SES Gradients in India:
Dynamics and Policy Challenges

Nikkil Sudharsanan

Technical University of Munich

NAS Workshop Session 1

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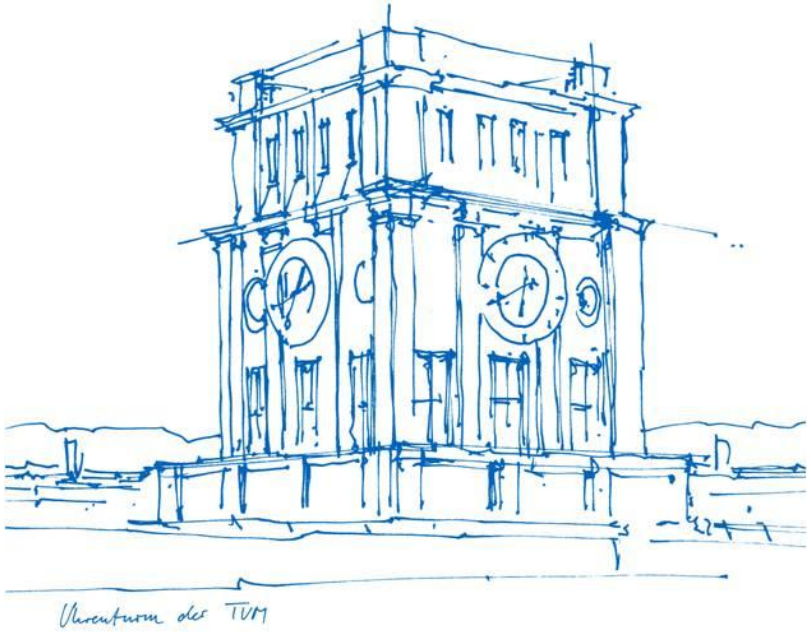

Overview

1. Gradients are dynamic
2. Shocks can expand existing gradients
3. Pro-poor healthcare policies have important challenges
4. What (do I think) is missing?

Gradients are Dynamic

"Changing socioeconomic and geographic gradients in cardiovascular disease risk factors among Indians aged 15–49 years–evidence from nationally representative household surveys"

Sarah Wetzel, Pascal Geldsetzer, Sneha Mani, Aashish Gupta, Kavita Singh, Mohammed K. Ali, Dorairaj Prabhakaran, Nikhil Tandon, Nikkil Sudharsanan

The Lancet Regional Health-Southeast Asia (2023)

Background

- Much of the literature on social gradients in LMICs is based on snapshots in time
  - Gives impression that gradients are static

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Background

- Much of the literature on social gradients in LMICs is based on snapshots in time
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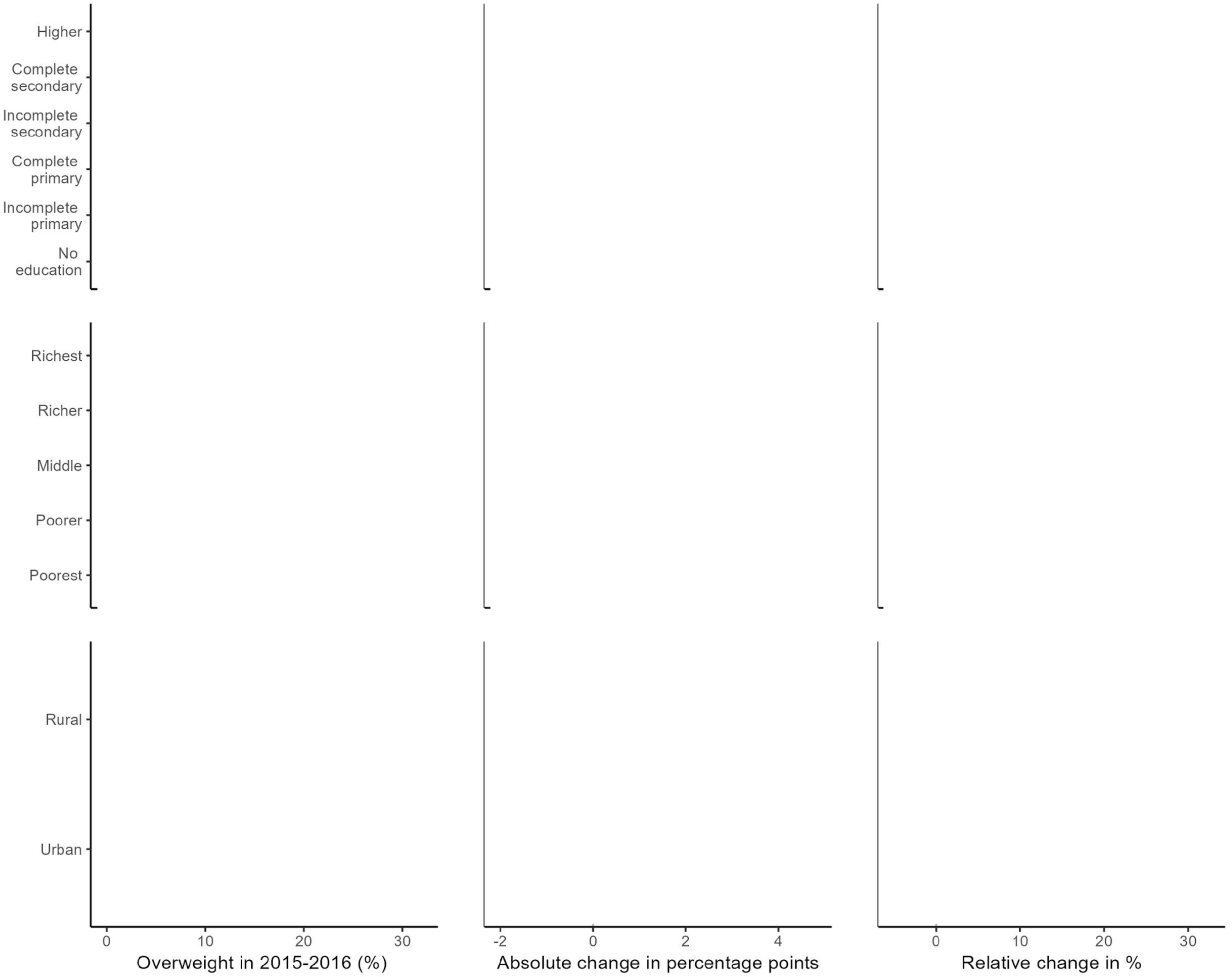
- Reversal Hypothesis (Sobal & Stunkard, 1989): Cardiovascular risk factors are worse among the higher SES individuals when countries are in early stages of development, but as countries develop, these gradients flatten then reverse
  - Most studies cross-sectionally compare countries at different levels of GDP or regions/groups within countries with different SES
    - Cross-sectional differences ≠ dynamic experience as countries develop
  - Few countries that use within country-data over time (mostly for obesity) but nothing for India

Brief Data and Methods

- Data: National Family and Health Surveys 4 (2015-16) and 5 (2019-21)
  - BMI (Measured), Diabetes (Measured), HTN (Measured), Smoking (Self-reported)
  - N ~ 770,000 in each wave of data

- Methods: Super descriptive
  - Measure gradients in risk factors by education, wealth, and urban/rural
  - Levels & changes (in absolute and %)

Overweight or obese



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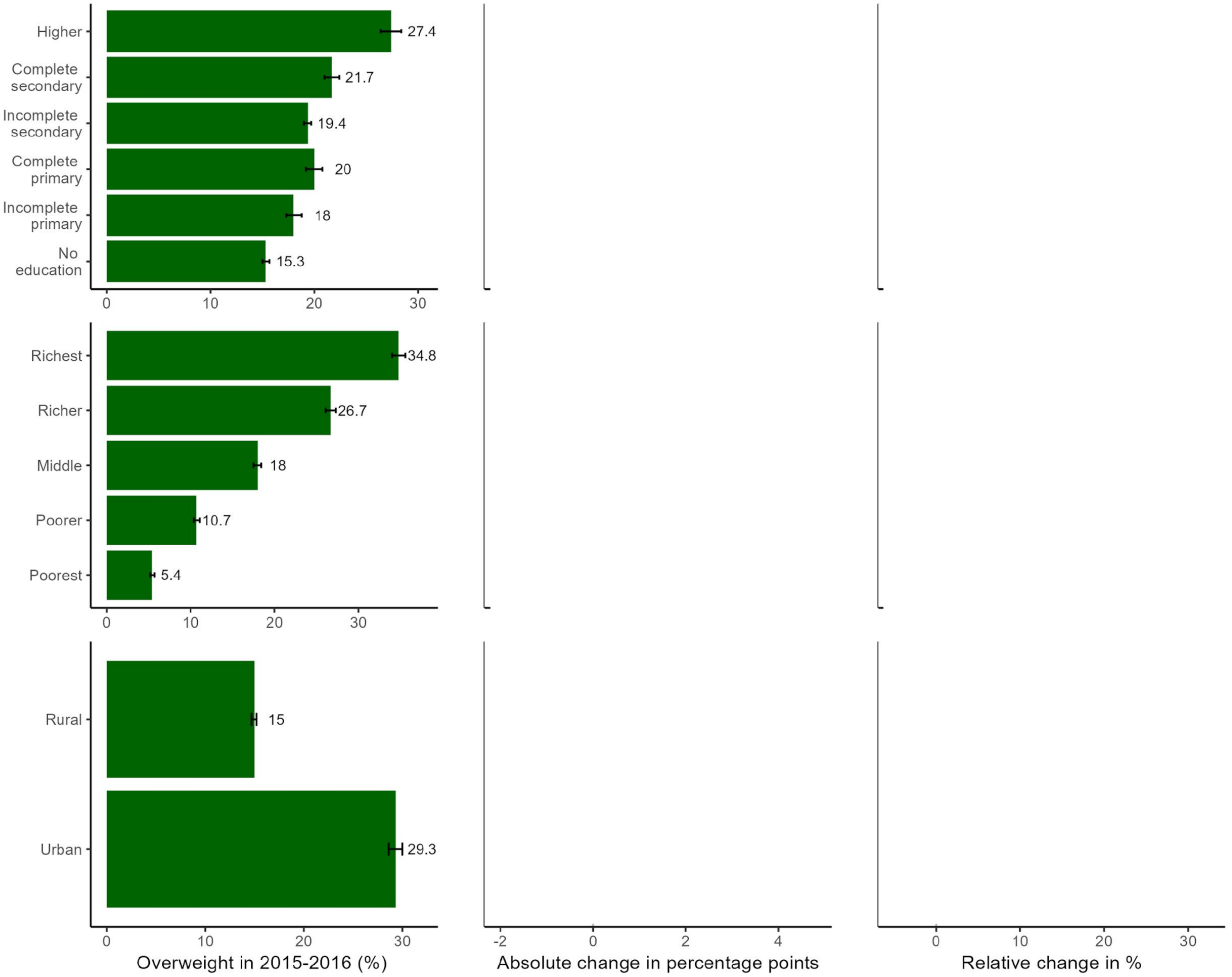

