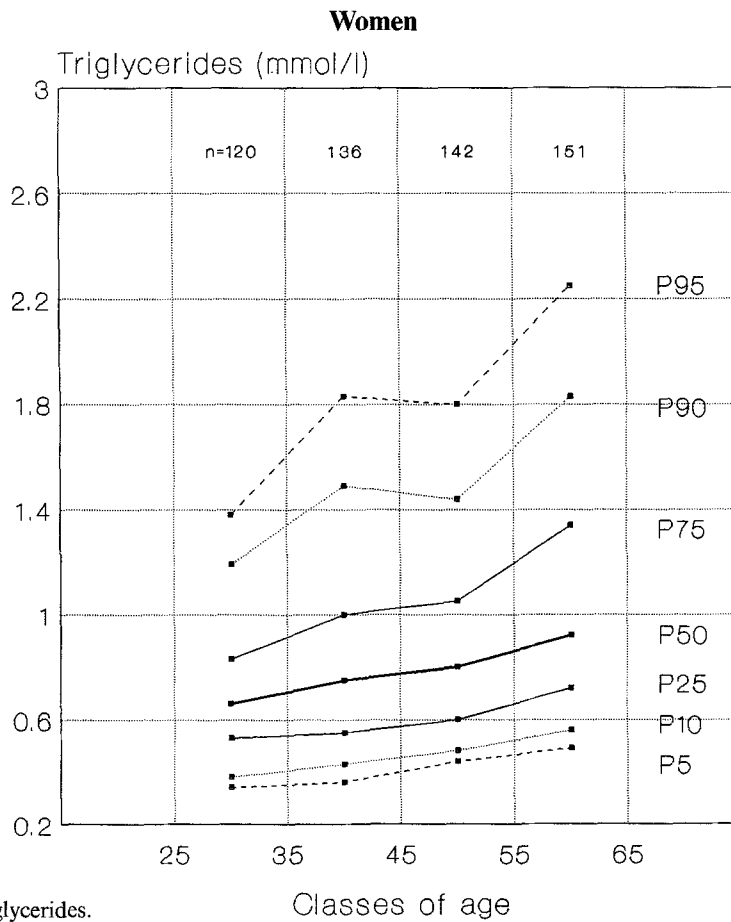


Fig. 29. Percentiles of triglycerides.

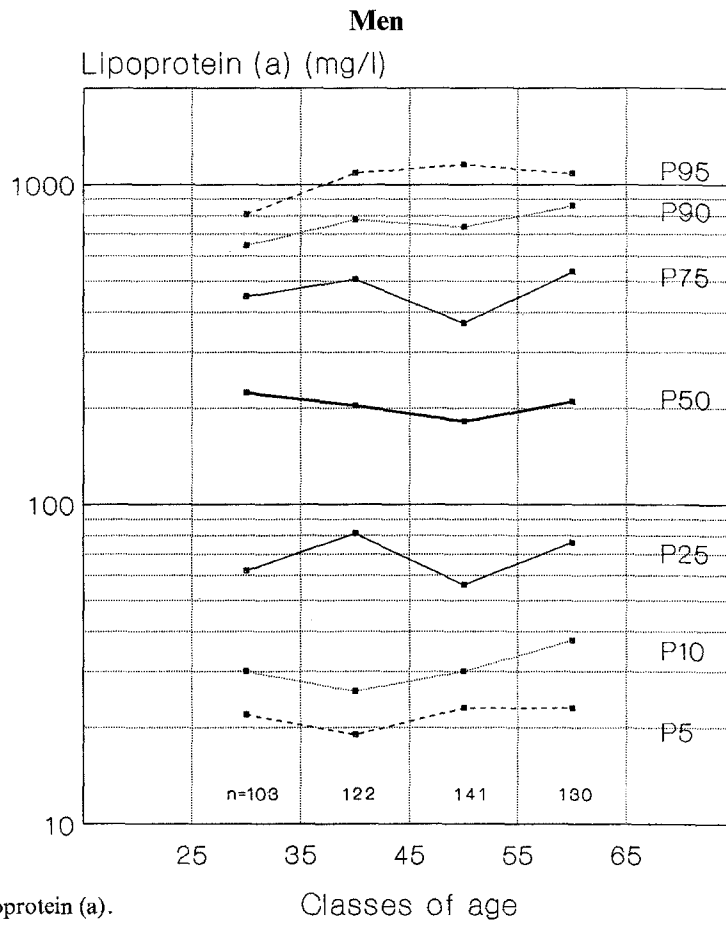


Fig. 30. Percentiles of lipoprotein (a).

