



Prediabetes and Diabetes in China

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Diabetes

- A chronic disease affecting about 300 million people worldwide;
- Significantly increases mortality and contributes to the global disease burden;
- Controlling diabetes can reduce macro- and micro-vascular complications of the disease.
- China has a large number of the population living with diabetes.

This Study

Use nationally representative survey data from China to estimate

- Prevalence, diagnosis, and management of diabetes;
- Prevalence of prediabetes.

Data

China Health and Retirement Longitudinal Study (CHARLS)

- 2011-2012 national baseline;
- Nationally representative of the 45+;
- Household survey + Venous blood collection.



Sample

- 45 years and older;
- Completed questions regarding their medical history related to diabetes;
- Provided valid fasting plasma glucose;
- Provided whole blood for HbA1c levels.
- **N=10,008**

Measures

Prediabetes

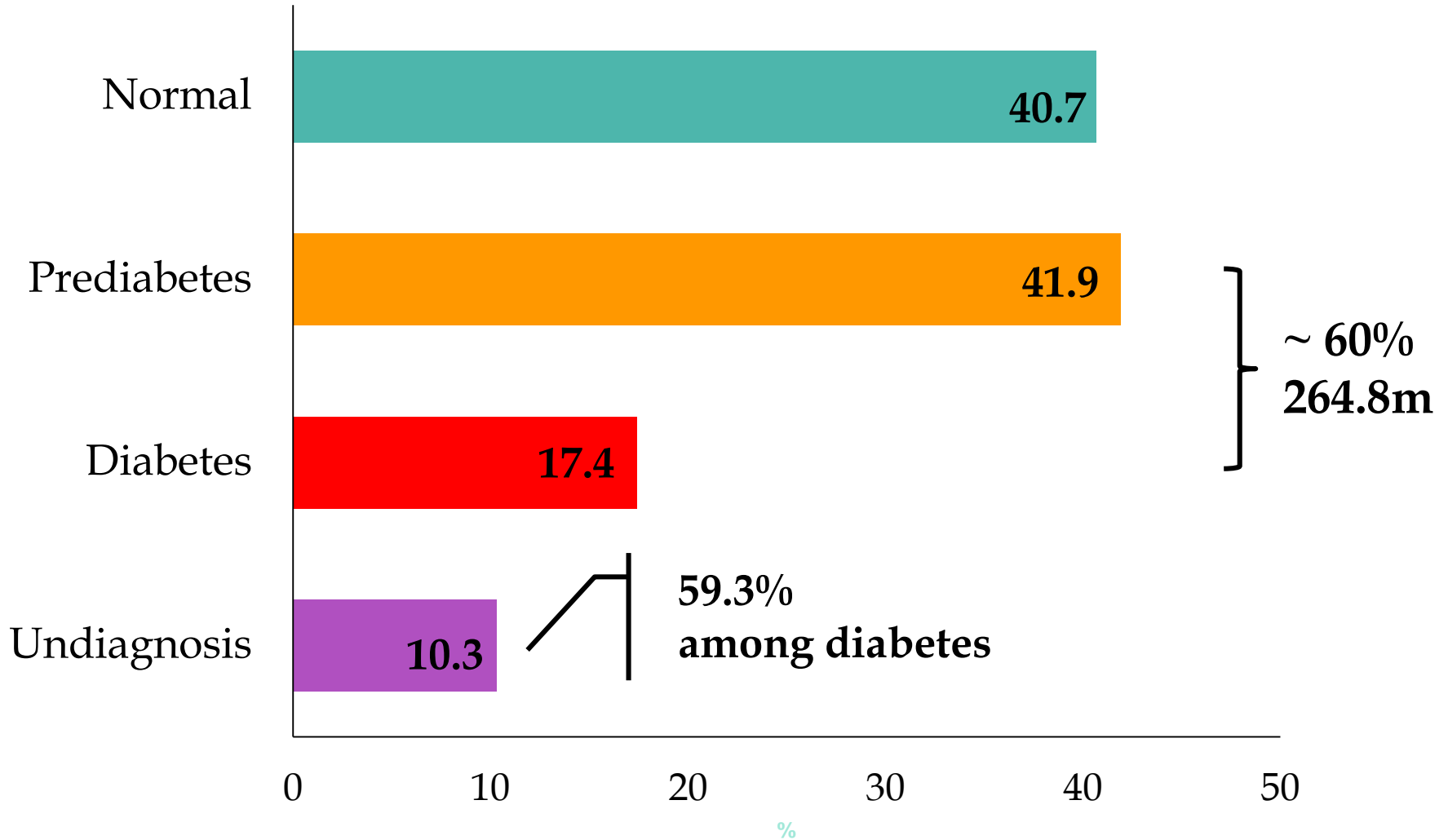
- No self-report of diagnosis
- Fasting plasma glucose level
100mg/dL - 125mg/dL
(5.6mmol/L - 6.9mmol/L)
- HbA1c concentration
5.7% - 6.4%

Diabetes

- Self-report of diagnosis
- Fasting plasma glucose level
 ≥ 126 mg/dL
(≥ 7.0 mmol/L)
- HbA1c concentration
 $\geq 6.5\%$

Prevalence of Prediabetes and Diabetes

Prevalence (%)



