

Patterns of Chronic Diseases: Cross-sectional Evidence from SAGE Countries

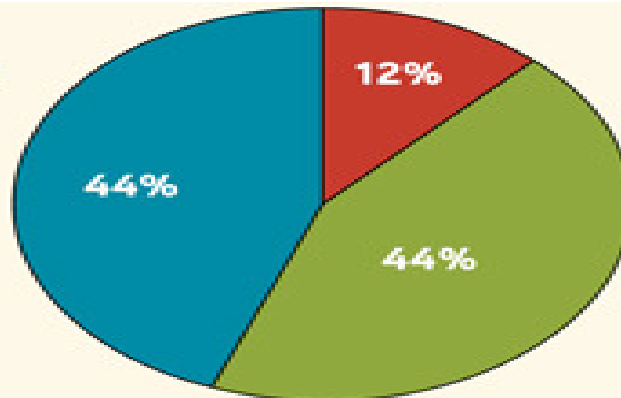
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Background

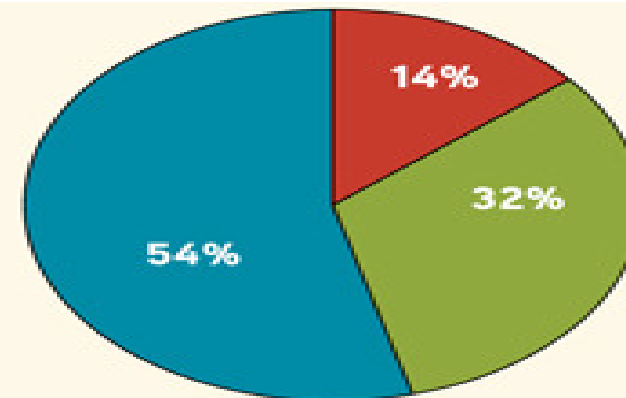
- Chronic diseases are the major cause of death and disability worldwide
- The patterns vary considerably globally across countries by income
- Health- epidemiological -demographic transition: are occurring at dramatic speed in most developing countries compared with the experience of developed countries
- In developed countries, the share of NCD is 85%
- In most developing countries, the contribution of chronic conditions to overall burden of disease is increasing .
- NCD contribute to a major share, currently around 50%, but vary greatly
- The contributing factors are many and varied, including global, societal and individual factors

The Increasing Burden of Chronic Non-Communicable Diseases: 2002-2030

Low- and Middle-Income Countries

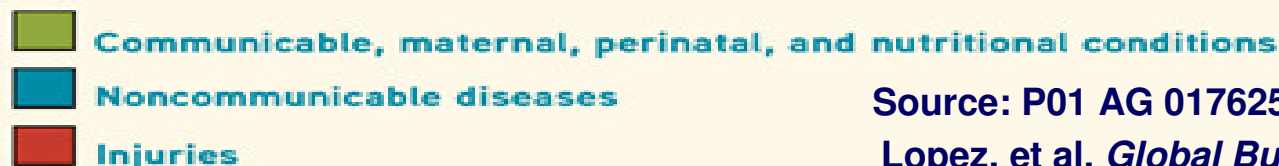
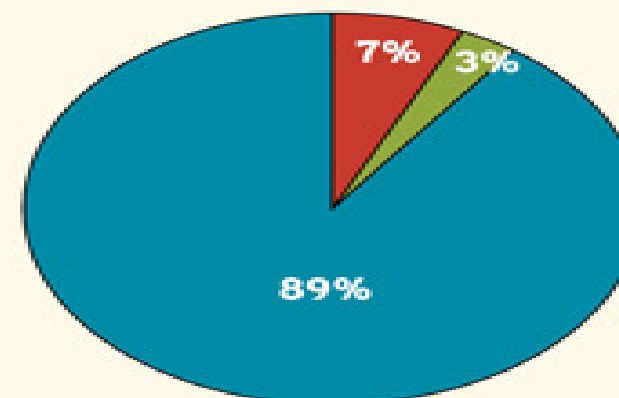
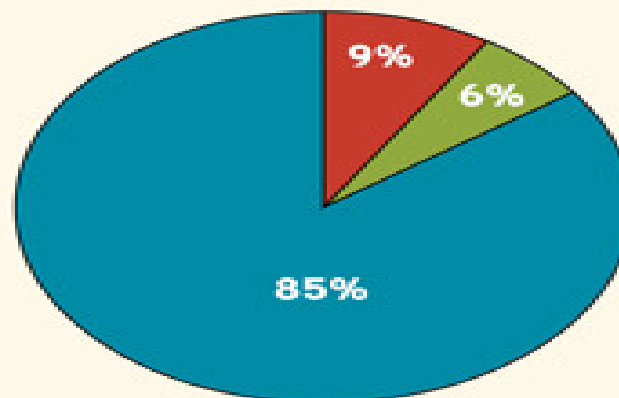


2002



2030

High-Income Countries

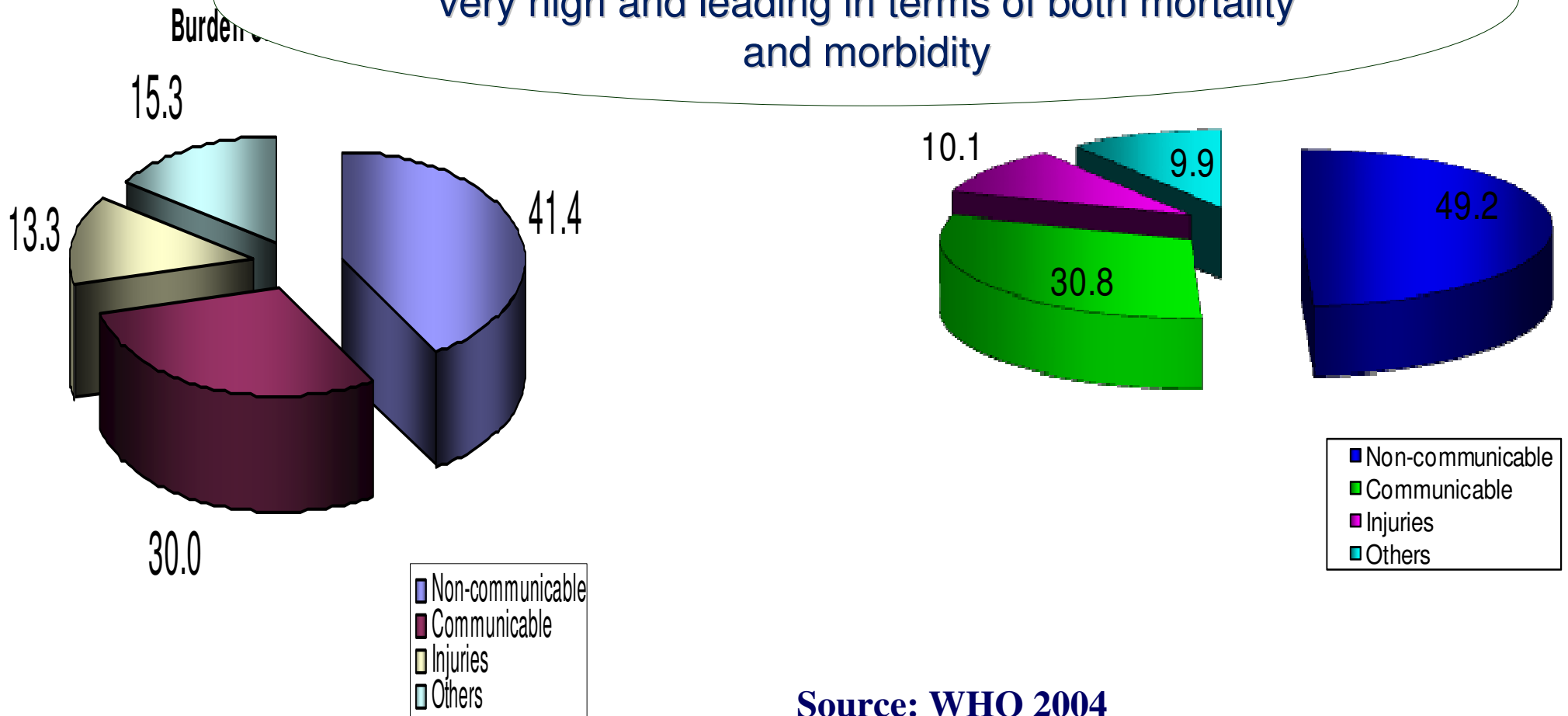


Source: P01 AG 017625 (PI Murray)

