

Table S1: Comparison of Baseline Characteristics between Hypertensive Individuals Included and Excluded from the Study

Characteristics	Excluded from analysis (n=355)	Included in analysis (n=2288)	P value
<b>Age(y), n(%)</b>			0.052
40~49	112 (31.5)	566 (24.7)	
50~59	89 (25.1)	633 (27.7)	
60~69	90 (25.4)	660 (28.8)	
70 and over	64 (18.0)	429 (18.8)	
<b>Male, n(%)</b>	126 (35.5)	817 (35.7)	0.94
<b>Formal education(vs. informal), n(%)</b>	161 (45.4)	1396 (61.0)	<.001
<b>Married (vs. Others), n(%)</b>	246 (69.3)	1679 (73.4)	0.11
<b>International Wealth Index score, n(%)</b>			<.001
0~43	121 (34.3)	539 (23.6)	
43~60	76 (21.5)	596 (26.1)	
60~73	84 (23.8)	555 (24.3)	
73 and above	72 (20.4)	591 (25.9)	
<b>Current smoker (vs. current non-smoker), n(%)</b>	38 (10.7)	236 (10.3)	0.82
<b>Physical activity level(MET-min/week), n(%)</b>			<.001
Highly active	148 (42.5)	1144 (50.6)	
Inactive	132 (37.9)	603 (26.7)	
Minimally active	68 (19.5)	512 (22.7)	
<b>BMI(kg/m<sup>2</sup>), n(%)</b>			0.15
18.5~23.0	96 (31.4)	656 (28.7)	
23.0~27.5	95 (31.0)	849 (37.2)	
27.5 and above	80 (26.1)	573 (25.1)	
<18.5	35 (11.4)	204 (8.9)	
<b>Waist circumference† (cm), n(%)</b>			0.084
0~Q1	94 (27.1)	543 (23.8)	
Q1~Q2	93 (26.8)	570 (24.9)	
Q2~Q3	63 (18.2)	554 (24.2)	
Q3 and above	97 (28.0)	619 (27.1)	
<b>Family history of CVD, n(%)</b>	55 (16.1)	593 (26.5)	<.001
<b>Country, n(%)</b>			<.001
Bangladesh	76 (21.4)	819 (35.8)	
Pakistan	215 (60.6)	679 (29.7)	
Sri Lanka	64 (18.0)	790 (34.5)	
<b>Statin use, n(%)</b>	29 (8.2)	315 (13.8)	0.004

MET, metabolic equivalent of task; BMI, body mass index; CVD, cardiovascular disease

†For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Table S2. Baseline Characteristics by Status of Cardiometabolic Multimorbidity<sup>†</sup> among Hypertensive Individuals in Bangladesh (n=819)

Characteristics	Cardiometabolic multimorbidity			P value
	All (n=819)	Yes (n=224)	No (n=595)	
<b>Age(y), n(%)</b>				0.038
40~49	259 (31.6)	63 (28.1)	196 (32.9)	.
50~59	254 (31.0)	60 (26.8)	194 (32.6)	.
60~69	178 (21.7)	56 (25.0)	122 (20.5)	.
70 and over	128 (15.6)	45 (20.1)	83 (13.9)	.
<b>Male, n(%)</b>	298 (36.4)	81 (36.2)	217 (36.5)	0.93
<b>Formal education(vs. informal), n(%)</b>	427 (52.1)	123 (54.9)	304 (51.1)	0.33
<b>Married (vs. Others), n(%)</b>	647 (79.0)	174 (77.7)	473 (79.5)	0.57
<b>International wealth Index score, n(%)</b>				0.038
0~43	258 (31.5)	54 (24.1)	204 (34.3)	.
43~60	300 (36.6)	87 (38.8)	213 (35.8)	.
60~73	207 (25.3)	65 (29.0)	142 (23.9)	.
73 and above	54 (6.6)	18 (8.0)	36 (6.1)	.
<b>Current smoker (vs. current non-smoker), n(%)</b>	99 (12.1)	28 (12.6)	71 (11.9)	0.81
<b>Physical activity level(MET-min/week), n(%)</b>				<.001
Inactive	152 (18.6)	49 (21.9)	103 (17.4)	.
Minimally active	202 (24.7)	76 (33.9)	126 (21.2)	.
Highly active	463 (56.7)	99 (44.2)	364 (61.4)	.
<b>BMI(kg/m<sup>2</sup>), n(%)</b>				0.14
<18.5	59 (7.2)	10 (4.5)	49 (8.2)	.
18.5~23.0	264 (32.2)	66 (29.5)	198 (33.3)	.
23.0~27.5	340 (41.5)	102 (45.5)	238 (40.0)	.
27.5 and above	156 (19.0)	46 (20.5)	110 (18.5)	.
<b>Waist circumference*(cm), n(%)</b>				<.001
0~Q1	211 (25.8)	39 (17.4)	172 (28.9)	.
Q1~Q2	250 (30.5)	67 (29.9)	183 (30.8)	.
Q2~Q3	217 (26.5)	78 (34.8)	139 (23.4)	.
Q3 and above	141 (17.2)	40 (17.9)	101 (17.0)	.
<b>Family history of CVD, n(%)</b>	303 (38.8)	84 (39.4)	219 (38.6)	0.84
<b>HDL (mg/dL), Mean (SD)</b>	38.1 (10.3)	37.1 (10.3)	38.5 (10.2)	0.092
<b>Triglyceride(mg/dL), Median (IQR)</b>	146.1 (105.4,208.0)	169.2 (122.4,246.2)	140.6 (99.5,193.4)	<.001
<b>Total cholesterol (mg/dL),Mean (SD)</b>	196.8 (46.9)	200.4 (50.8)	195.5 (45.3)	0.20
<b>LDL (mg/dL),Mean (SD)</b>	133.1 (40.3)	131.7 (42.6)	133.6 (39.5)	0.55
<b>Statin use, n(%)</b>	22 (2.7)	17 (7.6)	5 (0.8)	<.001