Factors associated with being diabetic

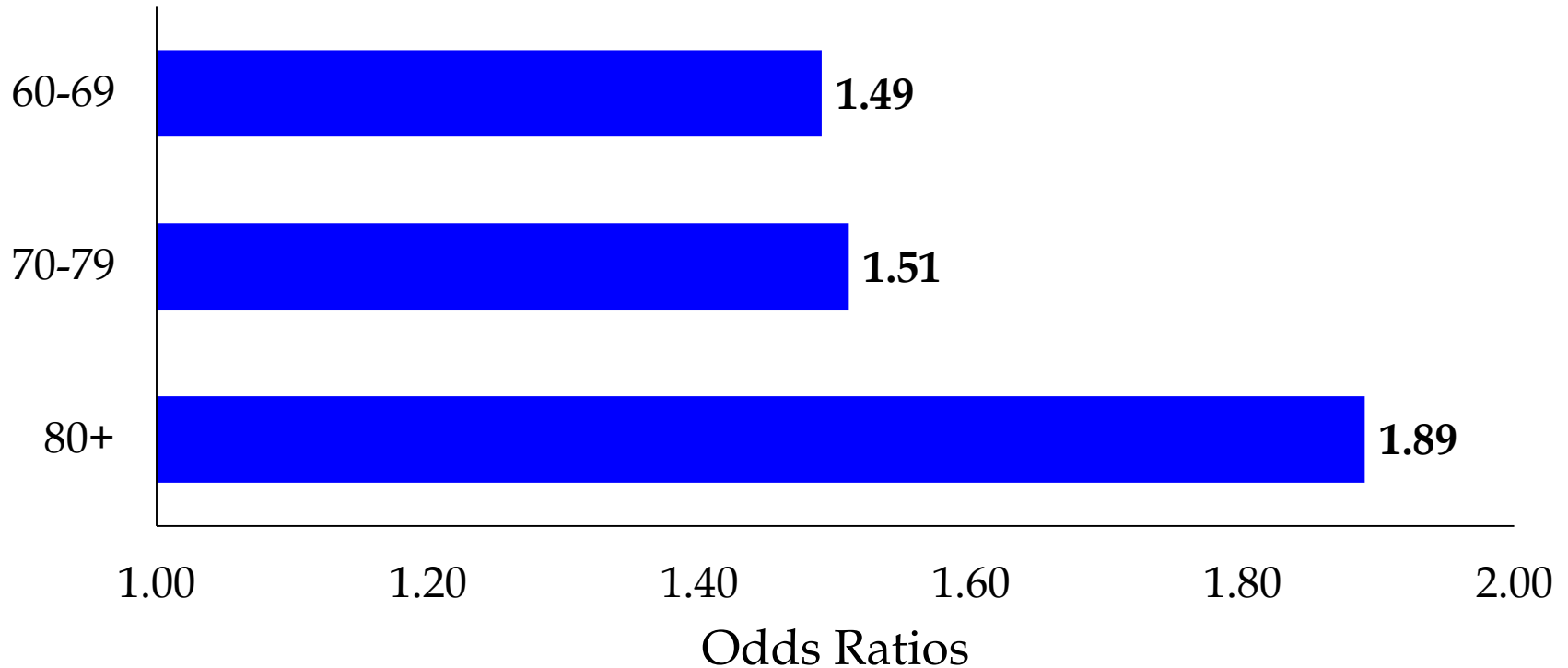
Weighted logit regression model:

Associations with:

- Sociodemographic characteristics;
- Hukou and residency;
- Health indicators:
BMI, waist circumference, and total cholesterol.

