Vision Impairment among Older Adults in Low and Middle Income Countries

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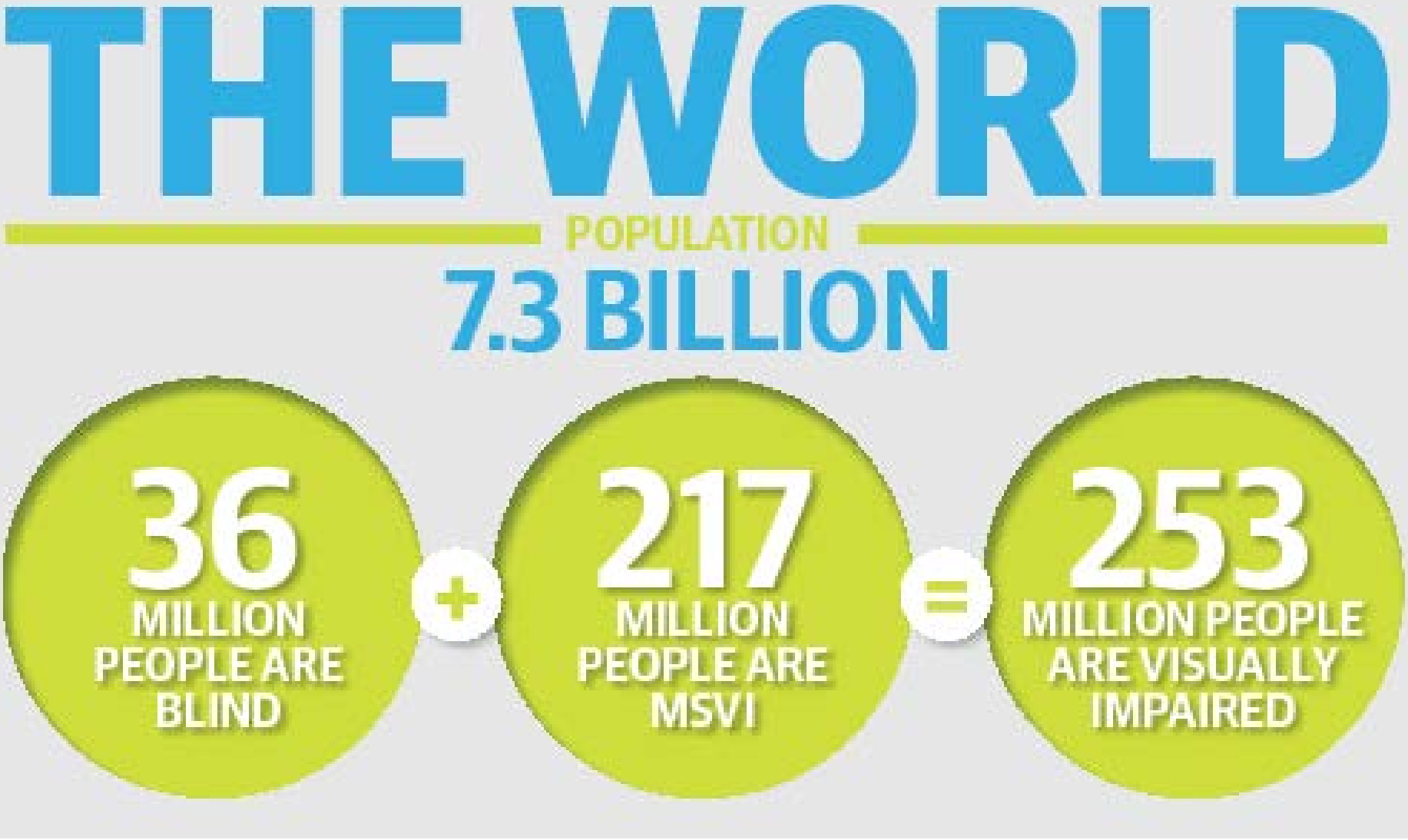

