

# **SUPPLEMENTAL MATERIAL**

## Data S1.

### Supplemental Methods

Equation for the generalized linear mixed effects multivariable regression models used to study the association between individual characteristics and the prevalence of isolated diastolic hypertension and the awareness among untreated participants with isolated diastolic hypertension.

If  $Y_{ij}$  indicates that the  $i^{\text{th}}$  patient in the  $j^{\text{th}}$  township is hypertensive, then we estimated

$$\text{logit}(\text{Pr}[Y_{ij}=1]) = \alpha_j + \Sigma BX_{ij}$$

where  $\alpha_j \sim N(0, \tau^2)$  is a random intercept over townships and  $X_{ij}$  is a vector of patient risk factors.

We used age, sex, marital status, annual household income, education level, occupation, health insurance status, smoking, alcohol use, obesity, diabetes mellitus, prior cardiovascular events, and geographical region as risk factors.

**Table S1. Baseline characteristics of participants with isolated diastolic hypertension, by treatment status.**

<b>Characteristics, n (%), 95% CI)</b>	<b>Untreated participants with IDH</b>	<b>Treated participants with IDH</b>
<b>N (%)</b>	63112	10167
<b>Age (years)</b>		
35-39	4361 (6.9%, 6.7 - 7.1)	242 (2.4%, 2.1 - 2.7)
40-44	9658 (15.3%, 15.0 - 15.6)	880 (8.7%, 8.1 - 9.2)
45-49	13,560 (21.5%, 21.2 - 21.8)	1768 (17.4%, 16.7 - 18.1)
50-54	13,939 (22.1%, 21.8 - 22.4)	2540 (25.0%, 24.1 - 25.8)
55-59	8354 (13.2%, 13.0 - 13.5)	1728 (17.0%, 16.3 - 17.7)
60-64	7258 (11.5%, 11.3 - 11.7)	1652 (16.2%, 15.5 - 17.0)
65-69	4062 (6.4%, 6.2 - 6.6)	923 (9.1%, 8.5 - 9.6)
70-75	1920 (3.0%, 2.9 - 3.2)	434 (4.3%, 3.9 - 4.7)
<b>Sex</b>		
Men	36,421 (57.7%, 57.3 - 58.1)	5939 (58.4%, 57.5 - 59.4)
Women	26,691 (42.3%, 41.9 - 42.7)	4228 (41.6%, 40.6 - 42.5)
<b>Urbanity</b>		
Urban	22,345 (35.4%, 35.0 - 35.8)	3964 (39.0%, 38.0 - 39.9)
Rural	40,767 (64.6%, 64.2 - 65.0)	6203 (61.0%, 60.1 - 62.0)
<b>Region</b>		
Eastern	20,374 (32.3%, 31.9 - 32.6)	3528 (34.7%, 33.8 - 35.6)
Western	24,697 (39.1%, 38.8 - 39.5)	3459 (34.0%, 33.1 - 34.9)
Central	18,041 (28.6%, 28.2 - 28.9)	3180 (31.3%, 30.4 - 32.2)
<b>Education</b>		
Primary school or lower	23,063 (36.5%, 36.2 - 36.9)	3149 (31.0%, 30.1 - 31.9)
Middle school	22,377 (35.5%, 35.1 - 35.8)	3582 (35.2%, 34.3 - 36.2)
High school	10,333 (16.4%, 16.1 - 16.7)	2035 (20.0%, 19.2 - 20.8)
College or above	6314 (10.0%, 9.8 - 10.2)	1288 (12.7%, 12.0 - 13.3)
Unknown*	1025 (1.6%, 1.5 - 1.7)	113 (1.1%, 0.9 - 1.3)
<b>Employment</b>		
Employed	50,534 (80.1%, 79.8 - 80.4)	7048 (69.3%, 68.4 - 70.2)
Unemployed	1109 (1.8%, 1.7 - 1.9)	236 (2.3%, 2.0 - 2.6)
Retired	6351 (10.1%, 9.8 - 10.3)	1991 (19.6%, 18.8 - 20.4)
Housework	3761 (6.0%, 5.8 - 6.1)	709 (7.0%, 6.5 - 7.5)
Unknown*	1357 (2.2%, 2.0 - 2.3)	183 (1.8%, 1.5 - 2.1)
<b>Occupation</b>		
Famer	30,616 (48.5%, 48.1 - 48.9)	3946 (38.8%, 37.9 - 39.8)
Nonfarmer	31,139 (49.3%, 48.9 - 49.7)	6038 (59.4%, 58.4 - 60.3)

