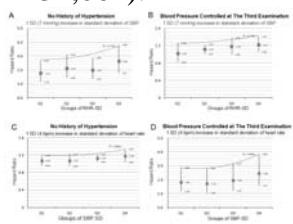


Figure S1: Sensitivity analyses in the subgroup without history of hypertension and with controlled blood pressure. This analysis excluded the blood pressure influence on mortality. Figure 4A indicates the HR and 95% CI for 1SD increase in SBP-SD for participants without history of hypertension (based on the reported history; n=40,098). Figure 4(B) indicates the HR and 95% CI for 1SD increase in SBP-SD for participants whose BP was controlled during the third examination (Participants whose BP was at normal range during the third examination regardless their hypertension status; n=32,061). Figure 4C indicates the HR and 95% CI for 1SD increase in RHR-SD for participants without history of hypertension (based on the reported history; n=40,098). Figure 4(D) indicates the HR and 95% CI for 1SD increase in RHR-SD for participants whose BP was controlled during the third examination (Participants whose BP was at normal range during the third examination regardless their hypertension status; n=32,061).



(Table S1) Baseline clinical characteristics of participants in the Kailuan Study by quartiles of standard deviation in diastolic blood pressure and pulse pressure

	Quartile of standard deviation in DBP, mm Hg				P value	Quartile of standard deviation in PP, mm Hg				P value
	Quartile 1 <4.33	Quartile 2 4.33-5.77	Quartile 3 5.77-9.39	Quartile 4 ≥9.39		Quartile 1 <4.82	Quartile 2 4.82-6.67	Quartile 3 6.67-10.34	Quartile 4 ≥10.34	
Participants, n	11,677	11,665	11,723	11,686		11,667	11,728	11,765	11,591	-
Age(±SD), years	51.6±11.7	52.2±11.7	52.5±11.7	53.9±11.2	<0.001	50.1±11.2	50.9±11.3	52.5±11.3	56.9±11.5	<0.001
Men, %	76.9	76.0	77.9	80.9	<0.001	77.5	77.5	78.6	78.6	0.032
BMI (±SD), kg/m ²	25.0±3.4	25.0±3.3	25.1±3.4	25.4±3.4	<0.001	25.0±3.3	25.0±3.3	25.1±3.4	25.4±3.4	<0.001
Current smoker, %	33.5	35.1	34.6	35.4	0.013	36.7	35.9	34.9	30.9	<0.001
High/intensive activity, %	12.5	13.2	12.7	13.5	0.121	12.0	12.4	13.2	14.2	<0.001
Mean SBP (±SD), mmHg	126.7±15.1	127.6±15.7	129.1±16.6	134.6±18.1	<0.001	124.8±14.6	125.8±15.0	129.5±16.0	138.4±17.6	<0.001
Mean DBP (±SD), mmHg	82.0±8.0	82.5±8.4	83.3±8.9	86.8±10.2	<0.001	82.0±8.6	82.4±8.7	83.9±9.0	86.4±9.6	<0.001
Mean PP(±SD), mmHg	44.7±9.9	45.1±10.2	45.8±10.7	47.8±11.5	<0.001	42.8±8.7	43.4±9.0	45.6±10.1	51.9±12.2	<0.001
Mean heart rate (±SD), bpm	73.4±7.6	73.5±7.7	73.6±7.9	74.4±8.2	<0.001	73.5±7.7	73.4±7.7	73.7±7.8	74.2±8.2	<0.001

bpm

TC (\pm SD), mmol/L	5.0 \pm 1.1	5.0 \pm 1.1	5.0 \pm 1.4	5.0 \pm 1.3	<0.001	4.9 \pm 1.0	5.0 \pm 1.4	5.0 \pm 1.3	5.1 \pm 1.4	<0.001
HDL(\pm SD), mmol/L	1.5 \pm 0.5	1.5 \pm 0.5	1.5 \pm 0.5	1.5 \pm 0.5	0.015	1.5 \pm 0.5	1.5 \pm 0.4	1.5 \pm 0.5	1.5 \pm 0.5	0.128
FPG (\pm SD), mmol/L	5.6 \pm 1.6	5.6 \pm 1.7	5.7 \pm 1.6	5.8 \pm 1.9	<0.001	5.6 \pm 1.6	5.9 \pm 1.6	5.6 \pm 1.6	5.9 \pm 2.0	<0.001
CRP $>$ 2mg/L, %	30.8	31.4	30.4	34.2	<0.001	30.2	29.6	31.2	35.6	<0.001
Diabetes mellitus, %	3.6	3.6	4.4	4.8	<0.001	3.2	3.5	4.0	5.9	<0.001
Hypertension, %	10.1	11.3	13.3	20.8	<0.001	10.1	10.9	13.6	21.6	<0.001
Antihypertensive medication drug class, %										
ACE inhibitor	0.6	0.7	0.9	1.3	<0.001	0.7	0.6	0.9	1.4	<0.001
ARB	0.2	0.2	0.3	0.4	0.015	0.1	0.2	0.2	0.5	<0.001
Calcium channel blocker	0.7	1.0	1.0	1.0	<0.001	0.7	0.9	1.0	1.7	<0.001
Diuretic	0.8	0.5	0.9	1.3	<0.001	0.6	0.6	0.9	1.4	<0.001
α -blocker	0.0	0.0	0.1	0.0	0.198	0.0	0.0	0.0	0.1	0.146
Combination tablets	0.9	0.9	1.3	1.8	<0.001	0.8	0.9	1.3	2.1	<0.001

