

Supplementary appendix

Sex differences in risk factor management of coronary heart disease across three regions

Figure Legends

eFigure 1: Sex differences in risk factor management in age-adjusted and multiple-adjusted model

BP: blood pressure; TC: total cholesterol; LDL: LDL-cholesterol

Target blood pressure (BP) was defined as BP <140/90mmHg or <140/80mmHg for diabetic patients. The target for TC, LDL-cholesterol and HDL-cholesterol levels were defined as <3 mmol/L, <1.8 mmol/L, and >1.0mmol/L for men and >1.2mmol/L for women, respectively. Target glucose was defined as <7 mmol/L. Information on HbA1c was only collected among patients with diabetes and its target was defined as <7%. *All three medical targets (BP on target, LDL on target, and glucose/HbA1c on target) are achieved was defined as all treatment targets.

Obesity was defined as a body mass index (BMI) $\geq 30\text{kg/m}^2$ and central obesity was defined as waist circumference $\geq 88\text{cm}$ for women and $\geq 102\text{cm}$ for men. Smoking status was current smoker and non-smoker. Adequate physical activity level was defined as moderate or vigorous physical activity for at least 30 mins three or more times a week. *All three lifestyle targets (non smoker, adequate physical activities, and non obesity) are reached was defined as all lifestyle targets.

Model 1 was age adjusted logistic regression model; Model 2 was logistic regression model with multiple adjustment with BP, smoking status, TC, HDL-cholesterol, glucose, and therapeutic target achievements. Odds Ratios (ORs) and 95% confidence interval (95% CI) presented as women versus men.

eTable 1: Missing data by region and sex, n (%).

	Overall		Europe		Asia		Middle East	
	Men	Women	Men	Women	Men	Women	Men	Women
Total No.	7154	2958	4851	1799	1136	746	1167	413
Missing information								
<i>Basic demographics</i>								
Age	87 (1%)	38(1%)	86(2%)	37(2%)	0 (0%)	0 (0%)	1(0.1%)	1(0.1%)
<i>Risk factors</i>								
Family history	1647 (23%)	591 (20%)	1605 (33%)	576 (32%)	4 (0.4%)	2 (0.3%)	38 (3%)	13 (3%)
Smoking status	112 (2%)	38 (1%)	89 (2%)	28 (2%)	4 (0.4%)	2 (0.3%)	19 (2%)	8 (2%)
Physical activity	172 (2%)	55 (2%)	126 (3%)	39 (2%)	10 (0.9%)	3 (0.4%)	36 (3%)	13 (3%)
BMI	564 (6%)	211 (2%)	341 (5%)	131 (2%)	13(0.7%)	6 (0.3%)	210(13%)	74 (5%)
WC	1575 (22%)	574 (19%)	1122 (23%)	422 (23%)	14 (1%)	7 (1%)	439 (38%)	145 (35%)
<i>Known history</i>								
Hypertension	183 (3%)	43 (2%)	91 (2%)	23 (1%)	5 (0.4%)	3 (0.4%)	87 (8%)	17 (4%)
Dyslipidaemia	199 (3%)	92 (3%)	101 (2%)	49 (3%)	9 (0.8%)	5 (0.7%)	89 (8%)	38 (9%)
Diabetes	1532 (21%)	507 (17%)	1016 (21%)	367 (20%)	7 (0.6%)	6 (0.8%)	509 (44%)	134 (32%)
<i>Medical treatment targets</i>								
BP on target	125 (2%)	29 (1%)	108 (2%)	23 (1%)	9 (0.8%)	4 (0.5%)	8 (0.7%)	2 (0.5%)
TC on target	1279 (18%)	568 (19%)	859 (18%)	338 (19%)	171 (15%)	115 (15%)	249 (21%)	115 (28%)
LDL on target	1903 (27%)	827 (28%)	1377 (28%)	550 (31%)	264 (23%)	157 (21%)	262 (23%)	120 (29%)
HDL on target	1650 (23%)	737 (25%)	1184 (24%)	482 (27%)	213 (19%)	138 (19%)	253 (22%)	117 (28%)
Glucose on target	1629 (23%)	645 (22%)	1150 (24%)	384 (22%)	221 (20%)	139 (19%)	258 (22%)	122 (30%)
HbA1C on target	807 (45%)	388 (39%)	480 (52%)	200 (51%)	98 (25%)	82 (23%)	229 (49%)	106 (44%)

eTable 2: Sex differences in risk factor control and management, stratified by medication use and CHD category.