Unknown*	1357 (2.2%, 2.0 - 2.3)	183 (1.8%, 1.5 - 2.1)
<b>Household Income (Yuan/year)</b>		
< 10,000	12,725 (20.2%, 19.8 - 20.5)	1582 (15.6%, 14.9 - 16.3)
10,000-50,000	34,601 (54.8%, 54.4 - 55.2)	5758 (56.6%, 55.7 - 57.6)
> 50,000	9903 (15.7%, 15.4 - 16.0)	2005 (19.7%, 18.9 - 20.5)
Unknown*	5883 (9.3%, 9.1 - 9.5)	822 (8.1%, 7.6 - 8.6)
<b>Marital Status</b>		
Married	59,671 (94.5%, 94.4 - 94.7)	9488 (93.3%, 92.8 - 93.8)
Widowed, separated, divorced, single	2629 (4.2%, 4.0 - 4.3)	563 (5.5%, 5.1 - 6.0)
Unknown*	812 (1.3%, 1.2 - 1.4)	116 (1.1%, 0.9 - 1.3)
<b>Health Insurance Status</b>		
Insured	61,637 (97.7%, 97.5 - 97.8)	9943 (97.8%, 97.5 - 98.1)
Uninsured	448 (0.7%, 0.6 - 0.8)	54 (0.5%, 0.4 - 0.7)
Unknown*	1027 (1.6%, 1.5 - 1.7)	170 (1.7%, 1.4 - 1.9)
<b>Medical History</b>		
Myocardial Infarction	334 (0.5%, 0.5 - 0.6)	162 (1.6%, 1.3 - 1.8)
Stroke	986 (1.6%, 1.5 - 1.7)	628 (6.2%, 5.7 - 6.6)
Diabetes Mellitus	2521 (4.0%, 3.8 - 4.1)	978 (9.6%, 9.0 - 10.2)
<b>CVD Risk Factor</b>		
Current smoker	17,842 (28.3%, 27.9 - 28.6)	2825 (27.8%, 26.9 - 28.7)
Current drinker	22,740 (36.0%, 35.7 - 36.4)	3789 (37.3%, 36.3 - 38.2)
Obesity	13,970 (22.1%, 21.8 - 22.5)	3271 (32.2%, 31.3 - 33.1)

CI, Confidence Interval; CVD, Cardiovascular Disease; IDH, Isolated Diastolic Hypertension

\* Participants either refused to answer the question or did not know the answer.

**Table S2. Prevalence of isolated diastolic hypertension among treated hypertensive participants, by population characteristics.**