MET, metabolic equivalent of task; BMI, body mass index; CVD, cardiovascular disease; HDL, high density lipoprotein; SD, standard deviation; IQR, inter-quartile range; LDL, low density lipoprotein.

<sup>†</sup>Cardio-metabolic multimorbidity was defined as the presence of two or more chronic conditions of diabetes, heart disease, CKD, and stroke.

\*For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Table S3. Baseline Characteristics by Status of Cardiometabolic Multimorbidity<sup>†</sup> among Hypertensive Individuals in Pakistan (n=679)

Characteristics	Cardiometabolic multimorbidity			P value
	All (n=679)	Yes (n=70)	No (n=609)	
<b>Age(y), n(%)</b>				0.81
40~49	209 (30.8)	19 (27.1)	190 (31.2)	.
50~59	193 (28.4)	23 (32.9)	170 (27.9)	.
60~69	172 (25.3)	18 (25.7)	154 (25.3)	.
70 and over	105 (15.5)	10 (14.3)	95 (15.6)	.
<b>Male,n(%)</b>	268 (39.5)	36 (51.4)	232 (38.1)	0.031
<b>Formal education(vs. informal), n(%)</b>	208 (30.6)	30 (42.9)	178 (29.2)	0.019
<b>Married (vs. Others), n(%)</b>	508 (74.8)	55 (78.6)	453 (74.4)	0.44
<b>International wealth Index score, n(%)</b>				0.12
0~43	240 (35.7)	16 (23.2)	224 (37.1)	.
43~60	173 (25.7)	21 (30.4)	152 (25.2)	.
60~73	148 (22.0)	20 (29.0)	128 (21.2)	.
73 and above	112 (16.6)	12 (17.4)	100 (16.6)	.
<b>Current smoker (vs. current non-smoker), n(%)</b>	95 (14.0)	12 (17.1)	83 (13.6)	0.42
<b>Physical activity level(MET-min/week), n(%)</b>				0.75
Inactive	264 (39.6)	29 (42.6)	235 (39.3)	.
Minimally active	109 (16.4)	12 (17.6)	97 (16.2)	.
Highly active	293 (44.0)	27 (39.7)	266 (44.5)	.
<b>BMI(kg/m<sup>2</sup>), n(%)</b>				0.026
<18.5	91 (13.4)	4 ( 5.8)	87 (14.3)	.
18.5~23.0	179 (26.4)	12 (17.4)	167 (27.5)	.
23.0~27.5	210 (31.0)	27 (39.1)	183 (30.1)	.
27.5 and above	197 (29.1)	26 (37.7)	171 (28.1)	.
<b>Waist circumference* (cm), n(%)</b>				<.001
0~Q1	173 (25.6)	6 ( 8.7)	167 (27.5)	.
Q1~Q2	146 (21.6)	13 (18.8)	133 (21.9)	.
Q2~Q3	136 (20.1)	15 (21.7)	121 (19.9)	.
Q3 and above	222 (32.8)	35 (50.7)	187 (30.8)	.
<b>Family history of CVD, n(%)</b>	75 (11.1)	17 (24.3)	58 ( 9.6)	<.001
<b>HDL (mg/dL), Mean (SD)</b>	42.4 (11.8)	37.8 ( 9.8)	42.9 (11.9)	<.001
<b>Triglyceride(mg/dL), Median (IQR)</b>	137.0 ( 98.0,197.0)	159.0 (117.0,250.0)	135.0 ( 97.0,192.0)	<.001
<b>Total cholesterol (mg/dL),Mean (SD)</b>	174.9 ( 42.5)	170.6 ( 47.9)	175.4 ( 41.8)	0.37
<b>LDL (mg/dL),Mean (SD)</b>	108.7 ( 34.1)	105.3 ( 40.9)	109.1 ( 33.2)	0.46
<b>Statin use,n(%)</b>	21 ( 3.1)	8 (11.4)	13 ( 2.1)	<.001

MET, metabolic equivalent of task; BMI, body mass index; CVD, cardiovascular disease; HDL, high density lipoprotein; SD, standard deviation; IQR, inter-quartile range; LDL, low density lipoprotein.

<sup>†</sup>Cardio-metabolic multimorbidity was defined as the presence of two or more chronic conditions of diabetes, heart disease, CKD, and stroke.

