Cardiovascular health condition in Chinese immigrants living in Milan

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Huge Chinese population living in Italy

Zhejiang
54,426,891 (Year2010)

60.6 million (2016)

320,000 Chinese in Italy
0.53% of the Italian population

National Institute of Statistics (Italy) 2015

Are they healthy?

- Host country
  - Health care accessibility, Acceptances, Diet…
- Origin
  - Lifestyle, Health awareness, Education …
- gene
  - Susceptibility to diseases... e.g. Stroke, BMI cutoffs
- …
  - Language, willingness to adapt…

Two pilot studies to Investigate the cardiovascular profile in

Chinese immigrants living in Milan

as compared with
1. Local Italians 2. Chinese living in Beijing

World Hypertension day. May 17

Questionnaire on CV;
BP measured on site

Policlinico: Health care activity in Chinese Community in Milan
Auxologico: Cardiovascular survey in Italy

487 Chinese in Milan
Hypertension day 2013-2015

VS.

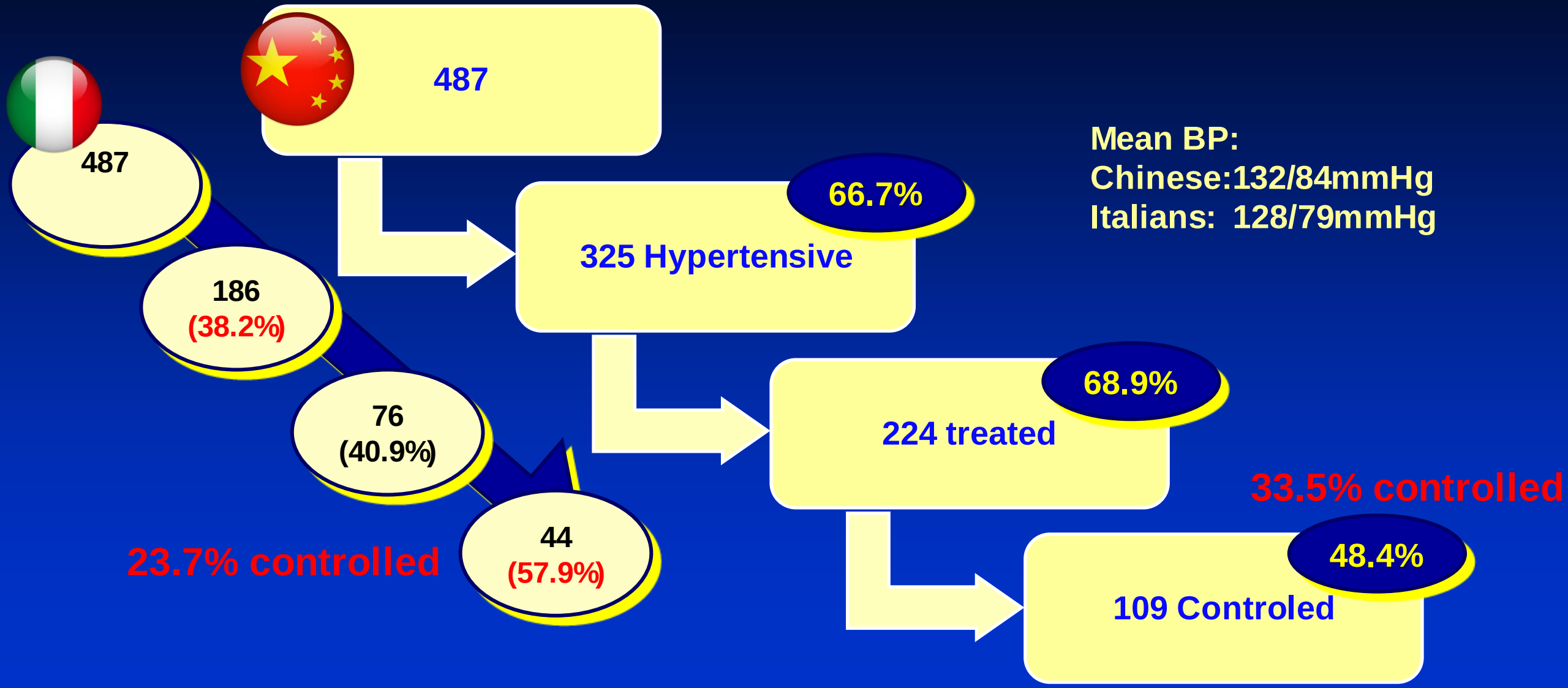
487 Italians in north Italy
Hypertension day 2015

Age<1year and gender 1:1 matched

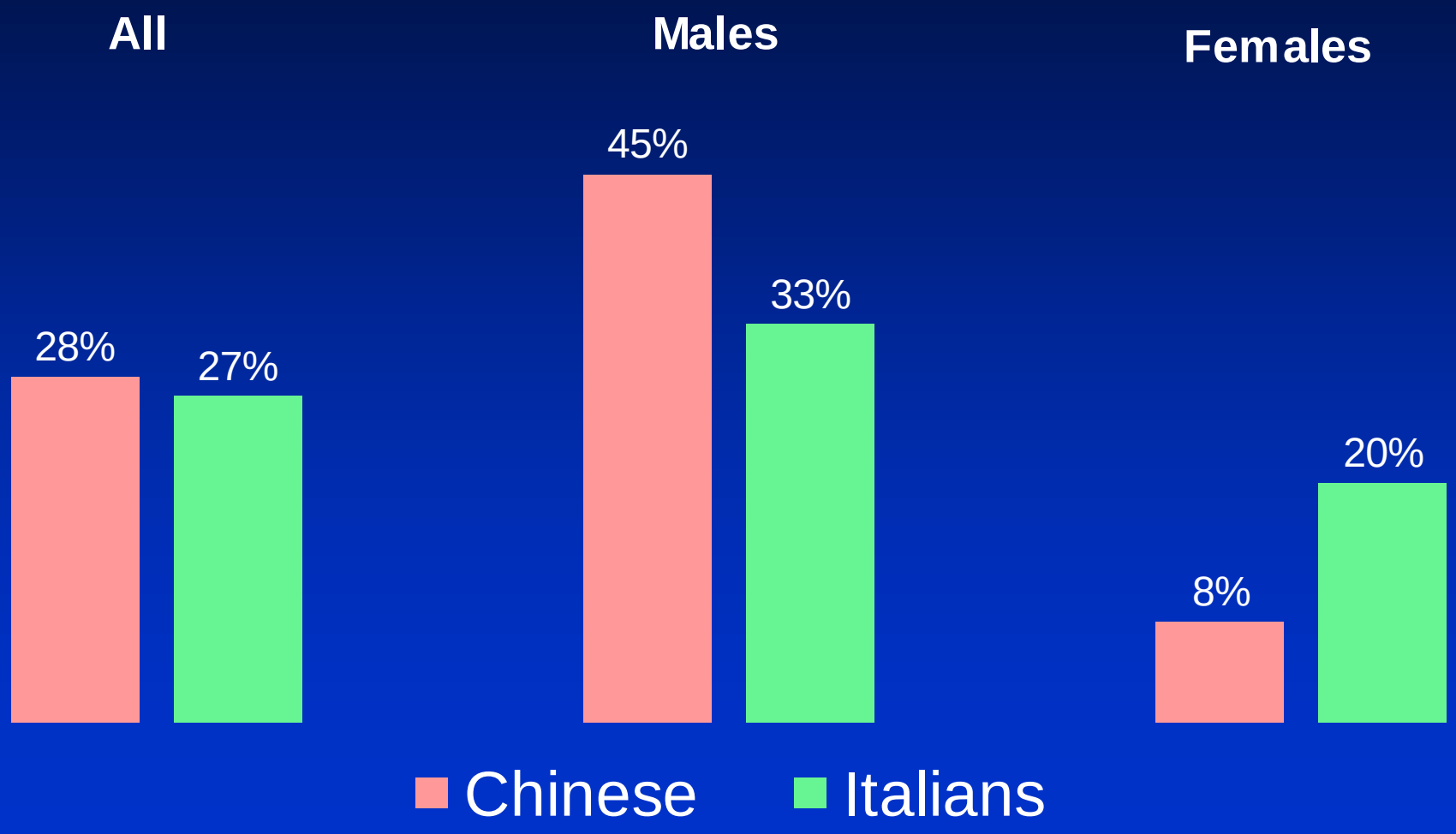
Age (SD)=48(12.2) years
Male 54.6%
62.1% living in Milan>=10 years