ACE=angiotensin converting enzyme; ARB= angiotensin receptor blocker; BMI=Body mass index; SBP=systolic blood pressure;
DBP= diastolic blood pressure; PP=pulse pressure; TC= Total cholesterol; HDL=High density lipoprotein; FPG= Fasting plasma
glucose; CRP=C-reactive protein.

(Table S2) Cumulative mortality and hazards ratios (95% confidence interval) for all-cause mortality associated with quartile of standard deviation of diastolic blood pressure.

	Quartile of DBP-SD, mmHg				P for trend
	Quartile 1 <4.33	Quartile 2 4.33-5.77	Quartile 3 5.77-9.39	Quartile 4 ≥9.39	
Total, n	11,677	11,665	11,723	11,686	-
Deaths, n (%)	371 (3.2)	260 (3.0)	495 (3.4)	541 (4.6)	<0.001
Model 1*	1.00 (Ref)	0.94 (0.81-1.11)	1.06 (0.93-1.21)	1.47(1.29-1.68)	<0.001
Model 2†	1.00 (Ref)	0.91(0.77-1.06)	0.99 (0.86-1.13)	1.26 (1.10-1.44)	<0.001
Model 3‡	1.00 (Ref)	0.88 (0.75-1.04)	0.95 (0.82-1.08)	1.13 (0.99-1.30)	0.005

*Unadjusted model.

†Adjusted for age and gender.

‡Adjusted for age, gender, body mass index, current smoker, mean diastolic blood pressure, mean resting heart rate, fasting plasma glucose, total cholesterol, high density lipoprotein, elevated C-reactive protein and ACE inhibitor.

DBP= diastolic blood pressure

(Table S3) Cumulative mortality and hazards ratios (95% confidence interval) for all-cause mortality associated with quartile of standard deviation of pulse pressure.

	Quartile of PP-SD, mmHg				P for trend
	Quartile 1 <4.82	Quartile 2 4.82-6.67	Quartile 3 6.67-10.34	Quartile 4 ≥10.34	
Total, n	11,667	11,728	11,765	11,591	-
Deaths, n (%)	254(2.2)	299 (2.5)	408 (3.5)	706 (6.1)	<0.001
Model 1*	1.00 (Ref)	1.18 (0.99-1.39)	1.61 (1.38-1.88)	2.86 (2.49-3.32)	<0.001
Model 2†	1.00 (Ref)	1.10 (0.93-1.30)	1.32 (1.12-1.54)	1.67 (1.44-1.93)	<0.001
Model 3‡	1.00 (Ref)	1.09 (0.92-1.29)	1.27 (1.08-1.49)	1.48 (1.27-1.72)	<0.001

*Unadjusted model.

†Adjusted for age and gender.

‡Adjusted for age, gender, body mass index, current smoker, mean pulse pressure, mean resting heart rate, fasting plasma glucose, total cholesterol, high density lipoprotein, elevated C-reactive protein and ACE inhibitor.

PP=pulse pressure

(Table S4) Adjusted hazards ratios with 95% confidence interval for 1 SD increase in standard deviation of heart rate for subtypes and in standard deviation of pulse pressure for subtypes of all-cause mortality

1 SD (4 bpm) increase in standard deviation of heart rate		1 SD (5 mmHg) increase in standard deviation of pulse pressure	
categories	HR (95%CI)	categories	HR (95%CI)
All subjects	1.10(1.06-1.15) [‡]	All subjects	1.10(1.05-1.13) [‡]
SD of PP, mmHg		SD of RHR, bpm	
<4.82	1.12(0.99-1.21)	<3.6	1.02(0.92-1.14)
4.82-6.67	1.09(0.98-1.22)	3.6-5.8	1.10(1.00-1.21)*
6.67-10.34	1.09(0.99-1.20)	5.8-8.5	1.08(1.03-1.14) [†]
≥10.34	1.09(1.03-1.16) [†]	≥8.5	1.13(1.05-1.22) [‡]

Adjusted for age, gender, body mass index, high/intensive activity, mean heart rate, mean pulse pressure, fasting plasma glucose, total cholesterol, high density lipoprotein, elevated C-reactive protein, and antihypertensive medication.

* $P<0.05$;

† $P<0.01$;

‡ $P<0.001$.