Table S1 Linear regression between LUTS/BPH and number of chronic diseases before and after PSM

	Before PSM		After PSM	
	Model 1	Model 2	Model 1	Model 2
LUTS/BPH	β=0.188, P<0.001	β=0.175, P<0.001	β=0.247, P<0.001	β=0.245, P<0.001

β = standardized regression coefficient. Model 1 = adjusted for age; Model 2 = adjusted for age, BMI, marital status, education level, residence, smoking, drinking, sleep, health insurance, physical activity and monthly pension. LUTS/BPH, lower urinary tract symptoms/benign prostatic hyperplasia; PSM, propensity score matching.

Table S2 Logistic regression results between covariates and the multimorbidity among 6,645 Chinese middle–aged and elderly Chinese individuals in the CHARLS

	Multimorbidity									
Variable	At least one		At least two		At least three		At least four		At least five	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Age	1.05 (1.04–1.06)	<0.001***	1.04 (1.04–1.05)	<0.001***	1.04 (1.03–1.05)	<0.001***	1.04 (1.03–1.05)	<0.001***	1.04 (1.03–1.05)	<0.001***
BMI	1.04 (1.03–1.06)	<0.001***	1.05 (1.04–1.07)	<0.001***	1.07 (1.05–1.09)	<0.001***	1.07 (1.05–1.09)	<0.001***	1.07 (1.04–1.09)	<0.001***
Marital status										
Widowed or single	0.90 (0.77–1.07)	0.22	0.96 (0.83–1.12)	0.61	0.99 (0.83–1.17)	0.88	1.02 (0.81–1.26)	0.89	0.79 (0.57–1.08)	0.15
Education level										
High school or lower	0.73 (0.65–0.83)	<0.001***	0.81 (0.72–0.92)	<0.001***	0.83 (0.71–0.95)	0.01*	0.81 (0.66–0.98)	0.03*	0.79 (0.59–1.03)	0.09
Location										
Urban	0.69 (0.61–0.78)	<0.001***	0.86 (0.76–0.97)	0.01*	0.83 (0.71–0.95)	0.01*	0.82 (0.68–0.99)	0.04*	0.87 (0.67–1.12)	0.27
Smoking										
Yes	0.92 (0.79–1.07)	0.29	0.92 (0.80–1.06)	0.27	1.02 (0.87–1.20)	0.81	1.10 (0.89–1.36)	0.40	1.16 (0.88–1.57)	0.31
Drinking										
Yes	0.81 (0.72–0.90)	<0.001***	0.82 (0.74–0.91)	<0.001***	0.80 (0.71–0.90)	<0.001***	0.76 (0.65–0.89)	<0.001***	0.79 (0.64–0.98)	0.03*
Sleep	0.95 (0.92–0.98)	0.002**	0.94 (0.92–0.97)	<0.001***	0.91 (0.89–0.94)	<0.001***	0.89 (0.85–0.93)	<0.001***	0.87 (0.82–0.92)	<0.001***
Physical activity (%)	0.93 (0.83–1.05)	0.22	1.03 (0.92–1.15)	0.65	0.89 (0.78–1.01)	0.08	0.93 (0.78–1.11)	0.42	0.82 (0.64–1.05)	0.12
Insurance	0.98 (0.80–1.22)	0.89	0.72 (0.58–0.88)	0.002**	0.82 (0.65–1.04)	0.12	0.99 (0.73–1.33)	0.96	0.86 (0.54–1.31)	0.50
Monthly pension	1.00 (1.00–1.00)	0.98	1.00 (1.00–1.00)	0.91	1.00 (1.00–1.00)	0.68	1.00 (1.00–1.00)	0.12	1.00 (1.000–1.000)	0.62

***, P<0.001; **, P<0.01; *, P<0.05. CHARLS, China Health and Retirement Longitudinal Study; BMI, body mass index; OR, odds ratio; CI, confidence interval.

Table S3 Univariate and multivariable logistic regression analysis of LUTS/BPH and multimorbidity after PSM

	Multimorbidity									
Regression analysis	At least one		At least two		At least three		At least four		At least five	
	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P	OR (95% CI)	P
Univariate	2.18 (1.72–2.77)	<0.001***	2.31 (1.89–2.82)	<0.001***	2.43 (1.97–3.00)	<0.001***	2.51 (1.95–3.24)	<0.001***	3.51 (2.52–4.99)	<0.001***
Multivariable										
Model 1	2.24 (1.76–2.85)	<0.001***	2.35 (1.92–2.87)	<0.001***	2.53 (2.02–3.08)	<0.001***	2.55 (1.98–3.30)	<0.001***	3.55 (2.54–5.05)	<0.001***
Model 2	2.26 (1.77–2.89)	<0.001***	2.37 (1.94–2.90)	<0.001***	2.53 (2.05–3.14)	<0.001***	2.60 (2.01–3.38)	<0.001***	3.69 (2.62–5.29)	<0.001***