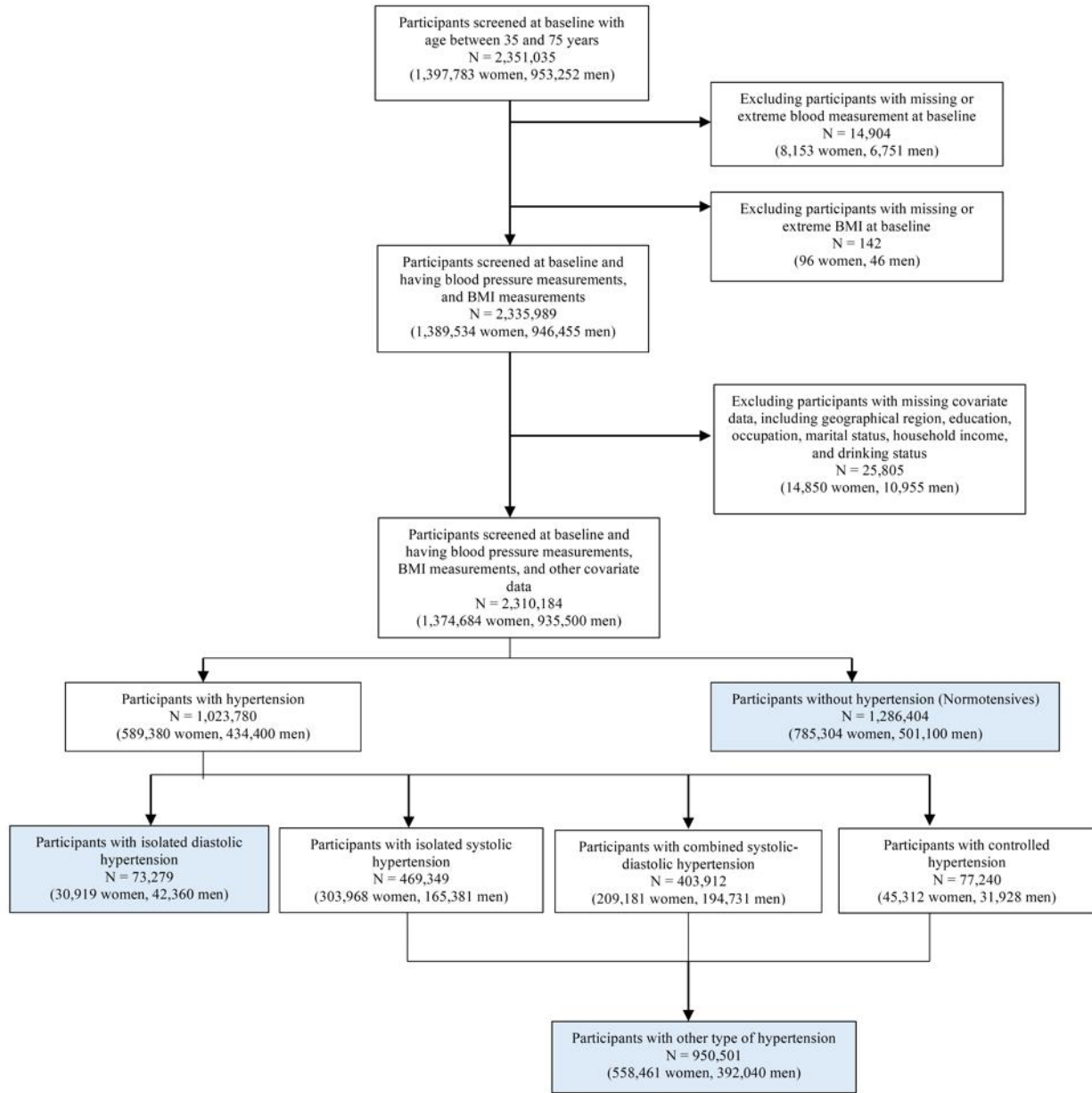
<b>Characteristics, n (%), 95% CI)</b>	<b>Treated Hypertensives</b>	<b>Prevalence of IDH</b>
<b>N (%)</b>	305,114	10,167 (3.3%, 3.3 - 3.4)
<b>Age (years)</b>		
35-39	2234	242 (10.8%, 9.5 - 12.1)
40-44	8621	880 (10.2%, 9.6 - 10.8)
45-49	22,341	1768 (7.9%, 7.6 - 8.3)
50-54	44,989	2540 (5.6%, 5.4 - 5.9)
55-59	48,750	1728 (3.5%, 3.4 - 3.7)
60-64	70,373	1652 (2.3%, 2.2 - 2.5)
65-69	63,575	923 (1.5%, 1.4 - 1.5)
70-75	44,231	434 (1.0%, 0.9 - 1.1)
<b>Sex</b>		
Men	122,604	5939 (4.8%, 4.7 - 5.0)
Women	182,510	4228 (2.3%, 2.2 - 2.4)
<b>Urbanity</b>		
Urban	121,796	3964 (3.3%, 3.2 - 3.4)
Rural	183,318	6203 (3.4%, 3.3 - 3.5)
<b>Region</b>		
Eastern	117,526	3528 (3.0%, 2.9 - 3.1)
Western	96,020	3459 (3.6%, 3.5 - 3.7)
Central	91,568	3180 (3.5%, 3.4 - 3.6)
<b>Education</b>		
Primary school or lower	141,784	3149 (2.2%, 2.1 - 2.3)
Middle school	94,633	3582 (3.8%, 3.7 - 3.9)
High school	46,285	2035 (4.4%, 4.2 - 4.6)
College or above	19,279	1288 (6.7%, 6.3 - 7.0)
Unknown*	3133	113 (3.6%, 3.0 - 4.3)
<b>Employment</b>		
Employed	184,078	7048 (3.8%, 3.7 - 3.9)
Unemployed	4236	236 (5.6%, 4.9 - 6.3)
Retired	83,825	1991 (2.4%, 2.3 - 2.5)
Housework	28,919	709 (2.5%, 2.3 - 2.6)
Unknown*	4056	183 (4.5%, 3.9 - 5.2)
<b>Occupation</b>		
Famer	139,046	3946 (2.8%, 2.8 - 2.9)
Nonfarmer	162,012	6038 (3.7%, 3.6 - 3.8)
Unknown*	4056	183 (4.5%, 3.9 - 5.2)