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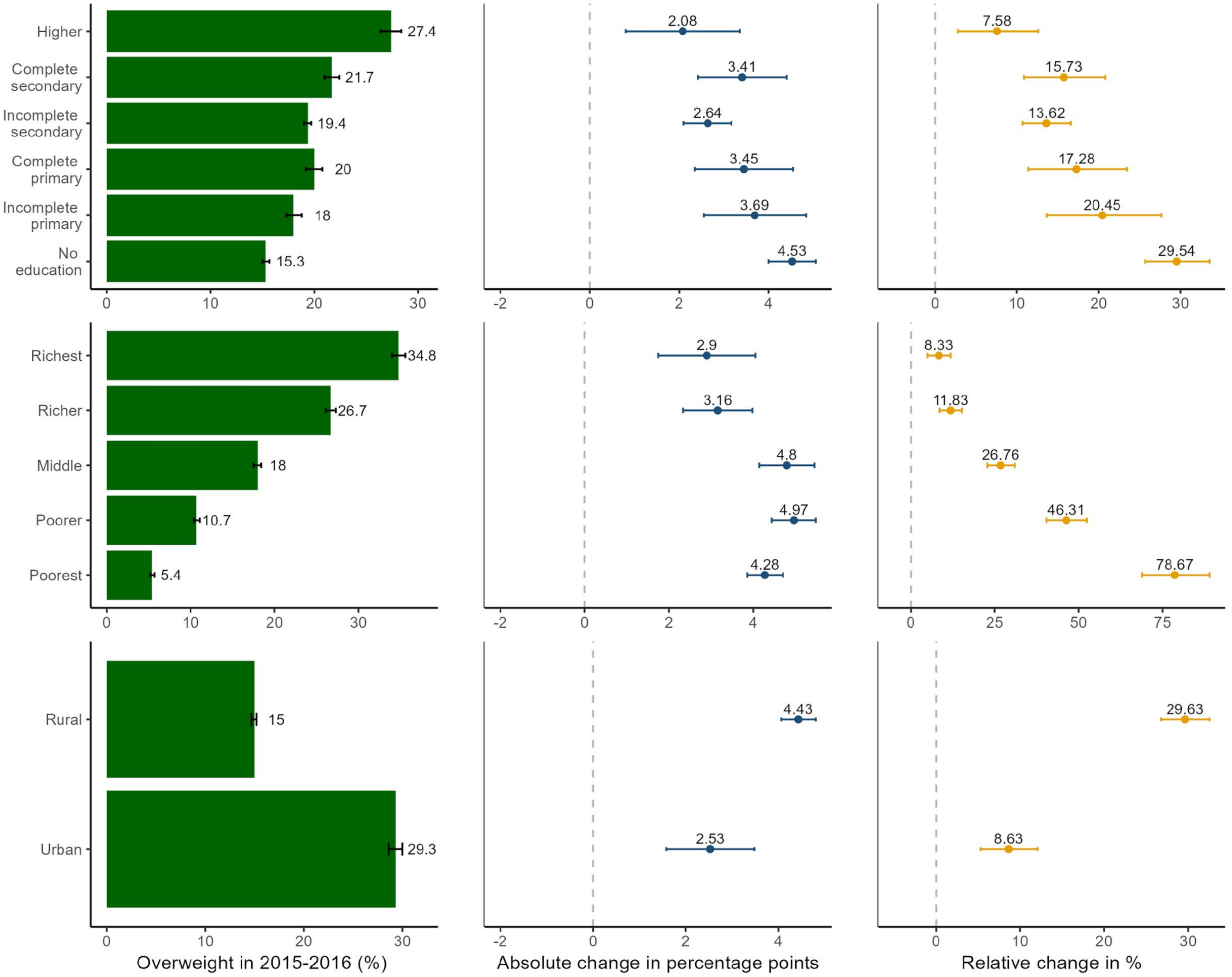
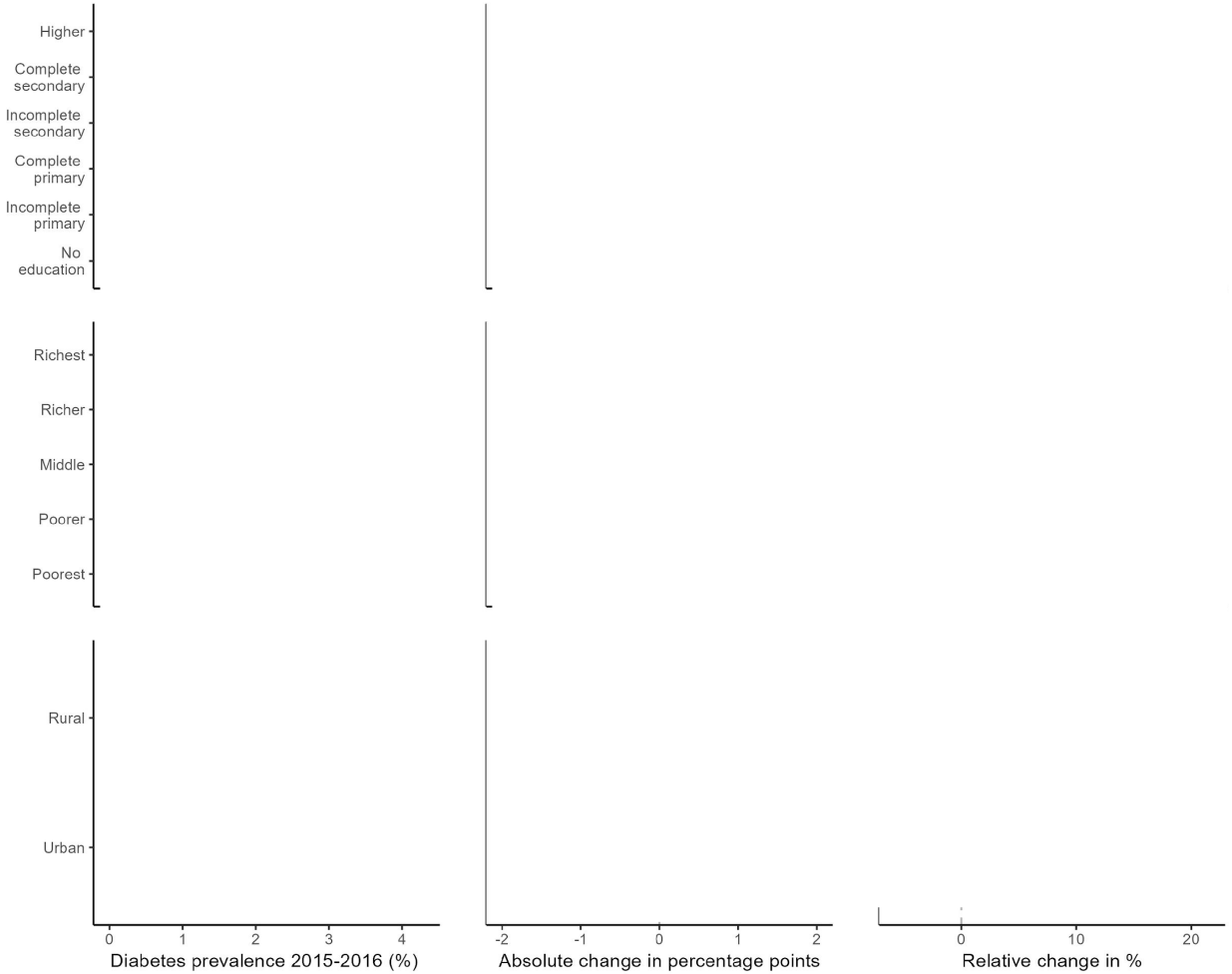