***, P<0.001. LUTS/BPH, lower urinary tract symptoms/benign prostatic hyperplasia; PSM, propensity score matching; OR, odds ratio; CI, confidence interval.
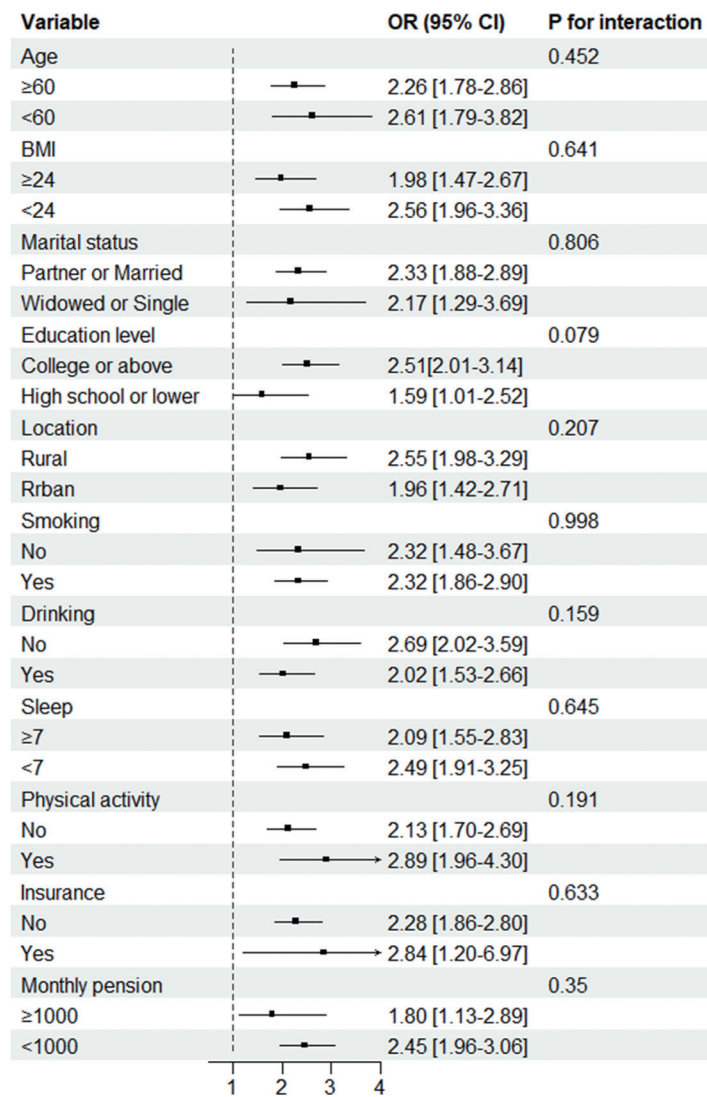
Variable		OR (95% CI)	P for interaction
Age			0.452
≥60		2.26 [1.78-2.86]	
<60		2.61 [1.79-3.82]	
BMI			0.641
≥24		1.98 [1.47-2.67]	
<24		2.56 [1.96-3.36]	
Marital status			0.806
Partner or Married		2.33 [1.88-2.89]	
Widowed or Single		2.17 [1.29-3.69]	
Education level			0.079
College or above		2.51[2.01-3.14]	
High school or lower		1.59 [1.01-2.52]	
Location			0.207
Rural		2.55 [1.98-3.29]	
Rrban		1.96 [1.42-2.71]	
Smoking			0.998
No		2.32 [1.48-3.67]	
Yes		2.32 [1.86-2.90]	
Drinking			0.159
No		2.69 [2.02-3.59]	
Yes		2.02 [1.53-2.66]	
Sleep			0.645
≥7		2.09 [1.55-2.83]	
<7		2.49 [1.91-3.25]	
Physical activity			0.191
No		2.13 [1.70-2.69]	
Yes		2.89 [1.96-4.30]	
Insurance			0.633
No		2.28 [1.86-2.80]	
Yes		2.84 [1.20-6.97]	
Monthly pension			0.35
≥1000		1.80 [1.13-2.89]	
<1000		2.45 [1.96-3.06]	

1 2 3 4

Figure S1 Results of subgroups analyses. BMI, body mass index; OR, odds ratio; CI, confidence interval.