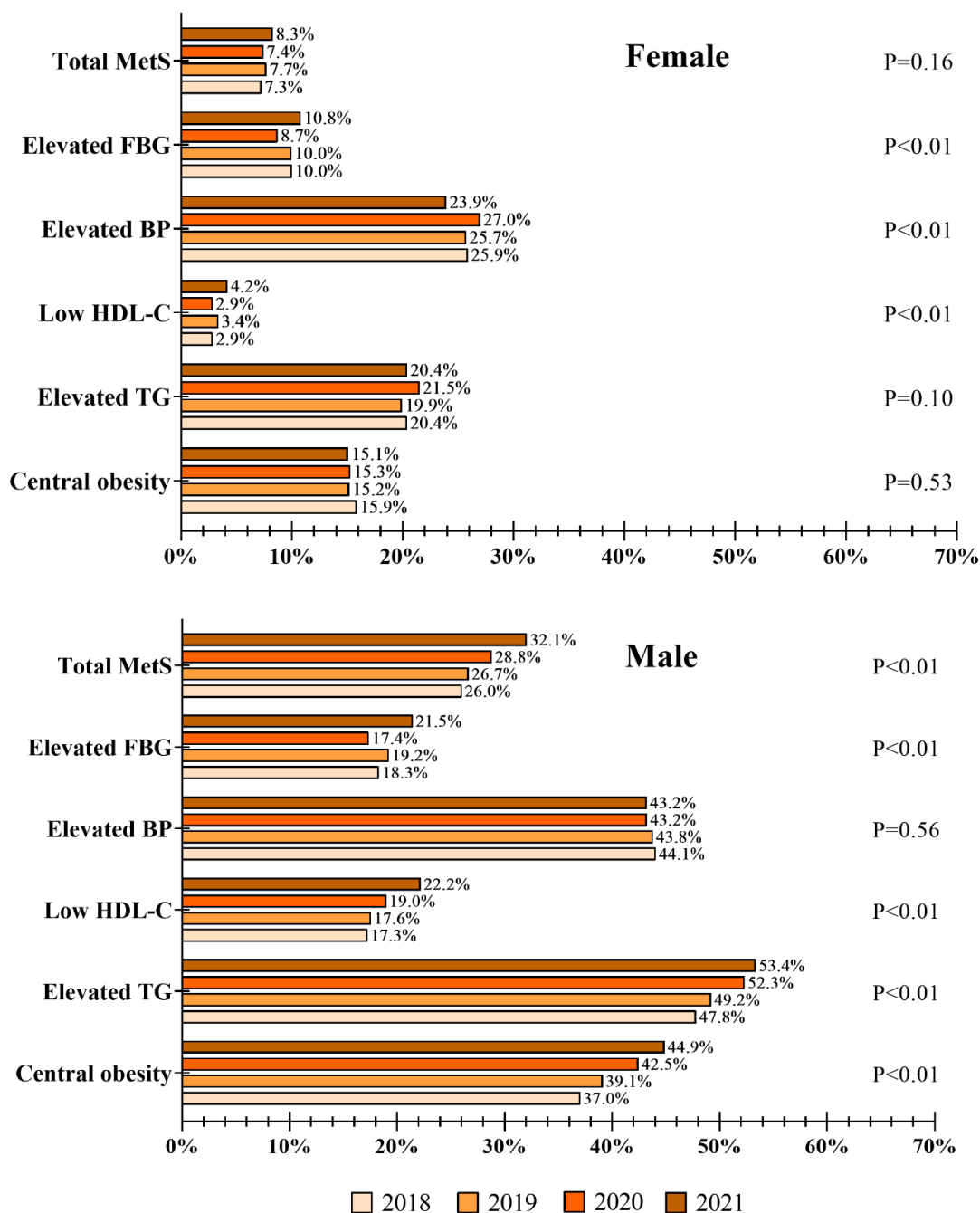