International Association for the Prevention of Blindness


About 90%
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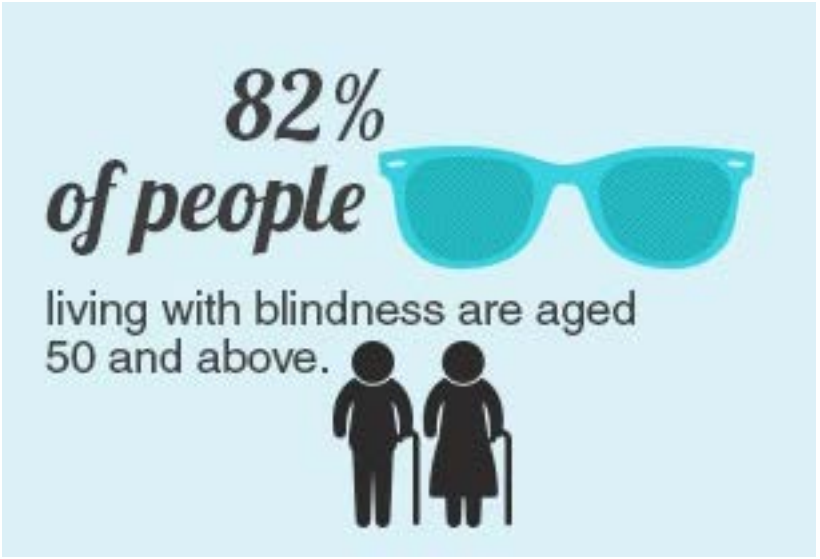
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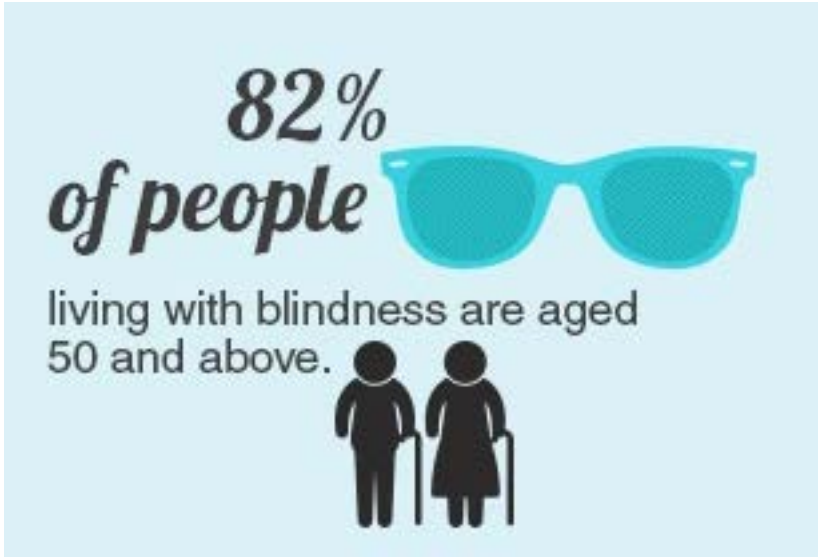