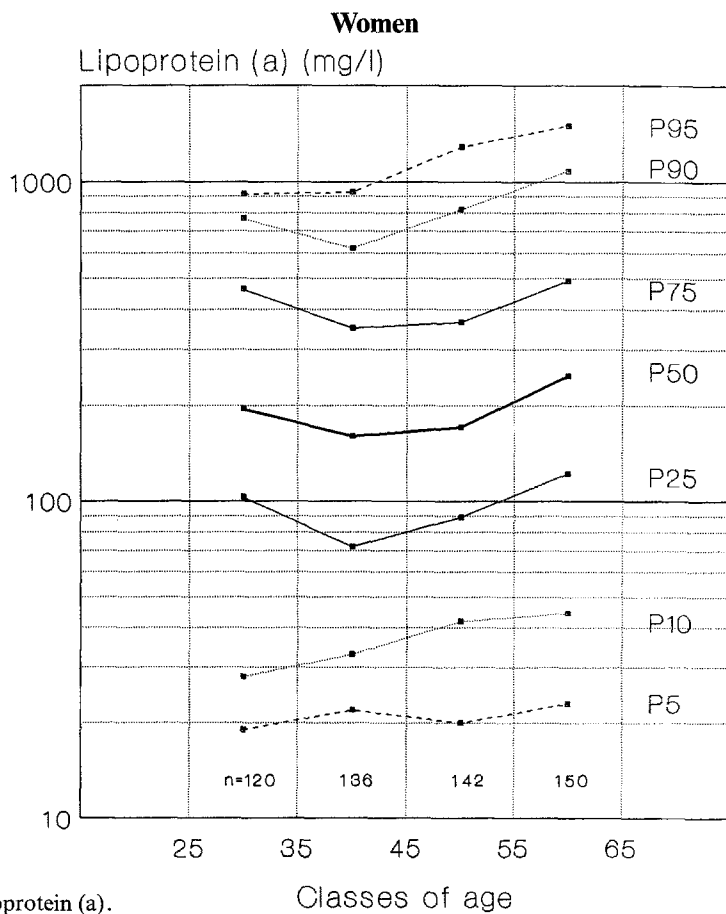


Fig. 31. Percentiles of lipoprotein (a).

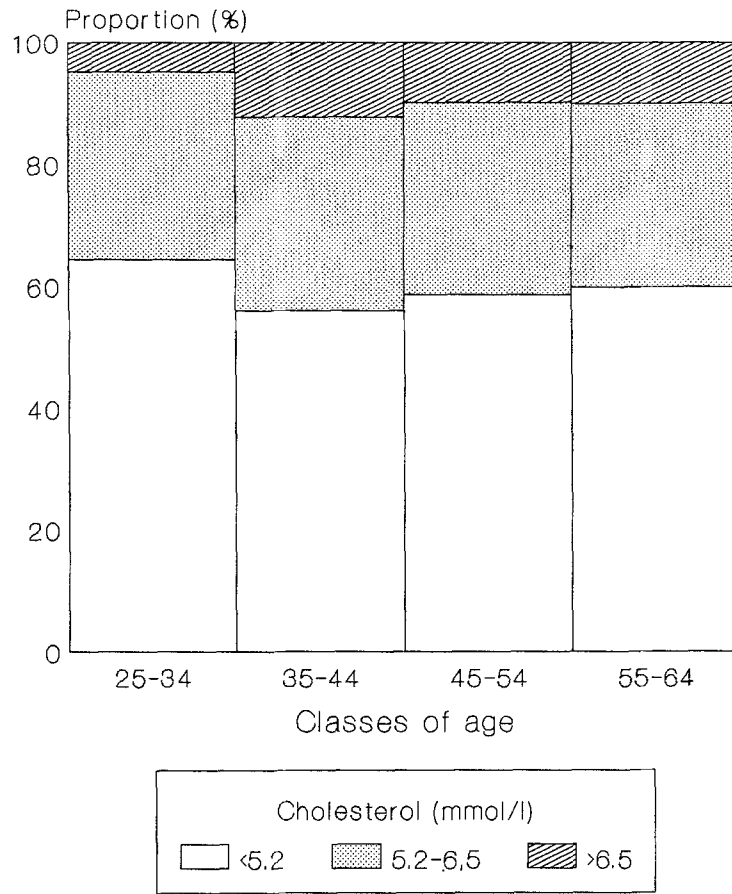


Fig. 32. Proportion of men with low, intermediate and high total cholesterol.