Diabetes


Higher
Complete secondary
Incomplete secondary
Complete primary
Incomplete primary
No education
Richest
Richer
Middle
Poorer
Poorest
Rural
Urban
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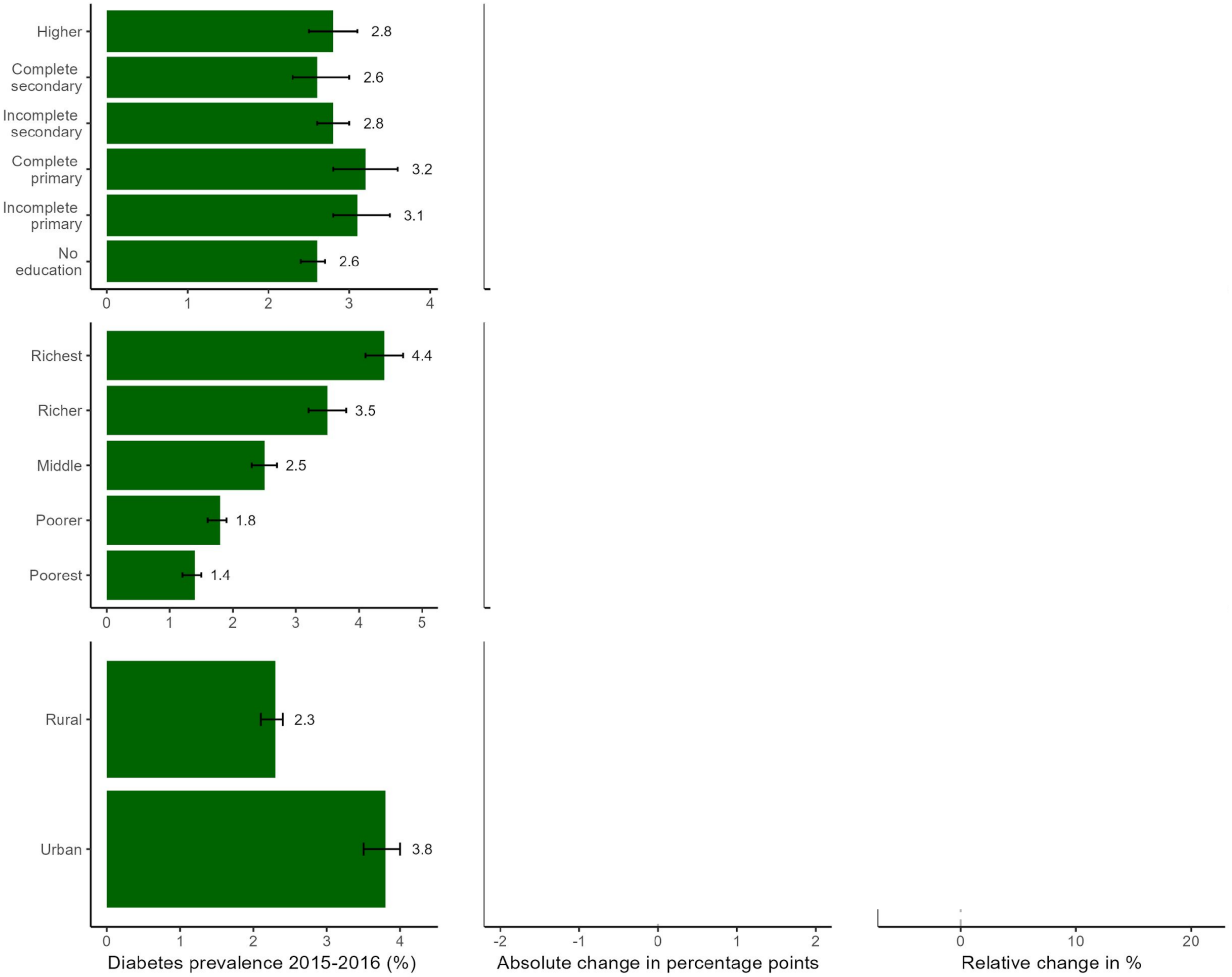
1
2
3
4
Diabetes prevalence 2015-2016 (%)
-2
-1
0
1
2
Absolute change in percentage points
0
10
20
Relative change in %

Diabetes


Higher
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Incomplete primary
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Richest
Richer
Middle
Poorer
Poorest
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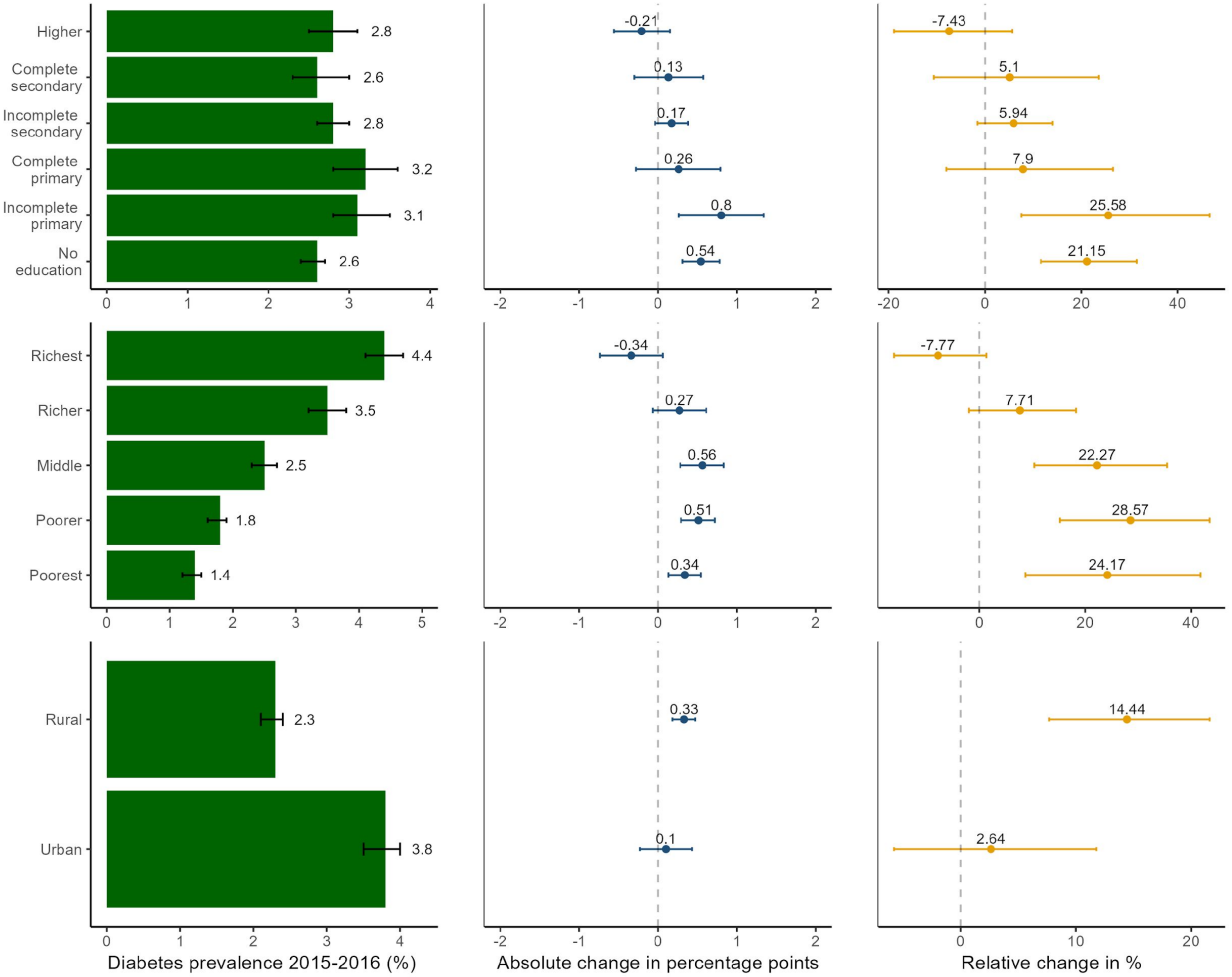
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-7.43
5.1
5.94
7.9
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21.15
Richest
Richer
Middle
Poorer
Poorest
4.4
3.5
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1.8
1.4
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0.56
0.51
0.34
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7.71
22.27
28.57
24.17
Rural
Urban
2.3
3.8
0.33
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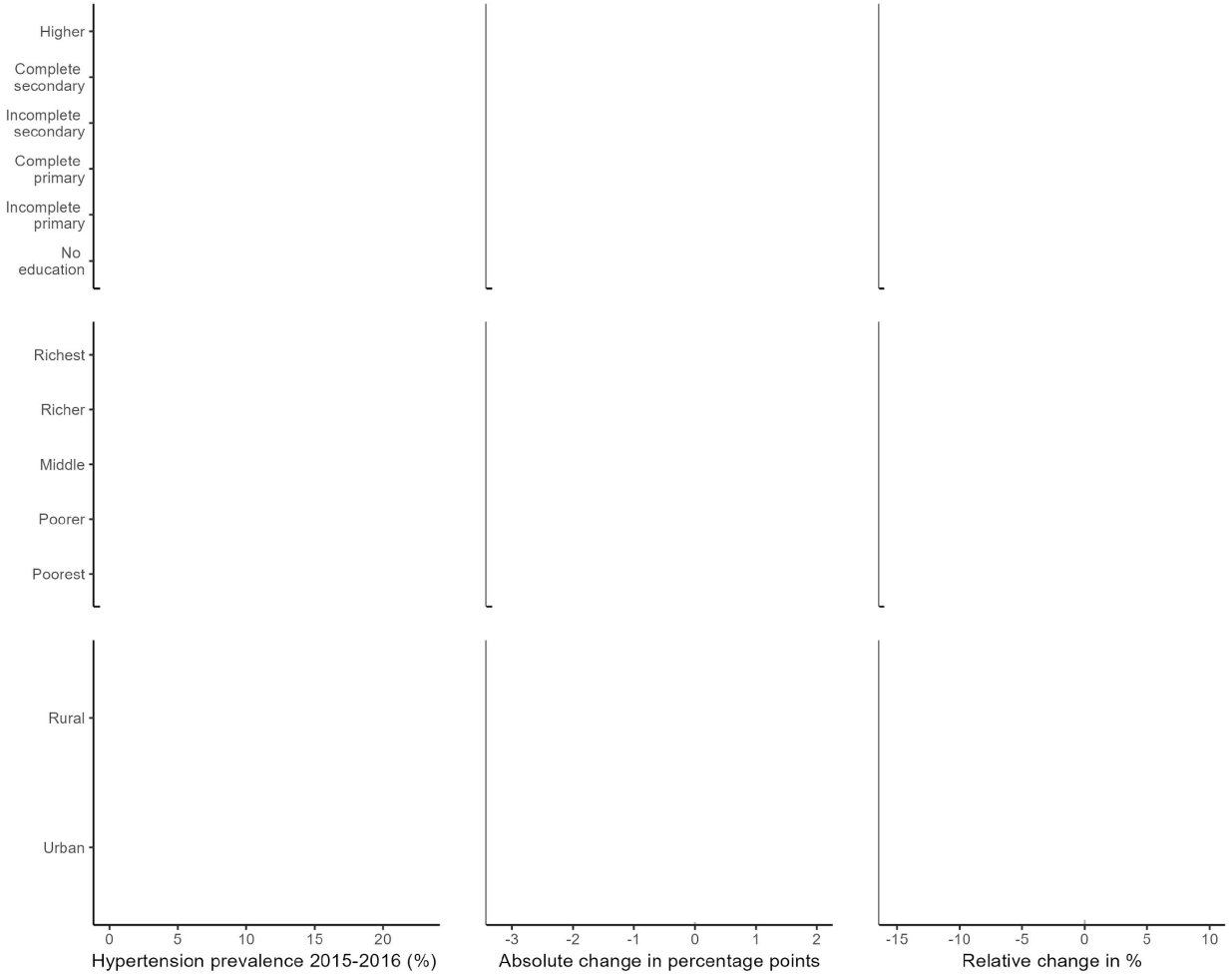
14.44
2.64
Diabetes prevalence 2015-2016 (%)
Absolute change in percentage points
Relative change in %