Chinese had smaller body mass index (BMI=24.2 kg/m^2) than Italians (25.9 kg/m^2)

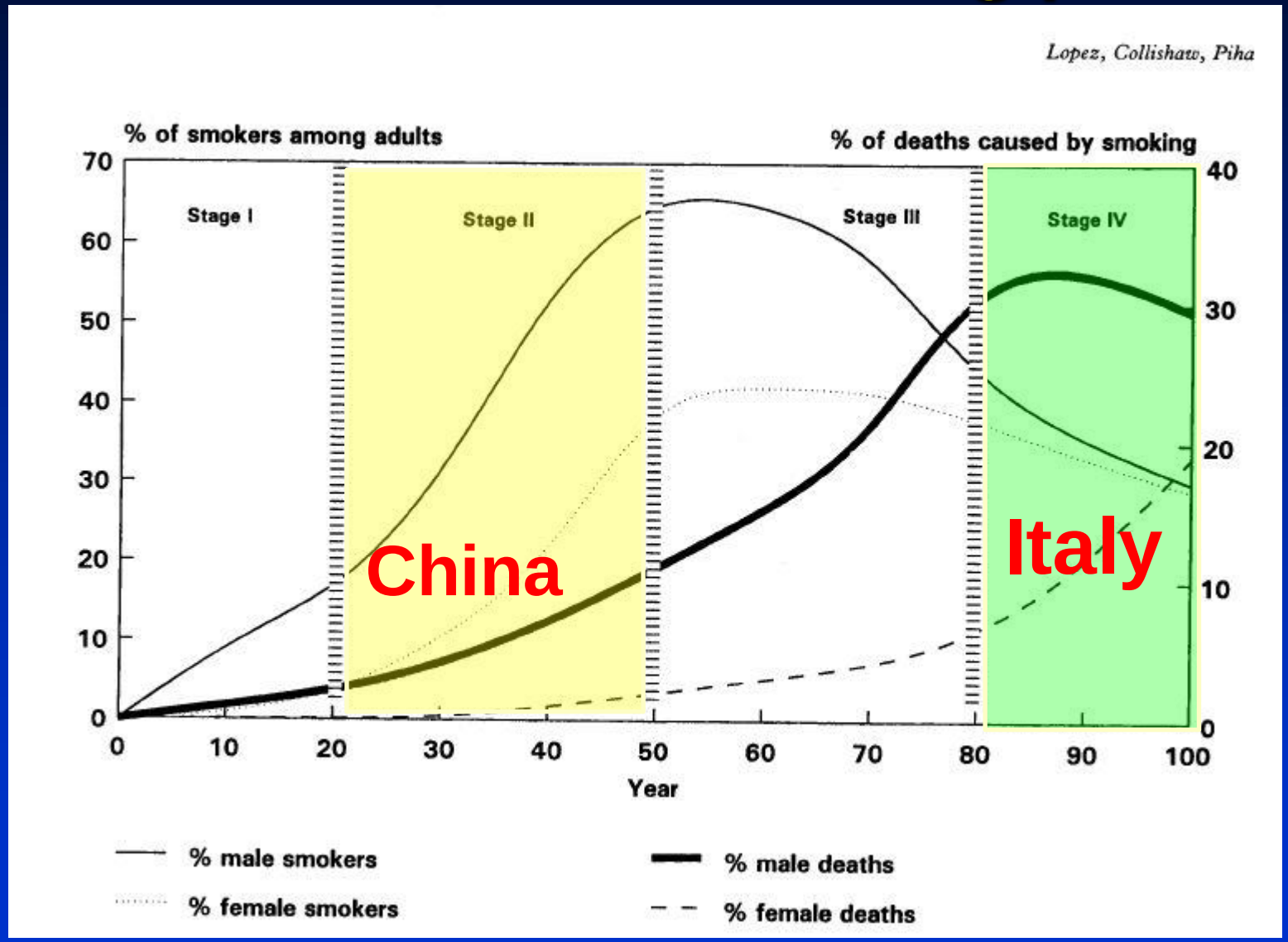
BP and Hypertension prevalence and control



Smoking rate/Pattern



Smoking pattern progress



From Pilot study I

- Chinese immigrants are less healthy…. More hypertension, more smoking, although they are thinner

2nd study

Subjects were selected from who visited hospitals for general health check

Chinese in Milan	VS.	Chinese in Beijing
2014-2017 Residence in Milan>=12m Policlinico		2016-2017 Residence in Beijing Fuwai Hospital

Match conditions: age<3 years, same gender

Variables: age, gender, weight, height, blood test, urine test, blood pressure

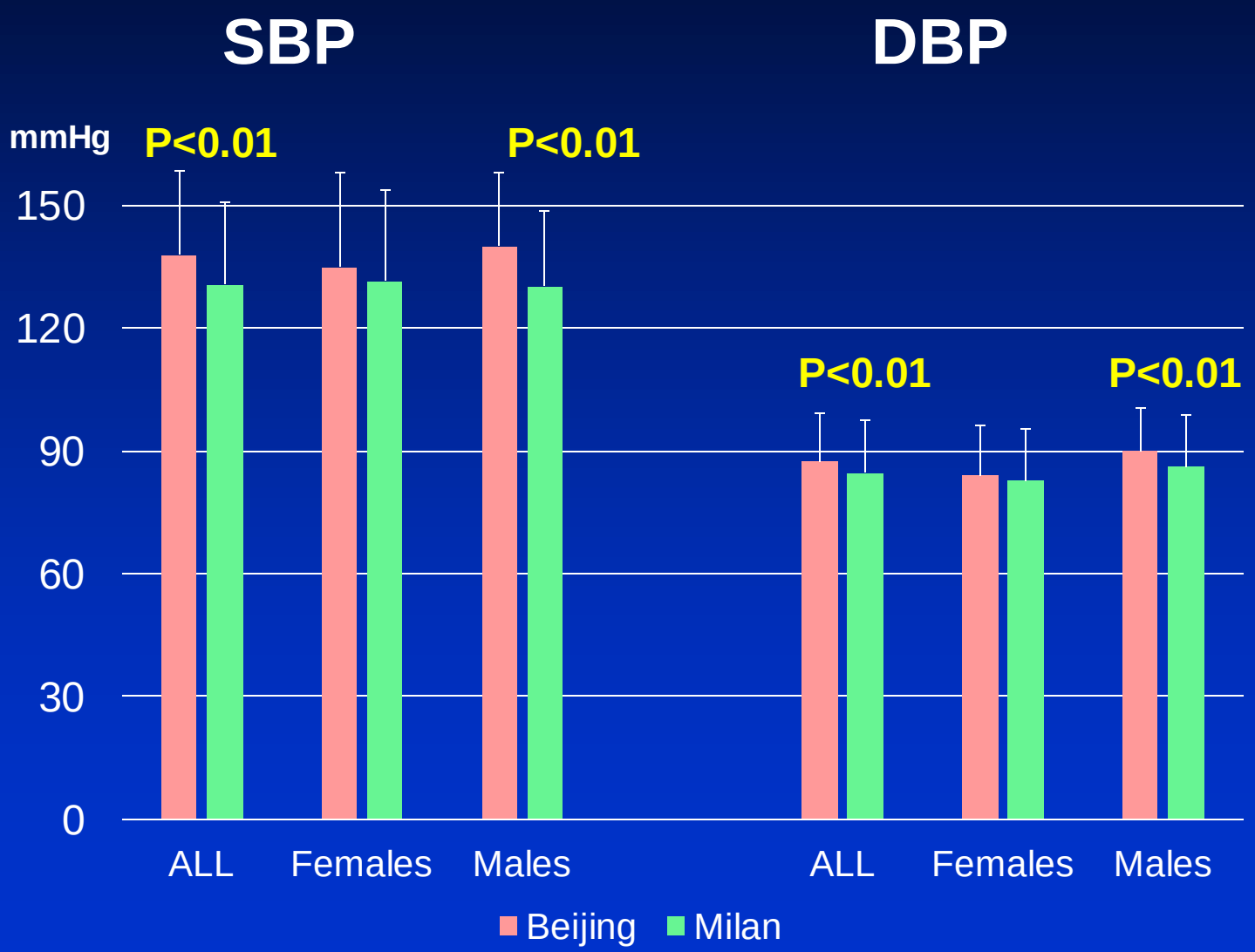
Results from Sample:

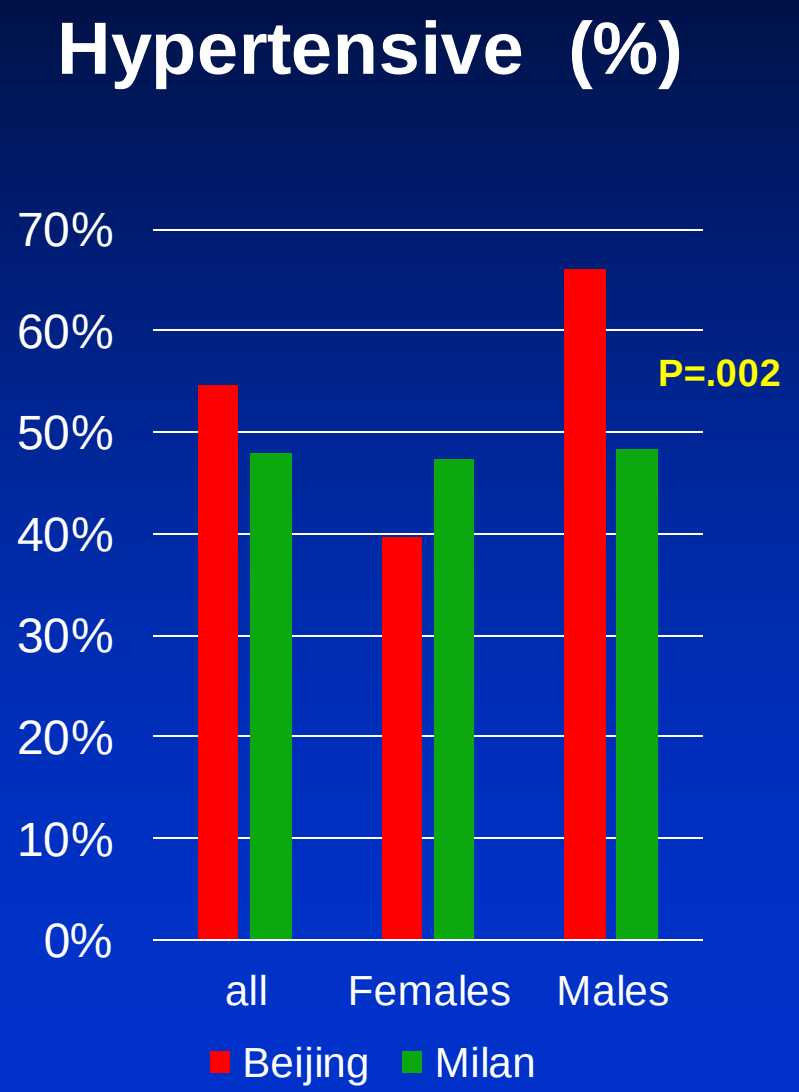
- 269 pairs =574
- 116 Females and153 Males from each center

	Beijing			Milan		
	All	Female	Male	All	Female	Male
Age (Years)	47.6 (9.0)	49.1	46.6	46.3 (9.0)	47.8	45.2
BMI (Kg/m2)	26.2 (3.8)	24.8	27.3	23.8 (3.2)	22.9	24.4

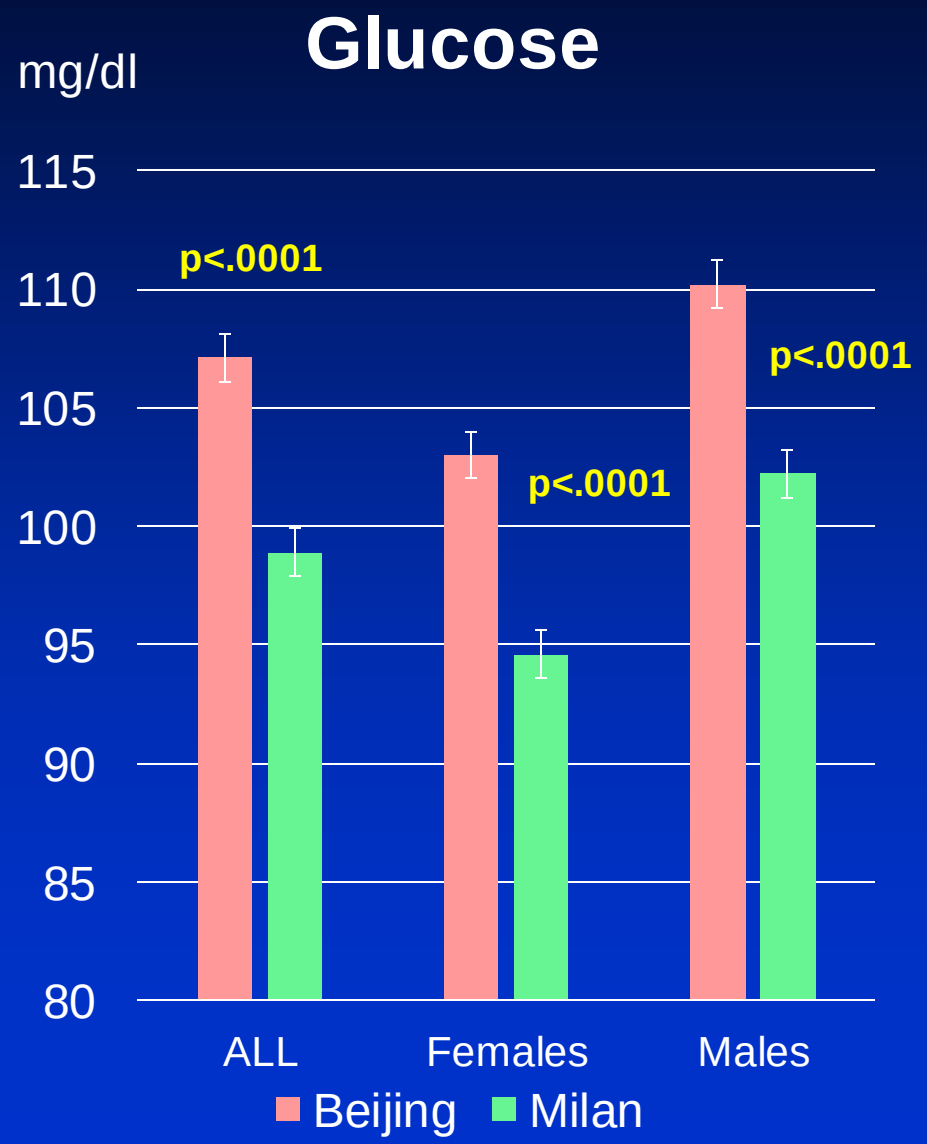
- Milan center:
  - 77(28.62%) lived in Milan for <5 years,
  - 45(16.73%) for 5-10 years
  - 147(54.65%) for >10 years.