<b>Household Income (Yuan/year)</b>		
< 10,000	62,445	1582 (2.5%, 2.4 - 2.7)
10,000-50,000	171,760	5758 (3.4%, 3.3 - 3.4)
> 50,000	48,107	2005 (4.2%, 4.0 - 4.3)
Unknown*	22,802	822 (3.6%, 3.4 - 3.8)
<b>Marital Status</b>		
Married	276,287	9488 (3.4%, 3.4 - 3.5)
Widowed, separated, divorced, single	25,708	563 (2.2%, 2.0 - 2.4)
Unknown*	3119	116 (3.7%, 3.1 - 4.4)
<b>Health Insurance Status</b>		
Insured	299,640	9943 (3.3%, 3.3 - 3.4)
Uninsured	1262	54 (4.3%, 3.2 - 5.4)
Unknown*	4212	170 (4.0%, 3.4 - 4.6)
<b>Medical History</b>		
Myocardial Infarction	5776	162 (2.8%, 2.4 - 3.2)
Stroke	21,343	628 (2.9%, 2.7 - 3.2)
Diabetes Mellitus	45,532	978 (2.1%, 2.0 - 2.3)
<b>CVD Risk Factor</b>		
Current smoker	56,473	2825 (5.0%, 4.8 - 5.2)
Current drinker	72,935	3789 (5.2%, 5.0 - 5.4)
Obesity	84,843	3271 (3.9%, 3.7 - 4.0)

CI, Confidence Interval; CVD, Cardiovascular Disease; IDH, Isolated Diastolic Hypertension