Hypertension



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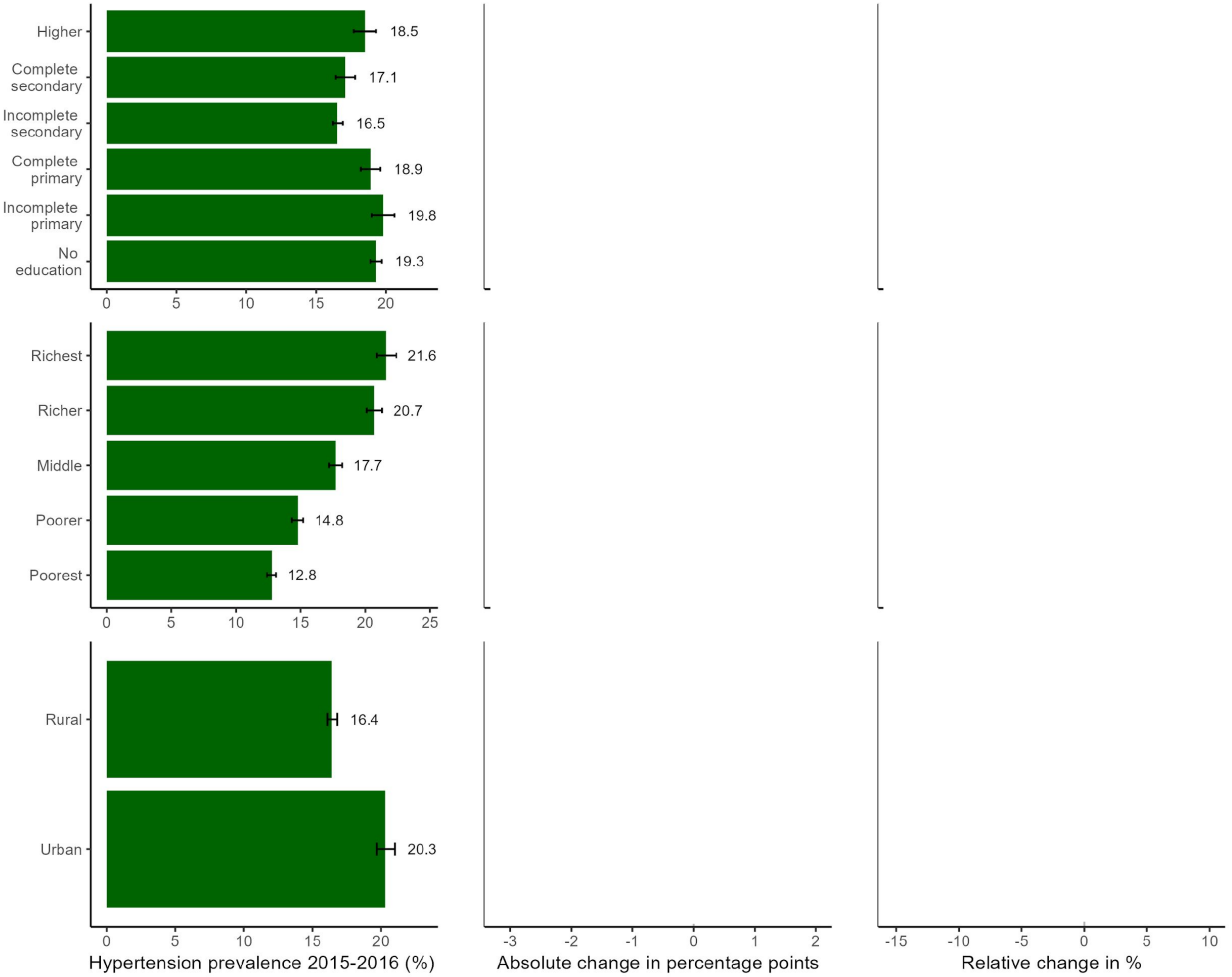
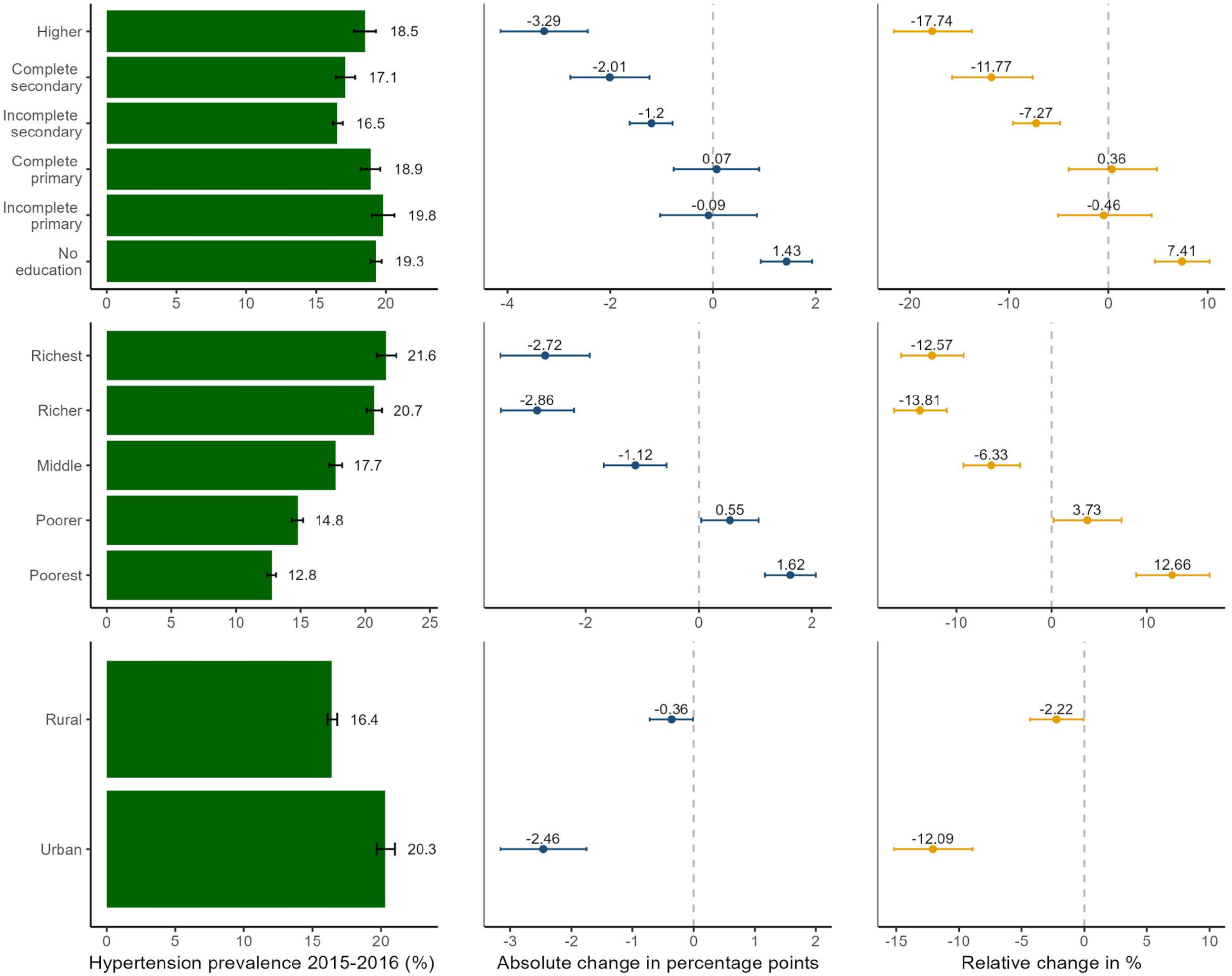
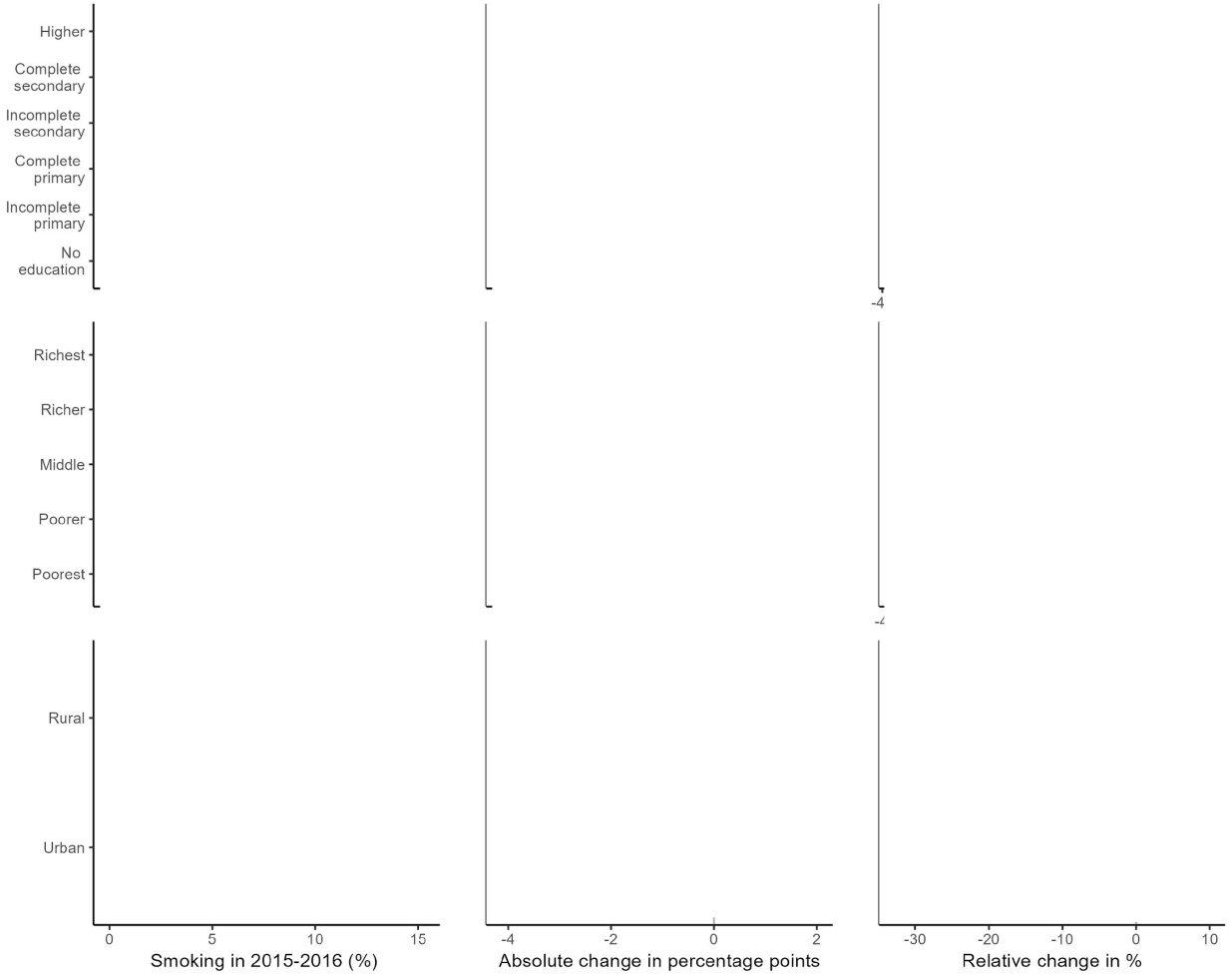