	Therapeutic target						Lifestyle					CHIS
	BP on target	TC on target	LDL on target	HDL on target	Glucose on target	HbA1c on target	Non-smoker	Adequate physical activities	Non-obese	Non-central obese	Cardiac rehab	CHIS
Medication*												
Yes	1.34 (1.23-1.47)	0.48 (0.37-0.62)	0.66 (0.51-0.65)	NA	0.92 (0.77-1.10)	0.88 (0.70-1.11)	NA	NA	NA	NA	NA	NA
No	0.98 (0.69-1.39)	0.64 (0.43-0.93)	0.71 (0.50-1.00)	NA	0.82 (0.69-0.99)	1.19 (0.74-1.94)	NA	NA	NA	NA	NA	NA
CHD category¶												
CABG	1.21 (0.96-1.53)	0.43 (0.27-0.66)	0.65 (0.48-0.86)	0.73 (0.56-0.95)	0.73 (0.56-0.96)	0.77 (0.42-1.39)	2.64 (1.62-4.57)	0.72 (0.57-0.90)	0.69 (0.53-0.89)	0.32 (0.24-0.42)	0.80 (0.63-1.01)	0.68 (0.51-0.92)
PCI	1.37 (1.19-1.57)	0.34 (0.25-0.45)	0.66 (0.55-0.78)	0.83 (0.72-0.97)	0.63 (0.53-0.74)	0.73 (0.53-1.00)	1.56 (1.27-1.93)	0.66 (0.57-0.75)	0.68 (0.58-0.79)	0.44 (0.38-0.51)	0.75 (0.64-0.87)	1.02 (1.00-1.03)
SAP	1.29 (1.11-1.50)	0.61 (0.45-0.82)	0.58 (0.46-0.72)	0.81 (0.69-0.96)	0.87 (0.72-1.06)	0.92 (0.67-1.27)	3.16 (2.45-4.11)	0.88 (0.76-1.02)	0.96 (0.81-1.14)	0.65 (0.56-0.75)	0.99 (0.98-1.00)	0.99 (0.82-1.19)
ACS	1.31 (1.12-1.53)	0.66 (0.52-0.84)	0.72 (0.59-0.87)	0.69 (0.58-0.82)	0.74 (0.62-0.89)	0.73 (0.46-1.16)	1.31 (1.06-1.63)	0.71 (0.60-0.82)	0.74 (0.63-0.88)	0.42 (0.35-0.49)	0.73 (0.62-0.87)	0.85 (0.60-1.58)

BP: blood pressure; TC: total cholesterol; EU: Europe; Cardiac rehab: cardiac rehabilitation; CHIS: cardiovascular health index score; CABG: coronary artery bypass graft; PCI: percutaneous coronary intervention; SAP: stable angina; ACS: acute coronary syndroms; NA: not applicable.

Results are shown as odds ratios (95% confidence interval) of women versus men.

*BP on target was stratified by anti-hypertensive medication (yes or no); TC and LDL on target were stratified by lipid-lowering medication (yes or no); Glucose and HbA1c on target were stratified by anti-diabetic medication (yes or no); no stratified analysis was performed for HDL on target, lifestyle achievement, or CHIS.

¶ In SURF, recruited patients may have more than one recorded CHD category. For example, patient could be recorded as both 'CABG' and 'PCI'. The current stratified analyses were performed for CABG (yes or no), PCI (yes or no), SAP (yes or no), or ACS (yes or no), respectively.

eTable 3: Sex differences in risk factor management, stratified by age group and region