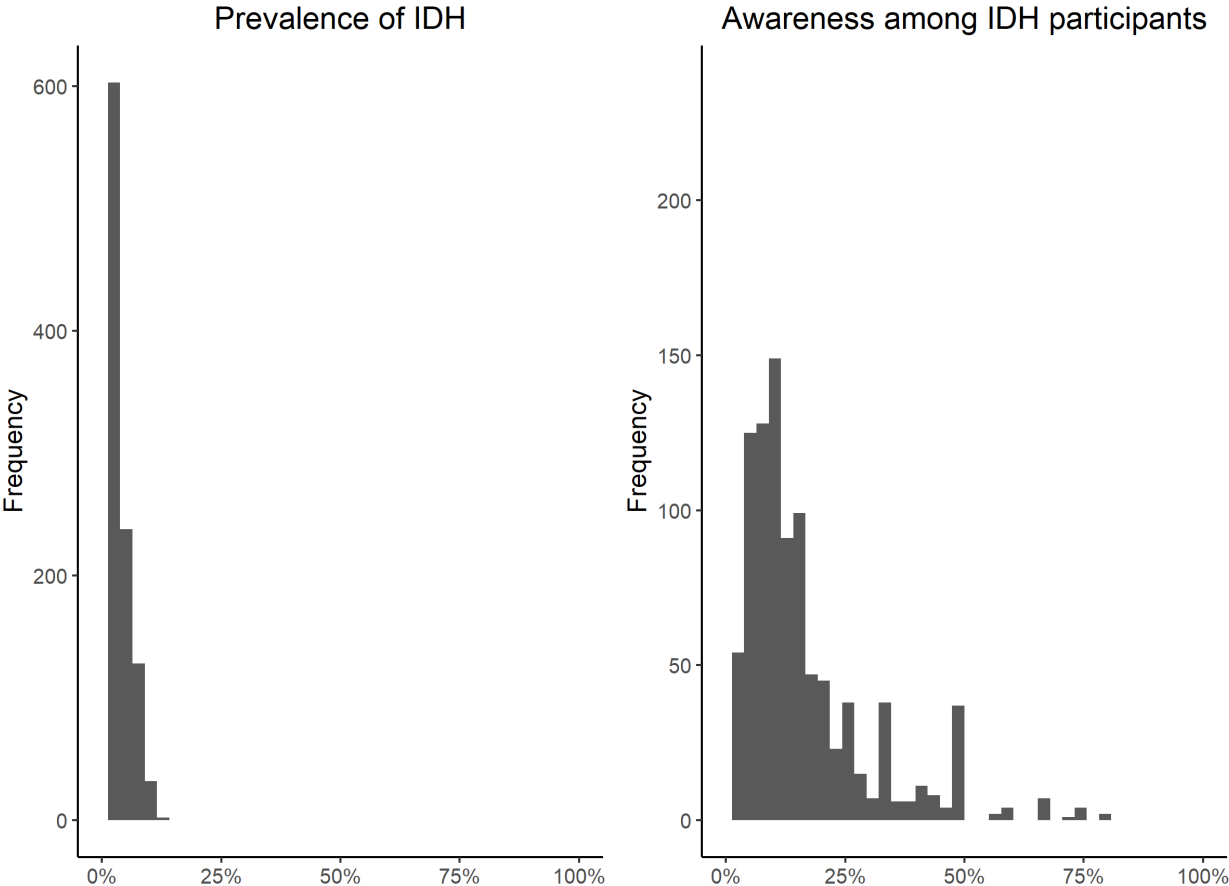
\* Participants either refused to answer the question or did not know the answer.

**Figure S1. Flowchart of study participant selection in China Patient-Centered Evaluative Assessment of Cardiac Events Million Persons Project.**