Hypertension



Smoking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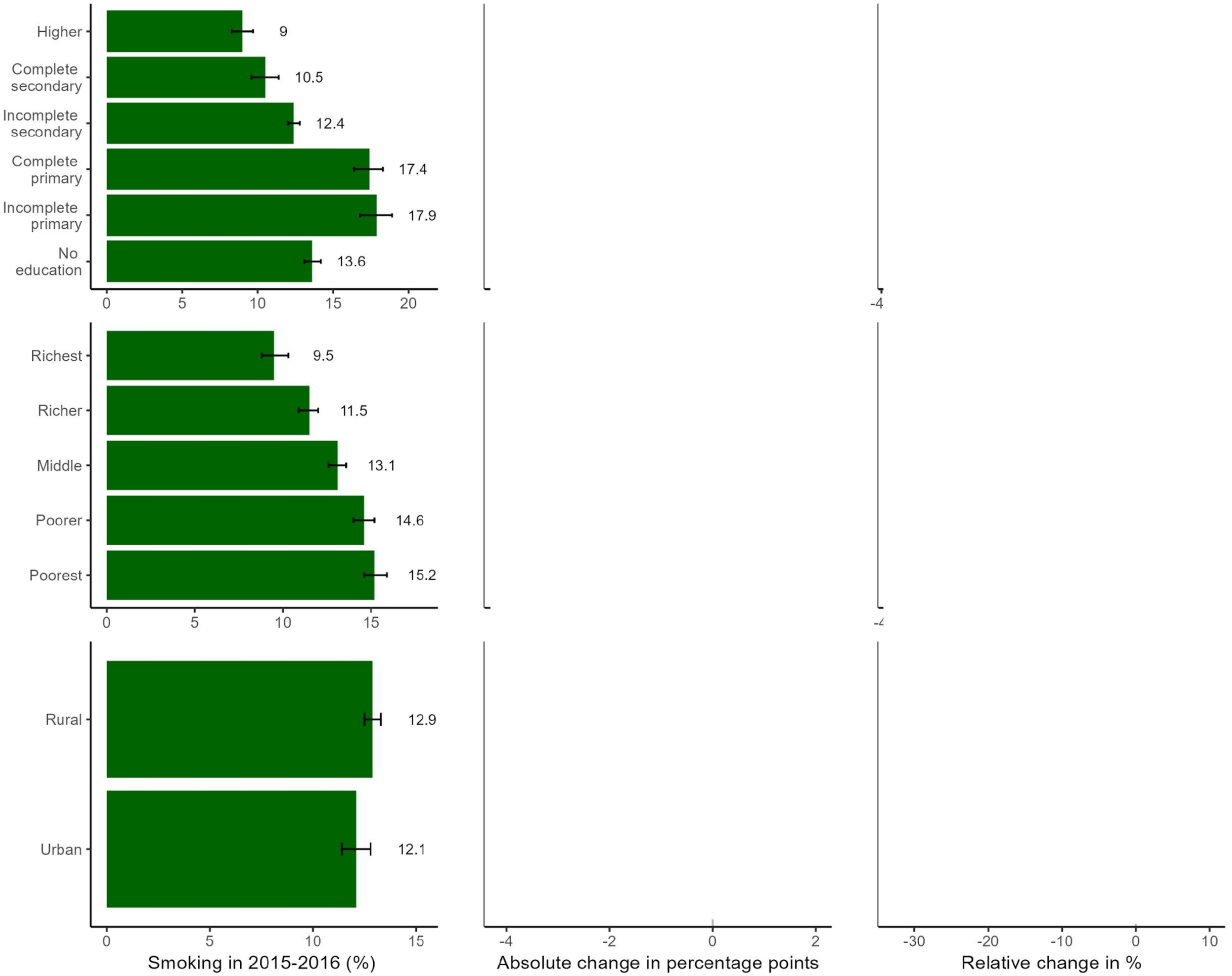
Urban
0
5
10
15
Smoking in 2015-2016 (%)
-4
-2
0
2
Absolute change in percentage points
-30
-20
-10
0
10
Relative change in %

Smoking


Higher
Complete secondary
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No education
9
10.5
12.4
17.4
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20
Richest
Richer
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11.5
13.1
14.6
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-10
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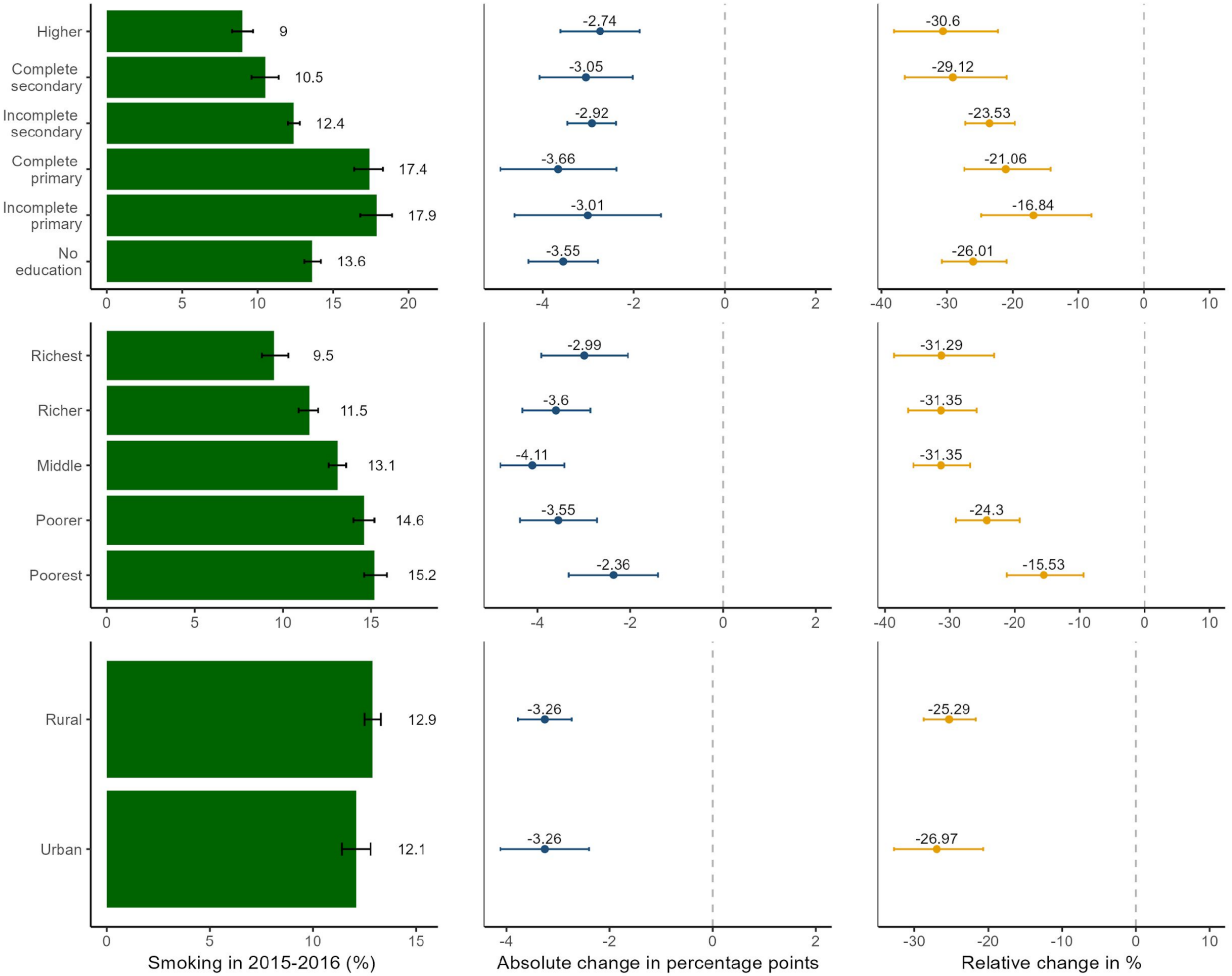
10
Relative change in %