\*For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Table S4 Baseline Characteristics by Status of Cardiometabolic Multimorbidity<sup>†</sup> among Hypertensive Individuals in Sri Lanka (n=790)

Characteristics	Cardiometabolic multimorbidity			P value
	All (n=790)	Yes (n=287)	No (n=503)	
<b>Age(y), n(%)</b>				<.001
40~49	98 (12.4)	10 ( 3.5)	88 (17.5)	.
50~59	186 (23.5)	55 (19.2)	131 (26.0)	.
60~69	310 (39.2)	129 (44.9)	181 (36.0)	.
70 and over	196 (24.8)	93 (32.4)	103 (20.5)	.
<b>Male, n(%)</b>	251 (31.8)	100 (34.8)	151 (30.0)	0.16
<b>Formal education(vs. informal), n(%)</b>	761 (96.3)	278 (96.9)	483 (96.0)	0.55
<b>Married (vs. Others), n(%)</b>	524 (66.3)	170 (59.2)	354 (70.4)	0.001
<b>International wealth Index score, n(%)</b>				0.66
0~43	41 ( 5.2)	13 ( 4.5)	28 ( 5.6)	.
43~60	123 (15.6)	50 (17.4)	73 (14.5)	.
60~73	200 (25.3)	74 (25.8)	126 (25.1)	.
73 and above	425 (53.9)	150 (52.3)	275 (54.8)	.
<b>Current smoker (vs. current non-smoker), n(%)</b>	42 ( 5.3)	15 ( 5.2)	27 ( 5.4)	0.93
<b>Physical activity level (MET-min/week), n(%)</b>				0.045
Inactive	187 (24.1)	79 (28.3)	108 (21.7)	.
Minimally active	201 (25.9)	76 (27.2)	125 (25.2)	.
Highly active	388 (50.0)	124 (44.4)	264 (53.1)	.
<b>BMI(kg/m<sup>2</sup>), n(%)</b>				0.20
<18.5	54 ( 6.9)	15 ( 5.2)	39 ( 7.8)	.
18.5~23.0	213 (27.1)	88 (30.8)	125 (25.0)	.
23.0~27.5	299 (38.0)	102 (35.7)	197 (39.4)	.
27.5 and above	220 (28.0)	81 (28.3)	139 (27.8)	.
<b>Waist circumference* (cm), n(%)</b>				0.17
0~Q1	159 (20.1)	48 (16.7)	111 (22.1)	.
Q1~Q2	174 (22.0)	59 (20.6)	115 (22.9)	.
Q2~Q3	201 (25.4)	81 (28.2)	120 (23.9)	.
Q3 and above	256 (32.4)	99 (34.5)	157 (31.2)	.
<b>Family history of CVD, n(%)</b>	215 (27.6)	76 (26.9)	139 (28.0)	0.73
<b>HDL (mg/dL), Mean (SD)</b>	55.3 ( 9.3)	53.5 ( 9.6)	56.4 ( 9.0)	<.001
<b>Triglyceride(mg/dL), Median (IQR)</b>	108.7 ( 85.1,143.2)	112.4 ( 89.3,145.9)	105.6 ( 83.6,143.1)	<.001
<b>Total cholesterol (mg/dL), Mean (SD)</b>	209.2 ( 49.4)	201.7 ( 52.2)	213.5 ( 47.3)	0.001
<b>LDL (mg/dL),Mean (SD)</b>	128.9 ( 42.1)	122.7 ( 44.0)	132.5 ( 40.6)	0.002
<b>Statin use,n(%)</b>	272 (34.4)	131 (45.6)	141 (28.0)	<.001

MET, metabolic equivalent of task; BMI, body mass index; CVD, cardiovascular disease; HDL, high density lipoprotein; SD, standard deviation; IQR, inter-quartile range; LDL, low density lipoprotein.

<sup>†</sup>Cardio-metabolic multimorbidity was defined as the presence of two or more chronic conditions of diabetes, heart disease, CKD, and stroke.

\*For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Table S5. Prevalence of Cardiometabolic Conditions Stratified by Quartiles<sup>†</sup> of Waist Circumference among Individuals with Hypertension in Bangladesh (n=819)