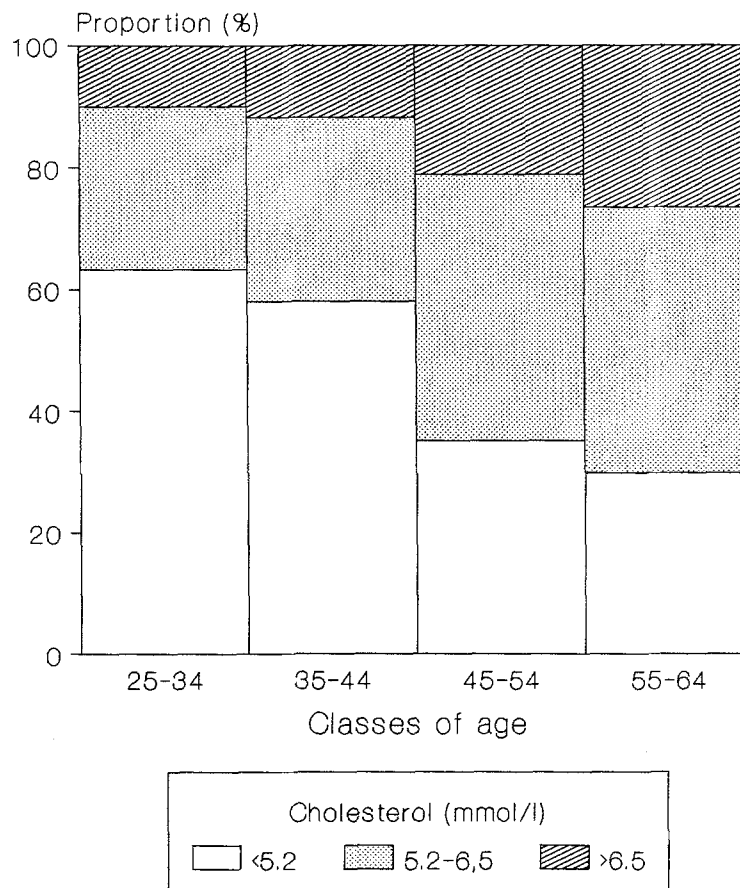


Fig. 33. Proportion of women with low, intermediate and high total cholesterol.

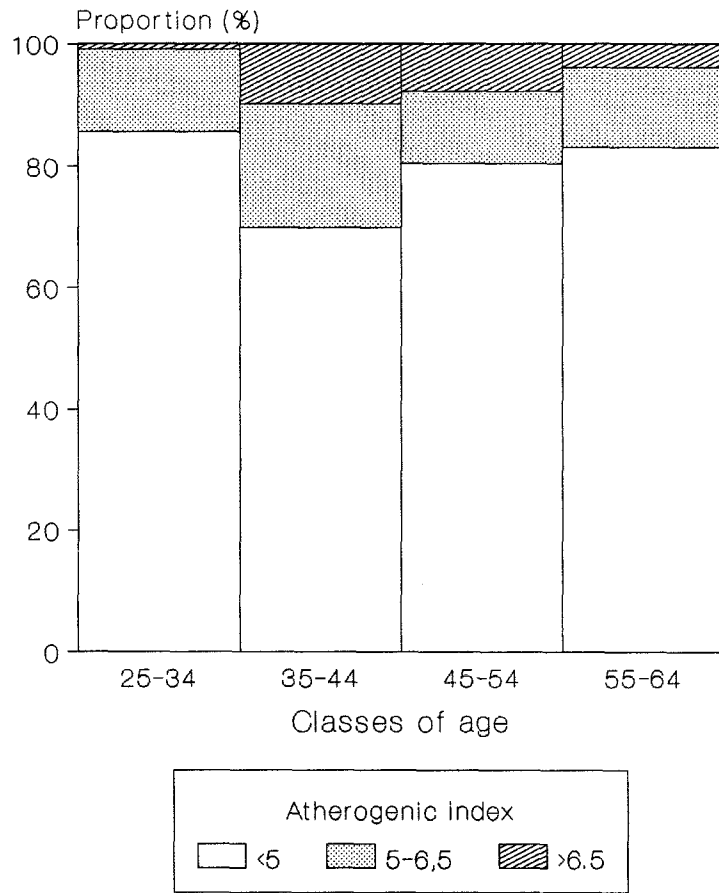


Fig. 34. Proportion of men with low, intermediate and high atherogenic index.

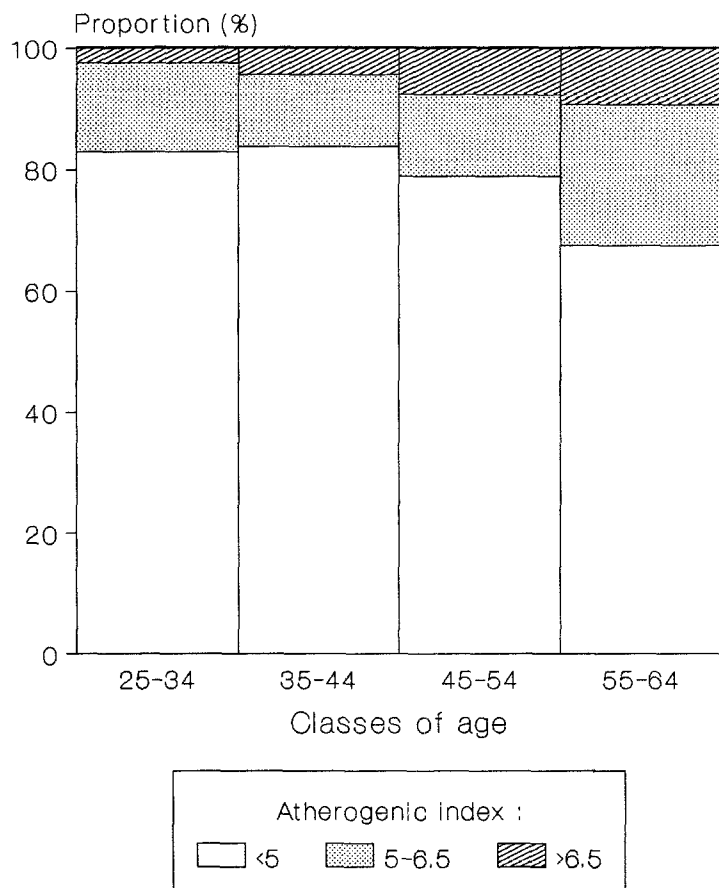


Fig. 35. Proportion of women with low, intermediate and high atherogenic index.