Smoking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Complete secondary
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Incomplete primary
No education
9
10.5
12.4
17.4
17.9
13.6
-2,74
-3,05
-2,92
-3,66
-3,01
-3,55
-30.6
-29,12
-23,53
-21,06
-16,84
-26,01
Richest
Richer
Middle
Poorer
Poorest
9.5
11.5
13.1
14.6
15.2
-2,99
-3,6
-4,11
-3,55
-2,36
-31,29
-31,35
-31,35
-24,3
-15,53
Rural
Urban
12.9
12.1
-3,26
-3,26
-25,29
-26,97
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Concluding Thoughts

- We find strong descriptive evidence of changing gradients in CVD risk factors in India consistent with the reversal hypothesis
    - Changes are happening quickly

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    - Changes are happening quickly

- Raises three questions
    - Are there contexts where gradients have stabilized?
    - How should we think of cross-sectional gradients in the background of rapid changes?
    - How do CVD gradients interact with healthcare to produce mortality gradients?

Shocks can Expand Existing Gradients

“Large and unequal life expectancy declines associated with the COVID-19 pandemic in India in 2020”

Aashish Gupta, Payal Hathi, Murad Banaji, Prankur Gupta, Ridhi Kashyap, Vipul Paikra,
Kanika Sharma, Anmol Somanchi, Nikkil Sudharsanan, Sangita Vyas

Under Review (But hopefully not for long!)

Brief Data and Methods

- Data: National Family and Health Survey 5 (N = 766,209)
  - Under 5 mortality: Birth history module
  - Over 5 mortality: Recent deaths in the household
- Methods: Life expectancy at birth by social group/caste
  - Create life years lived by age for each alive respondent and those reported deceased

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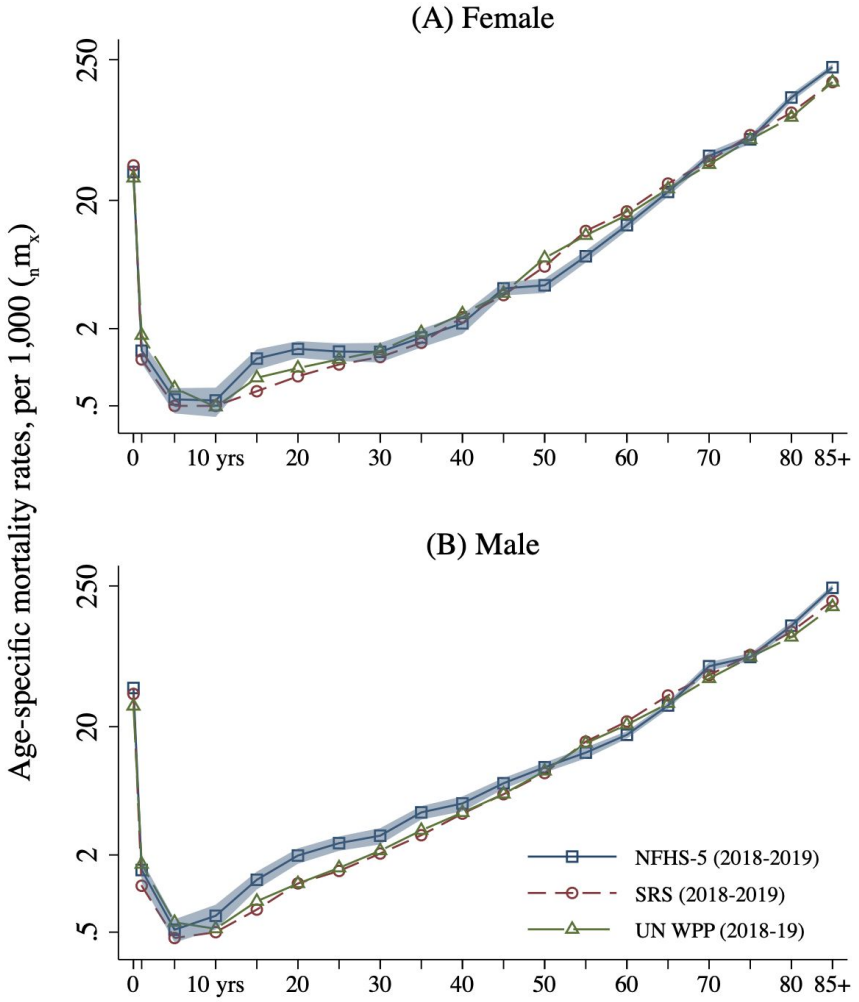
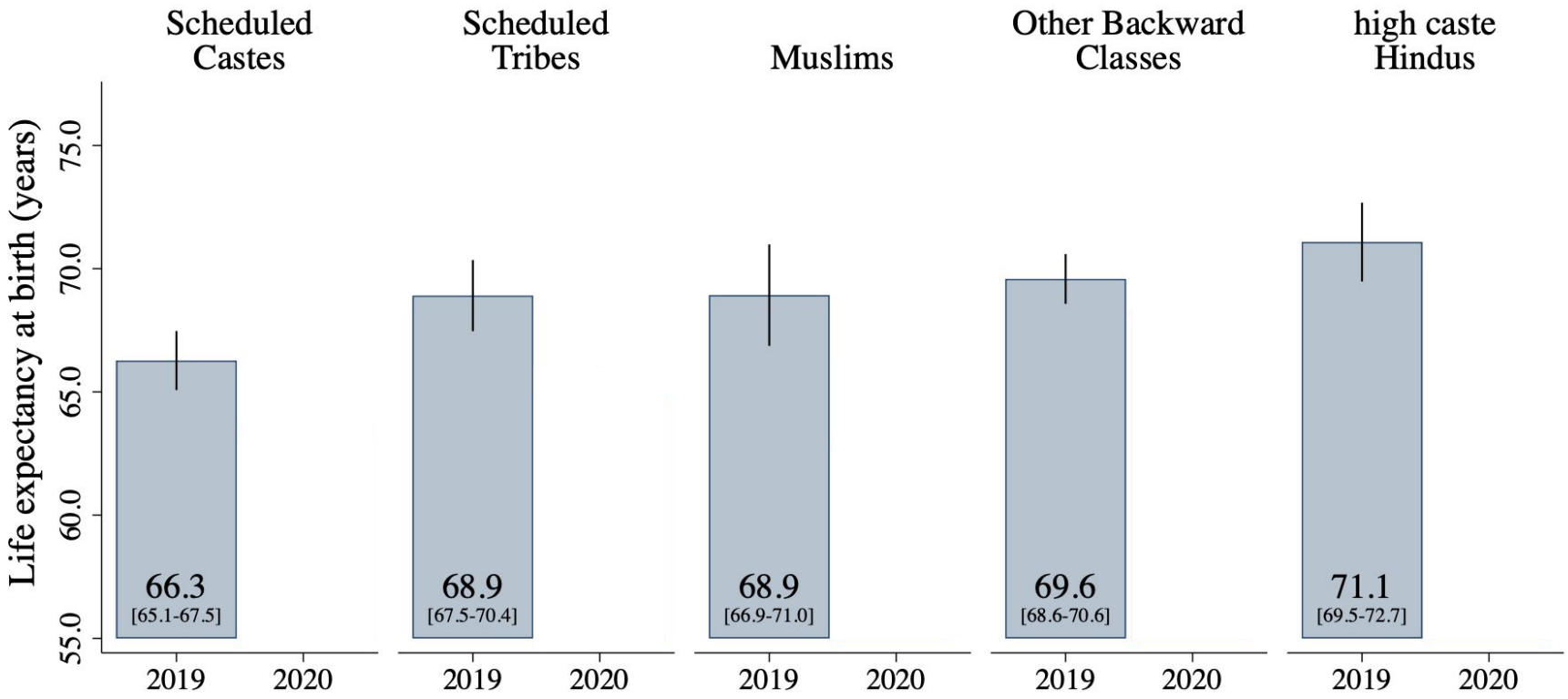
- Methods: Life expectancy at birth by social group/caste
  - Create life years lived by age for each alive respondent and those reported deceased
- What makes this paper unique
  - Some states had data collection that was interrupted by the COVID-19 pandemic
  - Mortality in 2019 and 2020 for HH's interviewed pre-pandemic compared to mortality in 2020 for households interviewed post Delta