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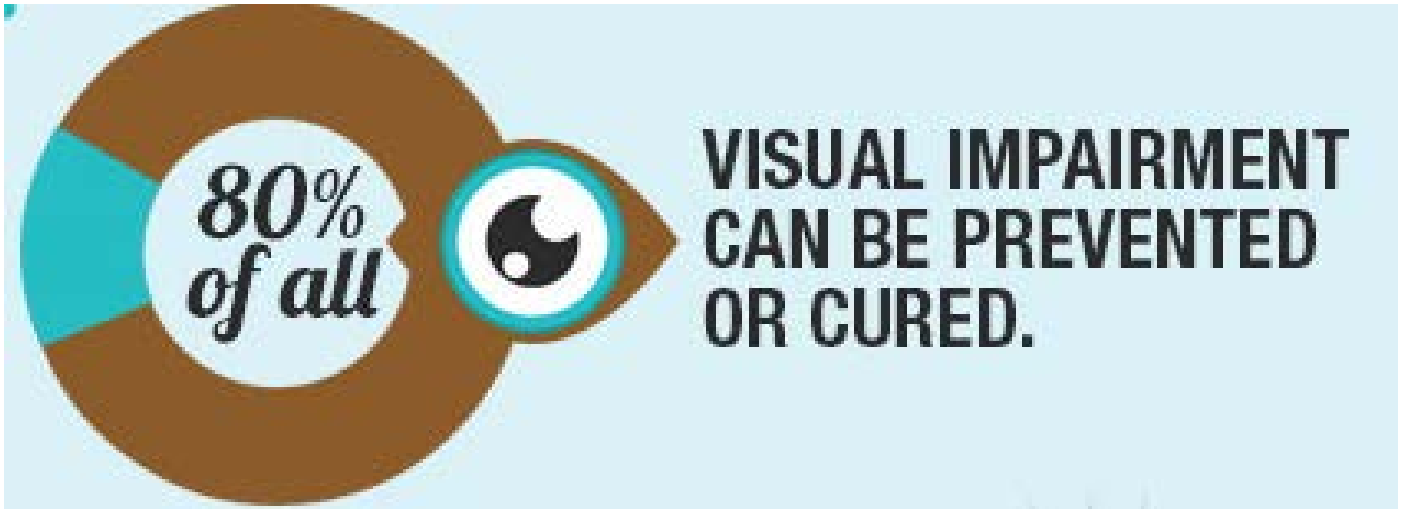
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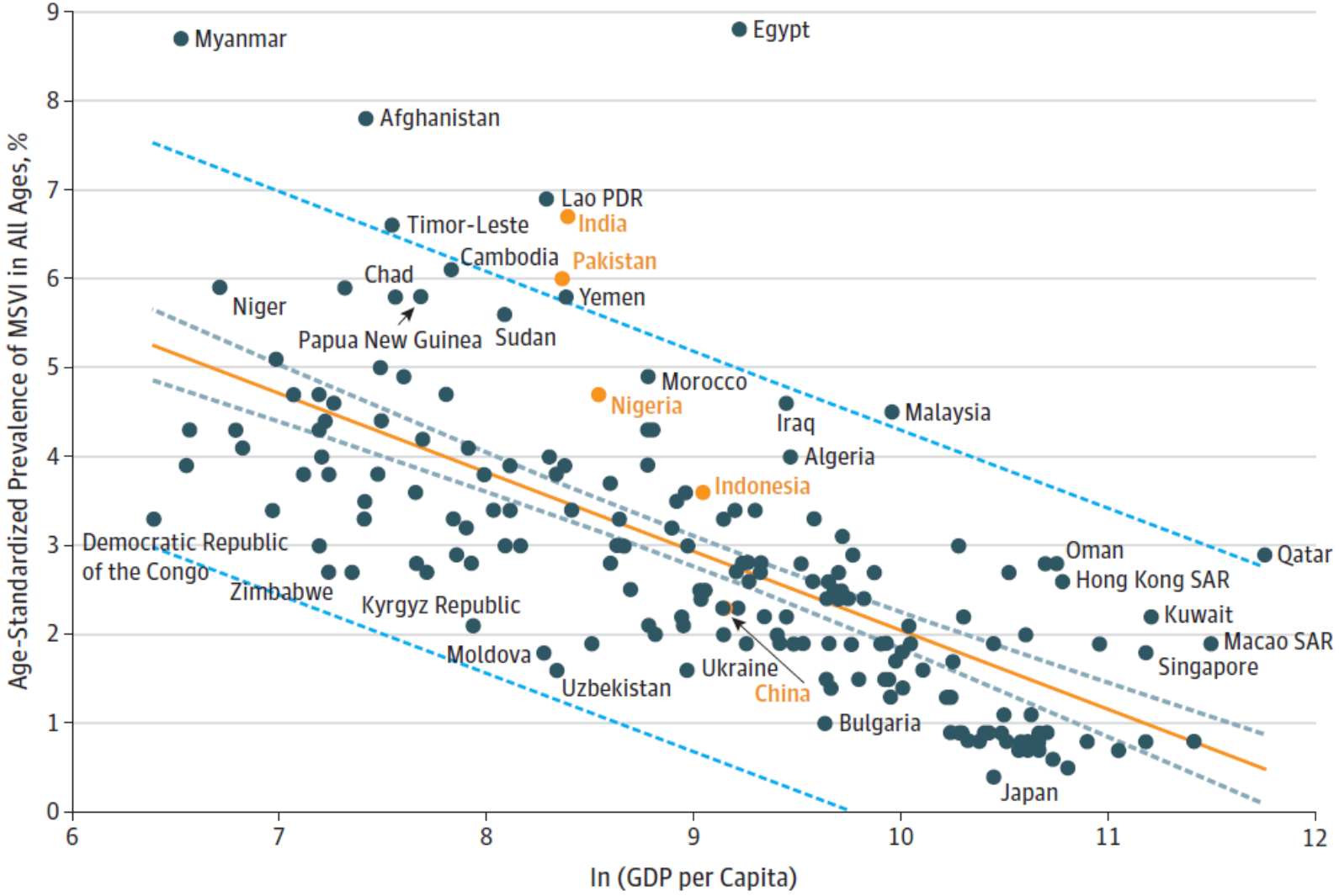
VISUAL IMPAIRMENT CAN BE PREVENTED OR CURED.