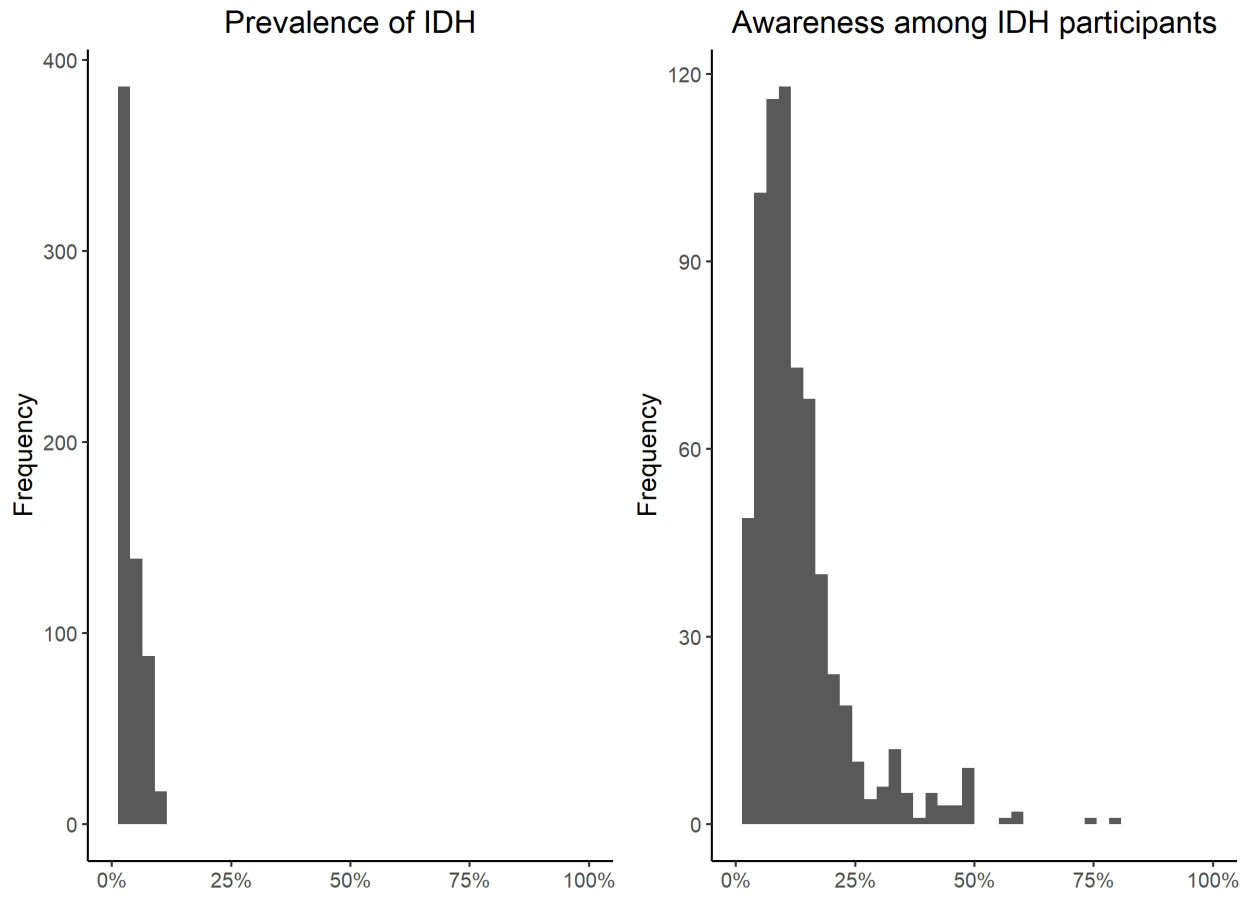
BMI, Body Mass Index

**Figure S2. Histograms of prevalence of isolated diastolic hypertension (IDH) and awareness among untreated IDH participants in 1,198 mutually exclusive population subgroups (at least 200 participants each) defined priori by 10 selected characteristics.**