Lopez, et al. *Global Burden of Disease by Risk Factors*.(2006)

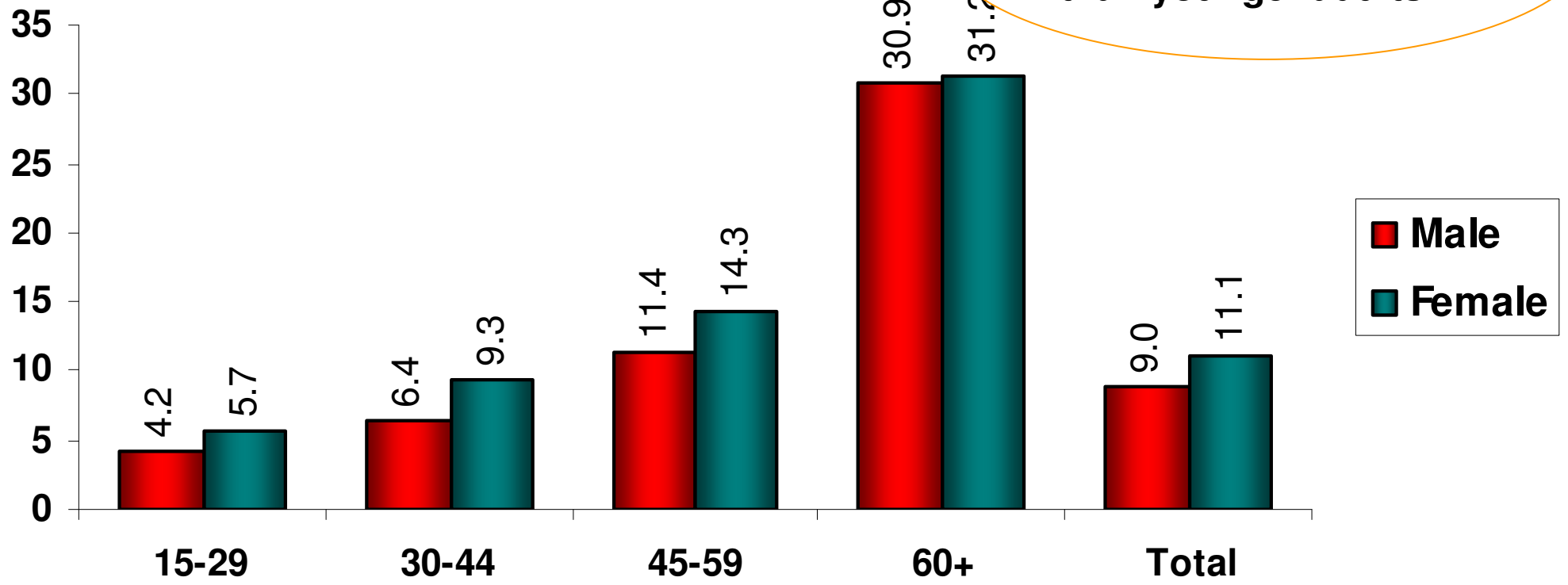
Burden of Morbidity and Mortality in India

Burden due to non-communicable diseases is very high and leading in terms of both mortality and morbidity



Source: WHO 2004

Percent reporting an ailment during last 15 days, 2004

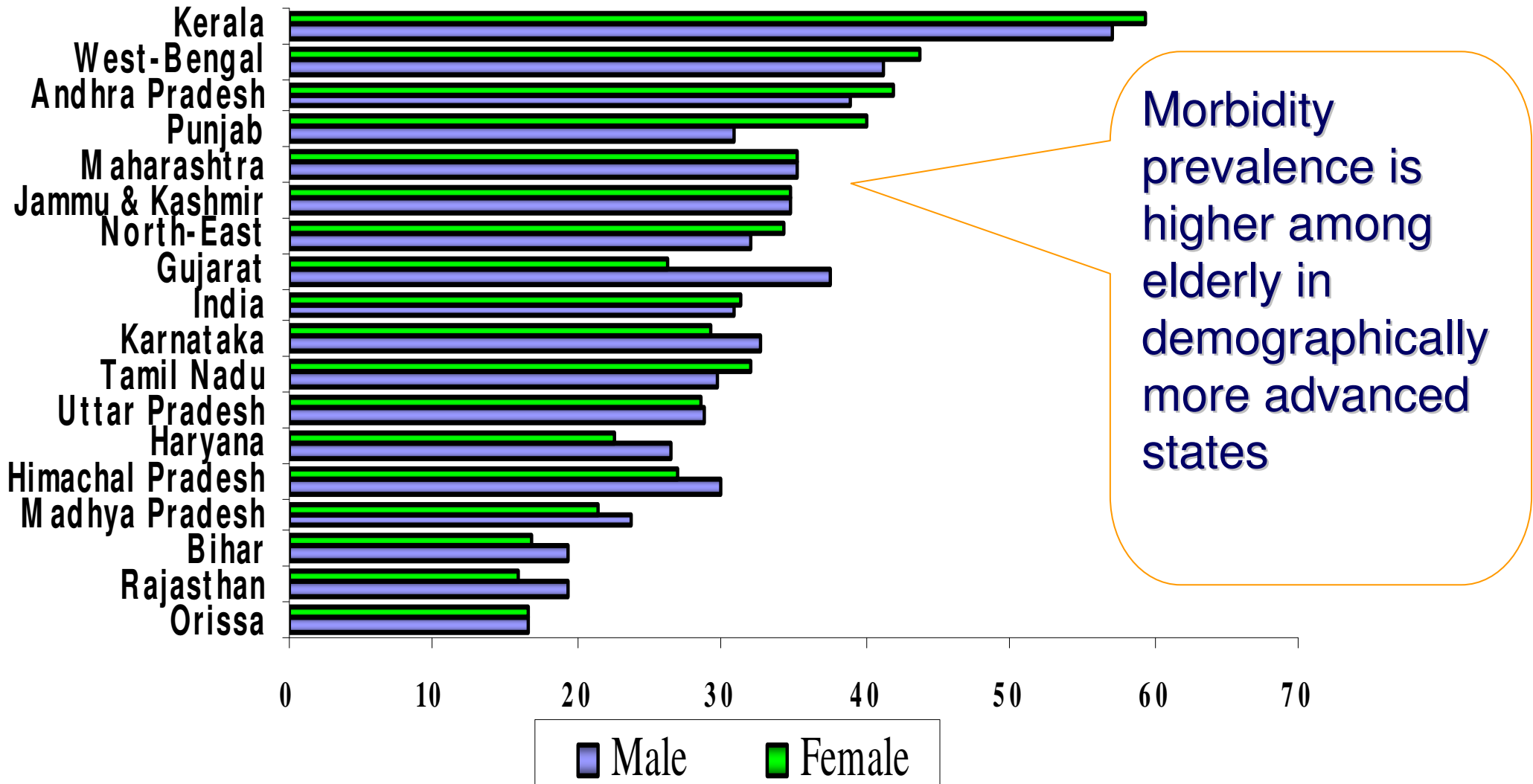


Morbidity prevalence among elderly is about 5 times higher than younger adults

Percent reporting morbidity is higher among females than males

Source: National Sample Survey, 60th round, 2004

Percent reporting morbidity among elderly persons (60+) by sex and major states, 2004



Source: National Sample Survey, 60th round, 2004

SAGE Module on Chronic Conditions and Health Care

● Goals :