Association of Socioeconomics With Prevalence of Visual Impairment and Blindness

Wei Wang, MD; William Yan, MBBS; Andreas Müller, PhD, MPH; Stuart Keel, PhD; Mingguang He, MBBS, MD, MSc, MPH, PhD



Hypothesis

- Individual-level factors associated with vision impairment (VI) and receipt of eye care in older adults vary from country to country

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  - Public health efforts may benefit from an understanding of *who* is most likely to be blind, visually impaired, and/or not receive eye care

Methods

To provide longitudinal data on health and wellbeing of adult populations and the aging process across different countries

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- World Health Organization
- Panel study (Wave 1, 2007-2010)
- Nationally representative samples
- Adults age 50 and older

SAGE Countries

Methods

SAGE Wave 1, 2007-2010

Outcome 1: Vision impairment (visual acuity <6/18 better eye)
Outcome 2: Eye exam in last 2 years

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Analyses:

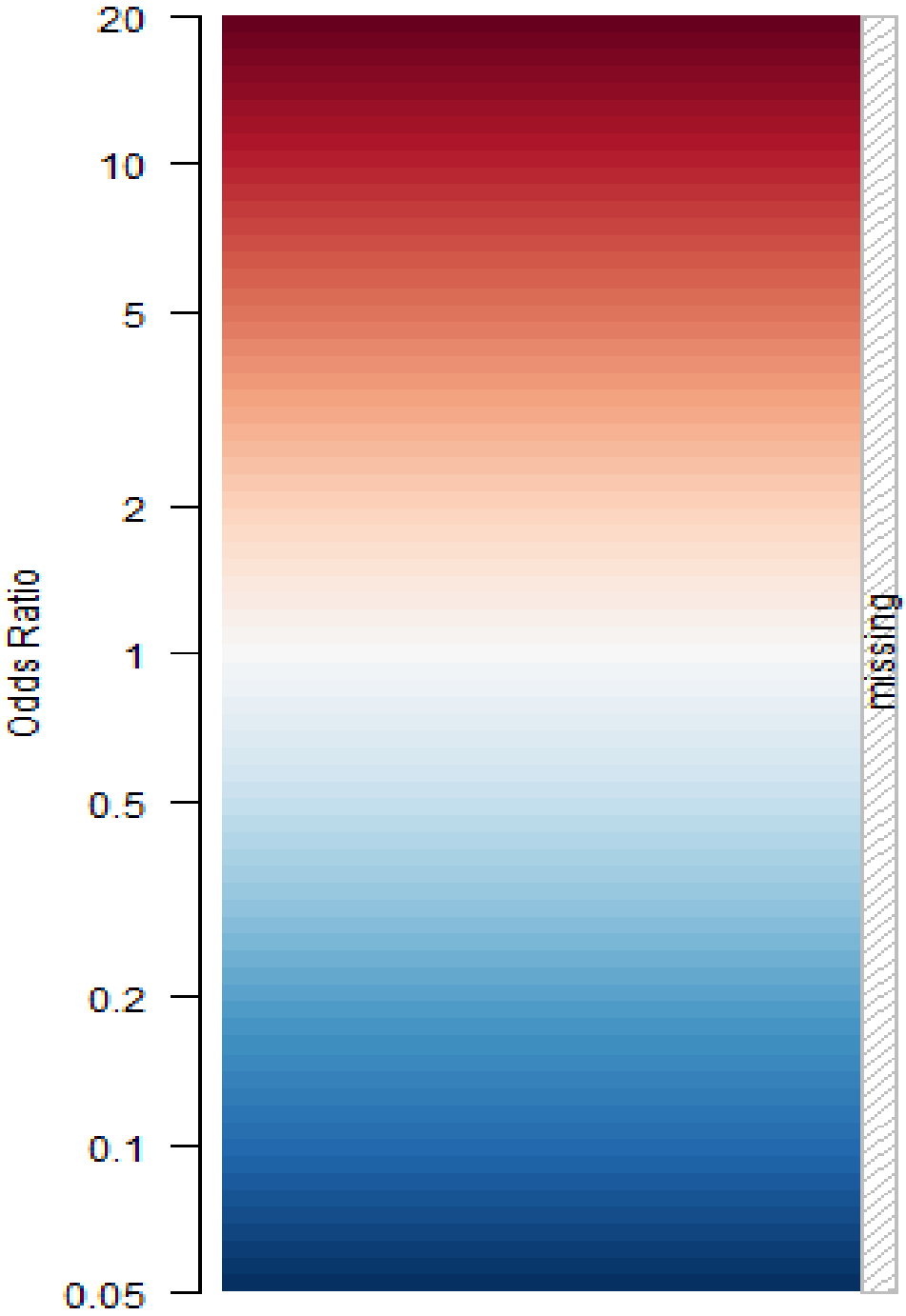
- Logistic models used to generate unadjusted (UOR) and adjusted odds ratios (AOR)
- Heat maps constructed to display effect sizes

Results

Prevalence estimates

	China	Ghana	India	Mexico	Russia	South Africa
Distance VI	9.9% (9.3-10.5)	12.2% (11.1-13.4)	18.2% (17.0-20.1)	15.5% (13.4-17.9)	25.4% (22.0-29.2)	10.9% (9.4-12.6)
Near VI	36.1% (35.0-37.1)	28.5% (26.9-30.1)	43.1% (41.1-45.1)	40.4% (37.1-43.7)	39.8% (36.0-43.8)	35.5% (33.0-38.2)
Eye Exams	15.9% (14.7-17.2)	15.0% (13.8-16.2)	21.8% (20.2-23.4)	41.5% (38.3-44.8)	53.1% (49.3-56.8)	27.7% (25.4-30.1)