Credibility of the recent household deaths approach



Large e_0 gradients across social groups



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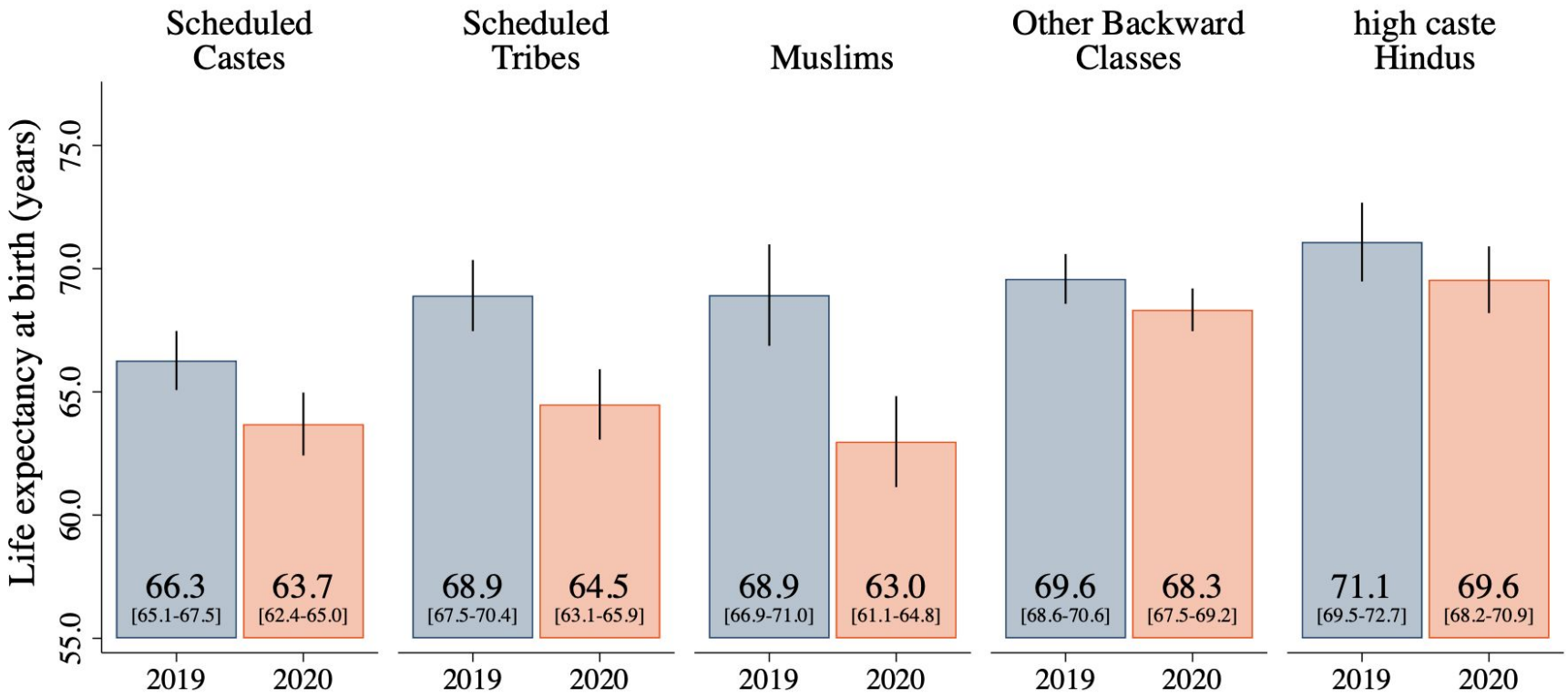
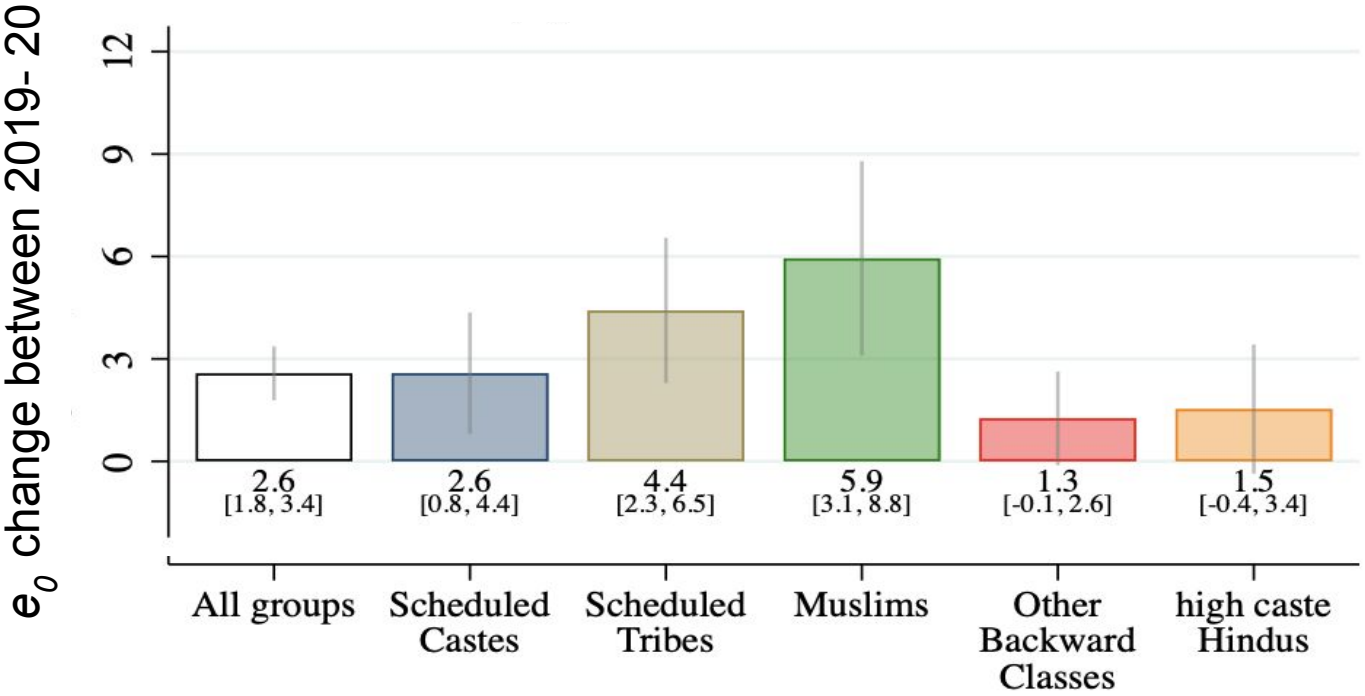


e_0 losses were greater for disadvantaged groups



Concluding Thoughts

- Already large social gradients became larger due to pandemic mortality
    - This is similar to studies on the effect of COVID on race/ethnic gradients in the USA
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- Already large social gradients became larger due to pandemic mortality
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- Not limited to pandemics: natural disasters or climate induced heat
- Questions this raises for me:
  - Are such expansions inevitable or is there a way to buffer against these expansions?
  - Will gradients “go back to normal” or is there a long-term mortality effect?

Policy challenges to addressing inequalities

Social Health Insurance and Universal Health Coverage

- India is a global frontrunner in large social health insurance programs
  - First the RSBY, now the PM-JAY
  - Both programs have an explicit pro-poor eligibility criterion
- Targeting and uptake are a major challenge
  - *Targeting*: How to reliably identify a poor household?
  - *Uptake*: The most disadvantaged tend to under-enroll despite higher need

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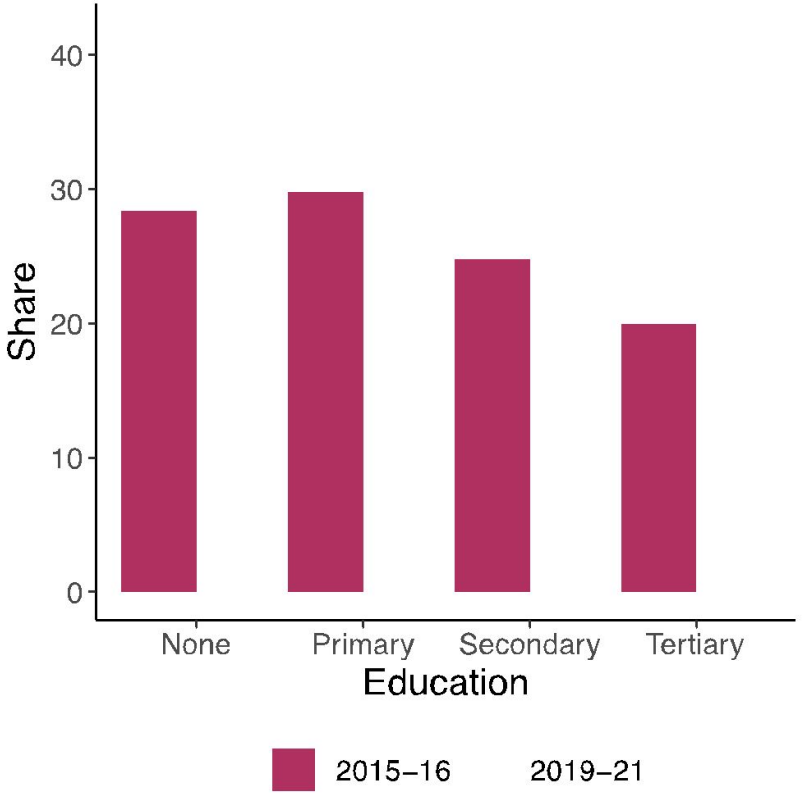
  - *Targeting*: How to reliably identify a poor household?
  - *Uptake*: The most disadvantaged tend to under-enroll despite higher need
- Our current work (J-PAL Innovations in Government Initiative with TN Gov't)
  - 2 highly vulnerable populations (tribal residents and urban slum residents) are significantly under-enrolled in the Tamil Nadu state health insurance program
  - Preliminary results: hassle costs and sludge!