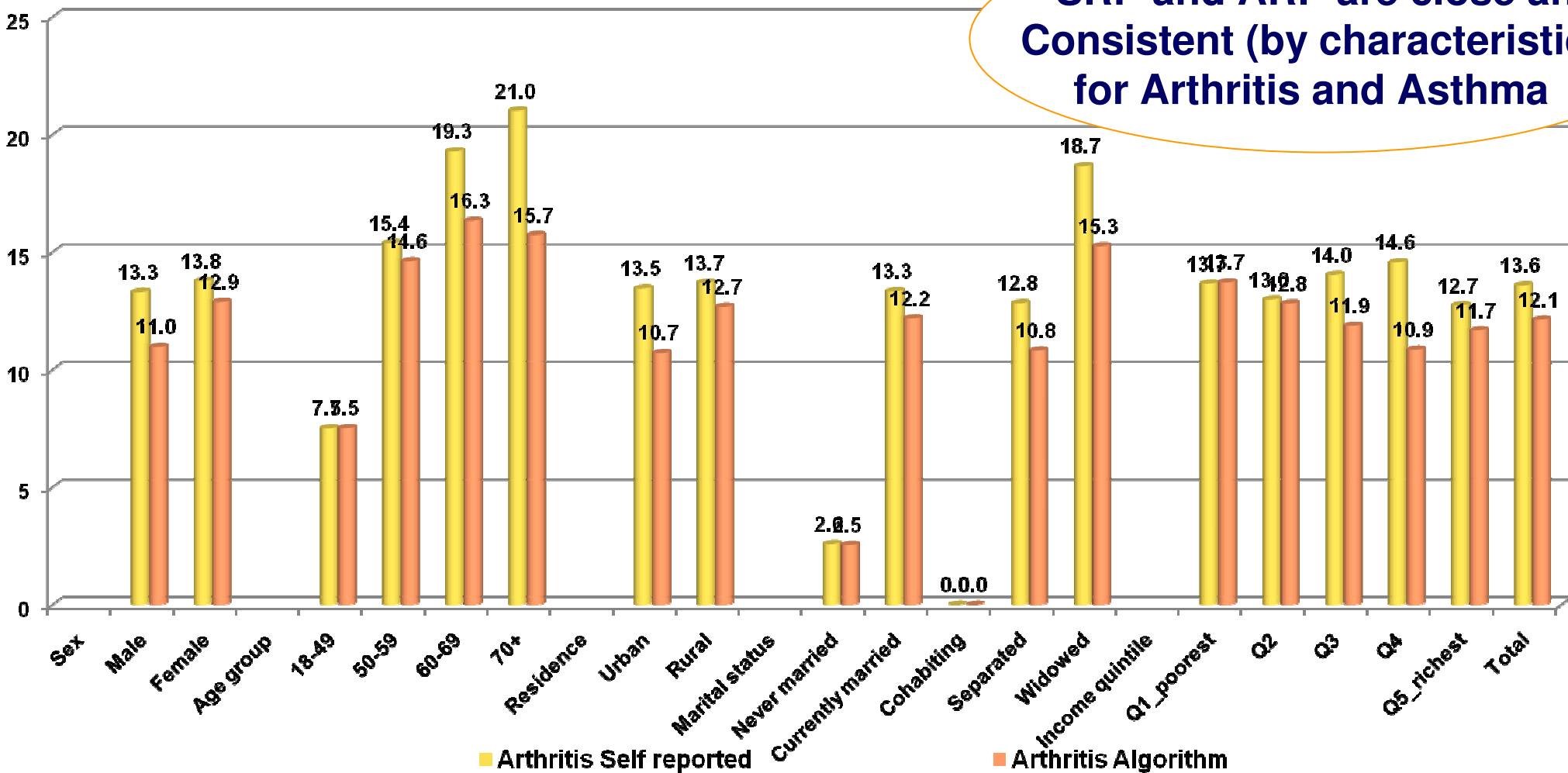
- To measure prevalence rates for chronic diseases: stroke, angina pectoris, diabetes mellitus, osteoarthritis, chronic lung disease, asthma, depression, hypertension, edentulism and injuries.
 - Self reported prevalence
 - Algorithm derived prevalence based on symptomatic conditions
- To measure health care coverage (intervention)
 - Currently treated (last two weeks)
 - Recent treated (last 12 months)
- To measure promotional health care conditions:
 - Reported coverage for cataract surgery, and cervical and breast cancer screening
- To find social determinants: income, residence, education, ethnicity etc

SAGE Module on Chronic Conditions and Health Care

- **Module on chronic conditions**
 - Gathered data on a selected range of chronic diseases that contribute to a large portion of the burden of non-communicable diseases and are more widely prevalent among older adults
- **Questions included self-reported conditions and, for some conditions, symptoms**
 - Prevalence from self report
 - Single question, diagnosed
 - Prevalence based on algorithmic approach
 - Based on questions covering symptomatic conditions
- **Results are presented in terms of prevalence and treatment rates which are determined from both conditions and symptoms**

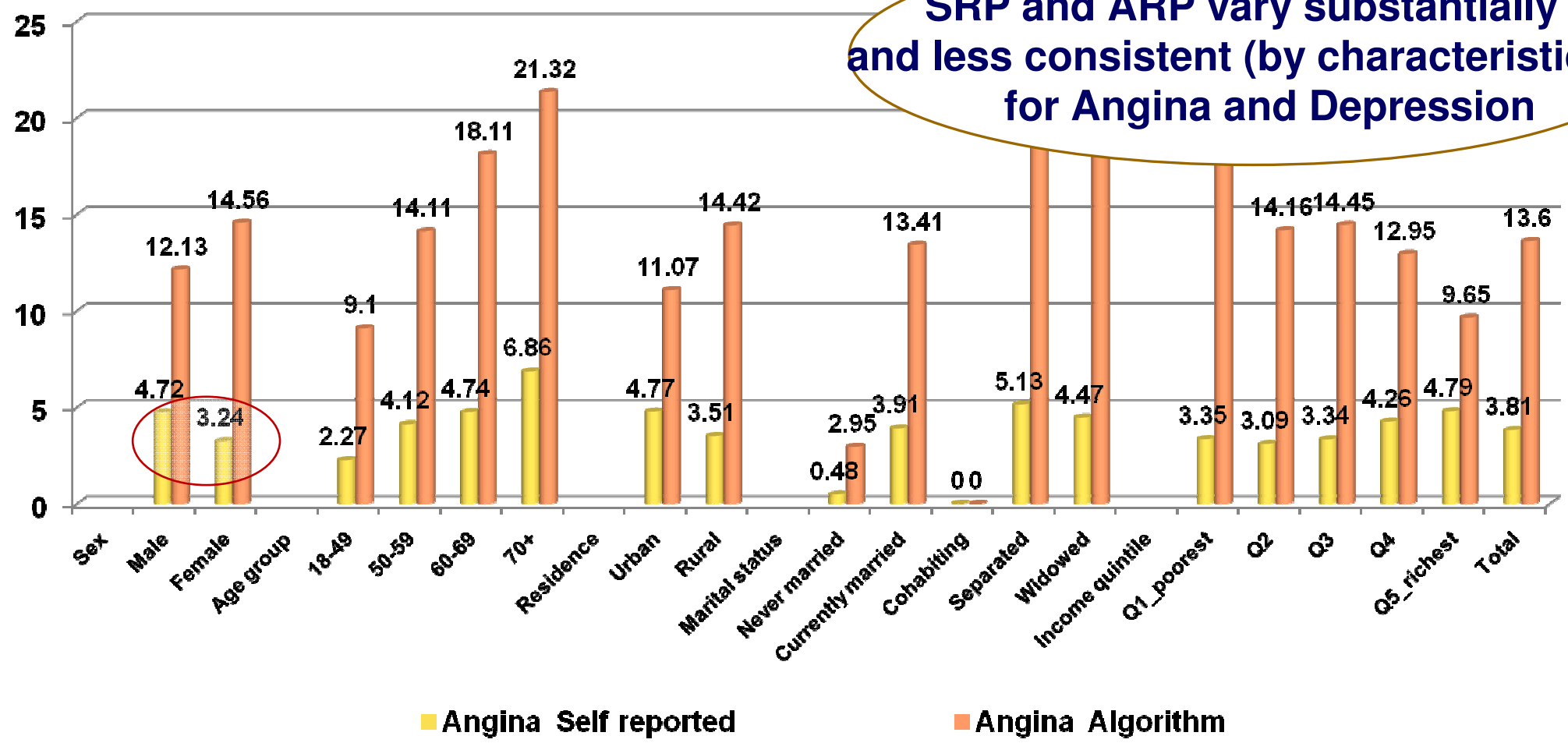
Chronic Disease Prevalence (India) Self-report vs Algorithm: Arthritis