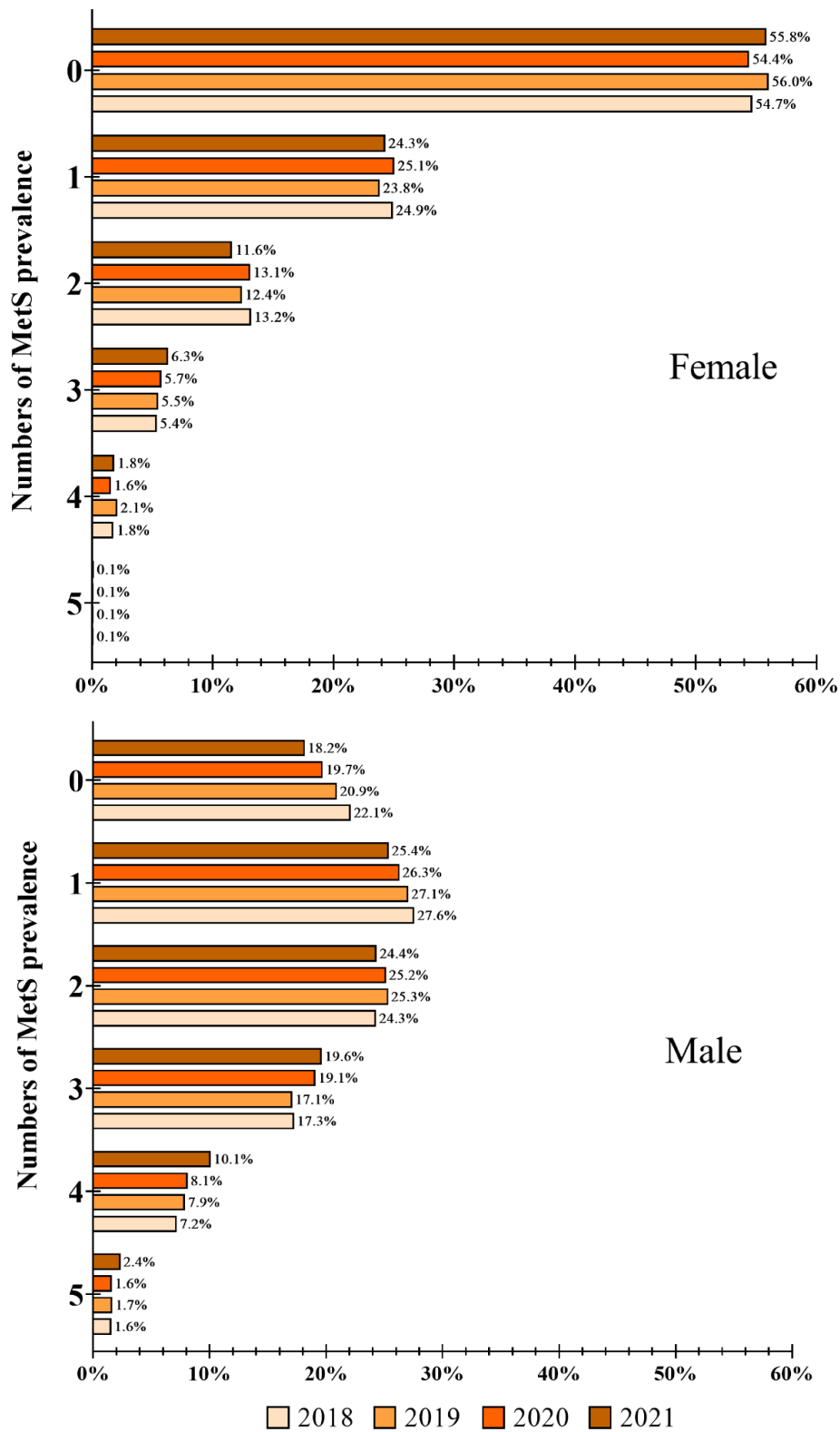