Cardiometabolic conditions*, n[%(95% CI)]	Total (n=819)	0~Q1 (n=211)	Q1~Q2 (n=250)	Q2~Q3 (n=217)	Q3 and over (n=141)	P trend
<b>Cardiometabolic multimorbidity‡</b>	224 [27.4 (24.3,30.5)]	39 [18.5 (13.5,24.4)]	67 [26.8 (21.4,32.7)]	78 [35.9 (29.6,42.7)]	40 [28.4 (21.1,36.6)]	0.003
<b>One cardiometabolic condition</b>	297 [36.3 (33.0,39.7)]	83 [39.3 (32.7,46.3)]	87 [34.8 (28.9,41.1)]	75 [34.6 (28.3,41.3)]	52 [36.9 (28.9,45.4)]	0.56
<b>Three or more cardiometabolic conditions</b>	56 [ 6.8 ( 5.2, 8.8)]	5 [ 2.4 ( 0.8, 5.4)]	15 [ 6.0 ( 3.4, 9.7)]	22 [10.1 ( 6.5,14.9)]	14 [ 9.9 ( 5.5,16.1)]	<.001
<b>Chronic kidney disease (CKD) §</b>	298 [36.4 (33.1,39.8)]	77 [36.5 (30.0,43.4)]	90 [36.0 (30.0,42.3)]	81 [37.3 (30.9,44.1)]	50 [35.5 (27.6,44.0)]	0.96
<b>Diabetes¶</b>	188 [23.0 (20.1,26.0)]	14 [ 6.6 ( 3.7,10.9)]	52 [20.8 (15.9,26.4)]	70 [32.3 (26.1,38.9)]	52 [36.9 (28.9,45.4)]	<.001
<b>Heart disease&amp;</b>	150 [18.3 (15.7,21.1)]	20 [ 9.5 ( 5.9,14.3)]	52 [20.8 (15.9,26.4)]	52 [24.0 (18.4,30.2)]	26 [18.4 (12.4,25.8)]	0.007
<b>Stroke&amp;&amp;</b>	173 [21.1 (18.4,24.1)]	55 [26.1 (20.3,32.5)]	44 [17.6 (13.1,22.9)]	53 [24.4 (18.9,30.7)]	21 [14.9 ( 9.5,21.9)]	0.087

95%CI, 95% confidence interval

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

\* Presence of any one of the following alone: diabetes, heart disease, CKD, and stroke

‡Cardiometabolic multimorbidity was defined as the presence of two or more chronic conditions of diabetes, heart disease, CKD, and stroke;

§CKD was defined as the presence of estimated glomerular filtration rate (eGFR) ≤60 ml/min/1.73m<sup>2</sup> or urine albumin and creatinine ratio (UACR) ≥30 mg/g;

¶Diabetes was defined as a fasting plasma glucose (FPG) ≥126 mg/dL or self-reported use of anti-diabetic medication;

&amp;Heart disease was ascertained based on self-reported physician diagnosis;

&amp;&amp;Stroke was determined if an individual ever had unconsciousness or had both abnormal speech and paralyzed face.

Table S6. Prevalence of Cardiometabolic Conditions Stratified by Quartiles †of Waist Circumference among Individuals with Hypertension in Pakistan (n=677\*)

Cardiometabolic conditions**, n[%(95% CI)]	Total (n=677)	0~Q1 (n=173)	Q1~Q2 (n=146)	Q2~Q3 (n=136)	Q3 and over (n=222)	P trend
<b>Cardiometabolic multimorbidity‡</b>	69 [10.2 ( 8.0,12.7)]	6 [ 3.5 ( 1.3, 7.4)]	13 [ 8.9 ( 4.8,14.7)]	15 [11.0 ( 6.3,17.5)]	35 [15.8 (11.2,21.2)]	<.001
<b>One cardiometabolic condition</b>	195 [28.8 (25.4,32.4)]	38 [22.0 (16.0,28.9)]	38 [26.0 (19.1,33.9)]	48 [35.3 (27.3,43.9)]	71 [32.0 (25.9,38.6)]	0.013
<b>Three or more cardiometabolic conditions</b>	10 [ 1.5 ( 0.7, 2.7)]	1 [ 0.6 ( 0.0, 3.2)]	2 [ 1.4 ( 0.2, 4.9)]	2 [ 1.5 ( 0.2, 5.2)]	5 [ 2.3 ( 0.7, 5.2)]	0.18
<b>Chronic kidney disease(CKD) §</b>	115 [17.0 (14.2,20.0)]	27 [15.6 (10.5,21.9)]	21 [14.4 ( 9.1,21.1)]	25 [18.4 (12.3,25.9)]	42 [18.9 (14.0,24.7)]	0.27
<b>Diabetes¶</b>	132 [19.5 (16.6,22.7)]	12 [ 6.9 ( 3.6,11.8)]	22 [15.1 ( 9.7,21.9)]	35 [25.7 (18.6,33.9)]	63 [28.4 (22.5,34.8)]	<.001
<b>Heart disease&amp;</b>	49 [ 7.2 ( 5.4, 9.5)]	6 [ 3.5 ( 1.3, 7.4)]	11 [ 7.5 ( 3.8,13.1)]	9 [ 6.6 ( 3.1,12.2)]	23 [10.4 ( 6.7,15.1)]	0.015
<b>Stroke&amp;&amp;</b>	49 [ 7.2 ( 5.4, 9.5)]	6 [ 3.5 ( 1.3, 7.4)]	13 [ 8.9 ( 4.8,14.7)]	11 [ 8.1 ( 4.1,14.0)]	19 [ 8.6 ( 5.2,13.0)]	0.090

95%CI, 95% confidence interval

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

\* Two subjects had no data on waist circumference

\*\* Presence of any one of the following alone: diabetes, heart disease, CKD, and stroke

‡Cardiometabolic multimorbidity was defined as the presence of two or more chronic conditions of diabetes, heart disease, CKD, and stroke;

§CKD was defined as the presence of estimated glomerular filtration rate (eGFR) ≤60 ml/min/1.73m<sup>2</sup> or urine albumin and creatinine ratio (UACR) ≥30 mg/g;

¶Diabetes was defined as a fasting plasma glucose (FPG) ≥126 mg/dL or self-reported use of anti-diabetic medication;

&amp;Heart disease was ascertained based on self-reported physician diagnosis;

&amp;&amp;Stroke was determined if an individual ever had unconsciousness or had both abnormal speech and paralyzed face.

