

Supplementary Table 1: Baseline characteristics of subjects grouped according to WHH Quartiles in the CHARLS cohort.

	Total (n=8977)	WHH Quartiles			
		Quartile1 (n=2244)	Quartile 2 (n=2245)	Quartile 3 (n=2243)	Quartile 4 (n=2245)
Gender, n(%)					
Female	4786(53.3%)	814(36.27%)	1064(47.39 %)	1327(59.16 %)	1581(70.42 %)
Male	4191(46.7%)	1430(63.73 %)	1181(52.61 %)	916(40.84%)	664(29.58%)
Age, year	59.53(9.33)	59.02(9.57)	58.73(9.21)	59.50(9.22)	60.87(9.18)
Alcohol habits, n(%)					
No	6055(67.5%)	1295(57.71 %)	1434(63.88 %)	1582(70.53 %)	1744(77.68 %)
Yes	2922(32.5%)	949(42.29%)	811(36.12%)	661(29.47%)	141(22.32%)
Smoking status, n(%)					
No	6245(69.6%)	1217(54.23 %)	1511(67.31 %)	1678(74.81 %)	1839(81.92 %)
Yes	2732(30.4%)	1027(45.77 %)	734(32.69%)	565(25.19%)	406(18.08%)
Fatty liver, n(%)					
No	8665(96.5%)	2161(96.30 %)	2173(96.79 %)	2117(94.38 %)	2154(95.95 %)
Yes	312(3.5%)	83(3.70%)	72(3.21%)	66(5.62%)	91(4.05%)
BMI, kg/m ²	23.13(20.84, 25.78)	19.45(18.98, 21.93)	22.37(20.72, 24.04)	24.24(22.43, 26.21)	26.49(24.19, 28.89)
SBP, mmHg	129.68 (21.50)	124.82 (20.47)	127.49 (20.66)	130.65 (21.42)	135.73 (21.87)
DBP, mmHg	75.40 (12.21)	72.76 (11.84)	74.58 (12.23)	76.14 (12.30)	78.12 (11.83)
HDL-C, mmol/L	1.32 (0.40)	1.44 (0.41)	1.37 (0.39)	1.29 (0.39)	1.20 (0.35)
TC, mmol/L	5.02 (1.00)	4.74(0.92)	4.94(0.95)	5.10(1.02)	5.28(1.04)
TG, mmol/L	1.20(0.85, 1.75)	0.97(0.72, 1.37)	1.12(0.81, 1.61)	1.24(0.90, 1.81)	1.52(1.08, 2.27)
HbA1c, %	5.10(4.90, 5.40)	4.80(4.60, 5.10)	5.10(4.85, 5.30)	5.20(5.00, 5.40)	5.60(5.30, 6.10)
FPG, mmol/L	5.69(5.24, 6.31)	5.45(5.06, 5.93)	5.58(5.19, 6.06)	5.68(5.27, 6.22)	6.20(5.59, 7.67)
Diabetes incidence	2012(22.4%)	223(9.94%)	284(12.65%)	479(21.36%)	1026(45.70 %)

Values were expressed as mean (SD) or medians (quartile interval) or n(%). Abbreviations as in Table1.

Supplementary Table 2: Univariate Cox regression analysis of the associations between diabetes and baseline variables in the NAGALA cohort.

	HR (95%CI)	<i>P</i> -value
Gender		
Female	1.0	
Male	2.89 (2.11, 3.96)	<0.001
Age	1.05 (1.03, 1.06)	<0.001
Alcohol habits		
Non/small	1.0	
Light	0.93 (0.62, 1.40)	0.729
Moderate	1.09 (0.71, 1.69)	0.692
Heavy	2.16 (1.34, 3.47)	0.001
Smoking status		
Never	1.0	
Past	1.60 (1.13, 2.27)	0.009
Current	2.66 (2.01, 3.54)	<0.001
Exercise habits		
No	1.0	
Yes	0.74 (0.51, 1.08)	0.115
Fatty liver		
No	1.0	
Yes	6.83 (5.28, 8.83)	<0.001
Height	1.02 (1.00, 1.03)	0.002
Weight	1.06 (1.05, 1.07)	<0.001
BMI	1.25 (1.22, 1.28)	<0.001
WC	1.09 (1.08, 1.11)	<0.001
SBP	1.04 (1.03, 1.04)	<0.001
DBP	1.06 (1.05, 1.07)	<0.001
ALT	1.01 (1.00, 1.01)	<0.001
AST	1.01 (1.01, 1.01)	<0.001
GGT	1.01 (1.01, 1.01)	<0.001
HDL-C	0.10 (0.07, 0.16)	<0.001
TC	1.44 (1.26, 1.65)	<0.001
TG	1.86 (1.72, 2.02)	<0.001
FPG	21.31 (14.68, 30.94)	<0.001
HbA1c	33.03 (19.61, 55.64)	<0.001
WHH	21.86 (16.14, 29.59)	<0.001