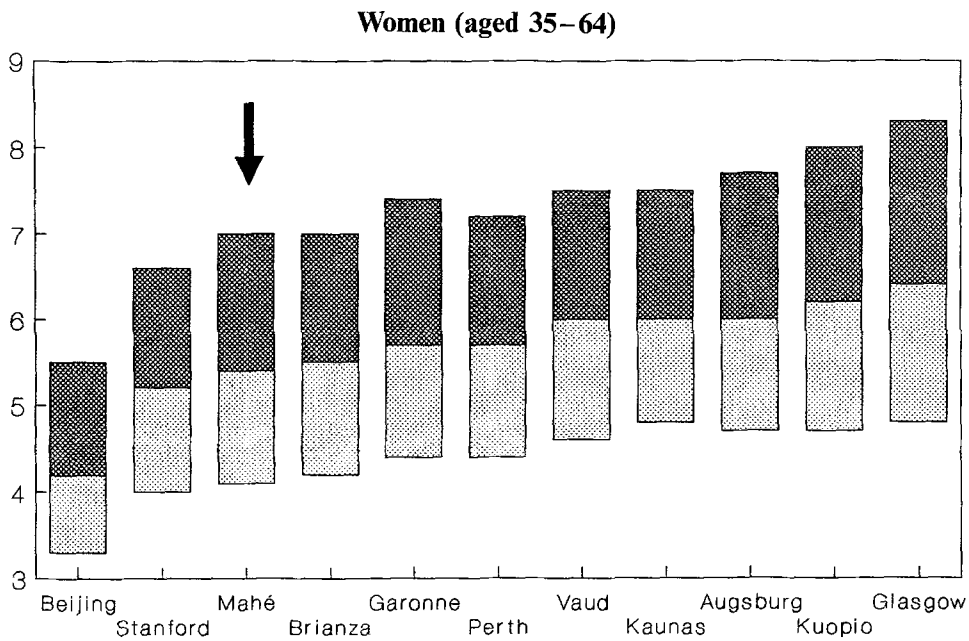


Fig. 36. Total cholesterol in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140). Age-standardized 10th, 50th and 90th percentiles.

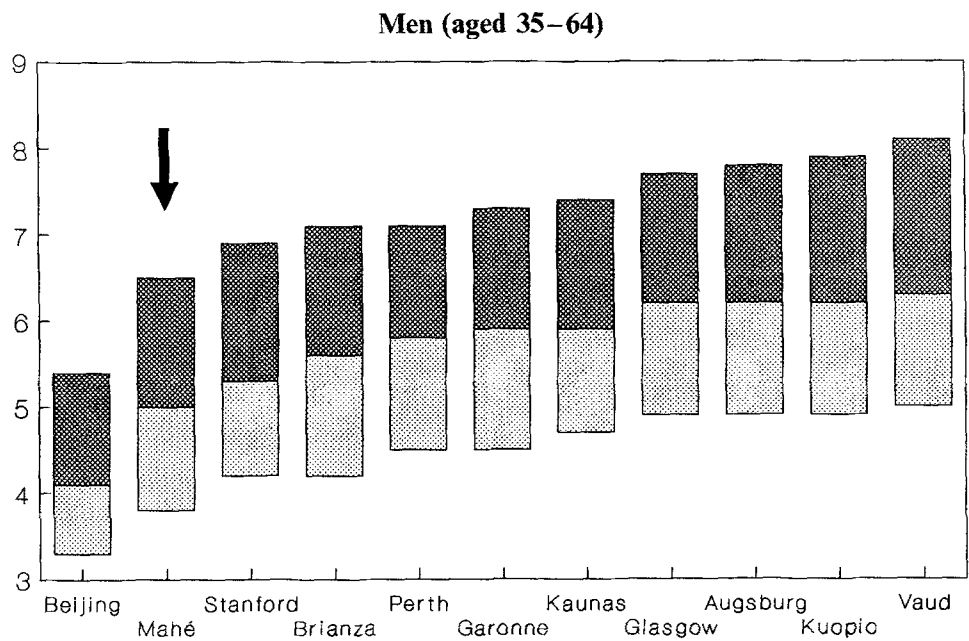


Fig. 37. Total cholesterol in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140). Age-standardized 10th, 50th and 90th percentiles.

