Online supplemental material

1.The collection and definition of CVD and non-CVD mortality

Among them, we successfully made contact with the relatives of 892 deceased study participants. Although the relatives did not know the cause of death for 149 of the deceased oldest old, we ascertained information for the causes of 743 deaths. In addition to these, the causes for 345 deaths were collected by questionnaire in the 2014 survey. In total, we were able to obtain information for the causes of 1088 (345+743) deaths.

For analyses of the association between SBP and CVD mortality, CVD mortality was taken as an endpoint event, survival status was defined as "1" in participants who died from CVD, survival status was defined as "0" in participants who survived, died from non-CVD or were without a known cause of death. The surviving participants were censored at 3 year, and participants who died from a non-CVD cause or were without a known cause of death were censored at their date of death. A similar methodology was followed to evaluate associations of SBP with non-CVD mortality.

**2. Characteristics of the participants**

The characteristics of the participants were compared by survival statuses (those who survived, died or were lost to follow-up) (Table 1). At baseline, the mean age of decedents was 94.7 years, which was significantly higher than the mean age of survivors (89.8 years), the BMI was significantly lower in decedents than survivors. In addition, the prevalence of cognitive impairment, ADL restriction, poor visual function, frailty, and stroke and other cerebrovascular diseases was higher among the decedents than survivors. The prevalence of high income, current smoking, alcohol consumption habits, central obesity, self-reported hypertension history and co-morbidity was lower in decedents than survivors. Significant differences were found in most covariates between the successfully followed-up and those who were lost to follow-up (Table 1).

The average SBP, DBP, MAP and PP values were 134.3 mmHg, 79.2 mmHg, 97.6 mmHg and 55.0 mmHg for decedents and 136.0 mmHg, 79.3 mmHg, 98.4 mmHg, and 56.4 mmHg, respectively, for survivors. The average SBP, MAP and PP was lower among decedents than survivors.