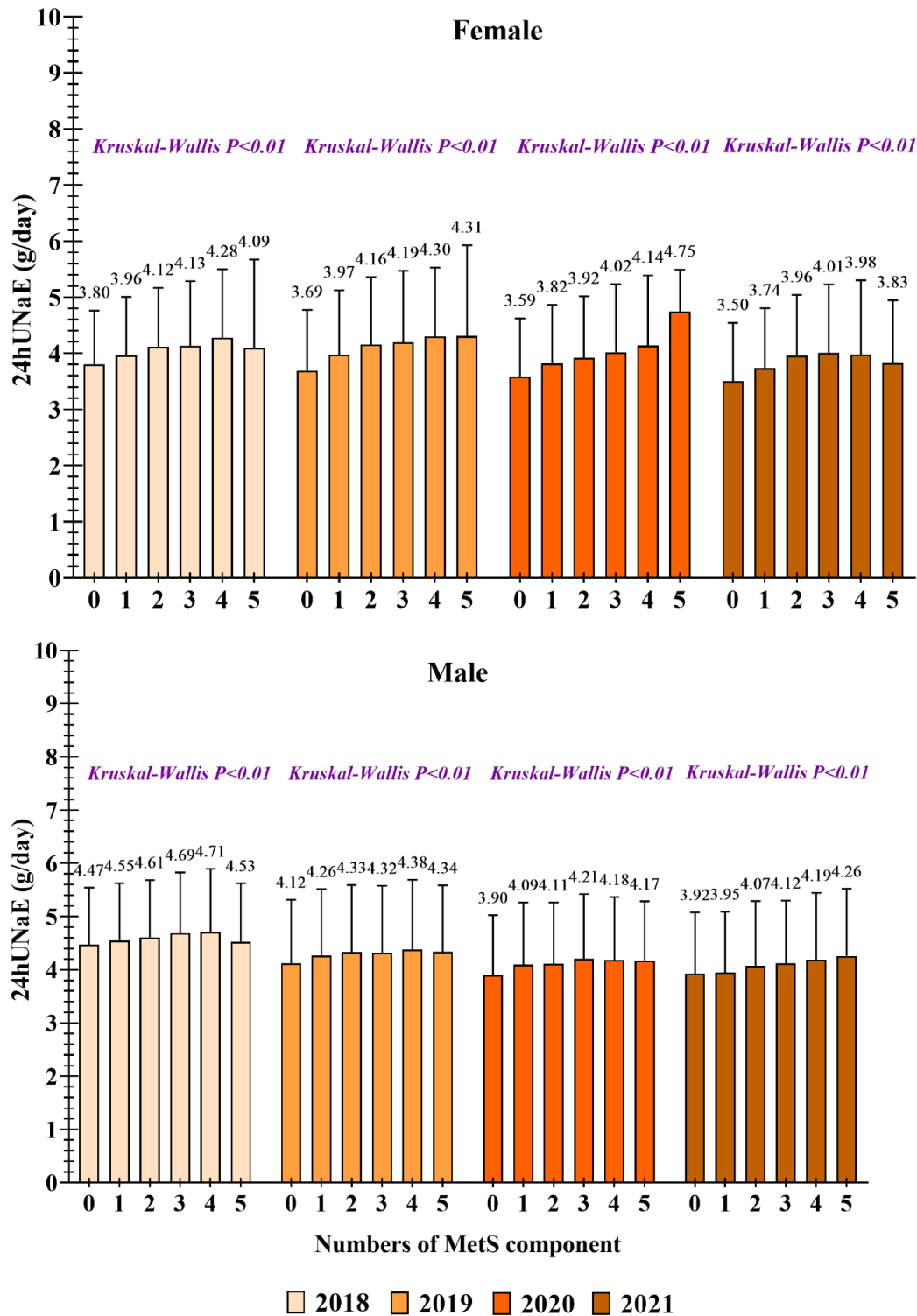
Appendix S1. The flow chart of participant selection