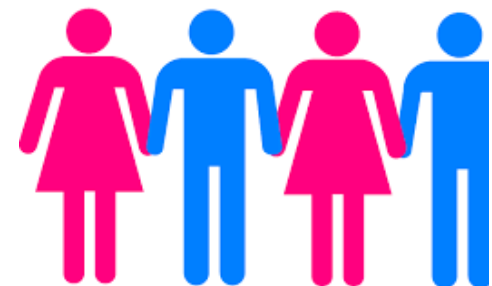
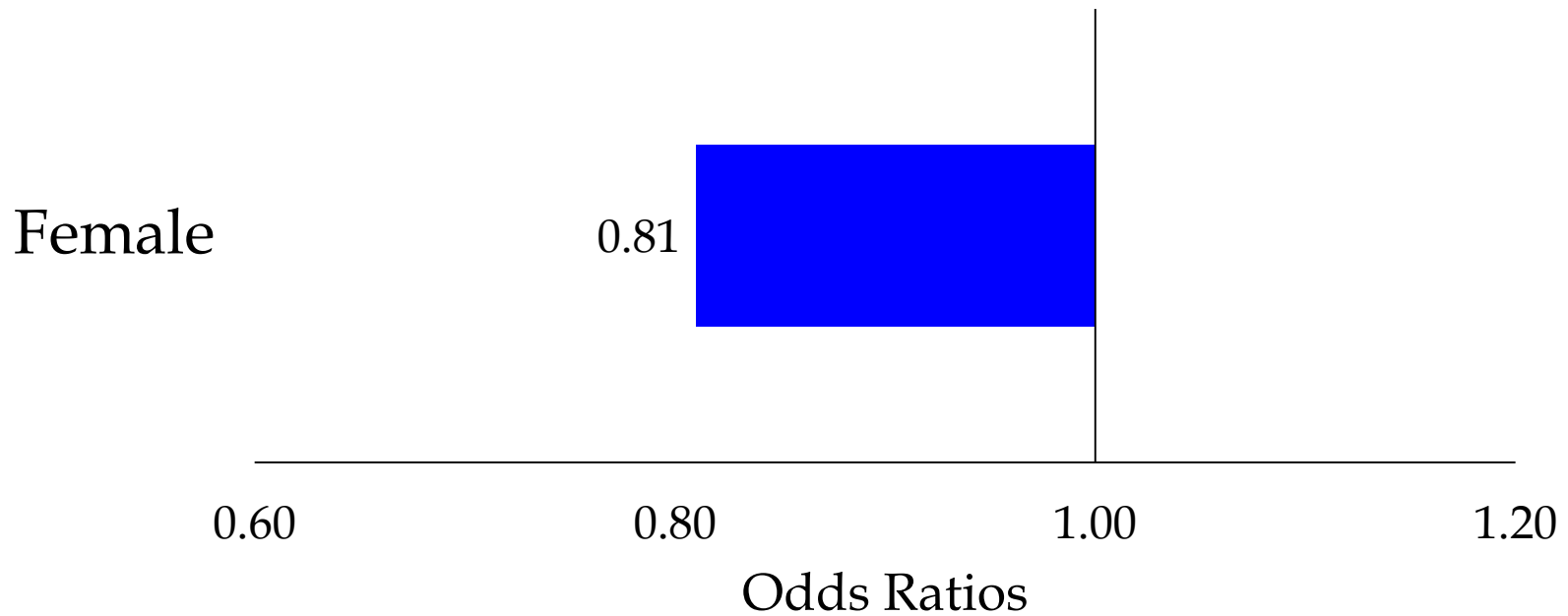
Increases with Age

(Ref = 45-59)



Higher among Men

(Ref = Male)