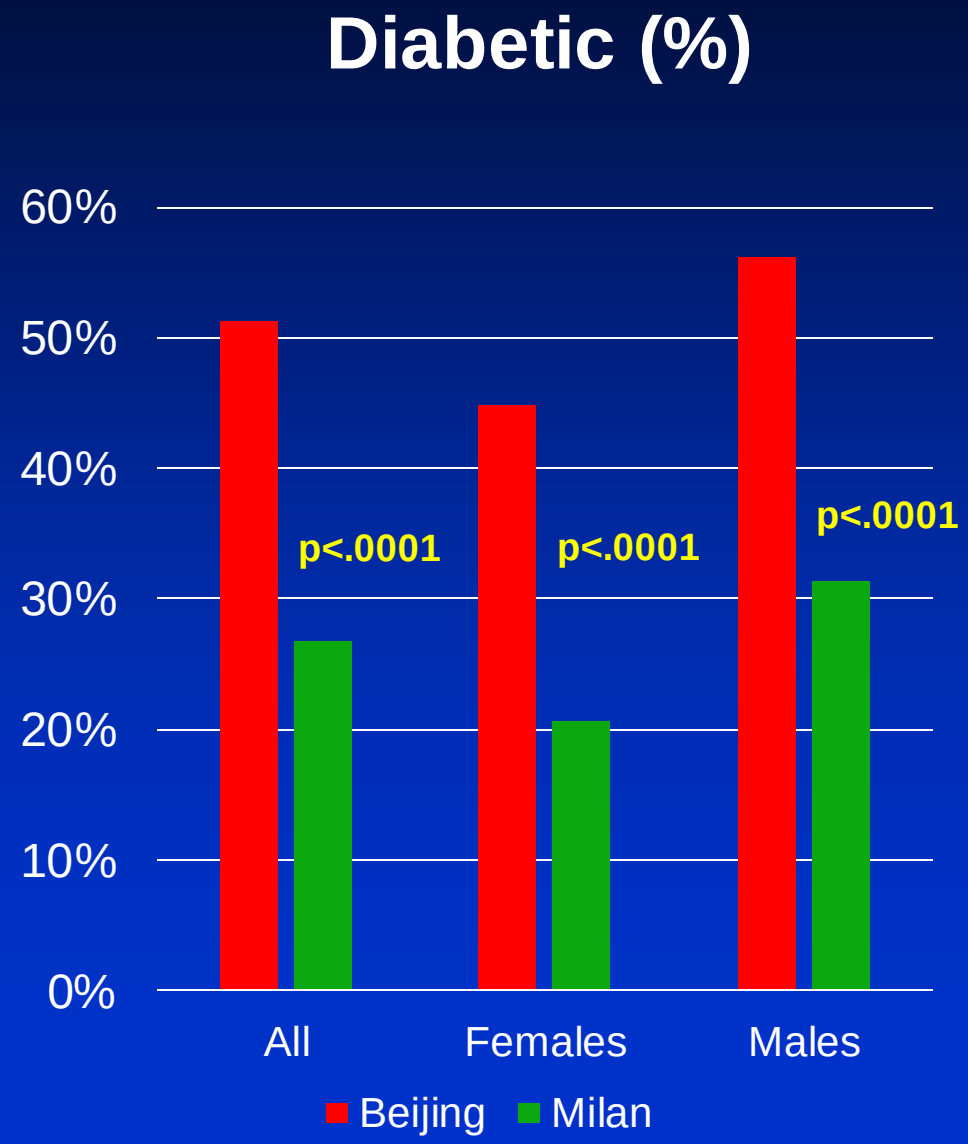
Blood Pressure





Blood Sugar


Glucose
mg/dl
115
110
105
100
95
90
85
80
p<.0001
p<.0001
p<.0001
ALL
Females
Males
Beijing
Milan


Diabetic (%)
60%
50%
40%
30%
20%
10%
0%
p<.0001
p<.0001
p<.0001
All
Females
Males
Beijing
Milan

From pilot study II

Chinese immigrants are in better condition than those living in Beijing

- Lower BP level, less hypertensions
- Lower glucose level, less diabetes

From pilot study II

Chinese immigrants are in better condition than those living in Beijing

Lower BP level, less hypertensions

Lower glucose level, less diabetes

Meta analysis including16 studies on the first generation (mainly in USA, Canada, UK)

As compared with Chinese living in mainland:

- ↑ Prevalence of diabetes, hypertension, obesity and smoking
- ↑ Serum cholesterol
- Poorer dietary patterns
- CV disease pattern: less Stroke, more coronary heart disease

Intern Emerg Med (2016) 11:307–318

From pilot study II

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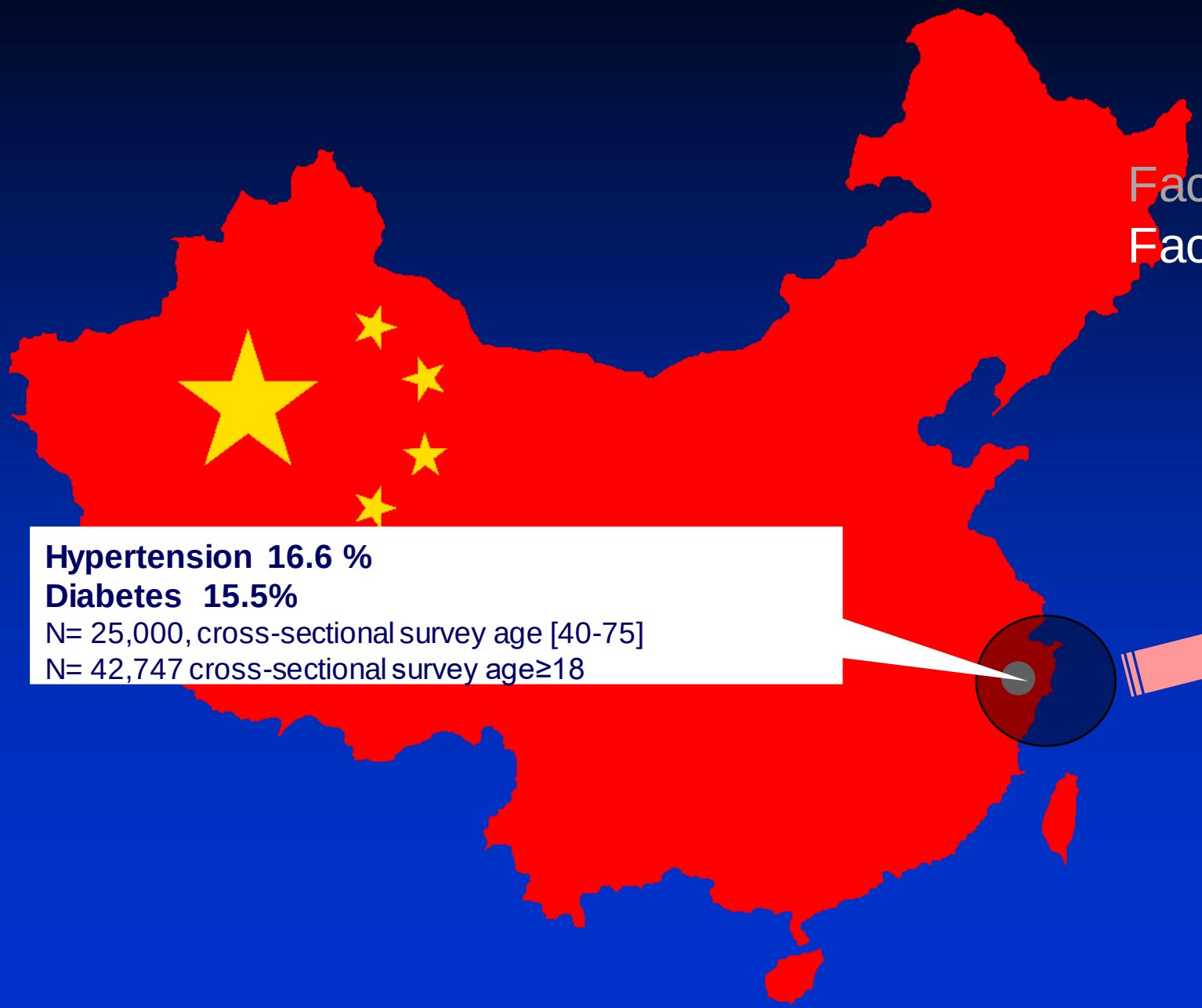
- Study is limited:

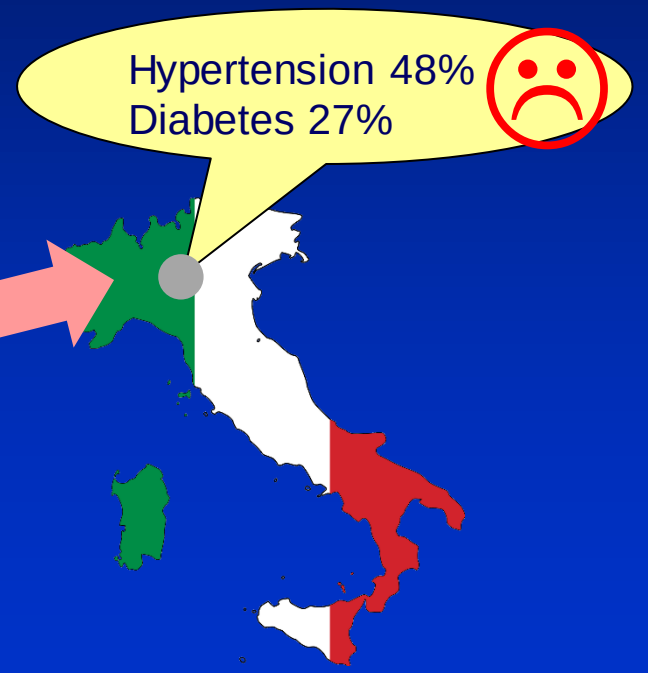
Limitation I: Sample selection



Hypertension 16.6 %
Diabetes 15.5%
N= 25,000, cross-sectional survey age [40-75]
N= 42,747 cross-sectional survey age≥18

Factor 1: Immigration

Factor 2: Not real general population



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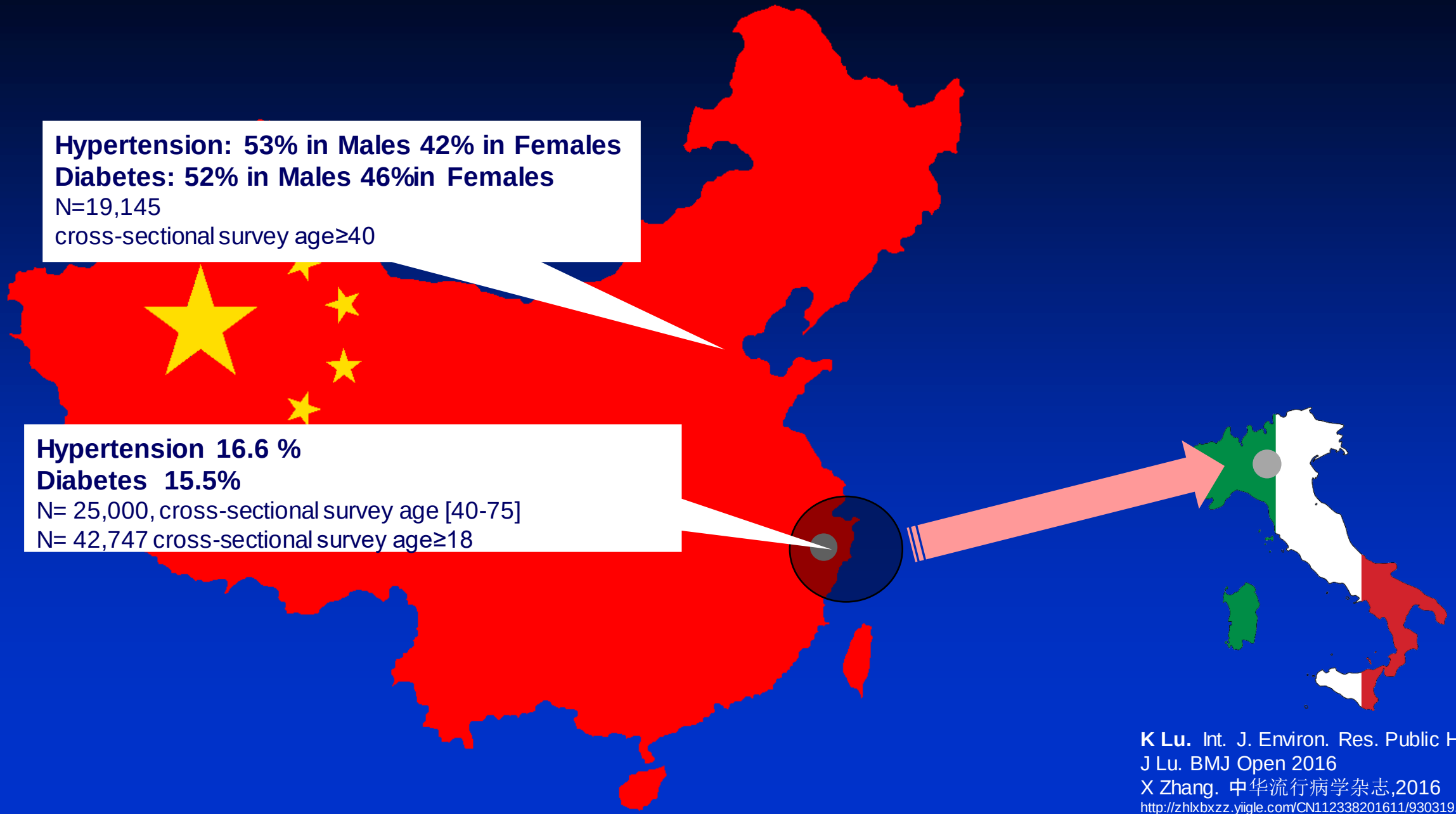
Limitation II: Unfair comparison-Geographic difference



Hypertension: 53% in Males 42% in Females
Diabetes: 52% in Males 46%in Females
N=19,145
cross-sectional survey age≥40

Hypertension 16.6 %
Diabetes 15.5%
N= 25,000, cross-sectional survey age [40-75]
N= 42,747 cross-sectional survey age≥18

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http://zhlxbxzz.yiigle.com/CN112338201611/930319.htm?locale=zh_CN