Abbreviations: HR: Hazard ratio; CI: confidence interval. Other abbreviations as in Table 1.

Supplementary Table 3: Collinearity screening between WHH and other variables in the NAGALA cohort.

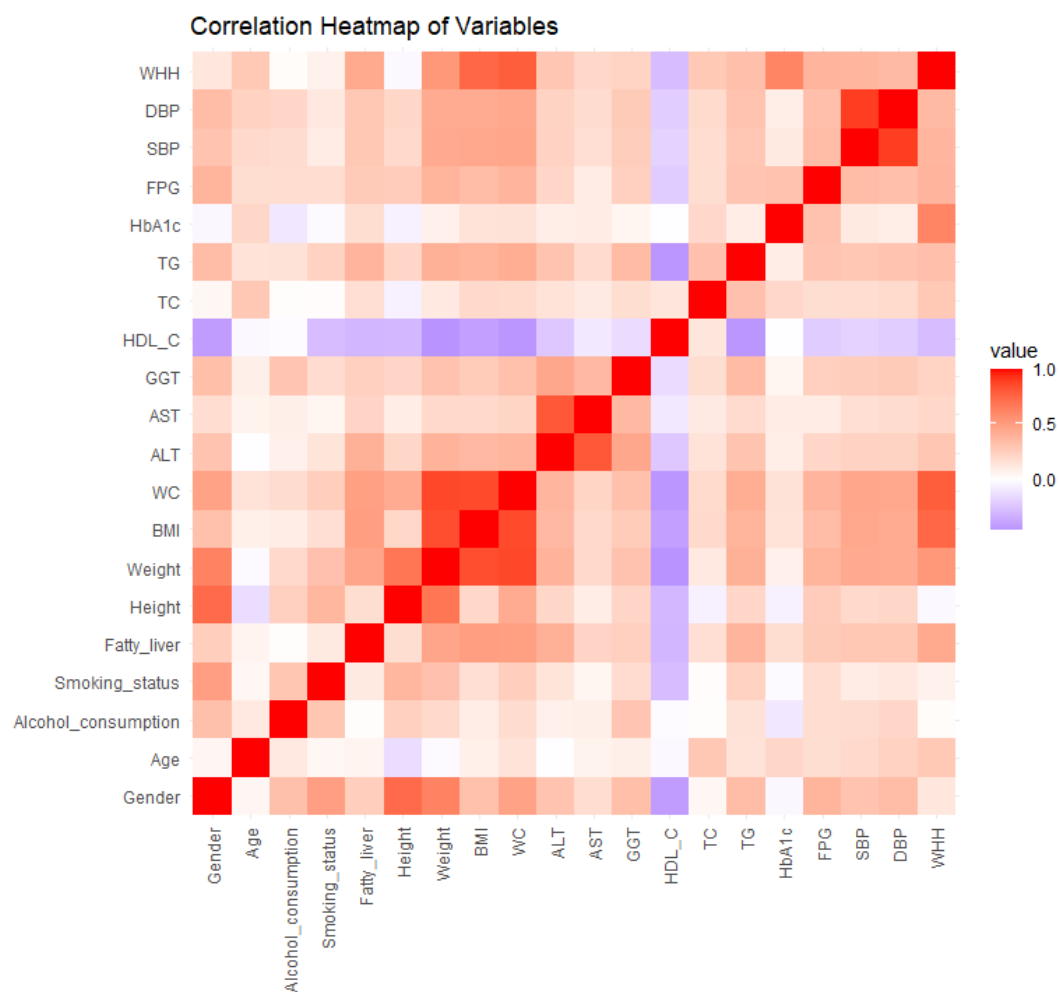
	Variance inflation factor		
	Step 1	Step 2	Step 3
WHH	322.72	3.68	1.61
Gender	2.87	1.89	1.84
Age	1.41	1.32	1.11
Alcohol habits	1.42	1.39	1.36