Urban-Rural: Hukou/Residency

Hukou

Residency



Agricultural



RURAL



URBAN

Rural/Rural

Rural/Urban

Non-Coastal → Urban/NC

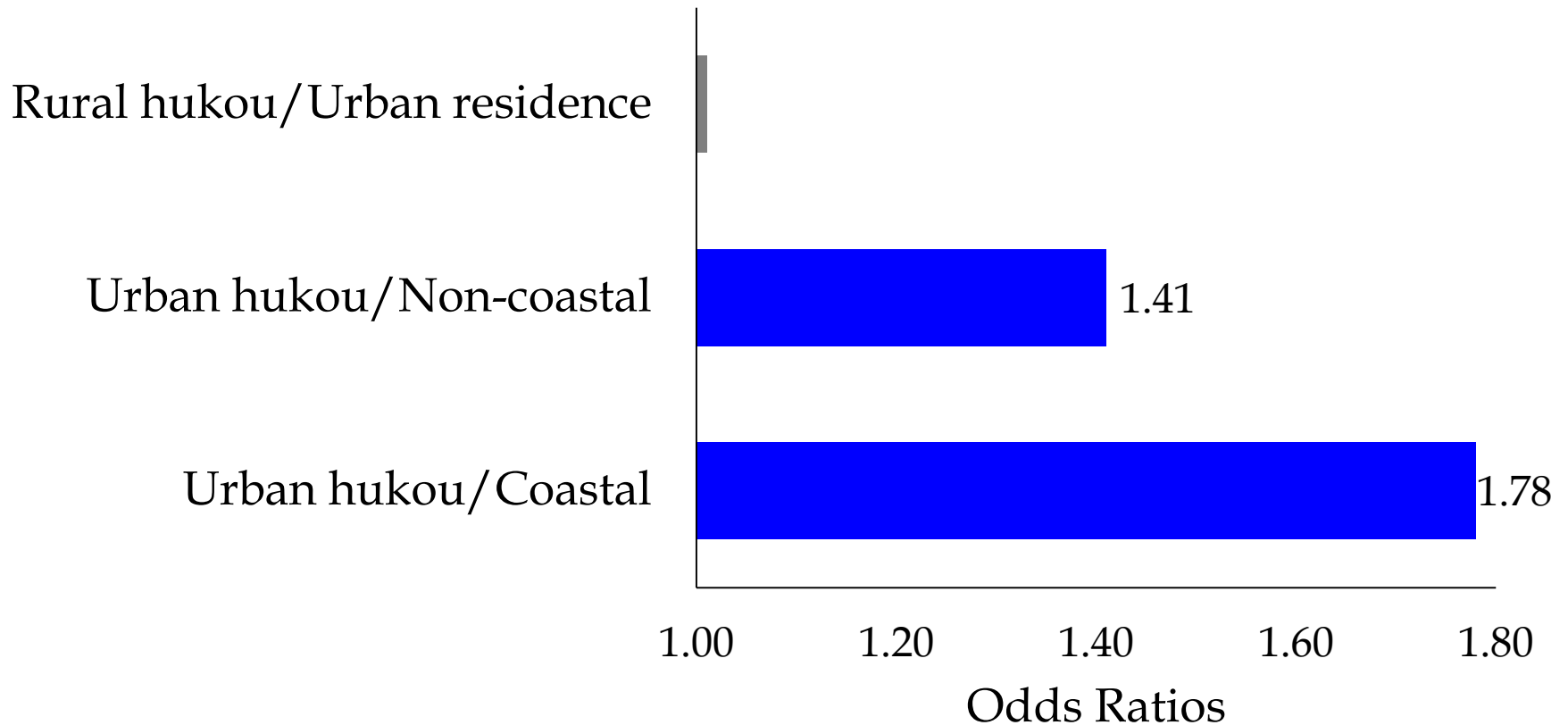
Coastal → Urban/C



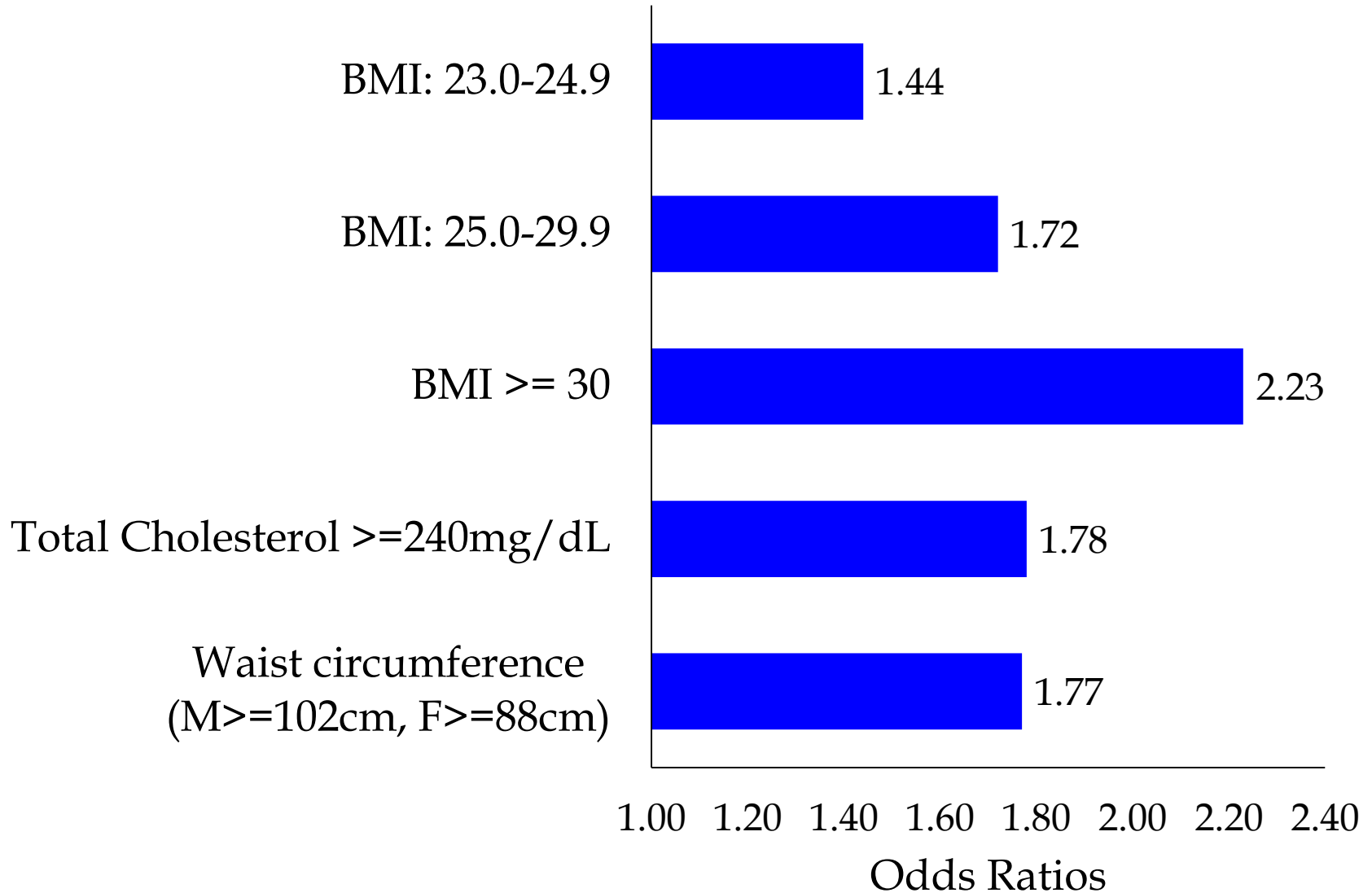
Non-Agricultural

Higher for Urban Hukou

(Ref=Rural/Rural)