Table S7. Prevalence of **Cardiometabolic** Conditions Stratified by Quartiles<sup>†</sup> of Waist Circumference among Individuals with Hypertension in Sri Lanka (n=790)

<b>Cardiometabolic conditions*, n[% (95% CI)]</b>	<b>Total (n=790)</b>	<b>0~Q1 (n=159)</b>	<b>Q1~Q2 (n=174)</b>	<b>Q2~Q3 (n=201)</b>	<b>Q3 and over (n=256)</b>	<b>P trend</b>
<b>Cardiometabolic multimorbidity‡</b>	287 [36.3 (33.0,39.8)]	48 [30.2 (23.2,38.0)]	59 [33.9 (26.9,41.5)]	81 [40.3 (33.5,47.4)]	99 [38.7 (32.7,44.9)]	0.050
<b>One Cardiometabolic condition</b>	315 [39.9 (36.4,43.4)]	77 [48.4 (40.4,56.5)]	74 [42.5 (35.1,50.2)]	73 [36.3 (29.7,43.4)]	91 [35.5 (29.7,41.7)]	0.006
<b>Three or more Cardiometabolic conditions</b>	63 [ 8.0 ( 6.2,10.1)]	9 [ 5.7 ( 2.6,10.5)]	10 [ 5.7 ( 2.8,10.3)]	20 [10.0 ( 6.2,14.9)]	24 [ 9.4 ( 6.1,13.6)]	0.083
<b>Chronic kidney disease(CKD) §</b>	462 [58.5 (55.0,61.9)]	104 [65.4 (57.5,72.8)]	102 [58.6 (50.9,66.0)]	112 [55.7 (48.6,62.7)]	144 [56.3 (49.9,62.4)]	0.072
<b>Diabetes¶</b>	302 [38.2 (34.8,41.7)]	35 [22.0 (15.8,29.3)]	66 [37.9 (30.7,45.6)]	85 [42.3 (35.4,49.4)]	116 [45.3 (39.1,51.6)]	<.001
<b>Heart disease&amp;</b>	118 [14.9 (12.5,17.6)]	19 [11.9 ( 7.4,18.0)]	21 [12.1 ( 7.6,17.9)]	44 [21.9 (16.4,28.3)]	34 [13.3 ( 9.4,18.1)]	0.36
<b>Stroke&amp;&amp;</b>	71 [ 9.0 ( 7.1,11.2)]	24 [15.1 ( 9.9,21.6)]	13 [ 7.5 ( 4.0,12.4)]	15 [ 7.5 ( 4.2,12.0)]	19 [ 7.4 ( 4.5,11.3)]	0.021

95%CI, 95% confidence interval

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

\* Presence of any one of the following alone: diabetes, heart disease, CKD, and stroke

‡Cardiometabolic multimorbidity was defined as the presence of two or more chronic conditions of diabetes, heart disease, CKD, and stroke;

§CKD was defined as the presence of estimated glomerular filtration rate (eGFR) ≤60 ml/min/1.73m<sup>2</sup> or urine albumin and creatinine ratio (UACR) ≥30 mg/g;

¶Diabetes was defined as a fasting plasma glucose (FPG) ≥126 mg/dL or self-reported use of anti-diabetic medication;

&amp;Heart disease was ascertained based on self-reported physician diagnosis;

&amp;&amp;Stroke was determined if an individual ever had unconsciousness or had both abnormal speech and paralyzed face.

Table S8. Prevalence of Various Pairs of Conditions by Quartiles<sup>†</sup> of Waist Circumference (n=2286\*)

Pairs, n[%(95%CI)]	Total (n=2286)	0~Q1 (n=543)	Q1~Q2 (n=570)	Q2~Q3 (n=554)	Q3 and over (n=619)	P trend
<b>DM+CKD</b>	230 [10.1 ( 8.9,11.4)]	26 [ 4.8 ( 3.2, 6.9)]	55 [ 9.6 ( 7.4,12.4)]	64 [11.6 ( 9.0,14.5)]	85 [13.7 (11.1,16.7)]	<.001
<b>CKD+Stroke</b>	67 [ 2.9 ( 2.3, 3.7)]	31 [ 5.7 ( 3.9, 8.0)]	15 [ 2.6 ( 1.5, 4.3)]	12 [ 2.2 ( 1.1, 3.8)]	9 [ 1.5 ( 0.7, 2.7)]	<.001
<b>CKD+HD</b>	55 [ 2.4 ( 1.8, 3.1)]	10 [ 1.8 ( 0.9, 3.4)]	14 [ 2.5 ( 1.3, 4.1)]	19 [ 3.4 ( 2.1, 5.3)]	12 [ 1.9 ( 1.0, 3.4)]	0.72
<b>DM+HD</b>	42 [ 1.8 ( 1.3, 2.5)]	2 [ 0.4 ( 0.0, 1.3)]	16 [ 2.8 ( 1.6, 4.5)]	11 [ 2.0 ( 1.0, 3.5)]	13 [ 2.1 ( 1.1, 3.6)]	0.095
<b>HD+Stroke</b>	30 [ 1.3 ( 0.9, 1.9)]	7 [ 1.3 ( 0.5, 2.6)]	7 [ 1.2 ( 0.5, 2.5)]	11 [ 2.0 ( 1.0, 3.5)]	5 [ 0.8 ( 0.3, 1.9)]	0.70
<b>DM+Stroke</b>	27 [ 1.2 ( 0.8, 1.7)]	2 [ 0.4 ( 0.0, 1.3)]	5 [ 0.9 ( 0.3, 2.0)]	13 [ 2.3 ( 1.3, 4.0)]	7 [ 1.1 ( 0.5, 2.3)]	0.078