Appendix S2. The prevalence of total MetS and its components across 2018-2021



Appendix S3. The proportion of MetS component numbers across 2018-2021



Appendix S4. Average 24hUNaE levels by the numbers of MetS components across 2018-2021

Appendix S5. The general characteristics by various exam frequencies during 2018-2021

Mean±SD or % (n)	Once (n=51,489)	Twice (n=7,975)	Three times (n=1,397)	Four times (n=178)	P value ¹
Male sex	55.20 (28,421)	65.05 (5,188)	65.50 (915)	59.55 (106)	<0.01
Age (years)	44.89±12.08	44.45±10.72	46.50±9.95	48.53±10.26	<0.01
Height (cm)	163.20±8.19	165.08±7.83	165.03±7.74	164.44±8.15	<0.01
Weight (kg)	64.70±12.32	66.42±11.66	66.13±11.24	64.59±11.43	<0.01
BMI (kg/m ²)	24.16±3.40	24.25±3.14	24.17±2.99	23.75±2.92	<0.01
WC (cm)	82.31±10.47	83.22±9.84	83.47±9.47	82.74±9.46	<0.01
HC (cm)	94.11±6.14	94.63±5.72	94.83±5.43	94.58±5.73	<0.01
WHR	0.87±0.07	0.88±0.07	0.88±0.07	0.87±0.07	<0.01
SBP (mmHg)	122.73±16.21	121.59±15.23	120.87±15.01	120.80±14.89	<0.01
DBP (mmHg)	75.17±11.37	75.26±11.14	74.84±10.97	74.00±11.02	0.29
FBG (mmol/L)	5.61±1.41	5.52±1.19	5.51±1.03	5.65±1.29	<0.01
TC (mmol/L)	5.04±0.99	5.03±0.96	4.99±0.95	4.98±0.98	0.16
TG (mmol/L)	1.88±1.91	1.87±1.83	1.81±1.77	1.66±1.43	0.01
HDL-C (mmol/L)	1.32±0.30	1.32±0.30	1.33±0.30	1.37±0.31	<0.01
LDL-C (mmol/L)	2.87±0.83	2.86±0.81	2.84±0.80	2.86±0.85	0.64
24hUCrE (g/day)	1.37±0.40	1.45±0.38	1.42±0.36	1.36±0.37	<0.01
24hUNaE (g/day)	4.07±1.18	4.24±1.15	4.27±1.09	4.30±1.09	<0.01
24hUKE (g/day)	2.03±0.43	2.14±0.45	2.18±0.45	2.22±0.43	<0.01
Salt intake (g/day)	10.36±3.00	10.79±2.91	10.85±2.78	10.94±2.76	<0.01
Current smokers	26.31 (13,548)	28.93 (2,307)	25.70 (359)	21.91 (39)	<0.01
Current drinkers	28.02 (14,429)	35.10 (2,799)	34.93 (488)	28.65 (51)	<0.01
Physical activities	53.86 (27,731)	65.48 (5,222)	70.58 (986)	76.97 (137)	<0.01
Central obesity	29.37 (15,120)	29.53 (2,355)	30.85 (431)	26.97 (48)	0.57
Elevated TG	37.29 (19,202)	37.93 (3,025)	35.65 (498)	30.90 (55)	0.11
Low HDL-C	12.07 (6,215)	12.24 (976)	11.52 (161)	10.11 (18)	0.74
Elevated BP	36.47 (18,780)	34.14 (2,723)	34.07 (476)	34.27 (61)	<0.01
Elevated FBG	15.13 (7,792)	13.76 (1,097)	13.46 (188)	18.54 (33)	0.01
Total MetS	19.41 (9,996)	18.27 (1,457)	16.68 (233)	10.11 (18)	<0.01
The number of MetS components					<0.01
0	35.73 (18,397)	34.82 (2,777)	34.57 (483)	33.15 (59)	
1	25.35 (13,055)	27.52 (2,195)	28.13 (393)	26.97 (48)	
2	19.50 (10,041)	19.39 (1,546)	20.62 (288)	29.78 (53)	
3	12.77 (6,573)	12.69 (1,012)	11.38 (159)	6.74 (12)	
4	5.56 (2,862)	4.66 (372)	4.44 (62)	2.81 (5)	
5	1.09 (561)	0.92 (73)	0.86 (12)	0.56 (1)	