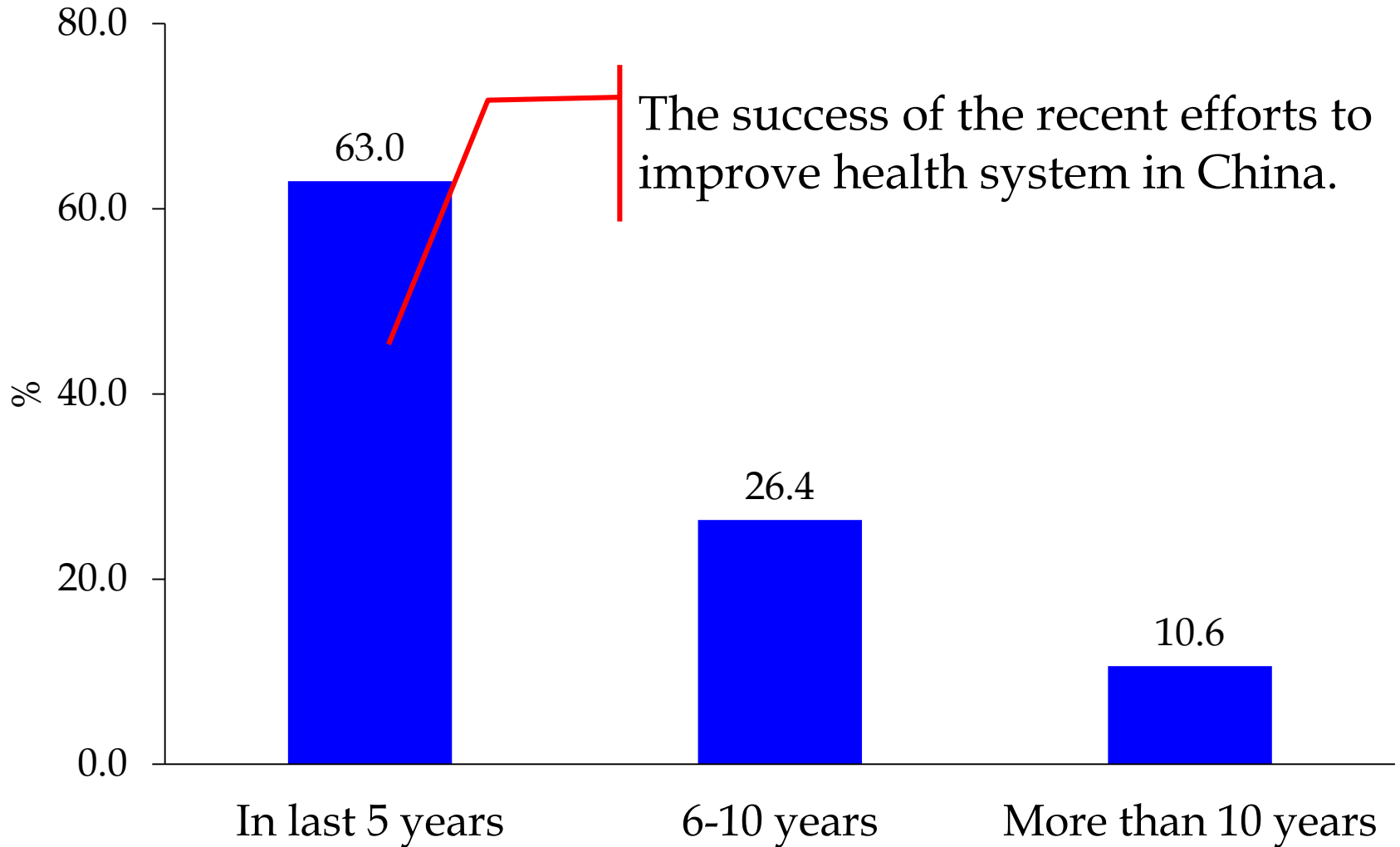


Health Indicators

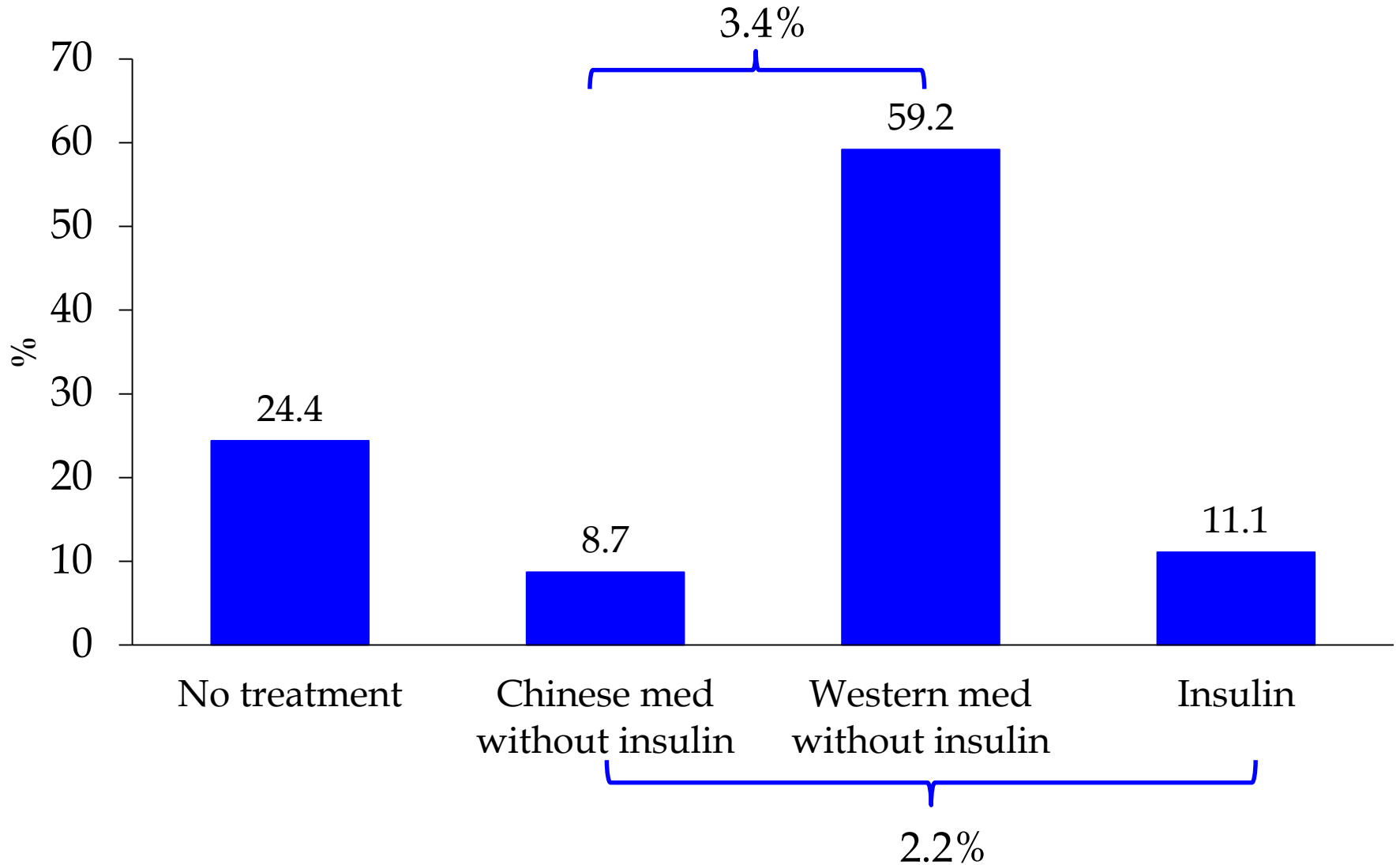


Diagnosis, Management, and Education

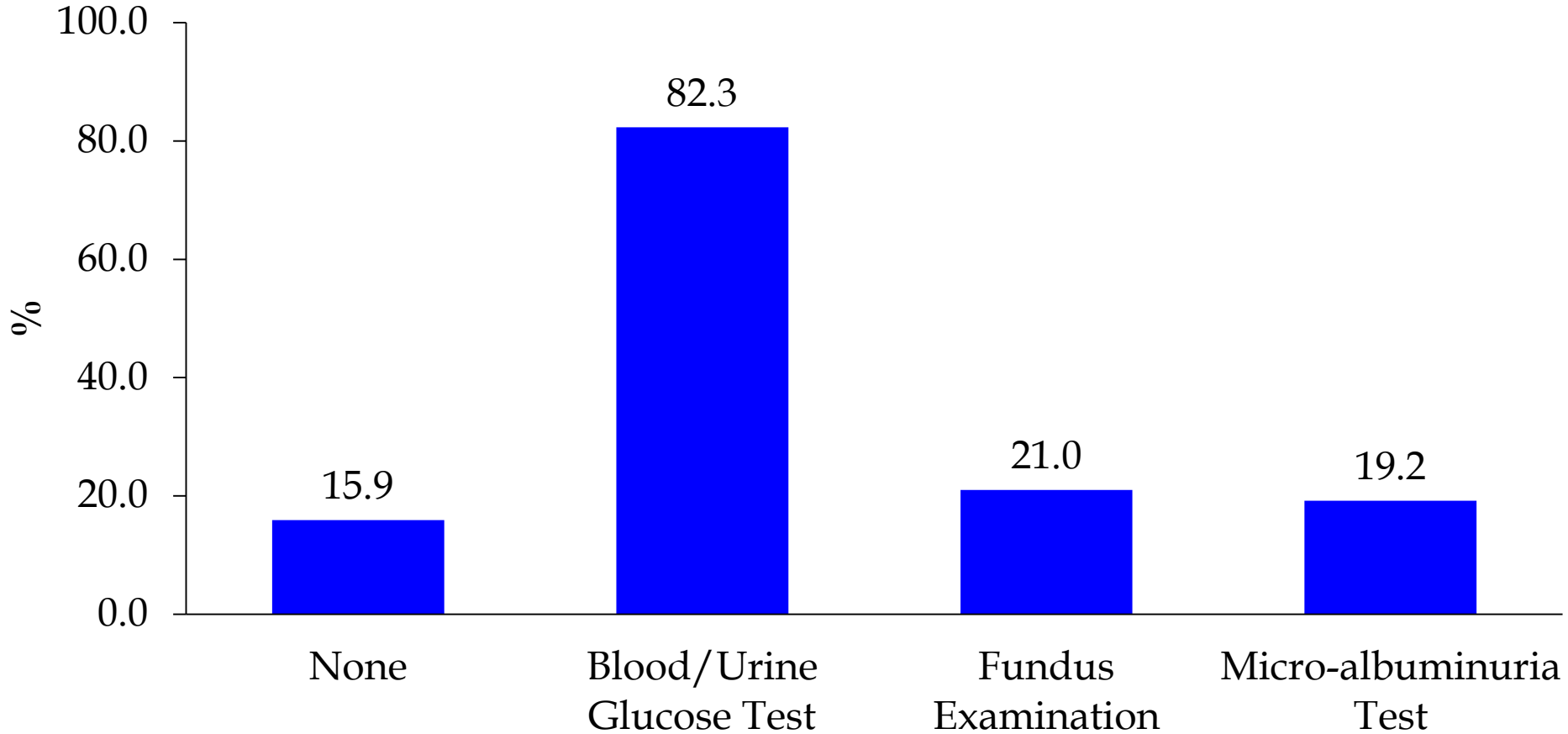
Diabetes Diagnosis



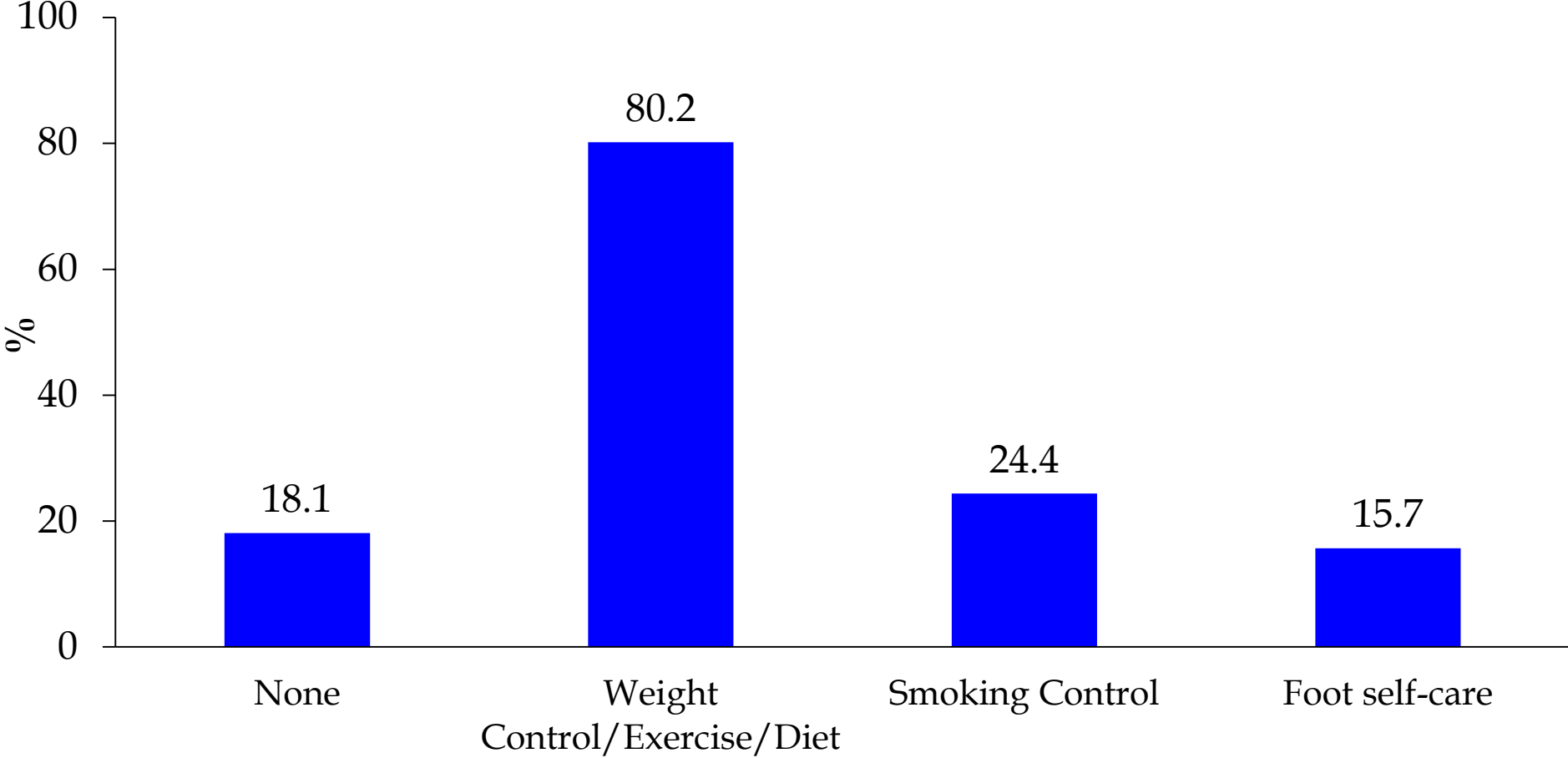
Diabetes Treatment



Tests for Diabetes

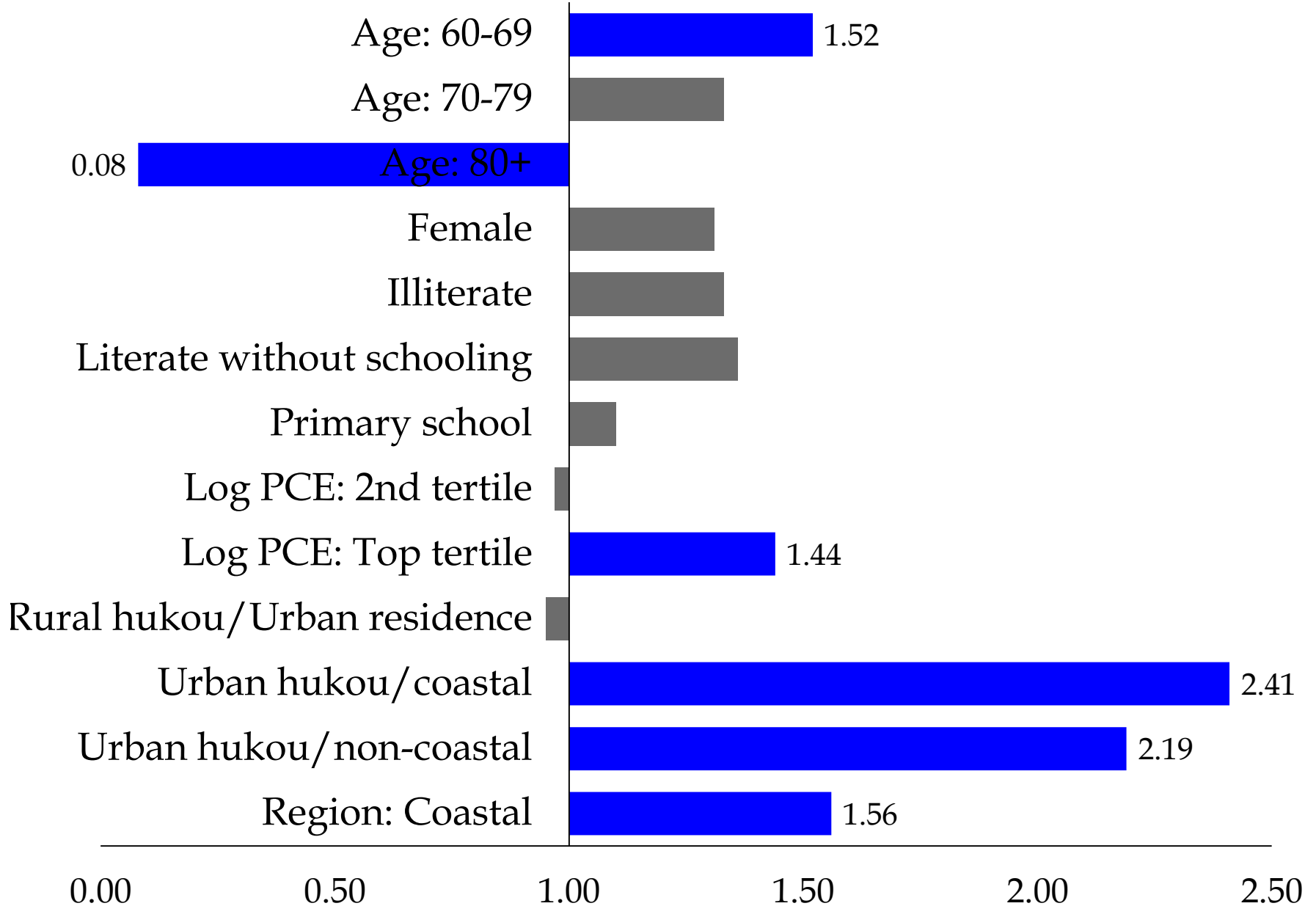


Health Education



Differentials in Diagnosis and Management

Among diabetics: Differentials in Diagnosis



Diagnosis is more likely among individuals

- With urban hukou;
- In the top tertile of household per capita expenditure;