Smoking status	1.46	1.44	1.43
Fatty liver	1.57	1.52	1.52
Height	55.17	NA	NA
Weight	254.53	NA	NA
BMI	162.92	3.71	NA
WC	261.20	NA	NA
SBP	6.80	6.60	6.50
DBP	6.98	6.78	6.61
ALT	5.39	7.97	6.28
AST	4.62	7.12	5.46
GGT	1.47	1.42	1.43
TC	1.28	1.24	1.23
TG	1.57	1.53	1.52
HDL-C	1.72	1.65	1.62
FPG	1.35	1.25	1.20
HbA1c	65.83	NA	NA

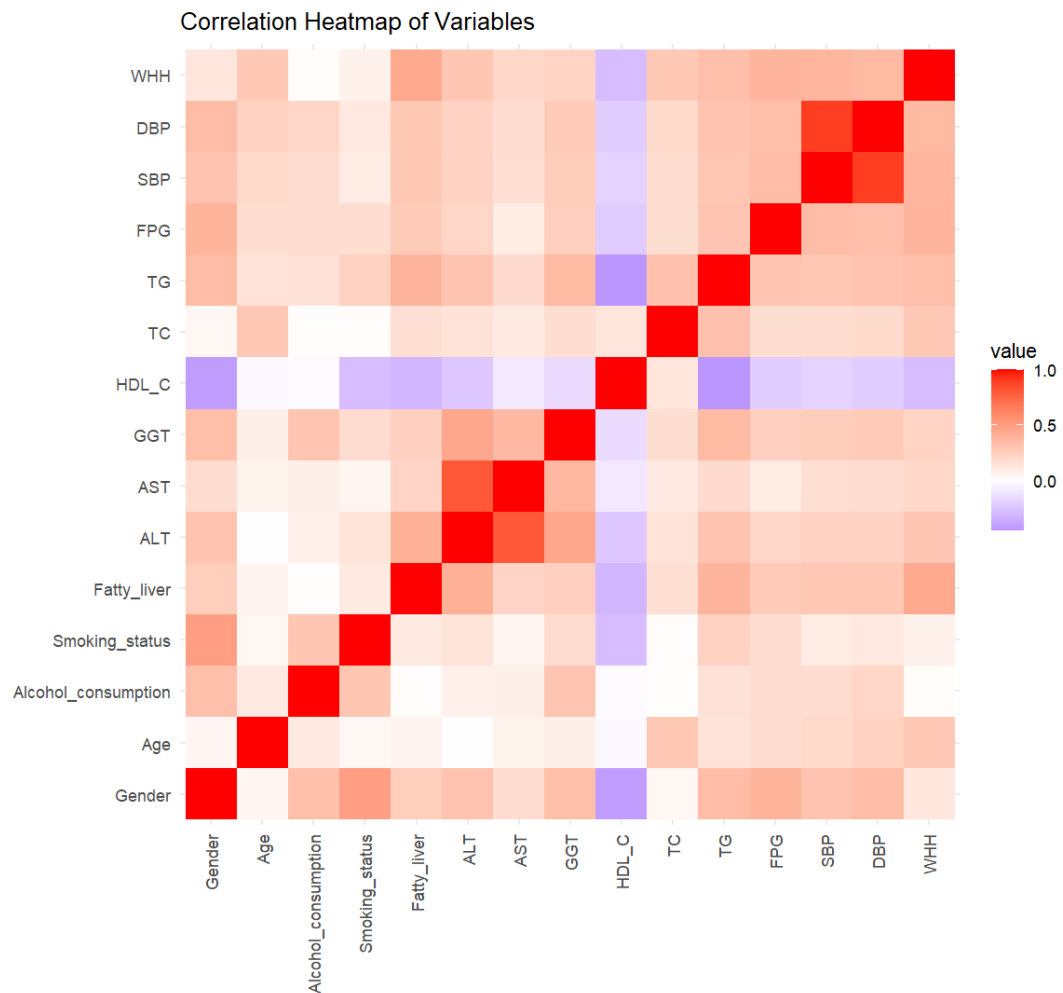
Note-1: Variance inflation factor = $1/(1-R^2)$.

Note-2: The variables with variance inflation factor >10 will be regarded as collinear variables and cannot be included in the multiple regression model.