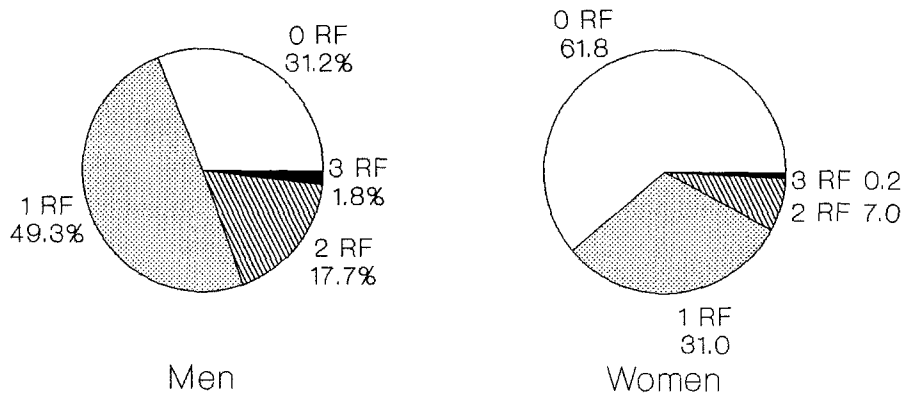


Fig. 38. Proportion of categories of major risk-factors score (population aged 25-64).

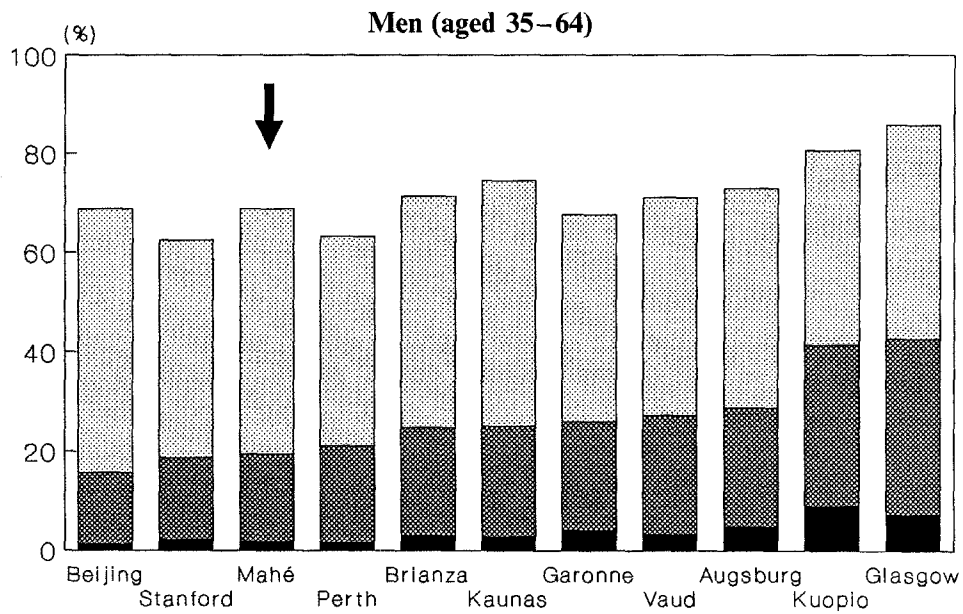


Fig. 39. Proportions of categories of major risk-factors score in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140).

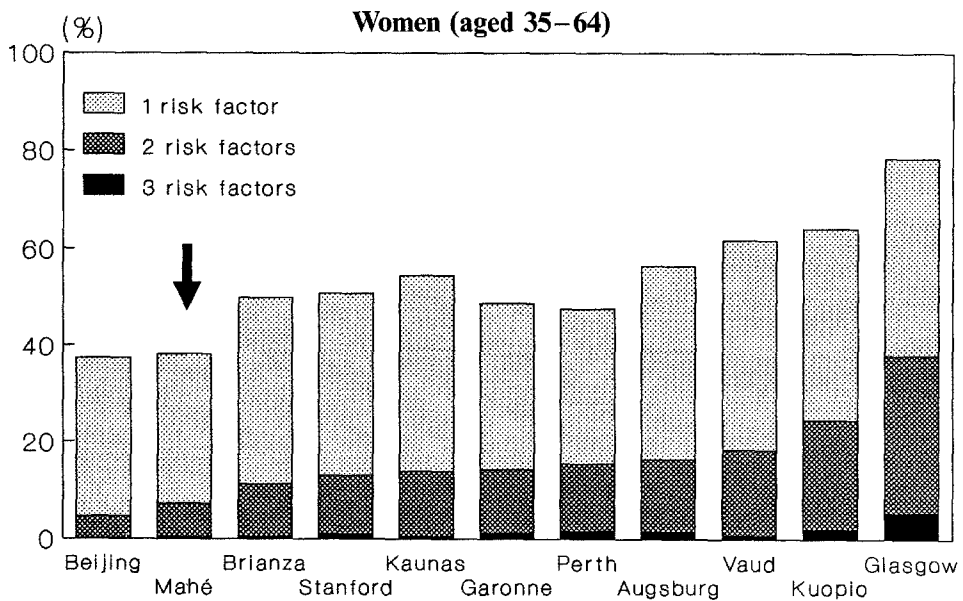


Fig. 40. Proportions of categories of major risk-factors score in Mahé and other populations (Wld hlth statist quart 1988; 41:115-140).