- Living in better-off coastal regions.

Among diagnosed diabetics

Recent Diagnosis Previous 5 yrs

Age (45-59)

60-69

70+

-

Female

Education (Junior school+)

Illiterate

Literate without schooling

Primary school

Log PCE (Bottom tertile)

2nd tertile

Top tertile

-

Urban-Rural (Rural/rural)

Rural hukou/urban residence

Urban hukou/non-coastal

Urban hukou/coastal

-

Coastal (Non-coastal)

Targets people who were less likely to have been previous diagnosed:
-- low economic resource
-- rural households

Among diagnosed diabetics

Treatment Western Med/Insulin

Age (45-59)

60-69

70+

Female

Education (Junior school+)

Illiterate

+

Literate without schooling

Primary school

Log PCE (Bottom tertile)

2nd tertile

Top tertile

+

Top tertile:

Greater economic resource

Urban-Rural (Rural/rural)

Rural hukou/urban
residence

+

Urban hukou/non-coastal

Urban hukou/coastal

+

Urban, Coastal:

Better access to health care

Coastal (Non-coastal)

Among diagnosed diabetics

	Test	Health Info
	Blood/Urine Glucose Test	Weight Control, Exercise, Diet
Age (45-59)		
60-69		
70+		-
Female		-
Education (Junior school+)		
Illiterate		
Literate without schooling		
Primary school		
Log PCE (Bottom tertile)		
2nd tertile		
Top tertile		+
Urban-Rural (Rural/rural)		
Rural hukou/urban residence	+	
Urban hukou/non-coastal		+
Urban hukou/coastal		+
Coastal (Non-coastal)		

Urban, Coastal:
Better access to health care
Higher quality health care

Future Work

Since CHARLS is a longitudinal study, we can track changes over time.

Acknowledgements

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