SRP and ARP are close and Consistent (by characteristics) for Arthritis and Asthma



Chronic Disease Prevalence (India) Self-report vs Algorithm: Angina

SRP and ARP vary substantially and less consistent (by characteristics) for Angina and Depression

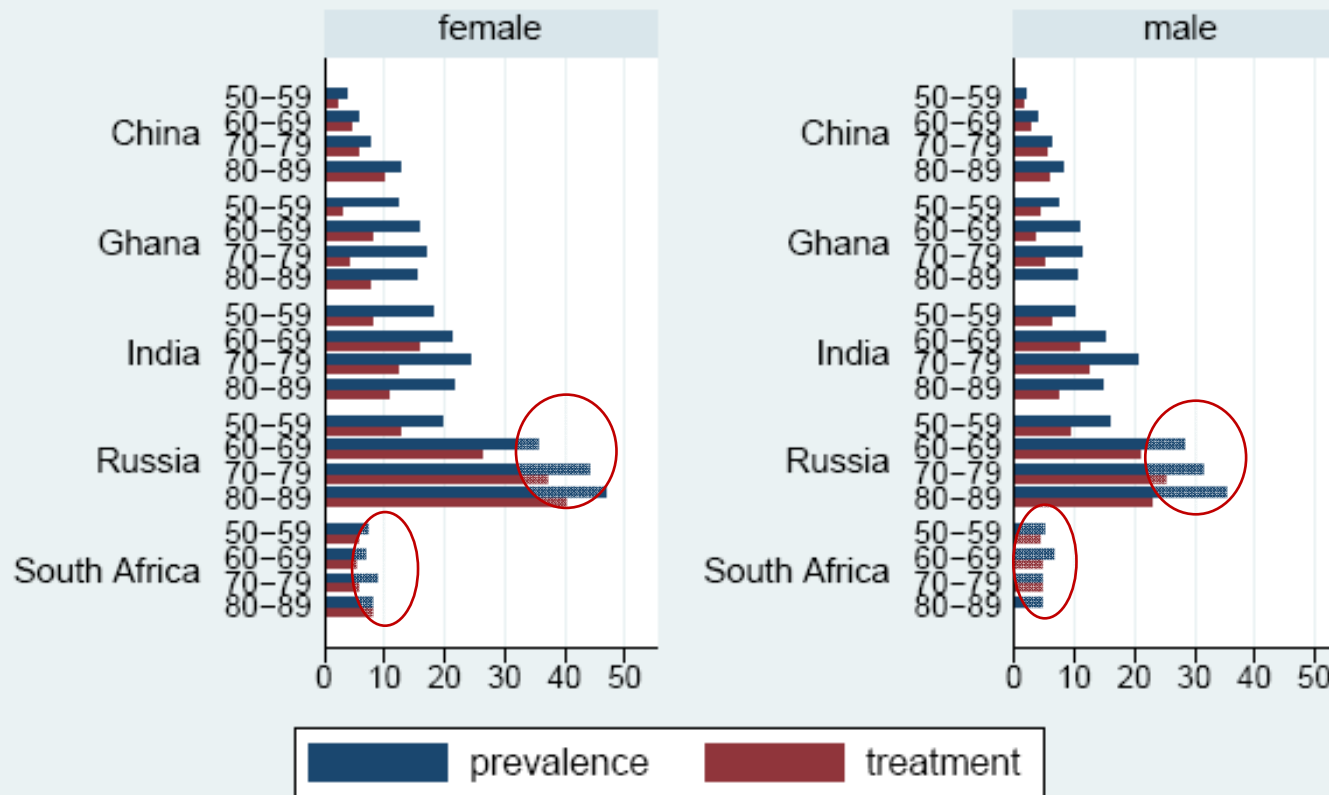


Prevalence (algorithm based) and treatment rates: cross-sectional evidence from SAGE countries