		Interaction P value	Age≤65			Age>65		
			Women N(%)	Men N(%)	OR (95%CI)	Women N(%)	Men N(%)	OR (95%CI)
Therapeutic targets								
BP on target	Europe	Reference	292 (43.2%)	940 (37.8%)	1.25 (1.05-1.49)	542 (50.9%)	935 (43.1%)	1.37 (1.18-1.58)
	Asia	<0.001	133 (46.0%)	215 (40.7%)	1.24 (0.93-1.66)	192 (42.4%)	220 (36.7%)	1.27 (0.99-1.63)
	Middle East	0.07	86 (36.9%)	187 (26.1%)	1.65 (1.21-2.27)	63 (35.6%)	123 (27.9%)	1.43 (0.98-2.07)
TC on target	Europe	Reference	45 (7.9%)	295 (13.9%)	0.53 (0.38-0.73)	112 (12.9%)	293 (16.3%)	0.76 (0.60-0.96)
	Asia	0.2	7 (2.8%)	36 (7.7%)	0.35 (0.14-0.75)	13 (3.4%)	56 (11.2%)	0.28 (0.14-0.50)
	Middle East	0.7	6 (3.7%)	90 (16.3%)	0.20 (0.08,0.42)	8 (5.9%)	63 (17.2%)	0.30 (0.13-0.61)
LDL on target	Europe	Reference	102 (20.9%)	612 (33.2%)	0.53 (0.42-0.67)	237 (32.0%)	570 (36.4%)	0.82 (0.68-0.99)
	Asia	0.3	18 (7.9%)	60 (14.2%)	0.51 (0.29, 0.88)	41 (11.4%)	88 (19.6%)	0.53 (0.35-0.78)
	Middle East	0.8	38 (23.2%)	216 (39.6%)	0.46 (0.30-0.68)	35 (27.1%)	150 (41.7%)	0.52 (0.33-0.80)
HDL on target	Europe	Reference	249 (48.9%)	1133 (58.2%)	0.69 (0.57-0.84)	442 (56.1%)	1054 (63.7%)	0.73 (0.61-0.86)
	Asia	0.01	130 (55.3%)	198 (44.4%)	1.55 (1.13-2.13)	212 (56.8%)	286 (60.0%)	0.88 (0.67-1.16)
	Middle East	0.02	45 (27.3%)	163 (29.6%)	0.89 (0.60-1.31)	39 (29.8%)	106 (29.2%)	1.03 (0.66-1.58)
Glucose on target	Europe	Reference	418 (77.4%)	1603 (81.5%)	0.78 (0.62-0.98)	649 (75.5%)	1302 (77.7%)	0.88 (0.73-1.07)
	Asia	0.8	182 (75.5%)	355 (80.3%)	0.76 (0.52-1.10)	262 (71.6%)	375 (79.3%)	0.66 (0.48-0.90)
	Middle East	0.02	60 (38.5%)	314 (57.2%)	0.47 (0.32-0.67)	65 (28.8%)	217 (32.9%)	0.61 (0.41-0.91)
HbA1c on target	Europe	Reference	23 (36.5%)	83 (40.9%)	0.83 (0.46-1.48)	43 (34.4%)	91 (38.1%)	0.85 (0.54-1.34)