Mohanty SK et al. “Public health insurance coverage in India before and after PM-JAY: repeated cross-sectional analysis of nationally representative survey data.” *BMJ Global Health* (2023).

Non-contributory social health insurance coverage in India



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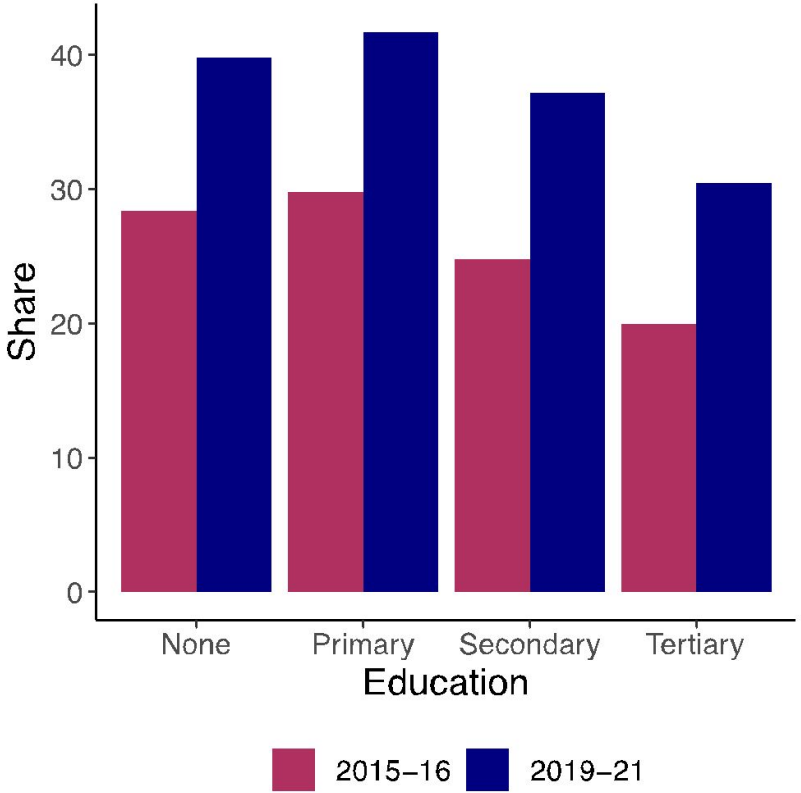
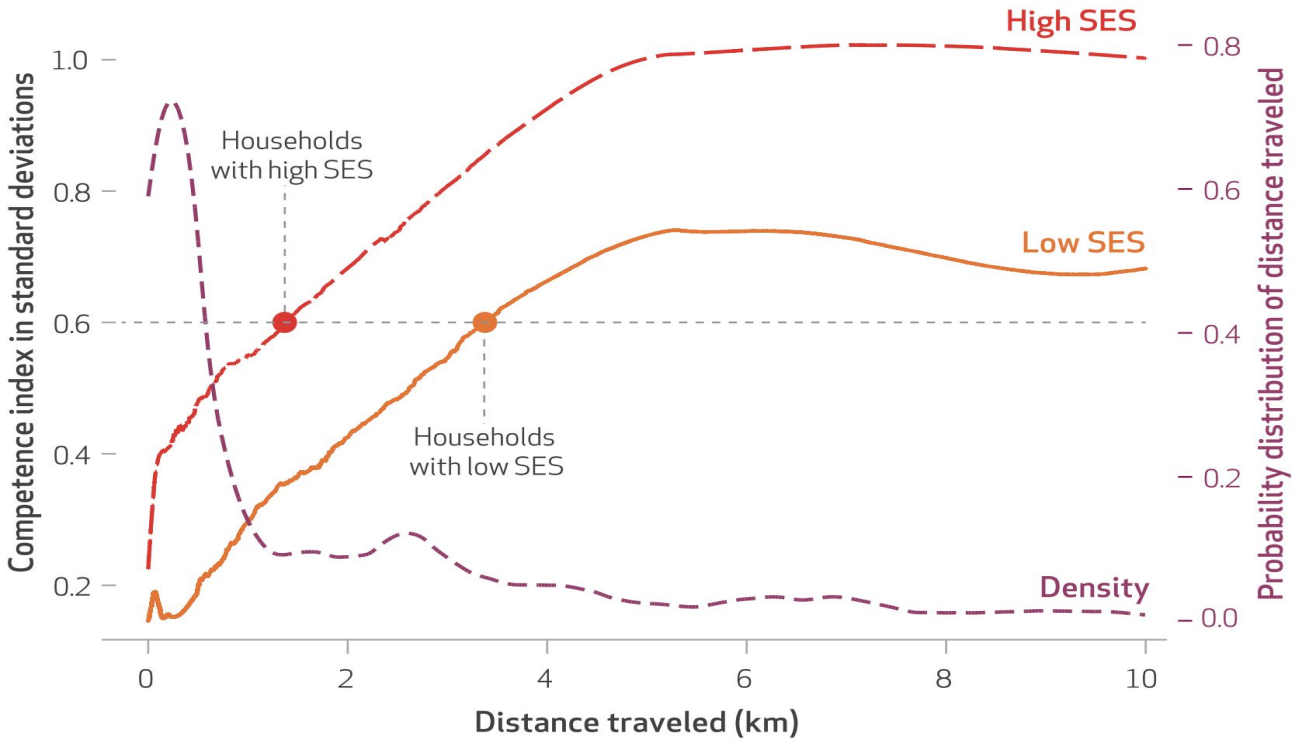


Jishnu Das & Aakash Mohpal. "Socioeconomic status and quality of care in rural India: new evidence from provider and household surveys." *Health Affairs* (2016).

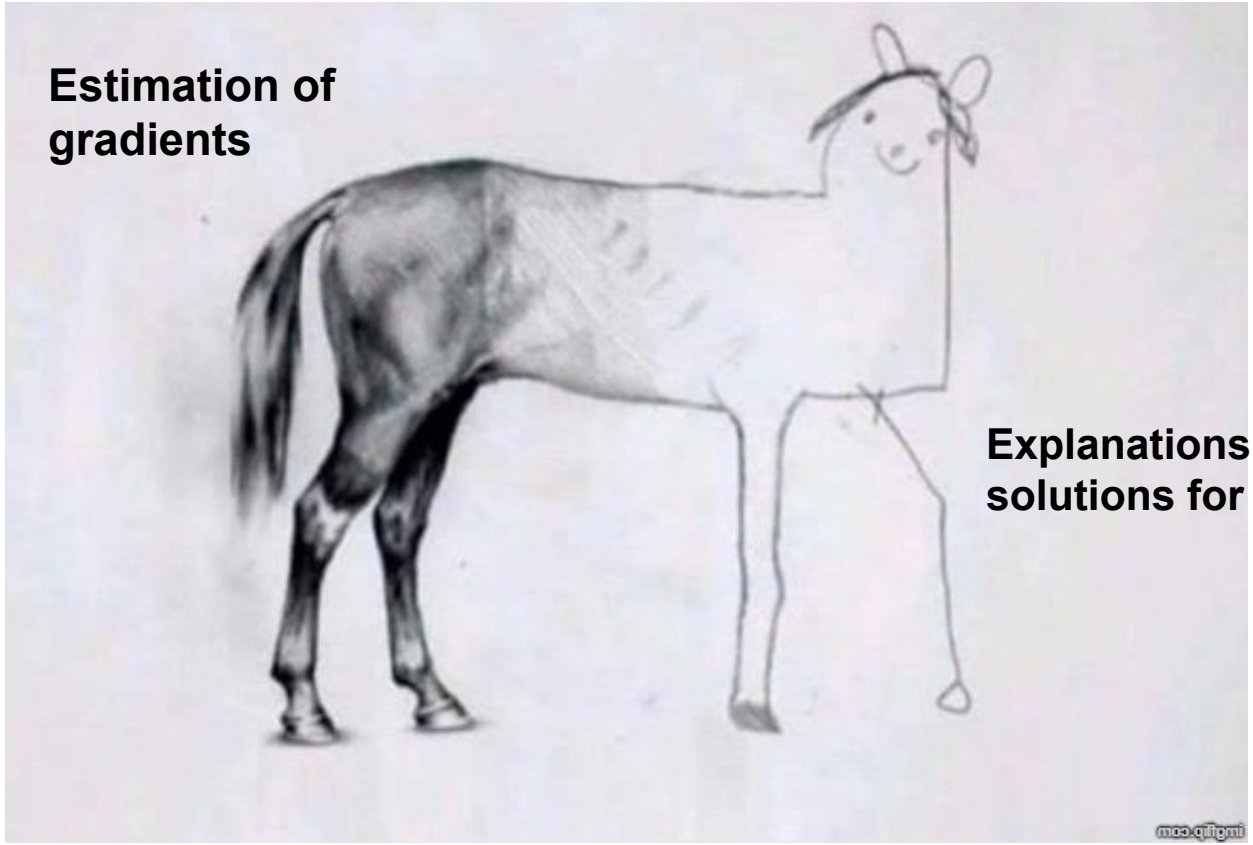
Quality of Care by SES

Distance traveled to and competence of health care providers used in Madhya Pradesh, India, 2009–11



What do I think is missing?

- Non-hand-wavy explanations for levels and changes in gradients



Explanations and solutions for gradients

What do I think is missing?

- Non-hand-wavy explanations for levels and changes in gradients
- Impact of policies on gradients
  - Pro-poor targeted policies
    - Village health initiatives (Family Physicians Scheme in Andhra Pradesh)
    - Non-contributory health insurance expansions
    - Public food distribution programs
    - Caste-based education policies

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    - Non-contributory health insurance expansions
    - Public food distribution programs
    - Caste-based education policies
  - Broad population policies
    - Sugar, tobacco, and alcohol taxes
    - Changes to the built environment