- Angina
- Arthritis
- Asthma
- Depression
- Blood Pressure

Angina

Prevalence and treatment rates

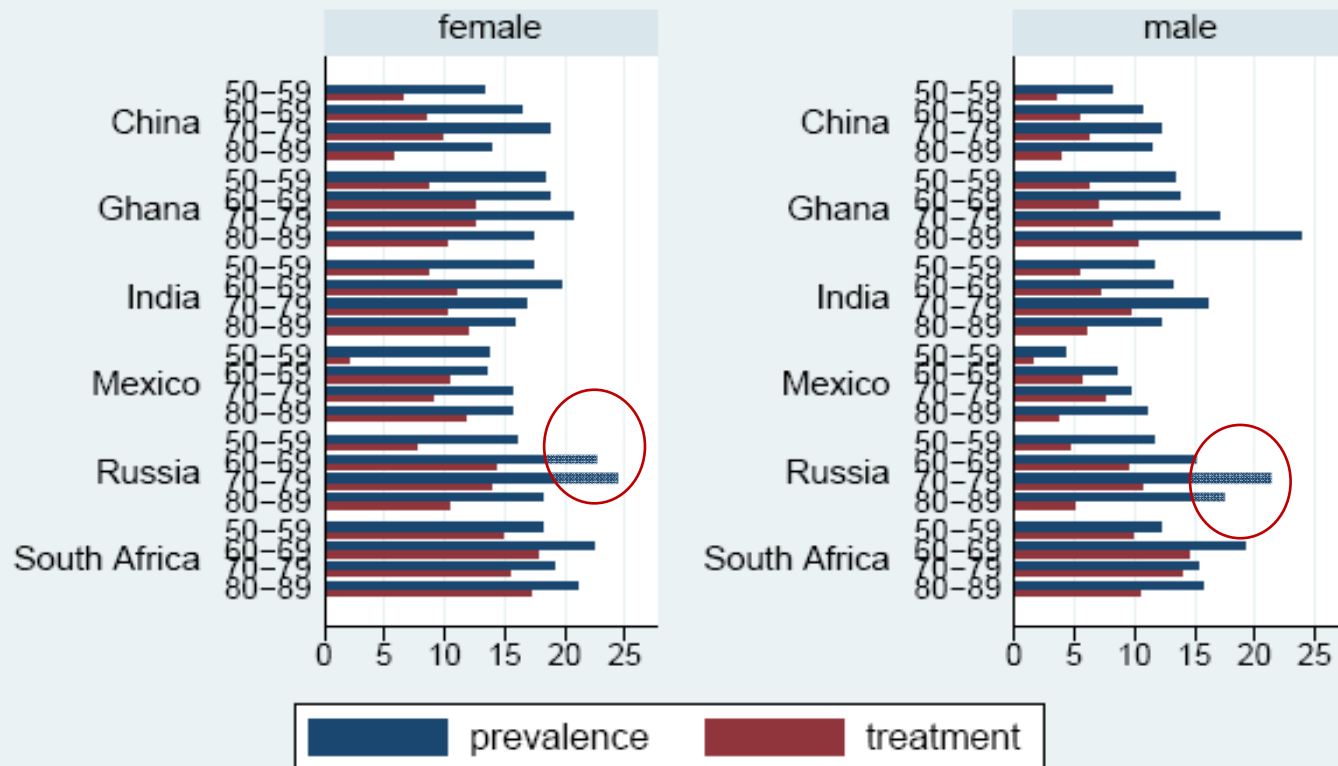


SAGE 2010



Arthritis

Prevalence and treatment rates

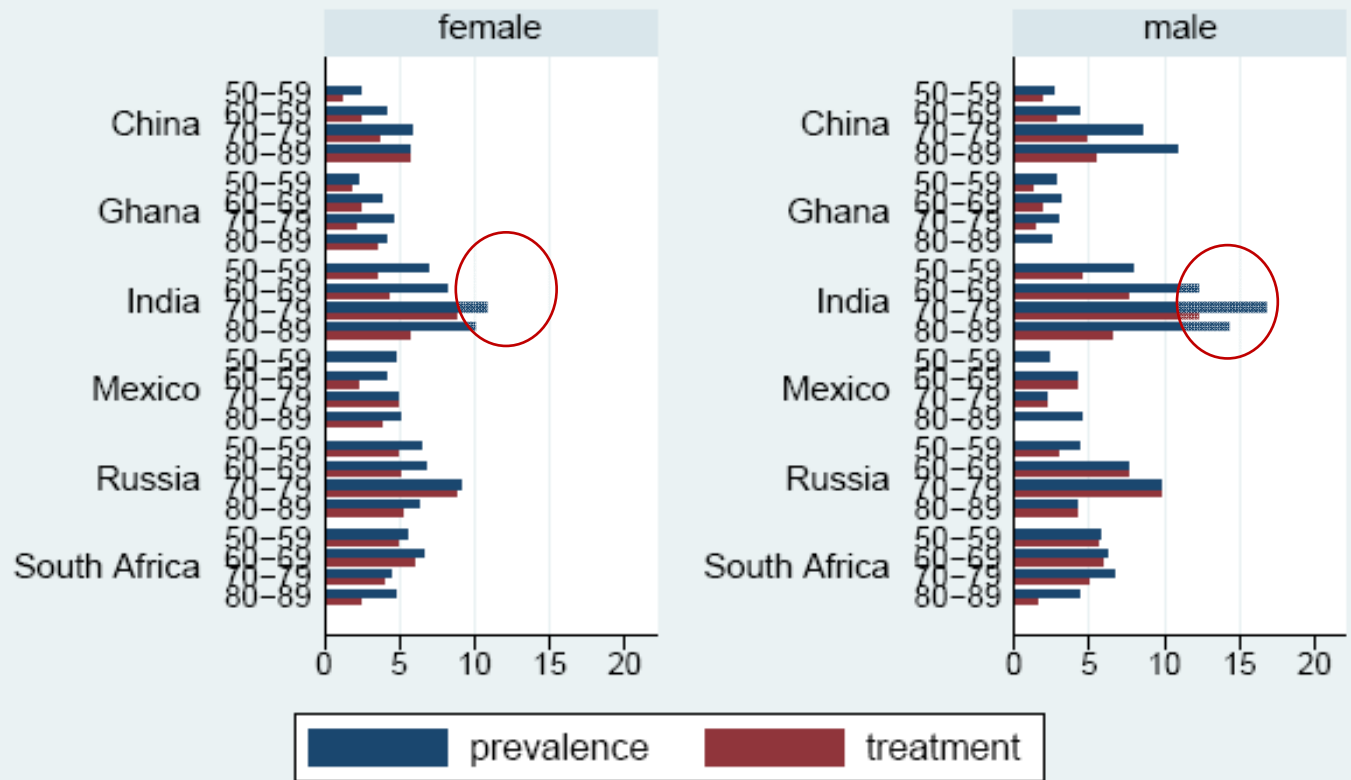


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Asthma

Prevalence and treatment rates

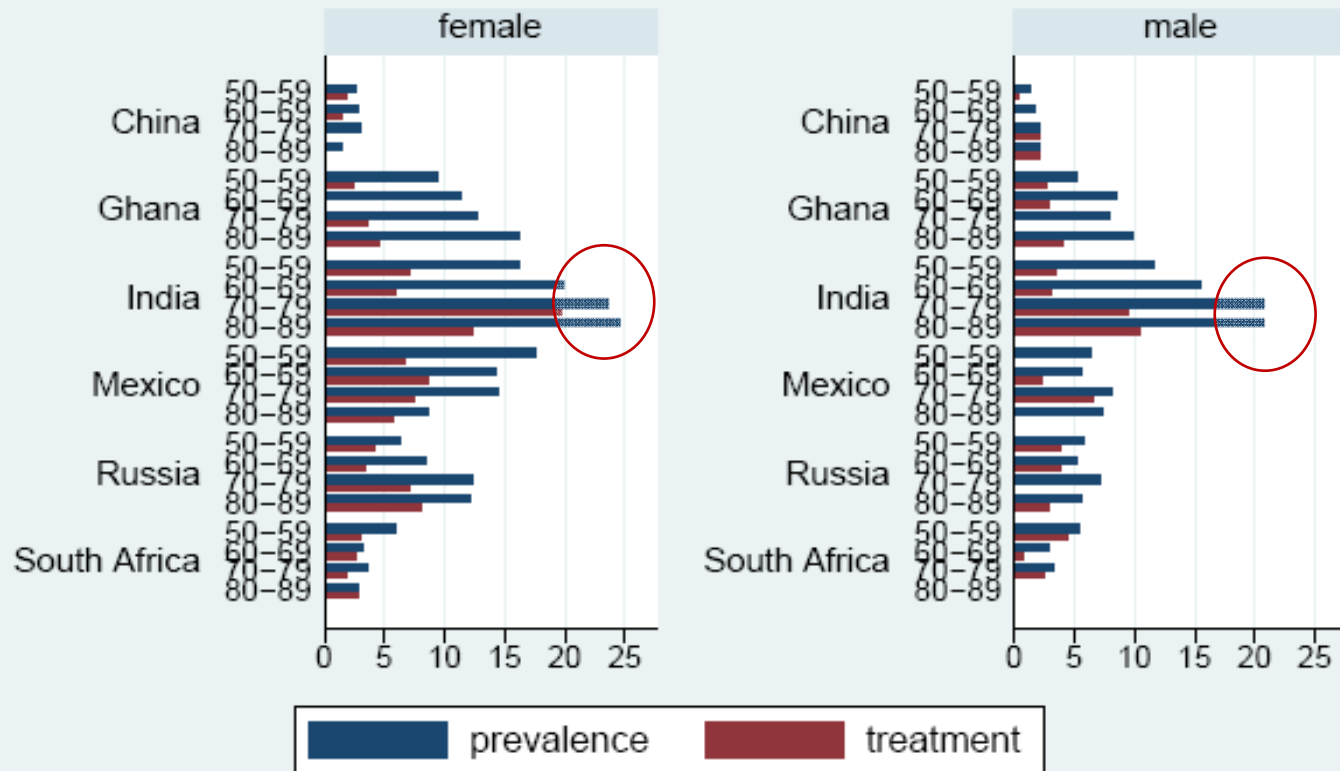


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Depression