			Age≤65			Age>65		
		Interaction P value	Women N (%)	Men N (%)	OR (95%CI)	Women N (%)	Men N (%)	OR (95%CI)
	Asia	0.6	58 (59.2%)	70 (53.0%)	1.28 (0.76-2.19)	92 (52.3%)	102 (62.6%)	0.65(0.42-1.01)
	Middle East	0.2	15 (17.9%)	42 (26.3%)	0.61 (0.31-1.16)	15 (28.8%)	27 (32.9%)	0.83 (0.38-1.75)
Lifestyle								
Non-smoker	Europe	Reference	505 (74.8%)	1821 (72.9%)	1.10 (0.91-1.34)	984 (92.7%)	1977 (90.6%)	1.30 (1.00-1.72)
	Asia	0.04	280 (96.6%)	349 (65.6%)	14.68(8.02-30.2)	444 (97.8%)	503 (83.8%)	8.56 (4.63-17.7)
	Middle East	0.2	228 (98.7%)	569 (80.0%)	18.97 (7.09-77.4)	172 (99.4%)	421 (96.6%)	6.13(1.23-11.1)
Adequate exercise	Europe	Reference	372 (55.7%)	1573 (63.2%)	0.73 (0.62-0.87)	417 (39.4%)	1148 (53.3%)	0.57 (0.49-0.66)
	Asia	<0.001	182 (62.8%)	247 (46.6%)	1.93 (1.44-2.59)	247 (54.5%)	323 (54.2%)	1.01 (0.79-1.30)
	Middle East	0.9	80 (35.2%)	400 (57.2%)	0.41 (0.30-0.55)	65 (37.8%)	149 (34.6%)	1.15 (0.79-1.66)
Non-obese	Europe	Reference	387 (61.3%)	1534 (64.8%)	0.86 (0.71-1.03)	688 (68.6%)	1498 (72.7%)	0.82 (0.70-0.97)
	Asia	0.04	256 (89.2%)	469 (89.3%)	0.99 (0.62-1.58)	420 (92.7%)	569 (95.2%)	0.65 (0.39-1.08)
	Middle East	0.7	57 (28.4%)	350 (57.6%)	0.29 (0.21-0.41)	60 (43.5%)	229 (65.6%)	0.40 (0.27-0.60)
Non-central obese	Europe	Reference	155 (22.6%)	1015 (40.0%)	0.44 (0.36-0.53)	227 (21.1%)	878 (46.8%)	0.41 (0.35-0.49)
	Asia	0.8	213 (73.2%)	479 (89.7%)	0.31 (0.21-0.46)	309 (67.9%)	549 (91.2%)	0.20 (0.14-0.29)
	Middle East	0.2	23 (9.8%)	247 (34.3%)	0.21 (0.13-0.32)	20 (11.3%)	144 (32.4%)	0.27 (0.16-0.43)
Cardiac rehab	Europe	Reference	258 (40.9%)	1135 (48.8%)	0.73 (0.61-0.87)	332 (33.9%)	958 (46.8%)	0.58 (0.50-0.68)
	Asia	0.04	3 (1.0%)	14 (2.6%)	0.38 (0.09-1.20)	11 (2.4%)	19 (3.2%)	0.76 (0.35-1.59)
	Middle East	0.09	5 (2.4%)	15 (2.3%)	1.04 (0.33-2.71)	7 (4.4%)	13 (3.2%)	1.38 (0.51-3.43)

			Age≤65			Age>65		
		Interaction P value	Women N (%)	Men N (%)	OR (95%CI)	Women N (%)	Men N (%)	OR (95%CI)
Overall risk factor management								
All treatment target	Europe	Reference	30 (6.8%)	140 (8.4%)	0.79 (0.58-0.86)	72 (10.4%)	156 (11.0%)	0.94 (0.69-1.26)
	Asia	0.3	5 (2.3%)	14 (3.6%)	0.63 (0.20-1.67)	14 (4.1%)	28 (6.6%)	0.61 (0.31-1.15)
	Middle East	0.4	2 (1.3%)	15 (2.9%)	0.45 (0.07-1.63)	0 (0%)	11 (0.3%)	NA*
All lifestyle target	Europe	Reference	157 (25.7%)	760 (32.9%)	0.70 (0.58-0.86)	270 (27.6%)	736 (36.9%)	0.65 (0.55-0.77)
	Asia	0.1	161 (56.1%)	160 (30.6%)	2.90 (2.15-3.91)	231 (51.1%)	260 (43.8%)	1.34 (1.05-1.72)
	Middle East	0.7	18 (9.5%)	136 (23.4%)	0.34 (0.20-0.56)	26 (20.0%)	73 (21.9%)	0.89 (0.53-1.46)
Good CHIS	Europe	Reference	58 (14.1%)	314 (20.2%)	0.69 (0.56-0.86)	127 (19.6%)	349 (26.4%)	0.75 (0.62-0.91)
	Asia	0.7	46 (20.9%)	48 (12.3%)	2.42 (1.68-3.51)	57 (16.7%)	87 (20.5%)	0.85 (0.62-1.17)
	Middle East	0.2	1 (0.8%)	55 (12.8%)	0.39 (0.26-0.59)	5 (5.5%)	33 (12.1%)	0.76 (0.47-1.21)

CHIS: Cardiovascular Health Index Score; OR (95% CI): Odds ratio (95% confidence interval)

Results are shown as number (percentage). Odds Ratios (ORs) and 95% confidence interval (CI) presented as women versus men.

*No result available for '0' cell