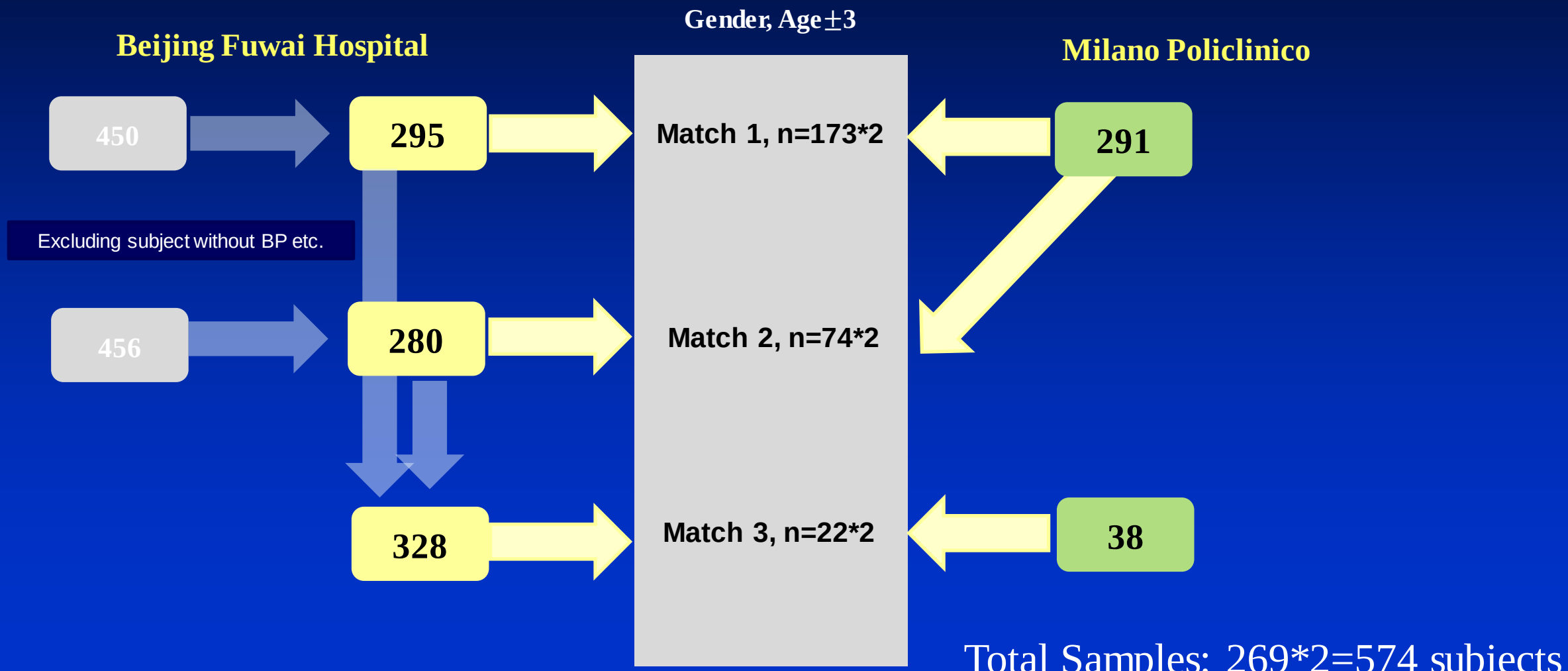
Further investigation

- The Belt and Road project lead by Chinese government, involving policlinico is pending….