Figure S1: Flow chart
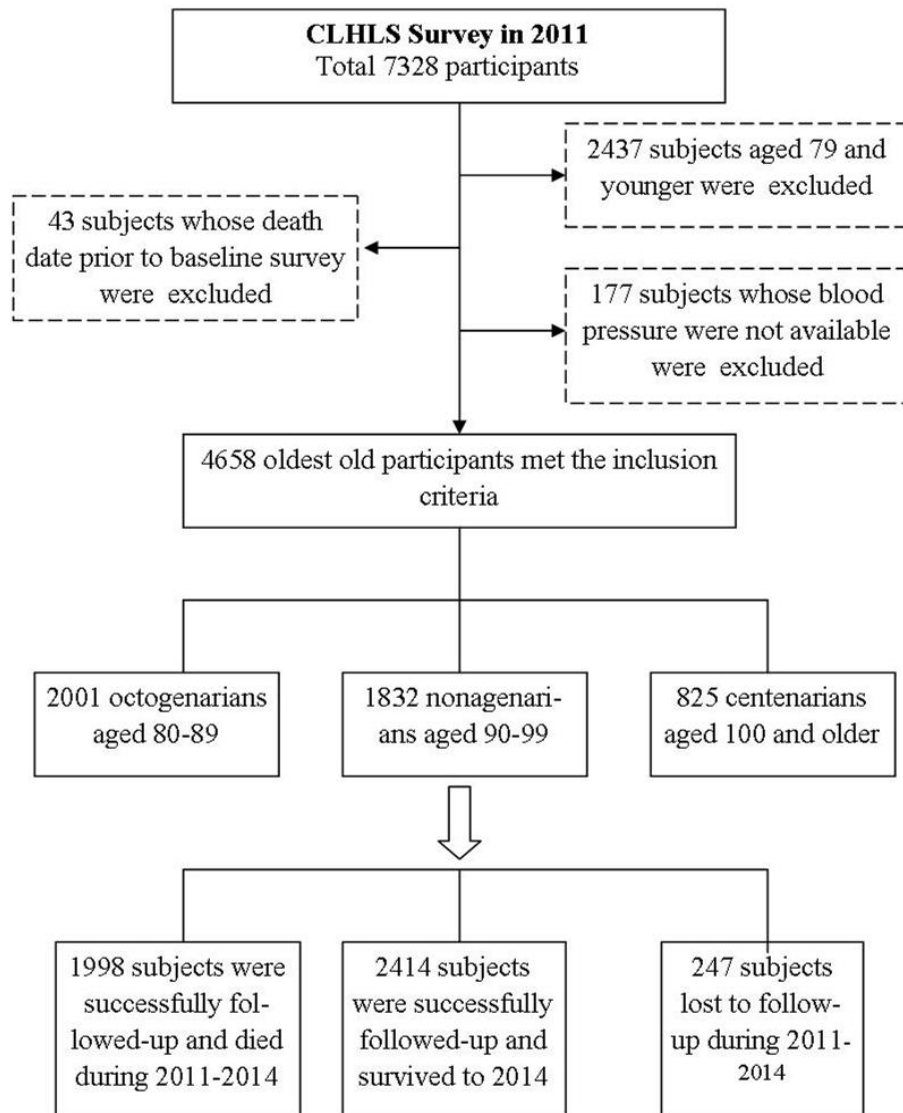
Figure S2: Associations of age, BMI and educational background with 3-year all-cause mortality in Cox models with penalized splines
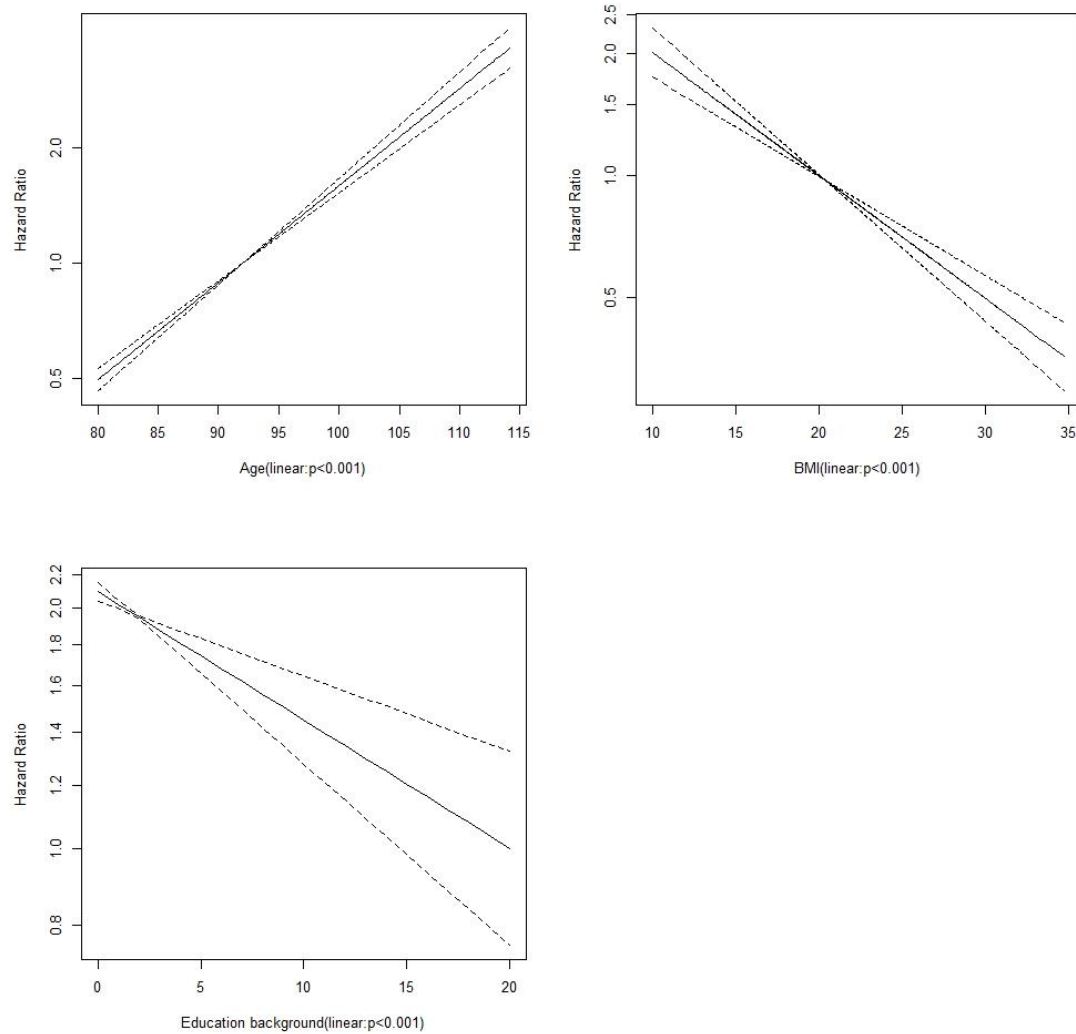
Legends: The lines depict the estimated hazard ratio of age (the age of 92 as the reference), BMI (20.4 kg/m^2 as the reference), education background (1.8 years as the reference) respectively, for risk of 3-year all-cause mortality, and the dotted lines indicate the 95% confidence intervals in the oldest old.