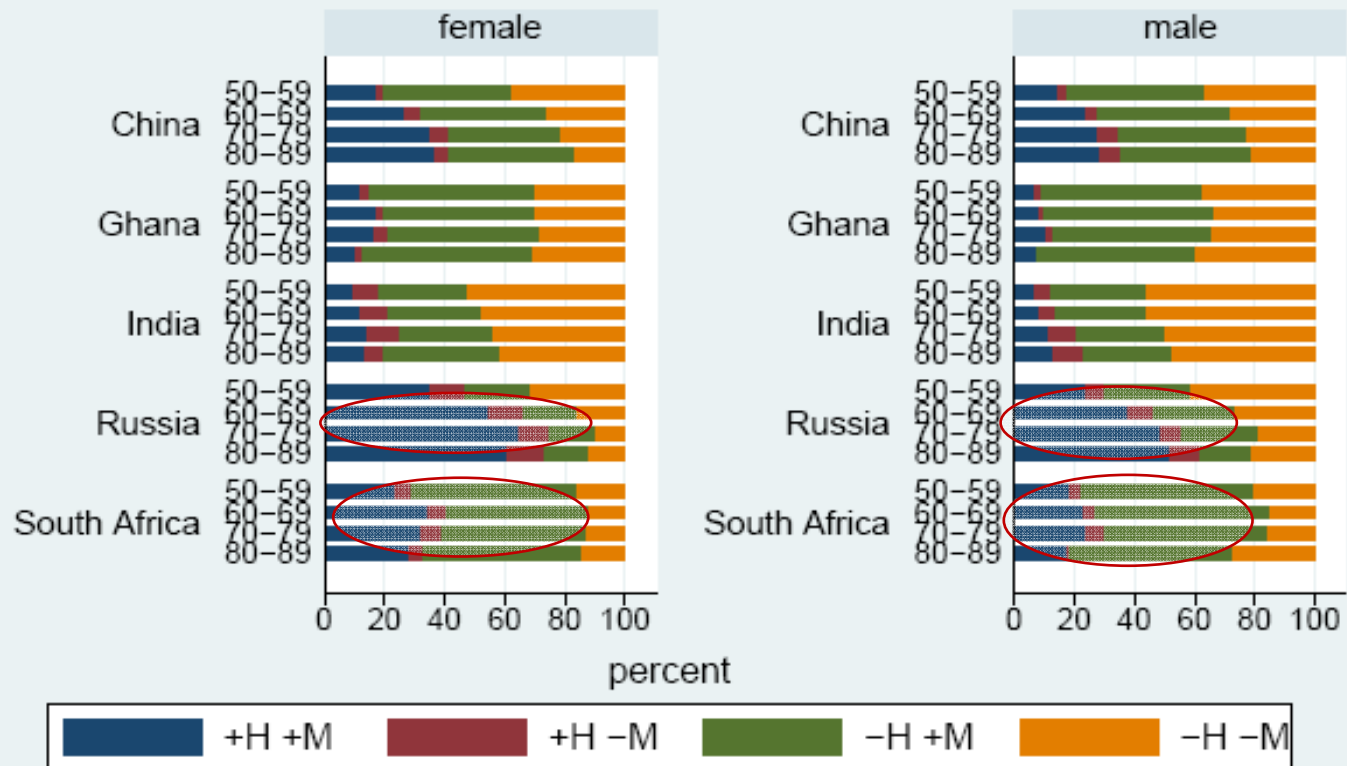
Prevalence and treatment rates



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Blood pressure by age and sex



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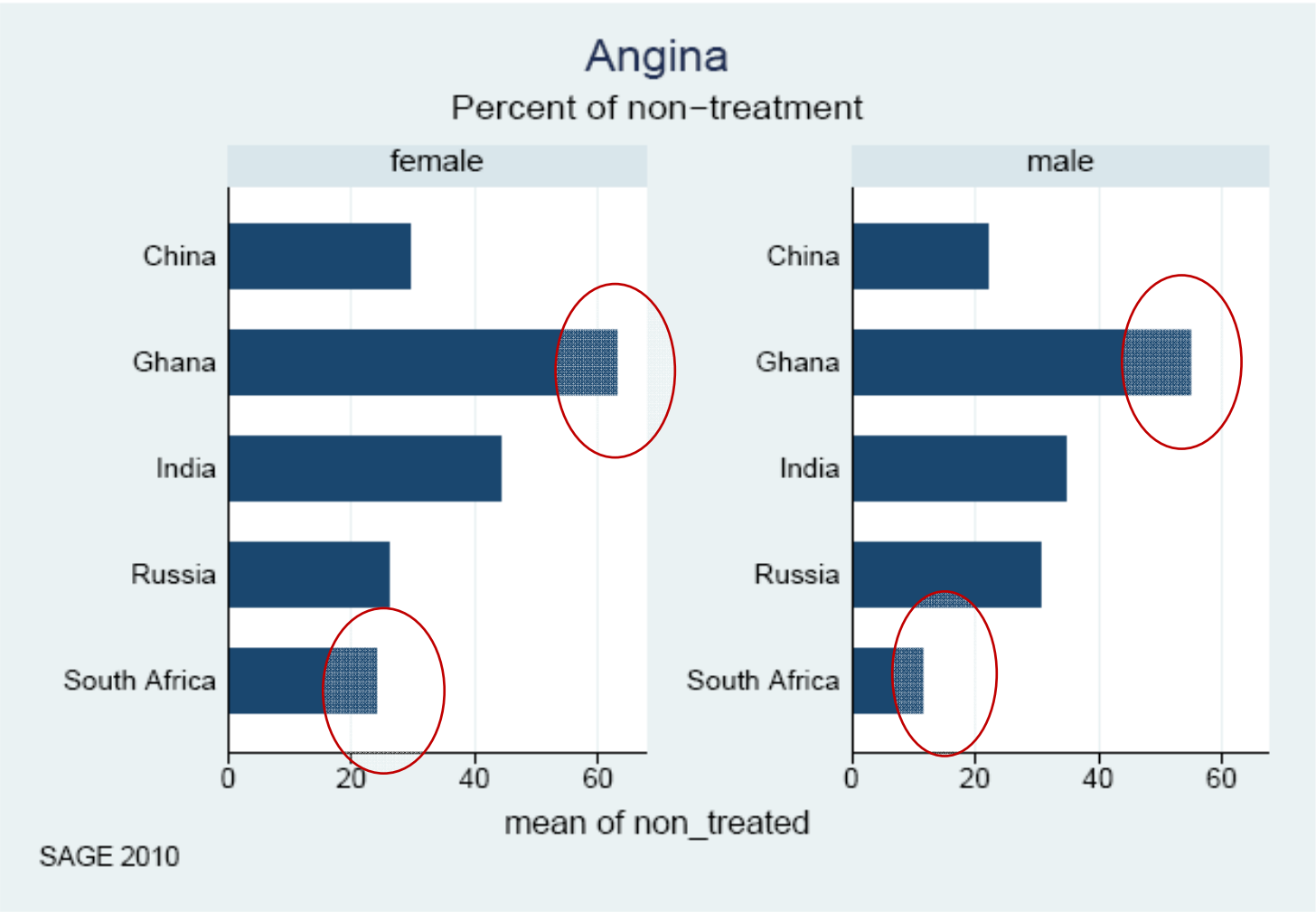
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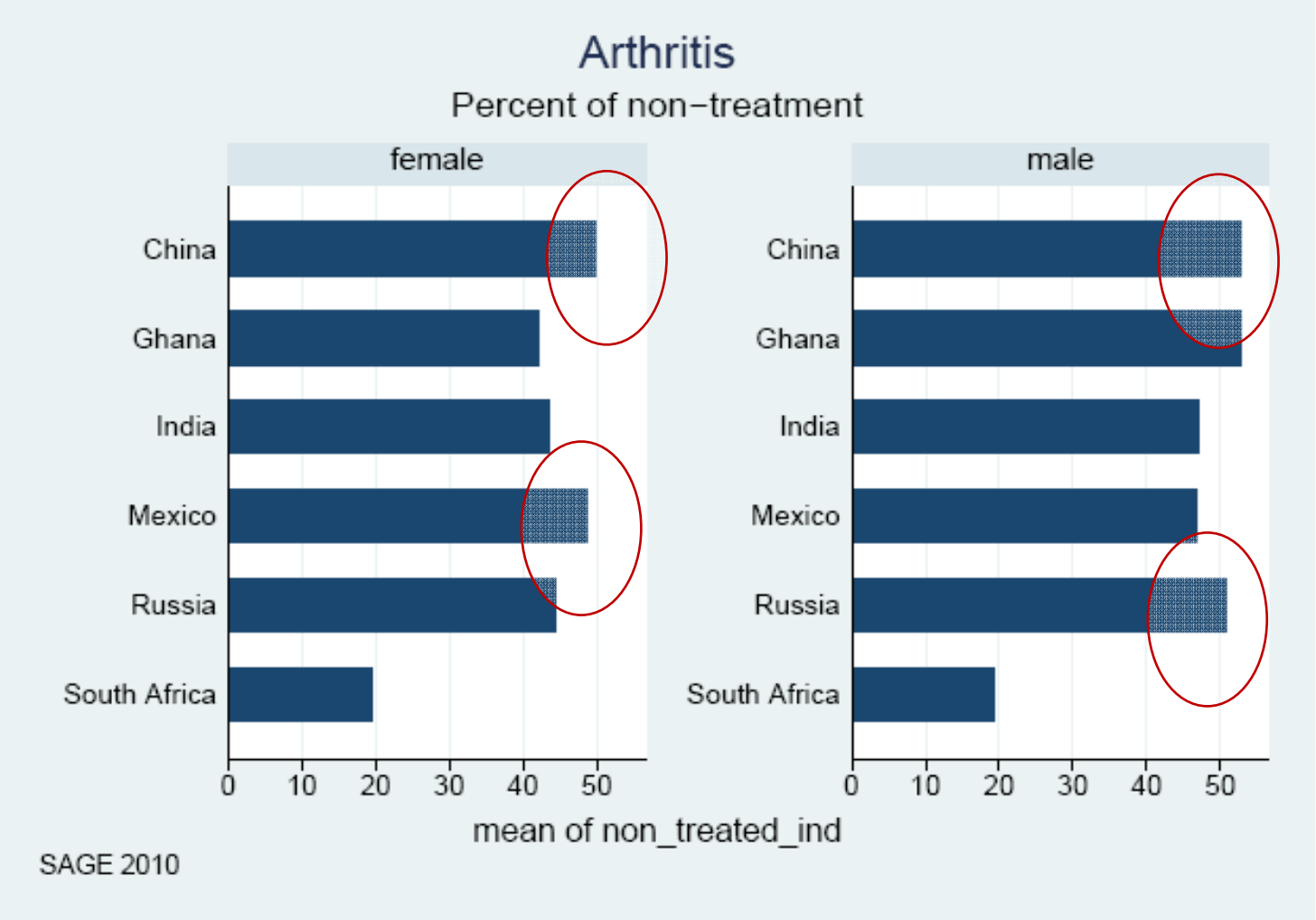
Logistic Regression Analysis of Social Determinants of Chronic Diseases and Treatment