Fondazione Isacchi Samaja

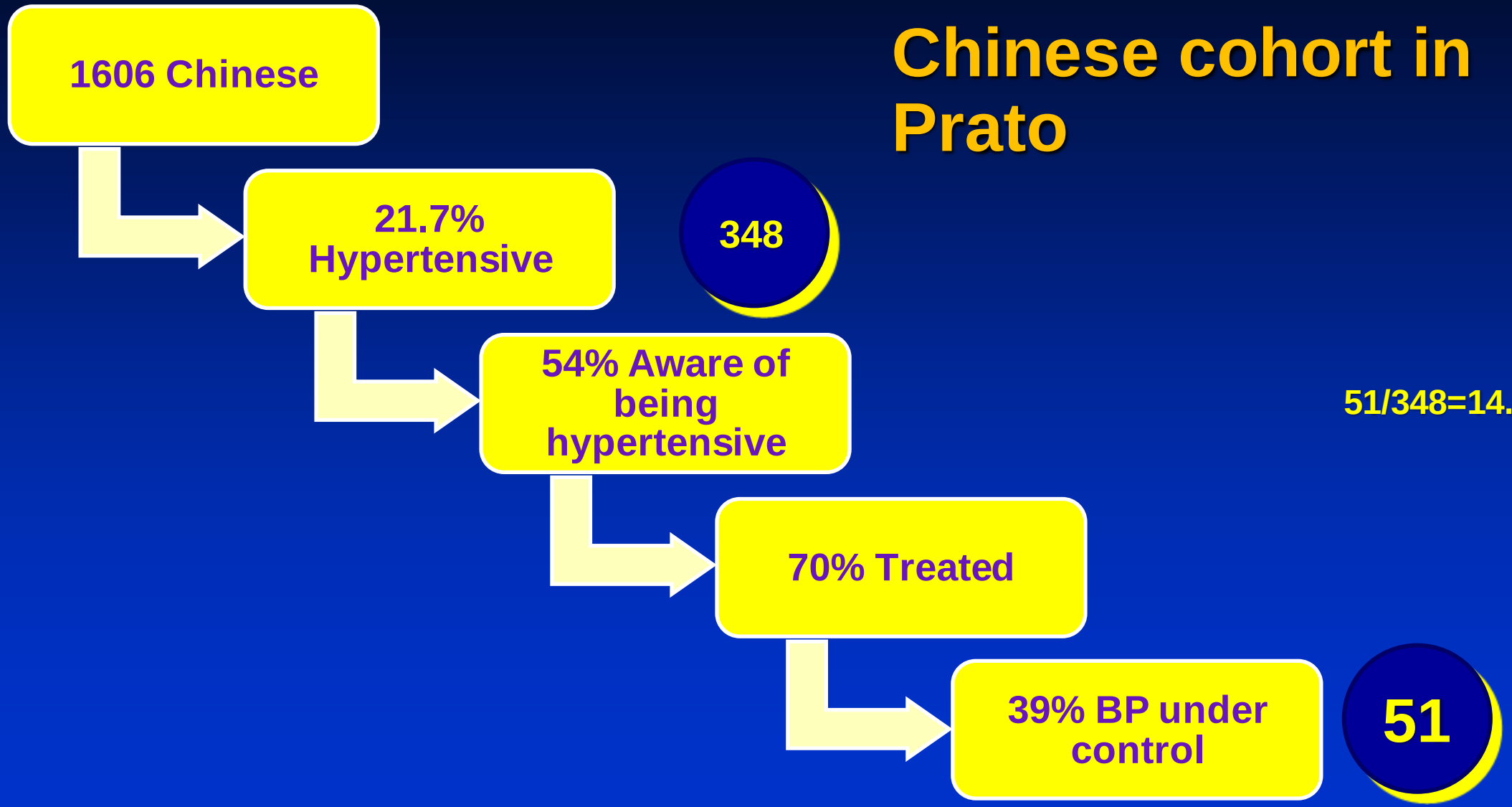
Fondazione Roberto Franceschi

Data match



Total Samples: 269*2=574 subjects

Chinese cohort in Prato



51/348=14.7%

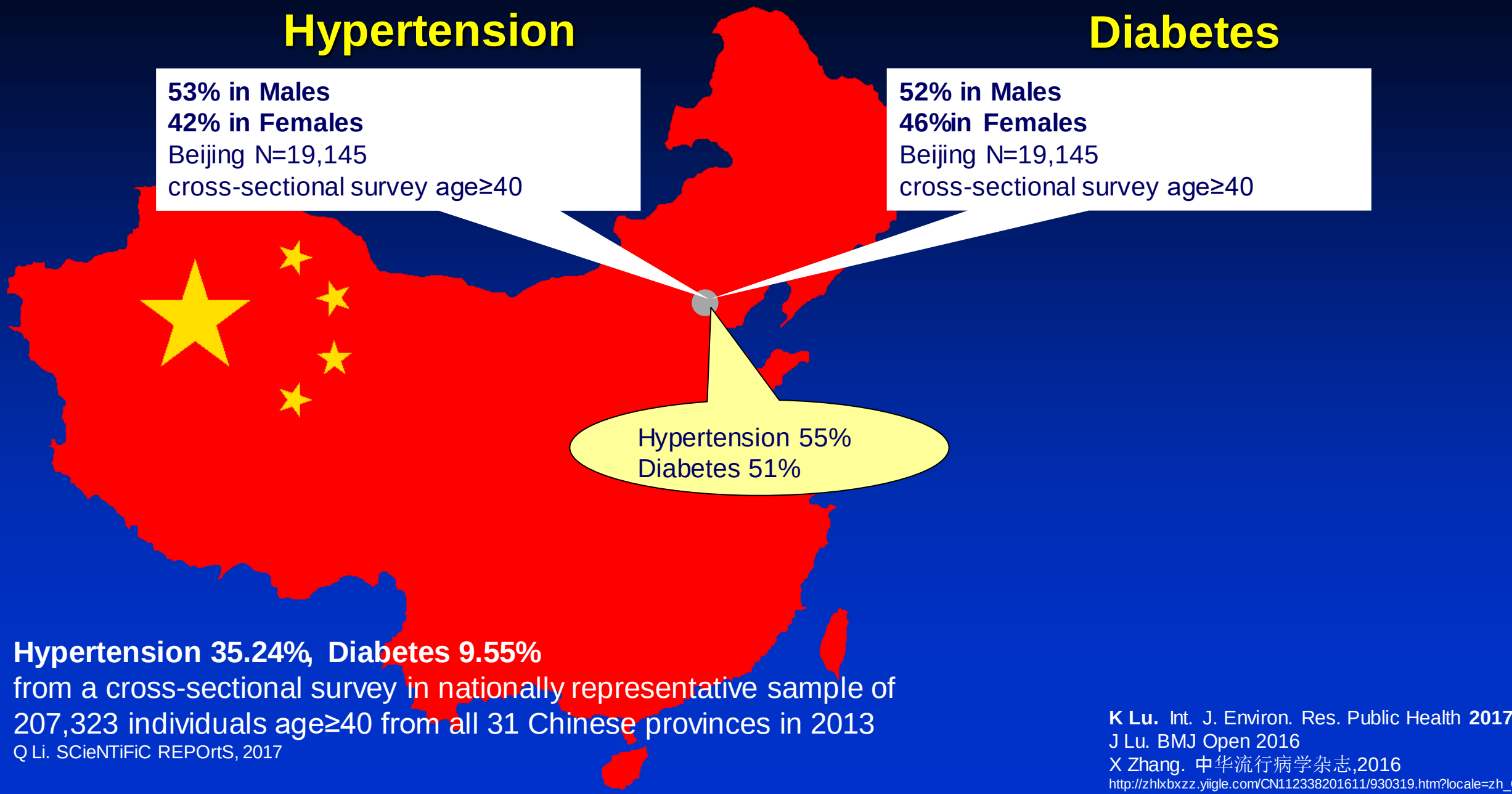
Moreover…

Milan sample was/had…than Beijing sample:

- shorter (which could be a study limitation),
- lower creatinine: 0.8(0.2) vs. 0.9(0.4), $p<0.001$
- Lower uric acid: 5.2(1.5) vs. 5.6(1.5), $p<0.001$
- Similar lipid profile (cholesterol , High-Density lipoprotein, Low-Density lipoprotein

	Beijng			Milan			T test (BJ vs. MI)		
	All	Female	Male	All	Female	Male	All	Female	Male
Age	47.6(9.0)	49.1	46.6	46.3(9.0)	47.8	45.2			
BMI	26.2(3.8)	24.8	27.3	23.8(3.2)	22.9	24.4	<.0001	<.0001	<.0001
Height	169.3(7.8)	163.0	174.1	165.3(7.1)	159.7	169.5	<.0001	<.0001	<.0001
Weight	75.5(14.1)	65.8	82.9	65.2(11.1)	58.4	70.3	<.0001	<.0001	<.0001
Cholesterol	188.1(39.0)	190.1	186.5	193.0(38.9)	190.0	195.2	0.15	0.99	0.05
Triglyceride	174.1(141.9)	140.1	199.9	162.0(130.0)	139.4	179.1	0.30	0.96	0.24
HDL	48.5(14.2)	54.4	44.0	49.0(13.5)	53.8	45.4	0.64	0.77	0.29
LDL	104.8(38.4)	107.7	102.5	111.5(37.9)	108.3	114.0	0.04	0.89	0.01
Creatinine	0.9(0.4)	0.8	1.0	0.8(0.2)	0.7	0.9	0.00	0.02	0.01
Uric Acid	5.6(1.5)	4.6	6.4	5.2(1.5)	4.3	5.9	0.00	0.02	0.00
Potassium	4.2(0.3)	4.2	4.2	4.2(0.4)	4.2	4.2	0.99	0.55	0.68
Sodium	139.5(8.2)	138.7	140.1	140.4(11.4)	141.2	139.9	0.29	0.03	0.82
Glycaemia	107.1(27.4)	103.0	110.2	98.9(29.5)	94.6	102.2	0.00	0.01	0.02

	Beijing			Milan			X^2 test*		
	All	Female	Male	All	Female	Male	All	Female	Male
Total N and %	269(100)	116(43.1)	153(56.9)	269(100)	116(43.1)	153(56.9)			
Smoking	66(43.1)	0	66(24.5)	82(30.5)	7(6.0)	75(24.5)	0.12	-	0.30
Normal Potassium*	265(98.5)	114(98.3)	151(98.7)	259(96.3)	114(98.3)	145(94.8)	0.10	1	0.06
Normal Sodium**	256(95.2)	110(94.8)	146(95.4)	253(94.1)	109(94.0)	144(94.1)	0.57	0.7753	0.6075



Hypertension 35.24%, Diabetes 9.55%
from a cross-sectional survey in nationally representative sample of 207,323 individuals age≥40 from all 31 Chinese provinces in 2013
Q Li. SCieNTiFiC REPOrtS, 2017

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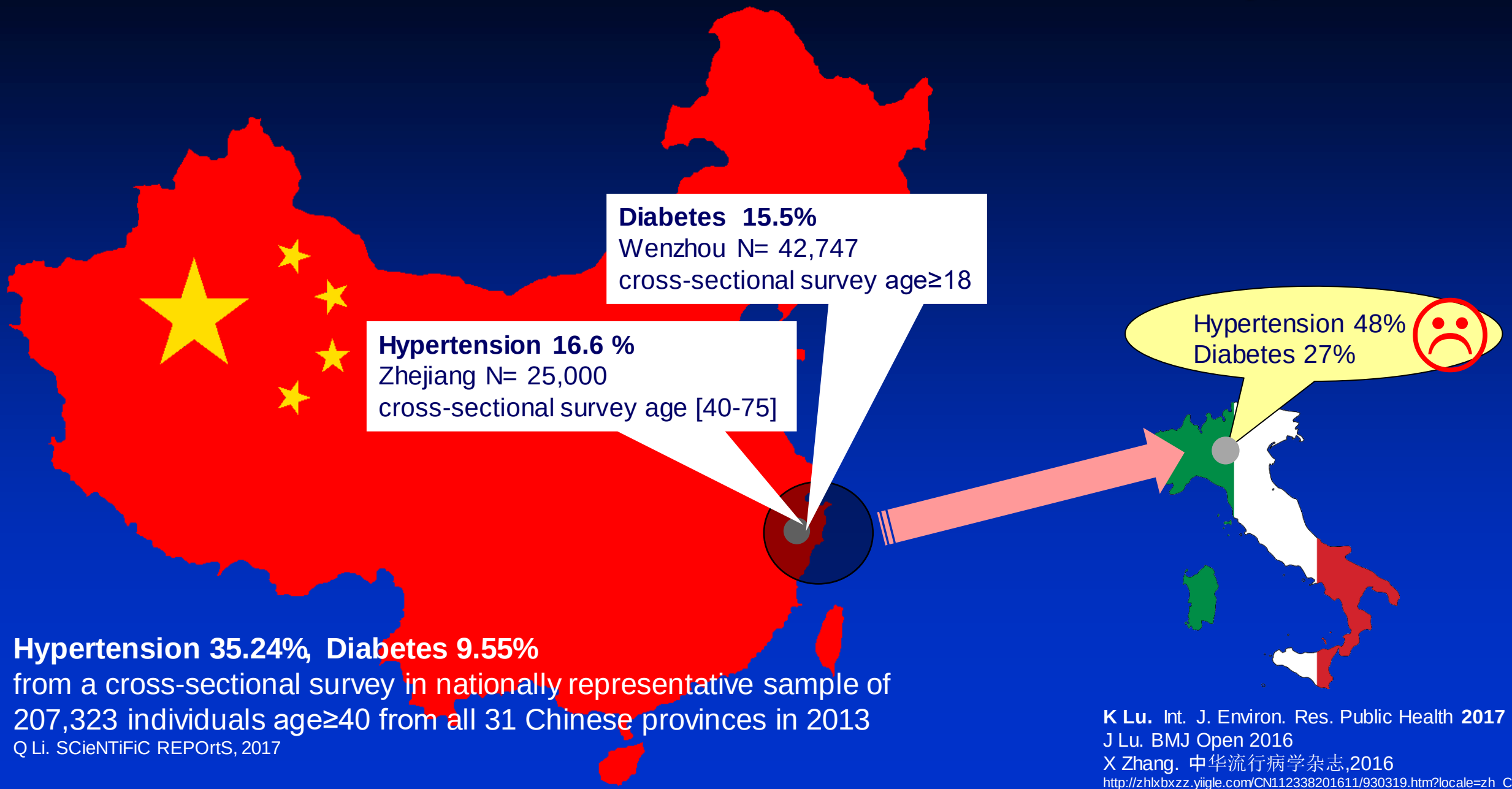
Other studies on Hypertension