Note: SD, standard deviance; MetS, metabolic syndromes; BMI, body mass index; WC, waist circumference; HC, hip circumference; WHR, waist to hip ratio; SBP, systolic blood pressure; DBP, diastolic blood pressure; FBG, fasting blood glucose; SCr, serum creatinine; TC, total cholesterol; TG, triglycerides; HDL-C, high density lipoprotein cholesterol; LDL-C, low density lipoprotein cholesterol; 24hUCrE, 24-hour urinary creatinine excretion (estimated); 24hUNaE, 24-hour urinary sodium excretion (estimated); 24hUKE, 24-hour urinary potassium excretion (estimated);

¹ P value was obtained by non-parametric Kruskal-Wallis tests for continuous variables and the Chi-square tests for categorical variables

Appendix S6. Unadjusted associations of MetS prevalence and its components with 24-h urinary sodium excretion

MetS and its components	Prevalence %	Unadjusted odds ratios (95% confidence intervals) for 24-h urinary sodium excretion						P value
		Q1	Q2	Q3	Q4	P _{trend}	Per unit increase	
Overall		14,823	14,823	14,823	14,823		59,292	
Central obesity	29.41	1.00	1.15 (1.09, 1.21)	1.39 (1.32, 1.46)	1.92 (1.82, 2.02)	<0.01	1.38 (1.36, 1.40)	<0.01
Elevated TG	37.39	1.00	1.04 (0.99, 1.09)	1.14 (1.09, 1.20)	1.20 (1.14, 1.25)	<0.01	1.19 (1.17, 1.20)	<0.01
Low HDL-C	12.08	1.00	0.95 (0.88, 1.01)	0.93 (0.87, 1.00)	0.88 (0.82, 0.94)	<0.01	1.08 (1.06, 1.11)	<0.01
Elevated BP	36.20	1.00	1.18 (1.13, 1.24)	1.31 (1.25, 1.38)	1.60 (1.52, 1.67)	<0.01	1.25 (1.23, 1.27)	<0.01
Elevated FBG	14.95	1.00	0.93 (0.88, 0.99)	0.94 (0.88, 1.00)	0.97 (0.91, 1.03)	0.11	1.05 (1.03, 1.07)	<0.01
Total MetS	19.27	1.00	1.05 (0.99, 1.11)	1.15 (1.08, 1.22)	1.36 (1.28, 1.44)	<0.01	1.24 (1.22, 1.26)	<0.01
Females		6,447	6,446	6,446	6,447		25,786	
Central obesity	15.77	1.00	1.24 (1.11, 1.38)	1.68 (1.51, 1.86)	2.72 (2.47, 3.01)	<0.01	1.44 (1.40, 1.49)	<0.01
Elevated TG	20.69	1.00	1.24 (1.13, 1.36)	1.40 (1.28, 1.52)	1.64 (1.50, 1.79)	<0.01	1.18 (1.15, 1.22)	<0.01
Low HDL-C	3.31	1.00	1.04 (0.86, 1.26)	1.00 (0.82, 1.21)	1.05 (0.87, 1.28)	0.92	0.99 (0.93, 1.06)	0.81
Elevated BP	26.14	1.00	1.20 (1.11, 1.31)	1.47 (1.35, 1.59)	2.09 (1.93, 2.26)	<0.01	1.32 (1.29, 1.35)	<0.01
Elevated FBG	9.97	1.00	1.03 (0.91, 1.16)	1.08 (0.96, 1.21)	1.37 (1.22, 1.53)	<0.01	1.14 (1.10, 1.18)	<0.01
Total MetS	7.83	1.00	1.18 (1.02, 1.36)	1.36 (1.18, 1.56)	2.07 (1.81, 2.35)	<0.01	1.32 (1.27, 1.37)	<0.01