The count of morbidity pairs was calculated for hypertensive individuals with only 2 other conditions.

95% CI, 95% confidence interval; DM, diabetes; CKD, chronic kidney disease; HD, heart disease

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

\* Two subjects had no data on waist circumference

Table S9. Prevalence of Various Pairs of Conditions by Quartiles<sup>†</sup> of Waist Circumference in Bangladesh (n=819)

Pairs, n[%(95%CI)]	Total (n=819)	0~Q1 (n=211)	Q1~Q2 (n=250)	Q2~Q3 (n=217)	Q3 and over (n=141)	P trend
<b>DM+CKD</b>	55 [ 6.7 ( 5.1, 8.7)]	5 [ 2.4 ( 0.8, 5.4)]	16 [ 6.4 ( 3.7,10.2)]	18 [ 8.3 ( 5.0,12.8)]	16 [11.3 ( 6.6,17.8)]	<.001
<b>CKD+Stroke</b>	42 [ 5.1 ( 3.7, 6.9)]	18 [ 8.5 ( 5.1,13.1)]	12 [ 4.8 ( 2.5, 8.2)]	9 [ 4.1 ( 1.9, 7.7)]	3 [ 2.1 ( 0.4, 6.1)]	0.007
<b>HD+Stroke</b>	22 [ 2.7 ( 1.7, 4.0)]	5 [ 2.4 ( 0.8, 5.4)]	7 [ 2.8 ( 1.1, 5.7)]	8 [ 3.7 ( 1.6, 7.1)]	2 [ 1.4 ( 0.2, 5.0)]	0.88
<b>CKD+HD</b>	19 [ 2.3 ( 1.4, 3.6)]	2 [ 0.9 ( 0.1, 3.4)]	8 [ 3.2 ( 1.4, 6.2)]	9 [ 4.1 ( 1.9, 7.7)]	0	0.94
<b>DM+HD</b>	18 [ 2.2 ( 1.3, 3.5)]	2 [ 0.9 ( 0.1, 3.4)]	8 [ 3.2 ( 1.4, 6.2)]	4 [ 1.8 ( 0.5, 4.7)]	4 [ 2.8 ( 0.8, 7.1)]	0.40
<b>DM+Stroke</b>	12 [ 1.5 ( 0.8, 2.5)]	2 [ 0.9 ( 0.1, 3.4)]	1 [ 0.4 ( 0.0, 2.2)]	8 [ 3.7 ( 1.6, 7.1)]	1 [ 0.7 ( 0.0, 3.9)]	0.29

The count of morbidity pairs was calculated for hypertensive individuals with only 2 other conditions.

95% CI, 95% confidence interval; DM, diabetes; CKD, chronic kidney disease; HD, heart disease

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Table S10. Prevalence of Various Pairs of Conditions by Quartiles<sup>†</sup> of Waist Circumference in Pakistan (n=677\*)

Pairs, n[%(95%CI)]	Total (n=677)	0~Q1 (n=173)	Q1~Q2 (n=146)	Q2~Q3 (n=136)	Q3 and over (n=222)	P trend
<b>DM+CKD</b>	29 [ 4.3 ( 2.9, 6.1)]	2 [ 1.2 ( 0.1, 4.1)]	5 [ 3.4 ( 1.1, 7.8)]	7 [ 5.1 ( 2.1,10.3)]	15 [ 6.8 ( 3.8,10.9)]	0.005
<b>DM+Stroke</b>	12 [ 1.8 ( 0.9, 3.1)]		0	3 [ 2.1 ( 0.4, 5.9)]	4 [ 2.9 ( 0.8, 7.4)]	5 [ 2.3 ( 0.7, 5.2)]
<b>DM+HD</b>	7 [ 1.0 ( 0.4, 2.1)]		0	2 [ 1.4 ( 0.2, 4.9)]	1 [ 0.7 ( 0.0, 4.0)]	4 [ 1.8 ( 0.5, 4.5)]
<b>HD+Stroke</b>	5 [ 0.7 ( 0.2, 1.7)]	2 [ 1.2 ( 0.1, 4.1)]		0	0	3 [ 1.4 ( 0.3, 3.9)]
<b>CKD+HD</b>	4 [ 0.6 ( 0.2, 1.5)]	1 [ 0.6 ( 0.0, 3.2)]	1 [ 0.7 ( 0.0, 3.8)]		2 [ 0.9 ( 0.1, 3.2)]	0.80
<b>CKD+Stroke</b>	2 [ 0.3 ( 0.0, 1.1)]		0	0	1 [ 0.7 ( 0.0, 4.0)]	1 [ 0.5 ( 0.0, 2.5)]

The count of morbidity pairs was calculated for hypertensive individuals with only 2 other conditions.