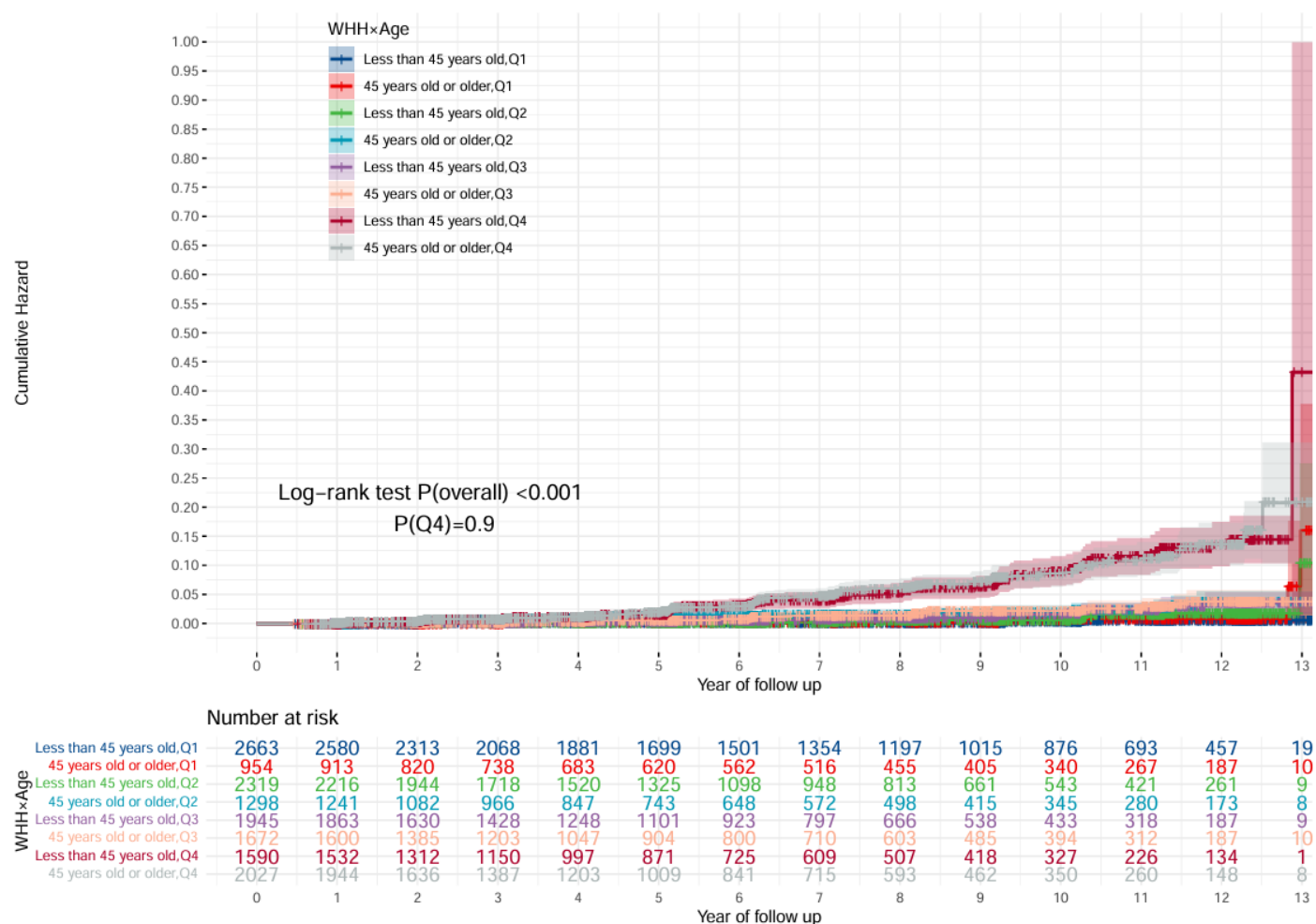
A



B



Supplementary Figure 1 The correlation heatmaps displayed the multicollinearity among variables in the NAGALA cohort. (A) Multicollinearity of variables in the original data. (B) The correlation heatmap of variables in the model after eliminating collinearity variables.



Supplementary Figure 2 Kaplan-Meier curve of the cumulative incidence of diabetes differentiated by WHH quartiles and age subgroups in the NAGALA cohort.