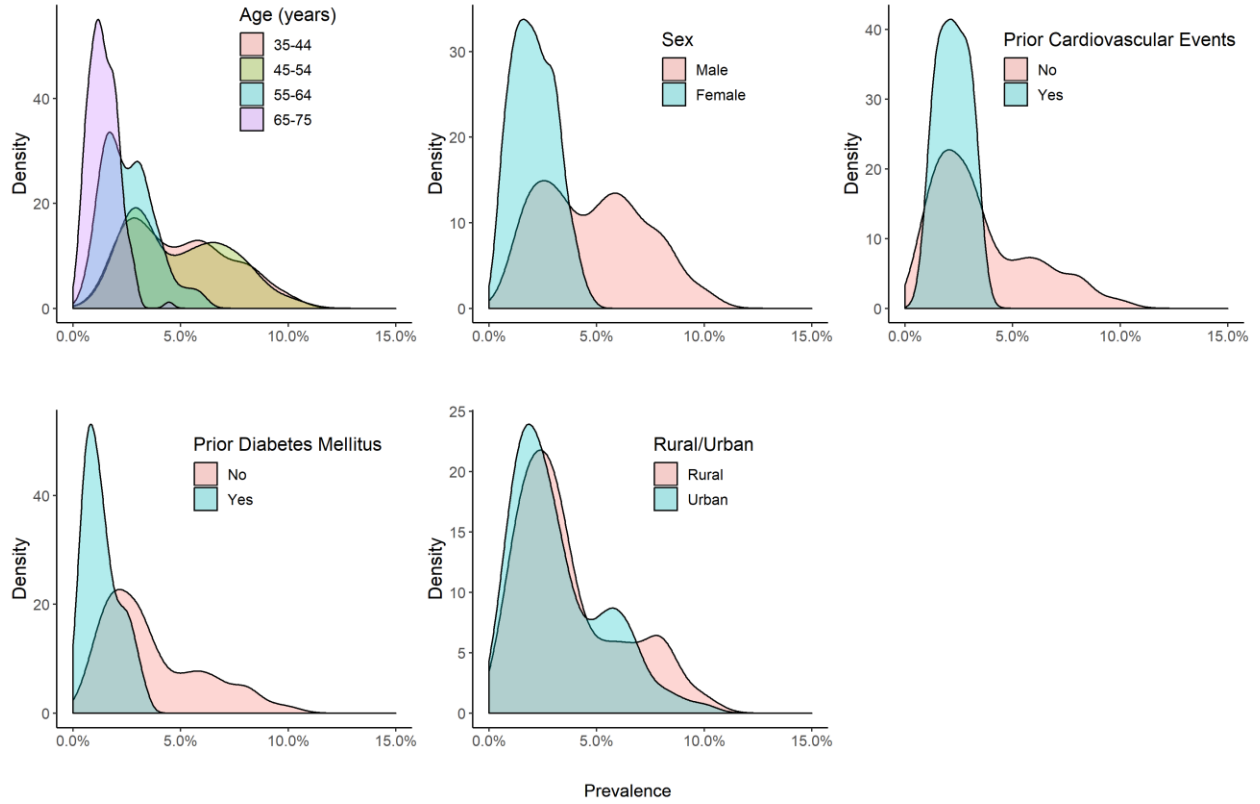


**Figure S3. Histograms prevalence of isolated diastolic hypertension (IDH) and awareness among untreated IDH participants in 731 mutually exclusive population subgroups (at least 500 participants each) defined priori by 10 selected characteristics.**

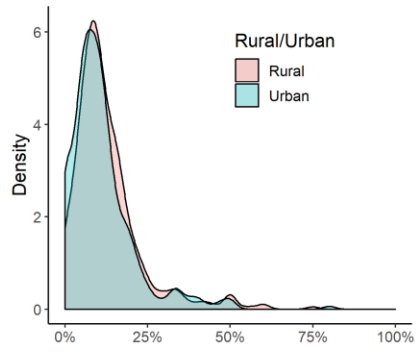
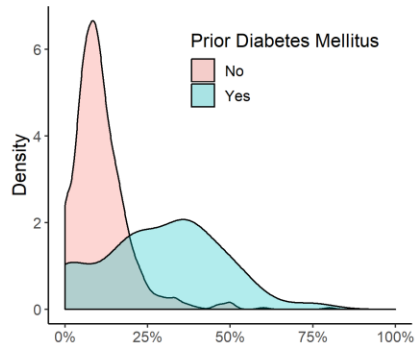
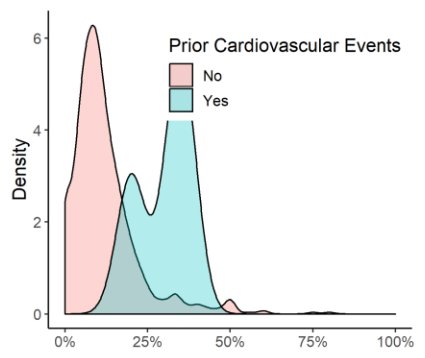
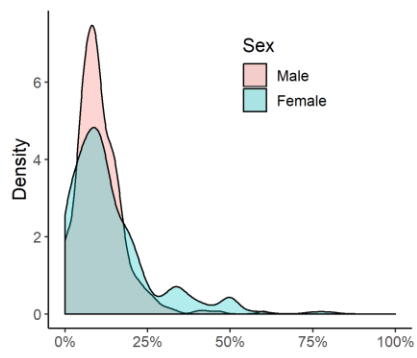
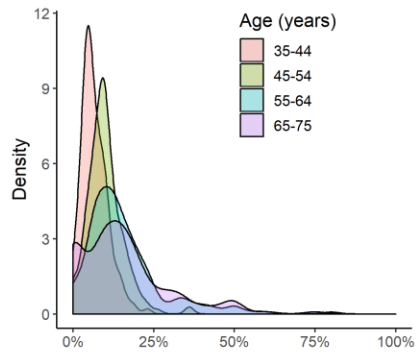


**Figure S4. Density plots of prevalence of isolated diastolic hypertension (IDH) among all study participants (A) and awareness among untreated IDH participants (B) in 731 mutually exclusive population subgroups (of at least 500 participants), by age, sex, prior cardiovascular events, history of diabetes and urbanity.**

**A. Prevalence**



**B. Awareness**



Awareness

**Figure S5. Number of antihypertensive medications used by treated participants with isolated diastolic hypertension, by degree of diastolic blood pressure (DBP) elevation.**