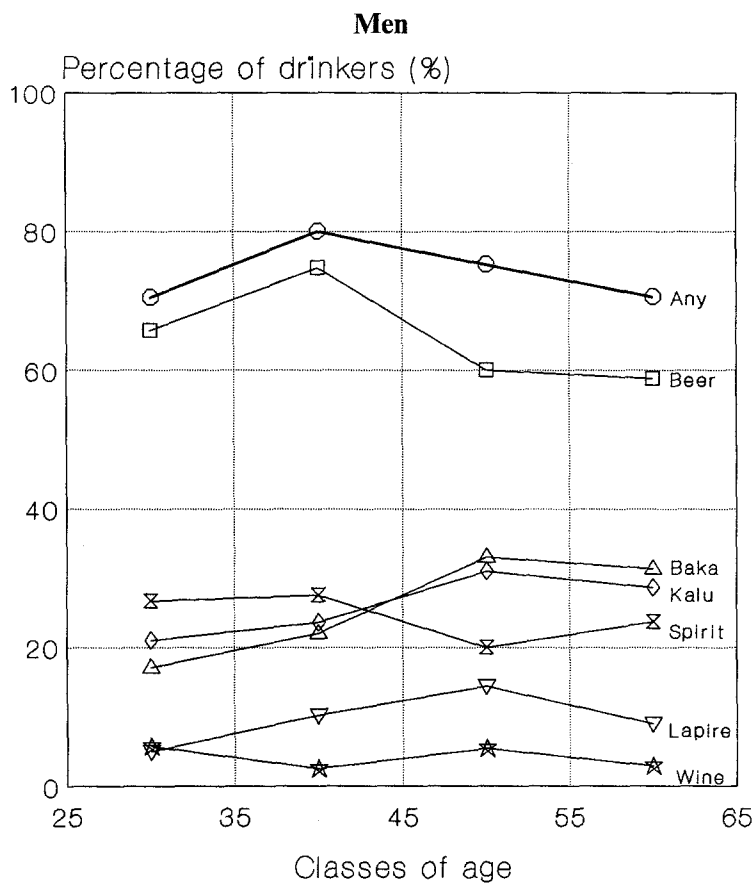


Fig. 41. Percentages of drinkers of available alcoholic drinks.

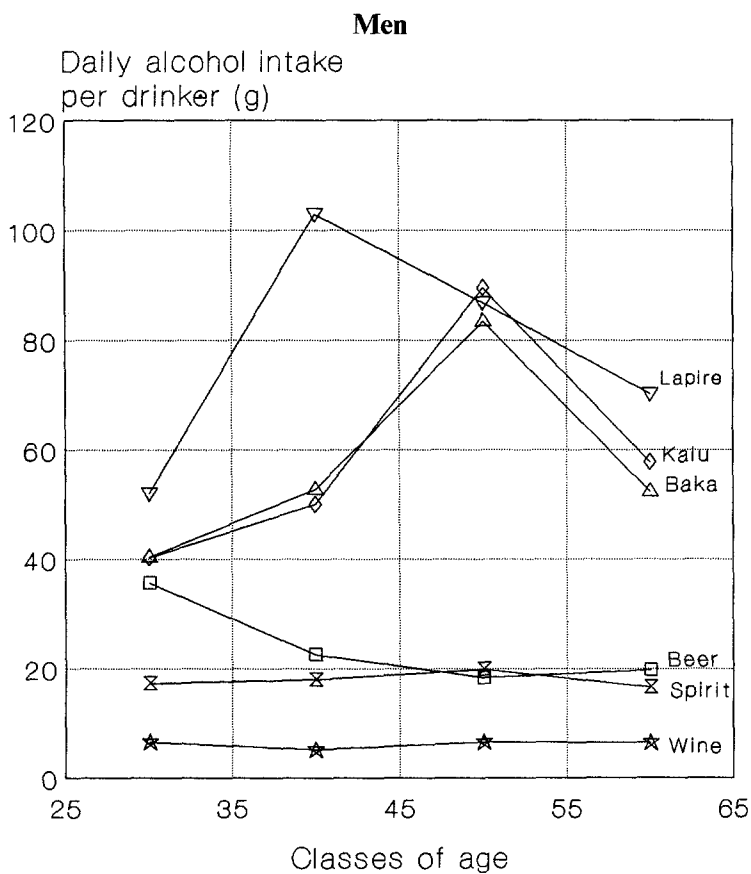


Fig. 42. Mean daily alcohol intake per drinker of specified drinks.