95% CI, 95% confidence interval; DM, diabetes; CKD, chronic kidney disease; HD, heart disease

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

\* Two subjects had no data on waist circumference

Table S11. Prevalence of Various Pairs of Conditions by Quartiles† of Waist Circumference in Sri Lanka (n=790)

Pairs, n[%(95%CI)]	Total (n=790)	0~Q1 (n=159)	Q1~Q2 (n=174)	Q2~Q3 (n=201)	Q3 and over (n=256)	P trend
<b>DM+CKD</b>	146 [18.5 (15.8,21.4)]	19 [11.9 ( 7.4,18.0)]	34 [19.5 (13.9,26.2)]	39 [19.4 (14.2,25.6)]	54 [21.1 (16.3,26.6)]	0.037
<b>CKD+HD</b>	32 [ 4.1 ( 2.8, 5.7)]	7 [ 4.4 ( 1.8, 8.9)]	5 [ 2.9 ( 0.9, 6.6)]	10 [ 5.0 ( 2.4, 9.0)]	10 [ 3.9 ( 1.9, 7.1)]	0.93
<b>CKD+Stroke</b>	23 [ 2.9 ( 1.9, 4.3)]	13 [ 8.2 ( 4.4,13.6)]	3 [ 1.7 ( 0.4, 5.0)]	2 [ 1.0 ( 0.1, 3.5)]	5 [ 2.0 ( 0.6, 4.5)]	0.001
<b>DM+HD</b>	17 [ 2.2 ( 1.3, 3.4)]		0	6 [ 3.4 ( 1.3, 7.4)]	6 [ 3.0 ( 1.1, 6.4)]	5 [ 2.0 ( 0.6, 4.5)]
<b>DM+Stroke</b>	3 [ 0.4 ( 0.1, 1.1)]		0	1 [ 0.6 ( 0.0, 3.2)]	1 [ 0.5 ( 0.0, 2.7)]	1 [ 0.4 ( 0.0, 2.2)]
<b>HD+Stroke</b>	3 [ 0.4 ( 0.1, 1.1)]		0	0	3 [ 1.5 ( 0.3, 4.3)]	0

The count of morbidity pairs was calculated for hypertensive individuals with only 2 other conditions.

95% CI, 95% confidence interval; DM, diabetes; CKD, chronic kidney disease; HD, heart disease

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Table S12. Ratio of Odds Ratios (RORs) and 95% Confidence Interval (CI) between Countries for Variables that Had Significant Interactions<sup>†</sup> with Country

Variables	ROR (95% CI)(P value)		
	BD vs PK	BD vs SL	PK Vs SL
Age 50~59	0.56 (0.28 , 1.12) ( 0.099)	0.23 (0.1 , 0.52) ( <.001)	0.41 (0.17 , 1.01) ( 0.052)
Age 60~69	1.22 (0.59 , 2.54) ( 0.59)	0.22 (0.1 , 0.51) ( <.001)	0.18 (0.07 , 0.49) ( <.001)
Age 70 and over	1.39 (0.61 , 3.15) ( 0.43)	0.19 (0.08 , 0.42) ( <.001)	0.13 (0.05 , 0.37) ( <.001)
Family history of CVD	0.37 (0.19 , 0.72) ( 0.003)	1.03 (0.63 , 1.67) ( 0.92)	2.74 (1.28 , 5.88) ( 0.010)
HDL	1.23 (1.04 , 1.45) ( 0.015)	1.15 (1.03 , 1.27) ( 0.010)	0.94 (0.79 , 1.11) ( 0.44)
Statin use	1.82 (0.39 , 8.43) ( 0.44)	4.62 (1.63 , 13.07) ( 0.004)	2.54 (0.78 , 8.24) ( 0.12)

BD, Bangladesh; PK,Pakistan; SL,Sri Lanka; CVD, cardiovascular disease; HDL, high density lipoprotein

<sup>†</sup>P values for interaction with country were <0.001 for age,0.012 for history of cardivarsular disease, 0.008 for HDL, and 0.006 for statin use, respectively

Table S13. Multivariate Predictors of Cardiometabolic Multimorbidity among Hypertensive Individuals in Each Country