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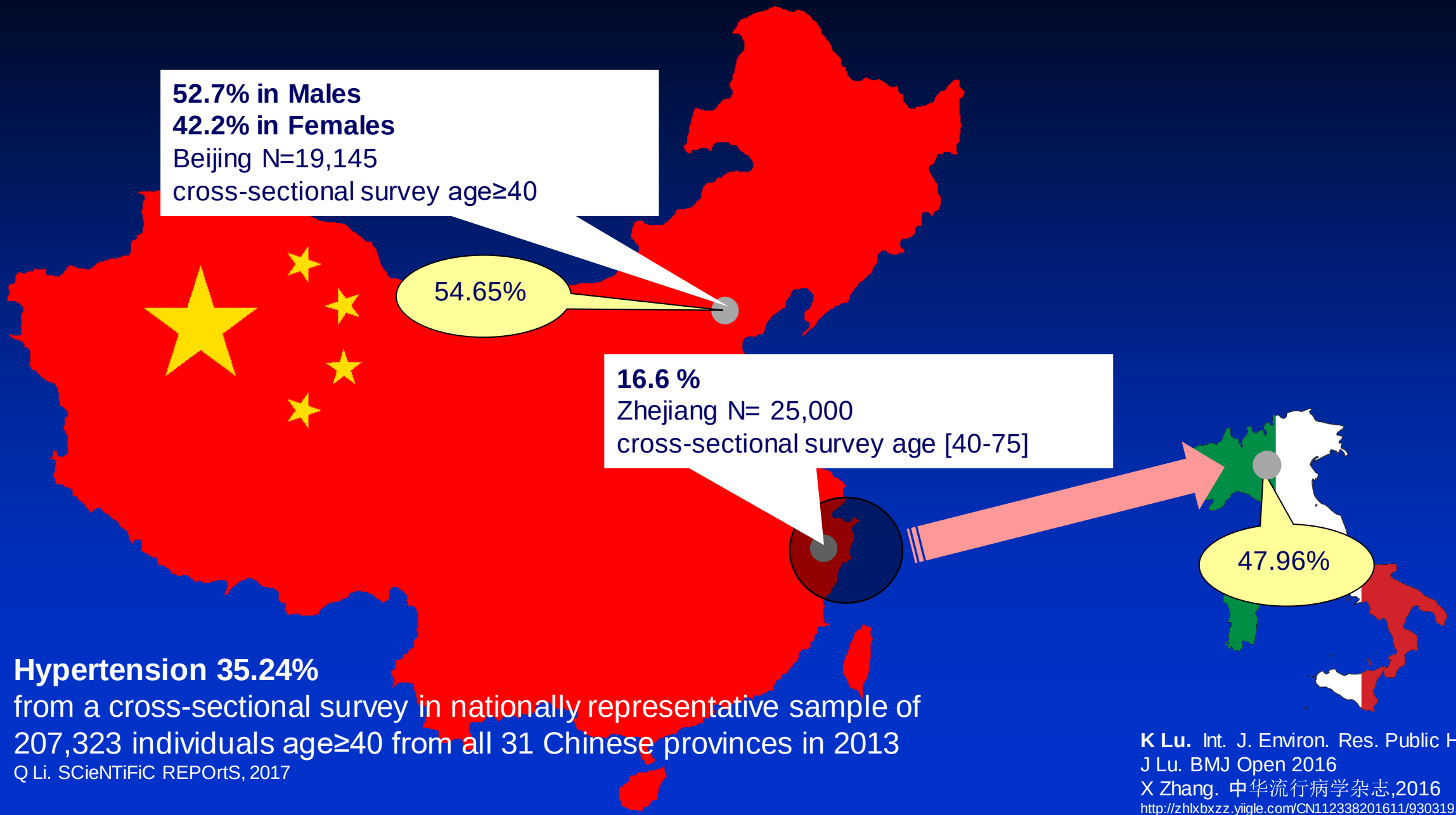

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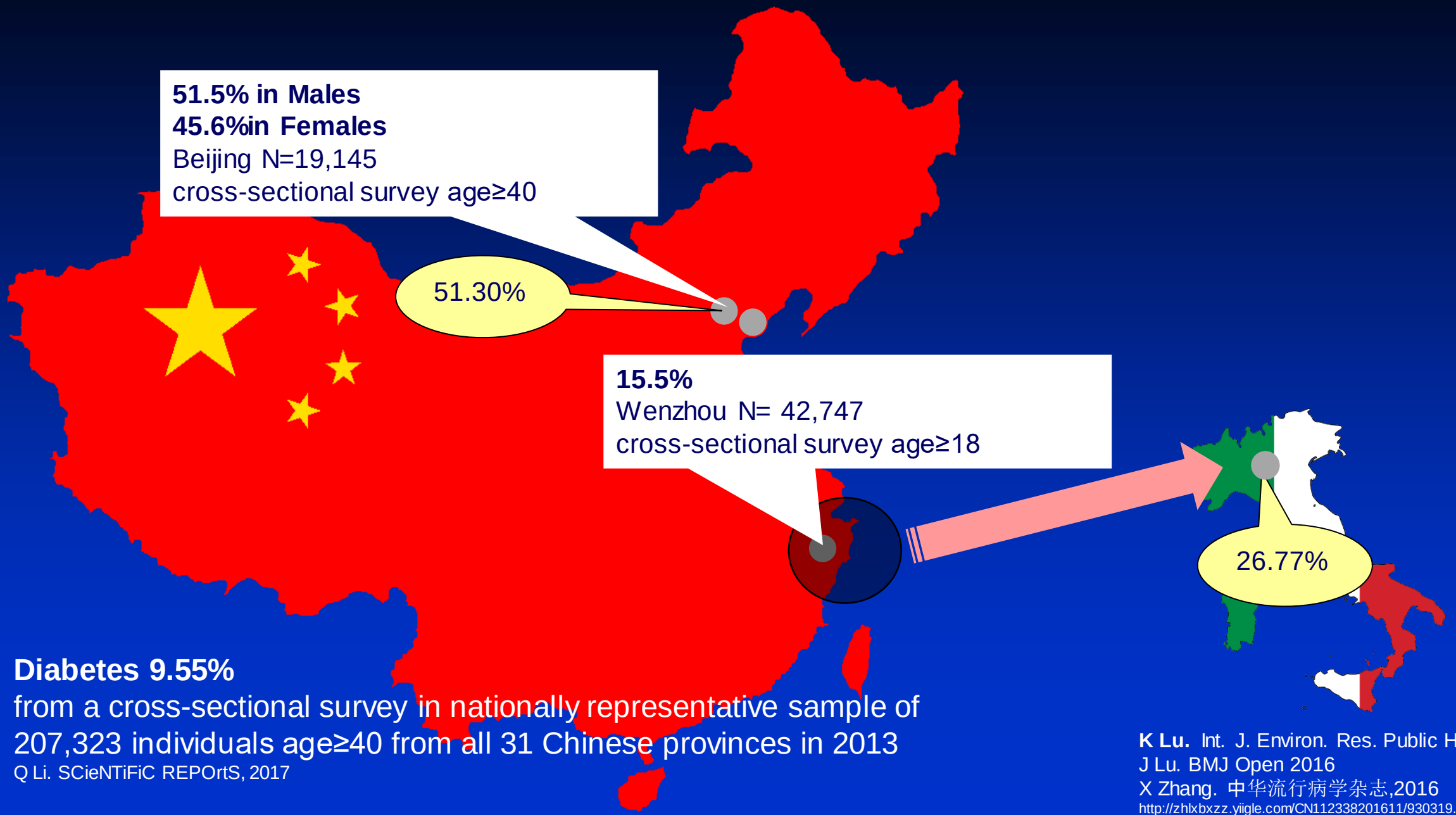

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