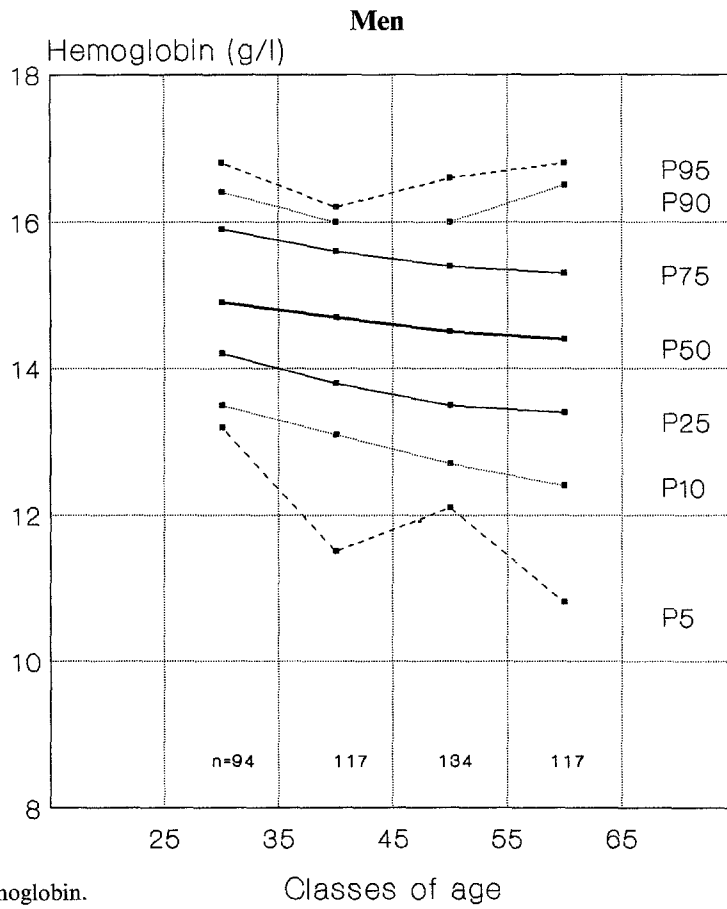


Fig. 43. Percentiles of hemoglobin.

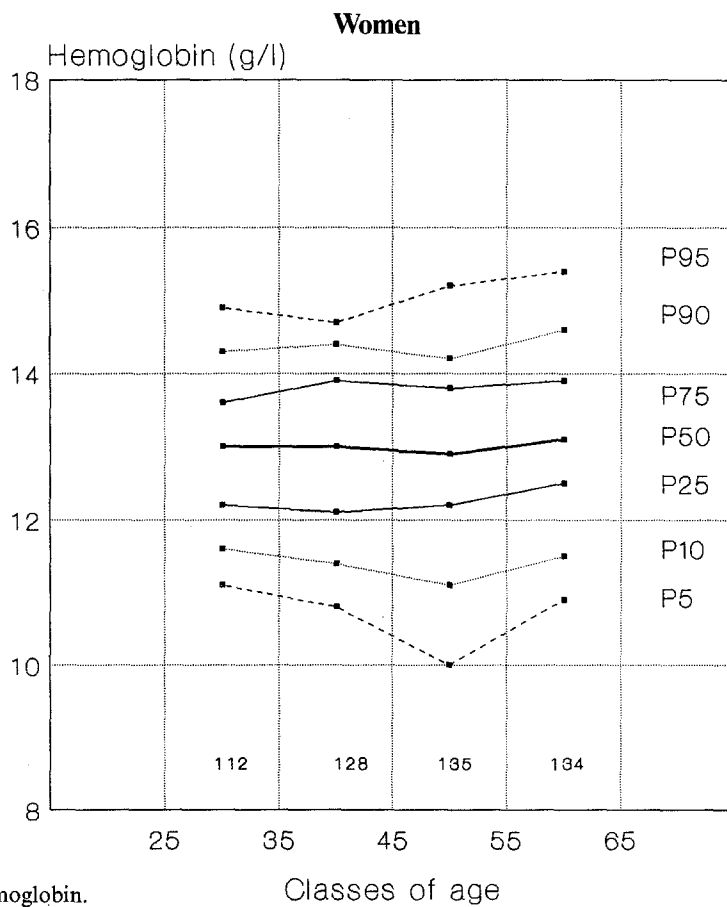


Fig. 44. Percentiles of hemoglobin.