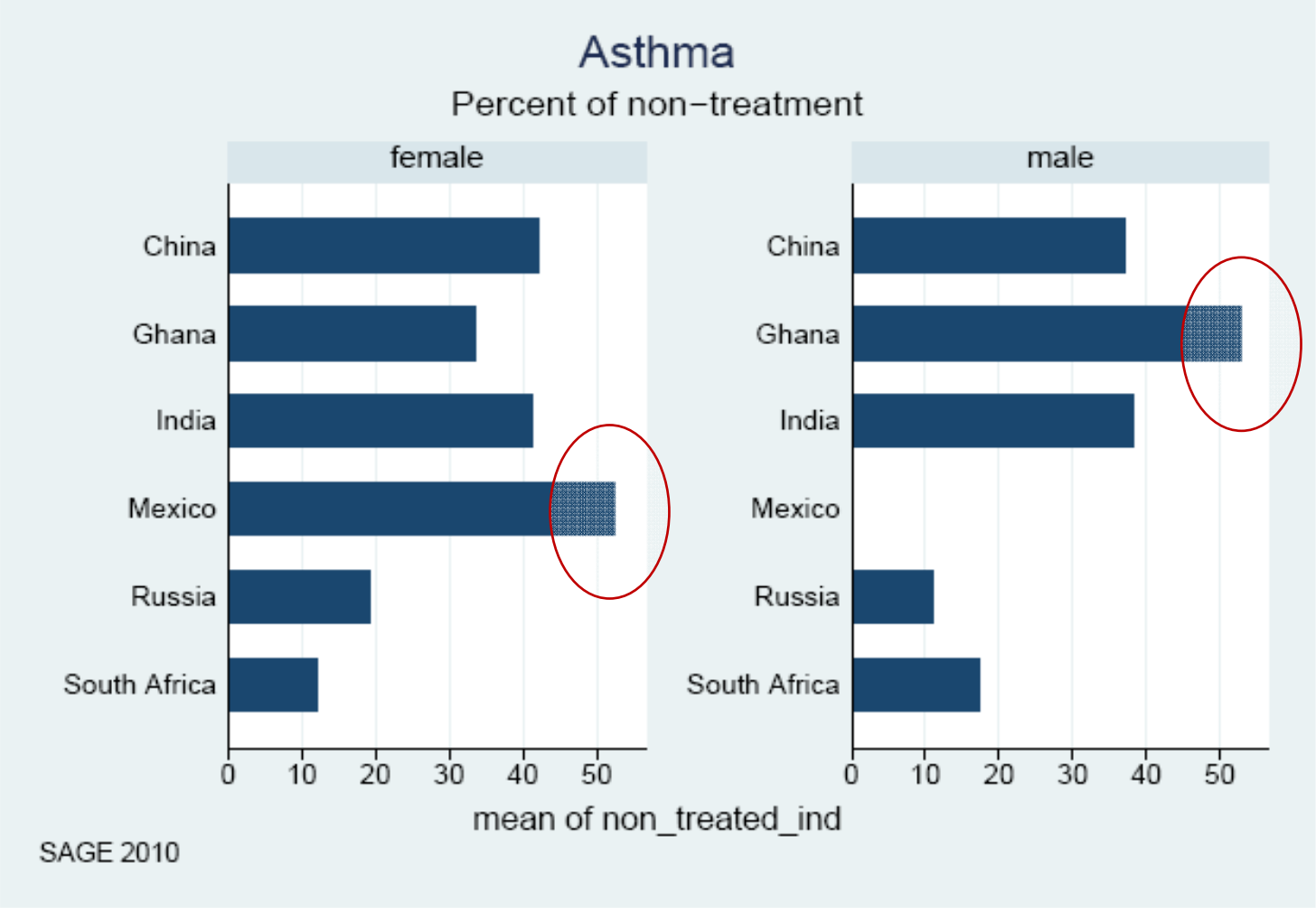
Characteristics	Odds ratios (Algorithm Based Prevalence)				Odds ratios (Treatment for AP)			
	Angina	Asthma	Arthritis	Depression	Angina	Asthma	Arthritis	Depression
female	1	1	1	1	1	1	1	1
male	0.7	1.4	0.64	0.8	0.97	0.92	0.84	0.6
18-49	1	1	1	1	1	1	1	1
50-59	1.7	2	2.1	1.8	1.5	0.9	1.2	1.9
60-69	2.5	2.7	2.7	2.3	2.3	1.2	1.5	1.3
70-79	3.2	3.7	2.9	2.4	3	1.4	1.6	3.3
80-89	3	3.3	2.6	2.3	3.4	1	1.1	4.5
noedu	1	1	1	1	1	1	1	1
pricom	0.8	0.9	0.94	0.8	1.5	0.9	1	1.3
seccom+	0.5	0.7	0.87	0.6	2.1	1	1.3	1.4
China	1	1	1	1	1	1	1	1
India	4.2	2.3	1.3	8.1	0.6	1.1	1.2	0.7
Russia	11.6	1.9	1.6	4.1	0.75	3.8	1.1	0.9
Safrica	1.5	1.3	1.5	1.9	1.7	5.6	4.1	1.97
Ghana	2.6	0.7	1.5	3.4	0.3	1	1.2	0.3