Males		8,376	8,377	8,377	8,376		33,506	
Central obesity	39.91	1.00	1.14 (1.07, 1.21)	1.34 (1.26, 1.43)	1.77 (1.66, 1.88)	<0.01	1.21 (1.19, 1.23)	<0.01
Elevated TG	50.24	1.00	0.96 (0.91, 1.02)	1.06 (1.00, 1.13)	1.05 (0.99, 1.12)	<0.01	1.02 (1.00, 1.04)	0.02
Low HDL-C	18.83	1.00	0.93 (0.86, 1.00)	0.92 (0.85, 0.99)	0.84 (0.78, 0.91)	<0.01	0.95 (0.92, 0.97)	<0.01
Elevated BP	43.94	1.00	1.18 (1.11, 1.26)	1.26 (1.18, 1.34)	1.39 (1.31, 1.48)	<0.01	1.11 (1.09, 1.13)	<0.01
Elevated FBG	18.79	1.00	0.90 (0.83, 0.97)	0.88 (0.82, 0.95)	0.82 (0.76, 0.89)	<0.01	0.94 (0.91, 0.96)	<0.01
Total MetS	28.08	1.00	1.03 (0.96, 1.10)	1.12 (1.04, 1.20)	1.24 (1.16, 1.33)	<0.01	1.08 (1.06, 1.10)	<0.01
Aged <60 years		13,110	13,208	13,221	13,285		52,824	
Central obesity	28.55	1.00	1.16 (1.10, 1.23)	1.40 (1.33, 1.48)	1.94 (1.83, 2.04)	<0.01	1.40 (1.38, 1.43)	<0.01
Elevated TG	37.61	1.00	1.02 (0.97, 1.08)	1.14 (1.09, 1.20)	1.19 (1.13, 1.25)	<0.01	1.20 (1.18, 1.22)	<0.01
Low HDL-C	12.46	1.00	0.94 (0.87, 1.01)	0.94 (0.87, 1.01)	0.90 (0.84, 0.97)	0.04	1.10 (1.08, 1.12)	<0.01
Elevated BP	32.63	1.00	1.21 (1.14, 1.27)	1.37 (1.30, 1.44)	1.69 (1.60, 1.78)	<0.01	1.29 (1.27, 1.31)	<0.01
Elevated FBG	13.05	1.00	0.96 (0.89, 1.03)	1.00 (0.93, 1.07)	1.03 (0.96, 1.10)	0.31	1.08 (1.06, 1.11)	<0.01
Total MetS	18.32	1.00	1.05 (0.98, 1.12)	1.18 (1.11, 1.26)	1.39 (1.30, 1.48)	<0.01	1.27 (1.25, 1.30)	<0.01
Aged ≥60 years		1,713	1,615	1,602	1,538		6,468	
Central obesity	36.47	1.00	1.08 (0.93, 1.25)	1.35 (1.17, 1.56)	1.90 (1.65, 2.19)	<0.01	1.24 (1.19, 1.30)	<0.01
Elevated TG	35.59	1.00	1.16 (1.01, 1.34)	1.16 (1.00, 1.33)	1.27 (1.10, 1.47)	0.01	1.06 (1.02, 1.11)	0.01
Low HDL-C	8.98	1.00	1.03 (0.83, 1.29)	0.83 (0.66, 1.05)	0.62 (0.48, 0.80)	<0.01	0.91 (0.85, 0.98)	0.02
Elevated BP	65.34	1.00	1.21 (1.05, 1.39)	1.21 (1.05, 1.40)	1.48 (1.28, 1.71)	<0.01	1.15 (1.10, 1.20)	<0.01
Elevated FBG	30.53	1.00	0.87 (0.75, 1.01)	0.75 (0.65, 0.87)	0.82 (0.70, 0.95)	<0.01	0.95 (0.91, 1.00)	0.04
Total MetS	27.09	1.00	1.09 (0.93, 1.27)	1.02 (0.87, 1.19)	1.27 (1.09, 1.48)	0.01	1.10 (1.05, 1.16)	<0.01

Note: MetS, metabolic syndrome; OR, odds ratio; CI, confidence interval; Q, quartile; TG, triglyceride; HDL-C, high-density lipoprotein cholesterol; BP, blood pressure; FBG, fasting blood glucose; 24hUKE, 24-hour urinary potassium excretion