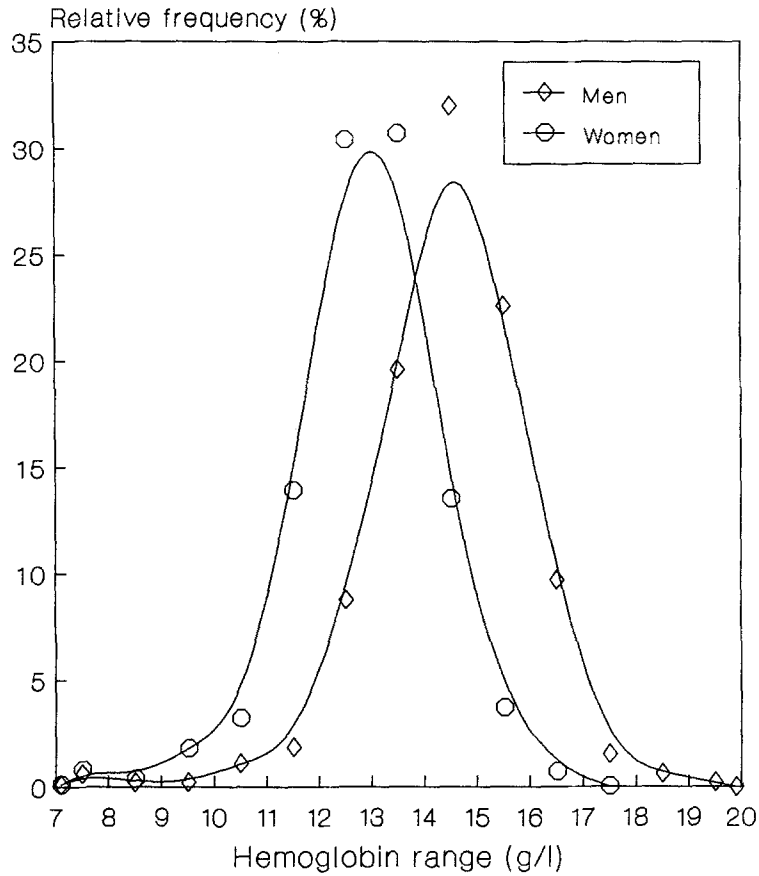
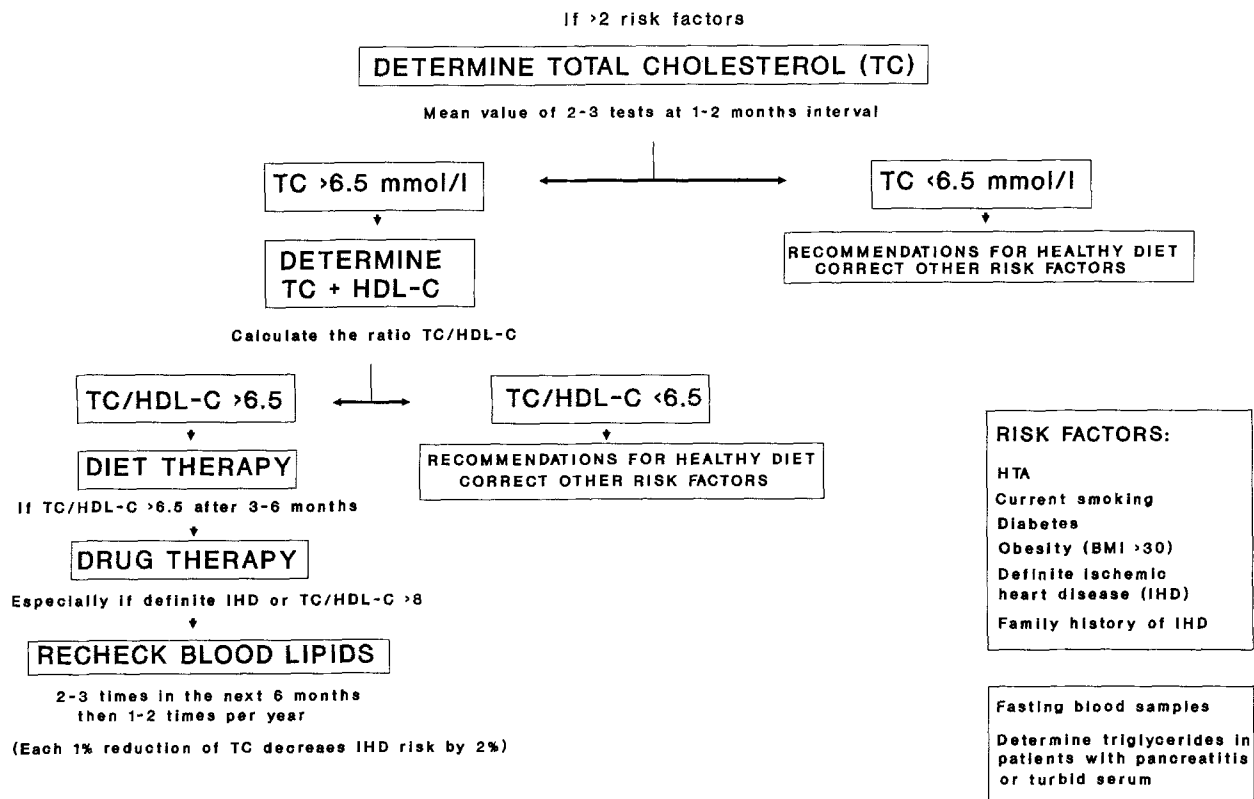


Fig. 45. Relative frequency of hemoglobin concentration by sex.



These guidelines may be modified in particular situations

Fig. 46. Recommendations for the detection and the treatment of dislipidemias.

Key personnel and collaborating organizations involved in the Seychelles Cardiovascular Diseases Survey 1989.

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 Ministry of Health, Primary Health Care, Policlinics, Seychelles
 Ministry of Health, Victoria Hospital, Support Services, Seychelles
 National Newspaper (Nation), Radio & Television (RTS), Victoria, Seychelles
 Postal Services, Victoria, Seychelles
 Seychelles People Progressive Front (SPPF), Victoria, Seychelles
 Skychef, Mahé Airport, Seychelles
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Special thanks go to the people of the Seychelles for their enthusiastic participation in the Seychelles Cardiovascular Diseases Survey. It is the hope of all collaborators on this project that these findings will provide an additional foundation for ongoing improvements in health care for all Seychellois.

En mersi spesyal pour tou Seselwa ki'n partisip avek lentouzyasm dan sa 'Seychelles Cardiovascular Diseases Survey'. Tou kolaborater sa letid i annan lespwar ki sa ki'n ganny dekouver i a kapab servi pour kontinyen fer progre dan sistenm lasante pour tou Seselwa.

¹) SCVDS: Seychelles Cardiovascular Diseases Survey