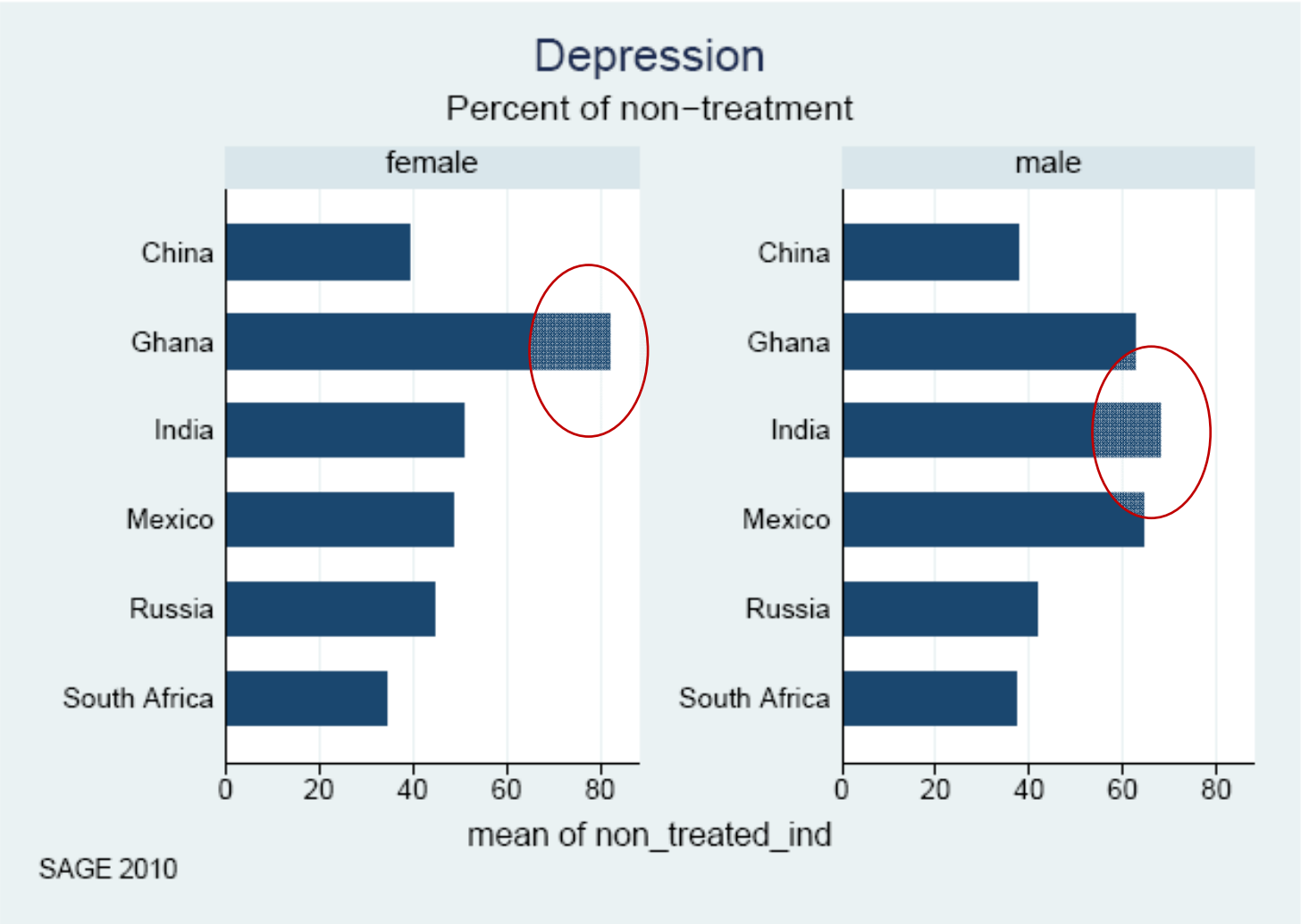
Logistic Regression Analysis of social determinants of Chronic Diseases

- By age, the odds of chronic disease prevalence is 3 times higher among older population in age 70 + than younger adults
- Females have higher likelihood of experiencing chronic diseases
- Education reduces the odds of chronic disease prevalence but increases the odds of treatment coverage
- The odds of angina prevalence is 12 times higher in Russia, followed by India (4 times) compared with China
- The odds of asthma and depression prevalence is greater in India
- Among Sage Countries, the odds of being treated is consistently higher for most chronic conditions in South Africa and lower in Ghana than other countries. India and China also have the next lower treatment rates









STATA

Non-treatment for Chronic Conditions

- By countries, non-treatment rates are generally higher for most chronic diseases in Ghana
- South Africa has the lowest non treatment rates for most chronic diseases
- By chronic conditions, non treatment rates are higher for depression and arthritis for all SAGE countries
- Non-treatment rates are somewhat lower for males than females

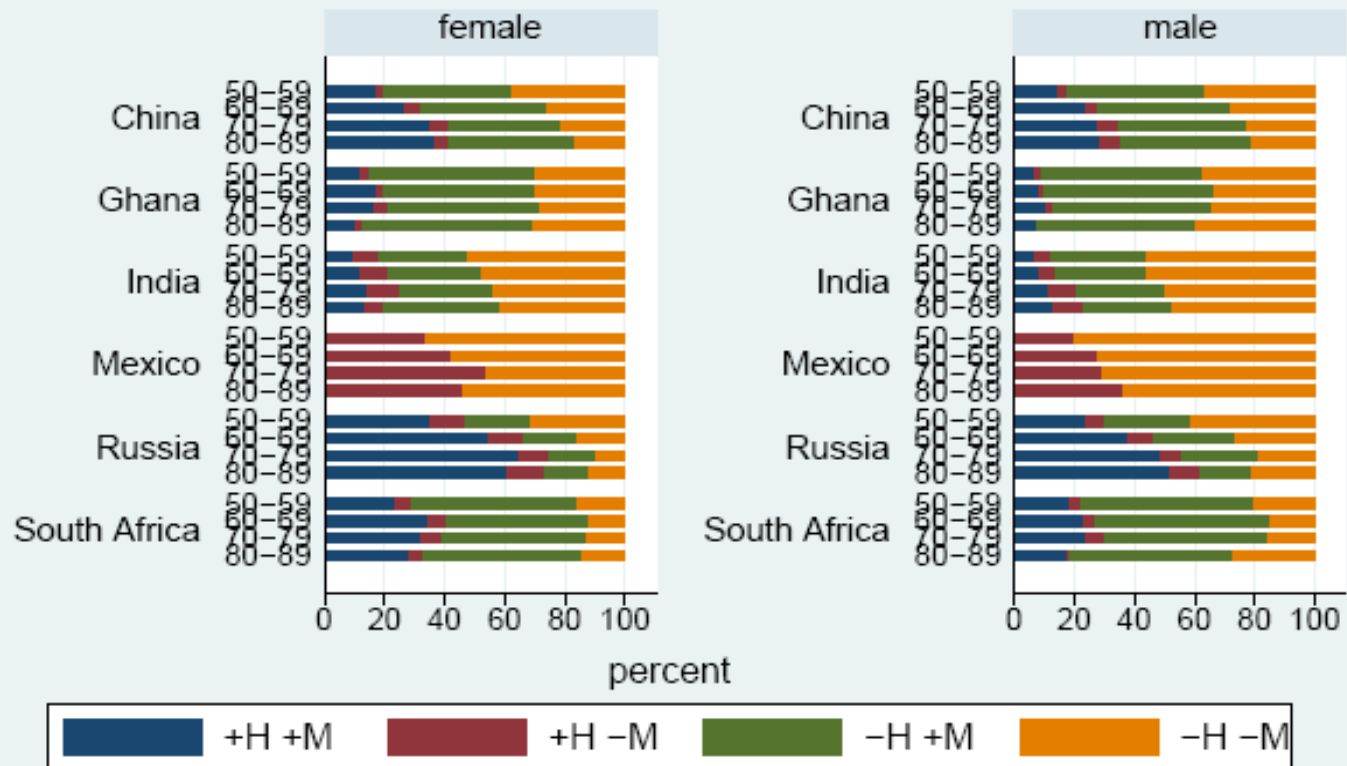
Conclusion

- Algorithm based approach is helpful in an effort to obtain better estimates of chronic disease prevalence
- Comparison of self-report and algorithm based prevalence indicates closer correspondence for asthma and arthritis, but a larger discrepancy was found for angina and depression
- Cross-sectional evidence for chronic diseases among SAGE countries confirms the rising and large burden of chronic diseases in India and other developing countries
- The burden of chronic diseases except asthma is higher among older women than among men
- The age gradient for chronic diseases is consistent for all countries

Conclusion

- Comparative assessment of self reported hypertension and measured blood pressure has been helpful to find the extent of true positives and true negatives between reported and measured (blood pressure)
- Among Sage countries:
 - Russia has a higher prevalence of heart diseases (angina) and hypertension
 - India has a higher prevalence of asthma and depression and lower prevalence of true positive hypertension.
 - Arthritis is widely prevalent among all Sage Countries
- The treatment rates for chronic diseases are highest for South Africa and lowest for Ghana

Blood pressure by age and sex



SAGE 2010

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