Abbreviation: BMI, body mass index;

Figure S3: Associations of blood pressure with all-cause mortality in Cox models with penalized splines before adjustment
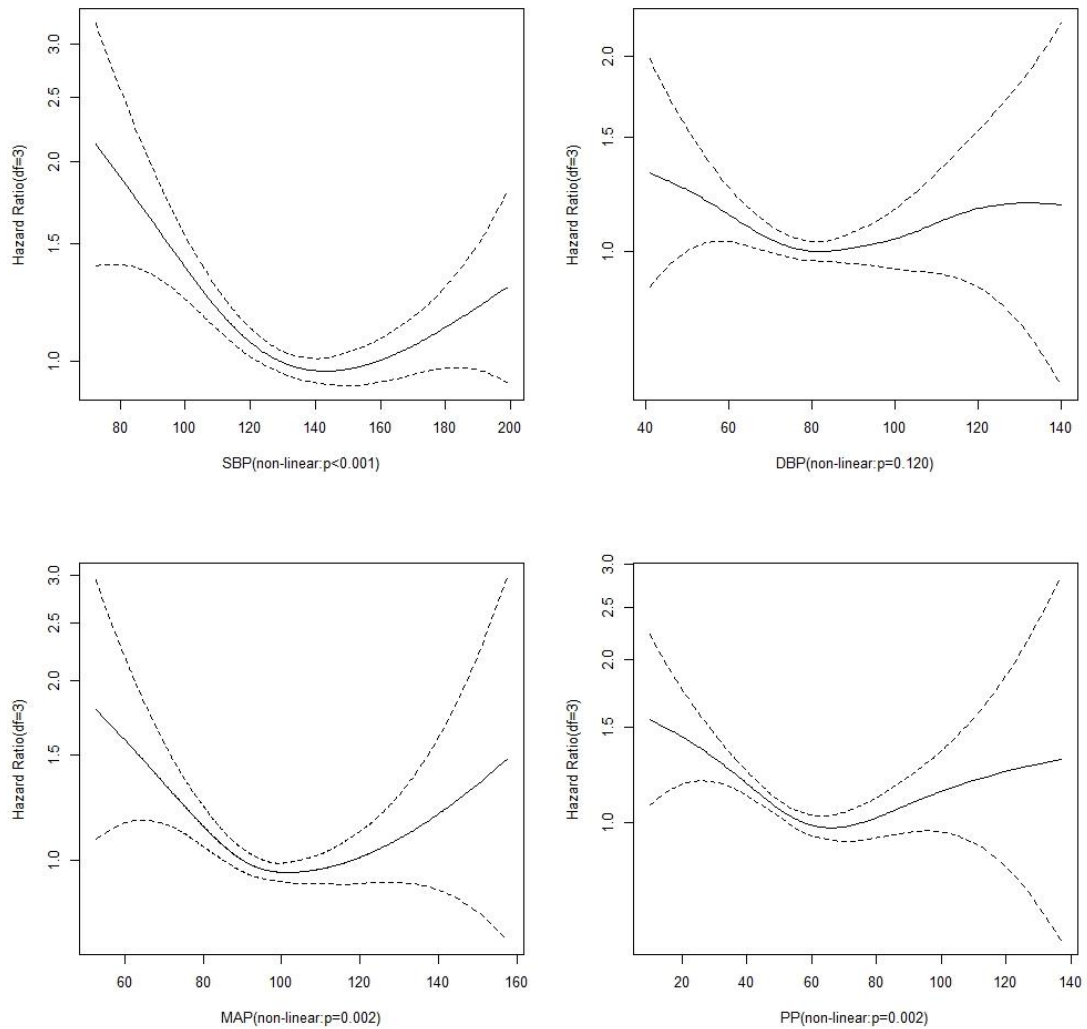
Legends: The lines depict the estimated hazard ratio of SBP (129 mmHg as the reference), DBP (80 mmHg as the reference), MAP (90 mmHg as the reference) and PP (57.5 mmHg as the reference) respectively, for risk of 3-year all-cause mortality, and the dotted lines indicate the 95% confidence intervals in the oldest old.

Abbreviation: SBP, systolic blood pressure; DBP, diastolic blood pressure; MAP, mean arterial pressure; PP, pulse pressure.