Variable	Bangladesh (n=776)	p-value	Pakistan (n=655)	p-value	Sri Lanka(n=760)	p-value
<b>Age(y)</b>		0.013		0.22		<.001
40~49	1.00		1.00		1.00	
50~59	0.88 (0.56,1.39)	0.58	1.61 (0.89,2.90)	0.11	4.03 (1.91,8.48)	<.001
60~69	1.41 (0.98,2.02)	0.065	1.06 (0.48,2.34)	0.88	6.13 (2.73,13.8)	<.001
70 and over	1.67 (1.11,2.52)	0.015	1.19 (0.51,2.76)	0.69	9.01 (3.56,22.8)	<.001
<b>Gender</b>		0.12		0.27		0.081
Male	1.00		1.00		1.00	
Female	1.47 (0.90,2.39)	0.12	0.72 (0.40,1.30)	0.27	0.66 (0.41,1.05)	0.081
<b>Education</b>		0.22		0.61		0.31
Informal	1.00		1.00		1.00	
Formal	1.22 (0.89,1.67)	0.22	1.20 (0.60,2.40)	0.61	1.51 (0.68,3.36)	0.31
<b>Marital status</b>		0.97		0.63		0.011
Single or widowed or divorced	1.00		1.00		1.00	
Married	1.01 (0.54,1.88)	0.97	0.75 (0.24,2.35)	0.63	0.73 (0.58,0.93)	0.011
<b>International wealth Index score</b>		0.46		0.17		0.007
0~43	1.00		1.00		1.00	
43~60	1.48 (0.83,2.63)	0.18	2.25 (1.03,4.91)	0.041	1.77 (0.76,4.13)	0.19
60~73	1.58 (0.87,2.88)	0.13	1.84 (0.52,6.46)	0.34	1.75 (1.02,3.03)	0.044
73 and above	1.46 (0.79,2.70)	0.22	1.55 (0.53,4.54)	0.42	1.21 (0.61,2.43)	0.58
<b>BMI(kg/m<sup>2</sup>)</b>		0.79		0.88		<.001
<18.5	1.00		1.00		1.00	
18.5~23.0	1.00 (0.55,1.82)	0.99	0.69 (0.20,2.41)	0.56	1.62 (0.91,2.89)	0.099
23.0~27.5	0.86 (0.36,2.06)	0.73	0.68 (0.19,2.40)	0.55	0.85 (0.53,1.38)	0.52
27.5 and above	0.72 (0.34,1.53)	0.39	0.59 (0.16,2.14)	0.42	1.12 (0.54,2.33)	0.75
<b>Smoking</b>		0.51		0.95		0.71
Non current smoker	1.00		1.00		1.00	
Current smoker	1.30 (0.59,2.88)	0.51	0.98 (0.56,1.71)	0.95	1.16 (0.52,2.58)	0.71
<b>Physical activity level(MET-min/week)</b>		<.001		0.96		0.18
Inactive	1.00		1.00		1.00	
Minimally active	1.07 (0.71,1.62)	0.74	0.92 (0.41,2.06)	0.85	0.86 (0.53,1.40)	0.55
Highly active	0.65 (0.48,0.87)	0.004	0.87 (0.34,2.28)	0.78	0.76 (0.53,1.08)	0.13
<b>Waist circumference† (cm)</b>		0.026		0.010		0.002
0~Q1	1.00		1.00		1.00	
Q1~Q2	1.34 (0.83,2.15)	0.23	2.20 (0.84,5.80)	0.11	1.74 (0.98,3.06)	0.057

Variable	Bangladesh (n=776)		Pakistan (n=655)		Sri Lanka(n=760)	
	OR (95% CI)	p-value	OR (95% CI)	p-value	OR (95% CI)	p-value
Q2~Q3	2.11 (1.26,3.51)	0.004	2.71 (1.07,6.84)	0.035	2.62 (1.23,5.58)	0.013
Q3 and above	1.56 (0.84,2.88)	0.16	3.93 (1.72,9.01)	0.001	2.67 (1.54,4.66)	<.001
<b>Family history of CVD</b>		0.67		0.001		0.82
No	1.00		1.00		1.00	
Yes	0.96 (0.78,1.18)	0.67	2.75 (1.48,5.12)	0.001	0.95 (0.63,1.45)	0.82
<b>Statin use</b>		<.001		0.008		<.001
Nonuser	1.00		1.00		1.00	
User	7.76 (2.76,21.8)	<.001	4.16 (1.45,11.9)	0.008	1.96 (1.42,2.71)	<.001
<b>HDL (mg/dL,per 5 mg/dL increase)</b>	1.04 (0.95,1.13)	0.45	0.87 (0.76,0.99)	0.042	0.89 (0.80,1.00)	0.057
<b>Triglyceride(mg/dL,per 5 mg/dL increase)</b>	1.02 (1.01,1.02)	<.001	1.01 (1.00,1.02)	0.017	1.01 (0.99,1.03)	0.26
<b>LDL (mg/dL,per 5 mg/dL increase)</b>	0.99 (0.97,1.01)	0.37	1.00 (0.97,1.03)	0.86	1.01 (0.98,1.04)	0.55

OR, odds ratio; 95% CI, 95% confidence interval; BMI, body mass index; MET, metabolic equivalent of task; CVD, cardiovascular disease; HDL, high density lipoprotein; LDL, low density lipoprotein

† For male ≤82, 82~91, 91~98, ≥98 cm, for female ≤79, 79~88, 88~95, ≥95 cm

Figure S1: Study flow chart of hypertensive individuals included in the study on **cardiometabolic multimorbidity**