Heat maps



Distance VI


Age: 80+
Female
College education
Low wealth
Food insecure
Health insurance
Access to medical care
No recent eye exam
Rural residence
Severe disability
>1 Medical comorbidity
Poor memory
Not married
Low social support
Low social participation
China
Ghana
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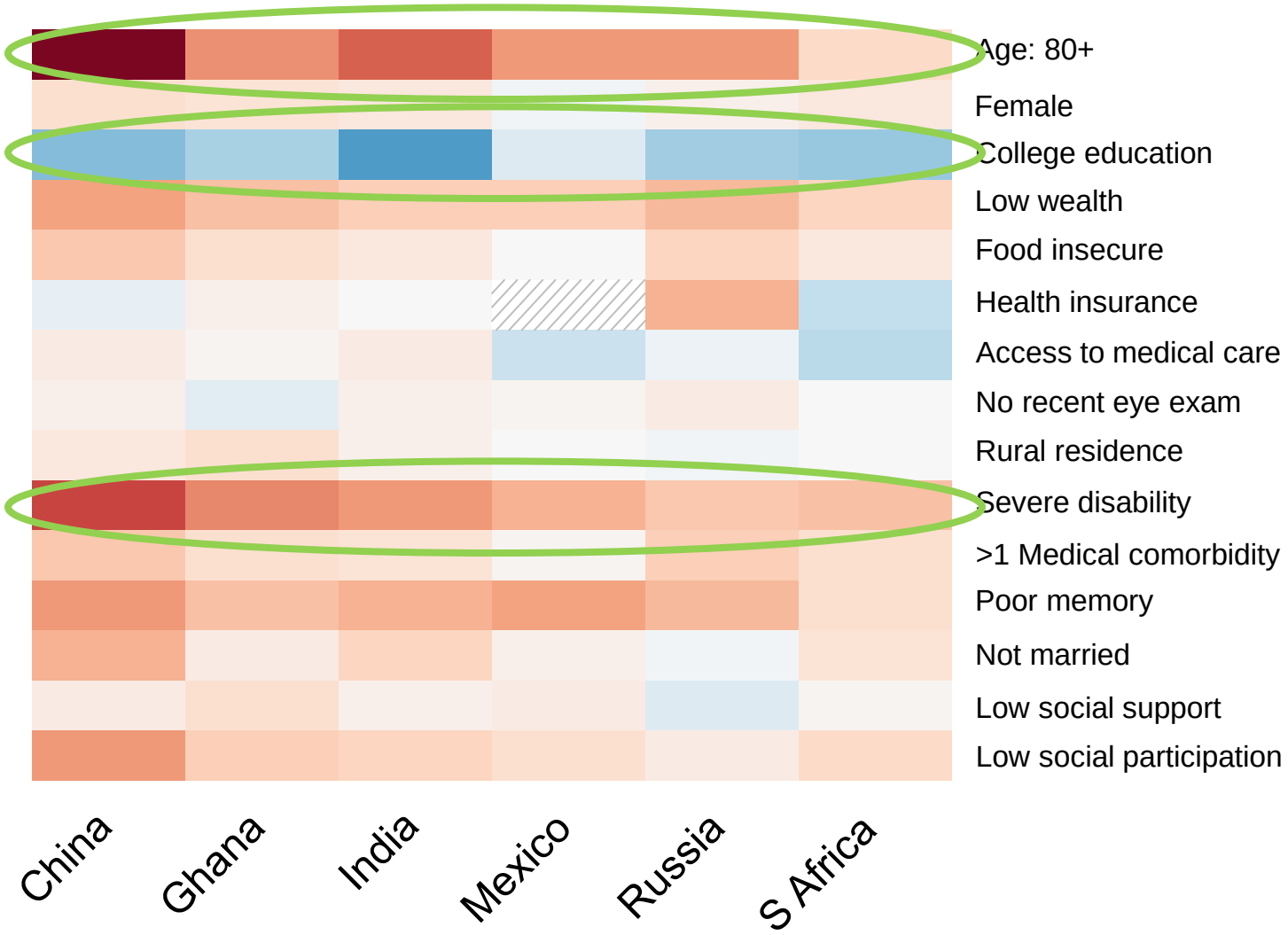
Distance VI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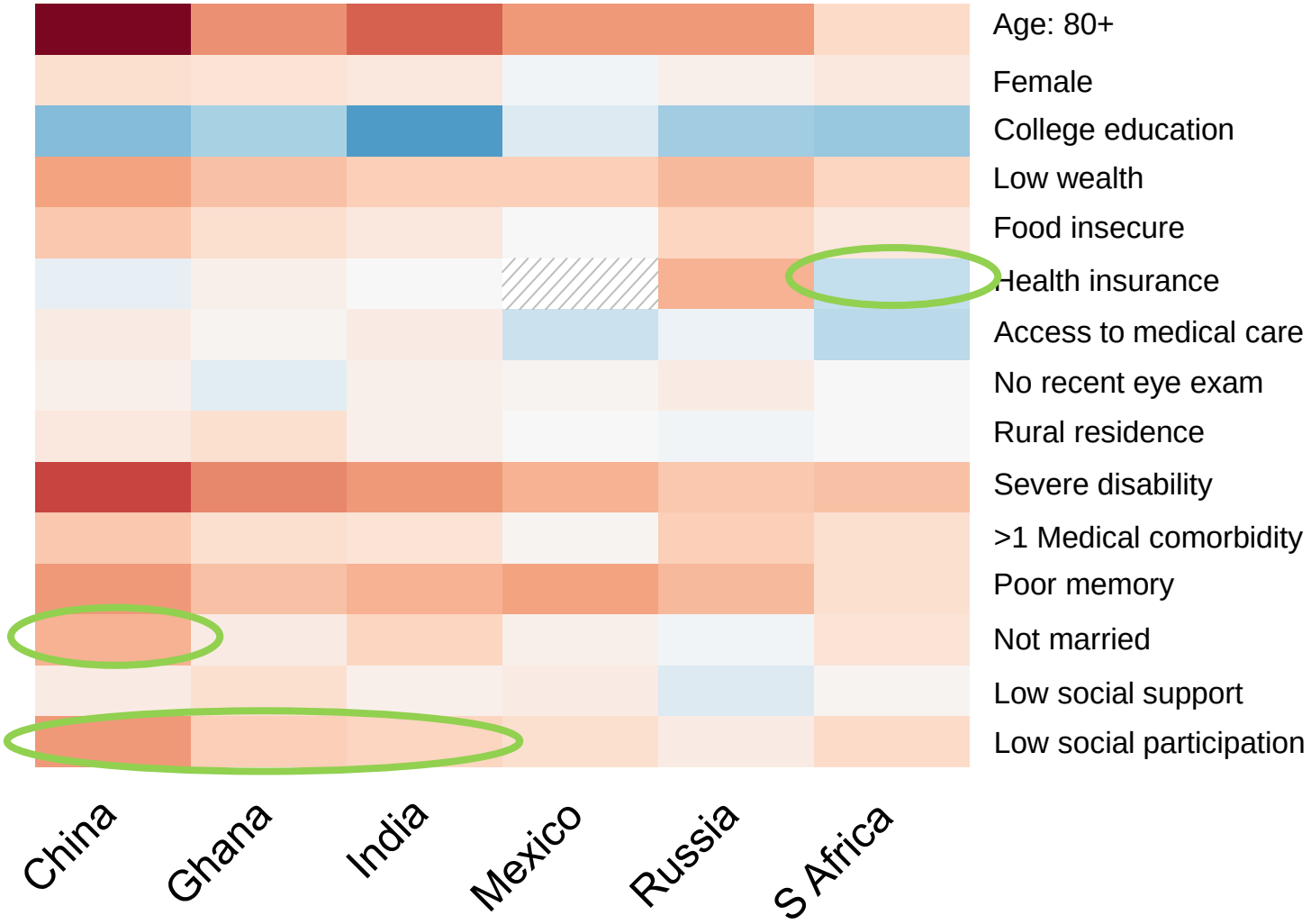
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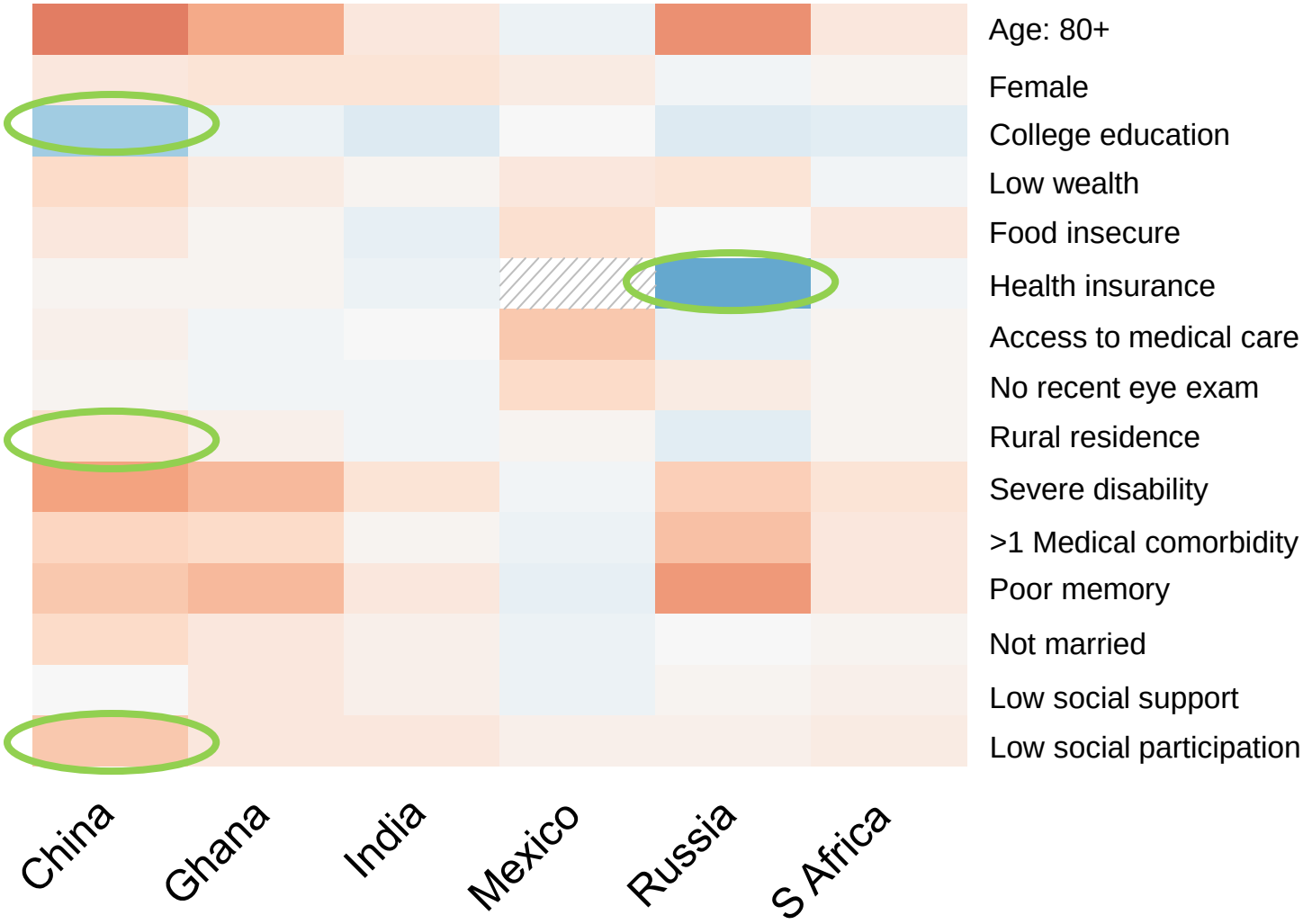
Near VI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- Common associations with both near and distance VI:
  - Older age
  - Less education
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- Common associations with only distance VI:
  - Female sex
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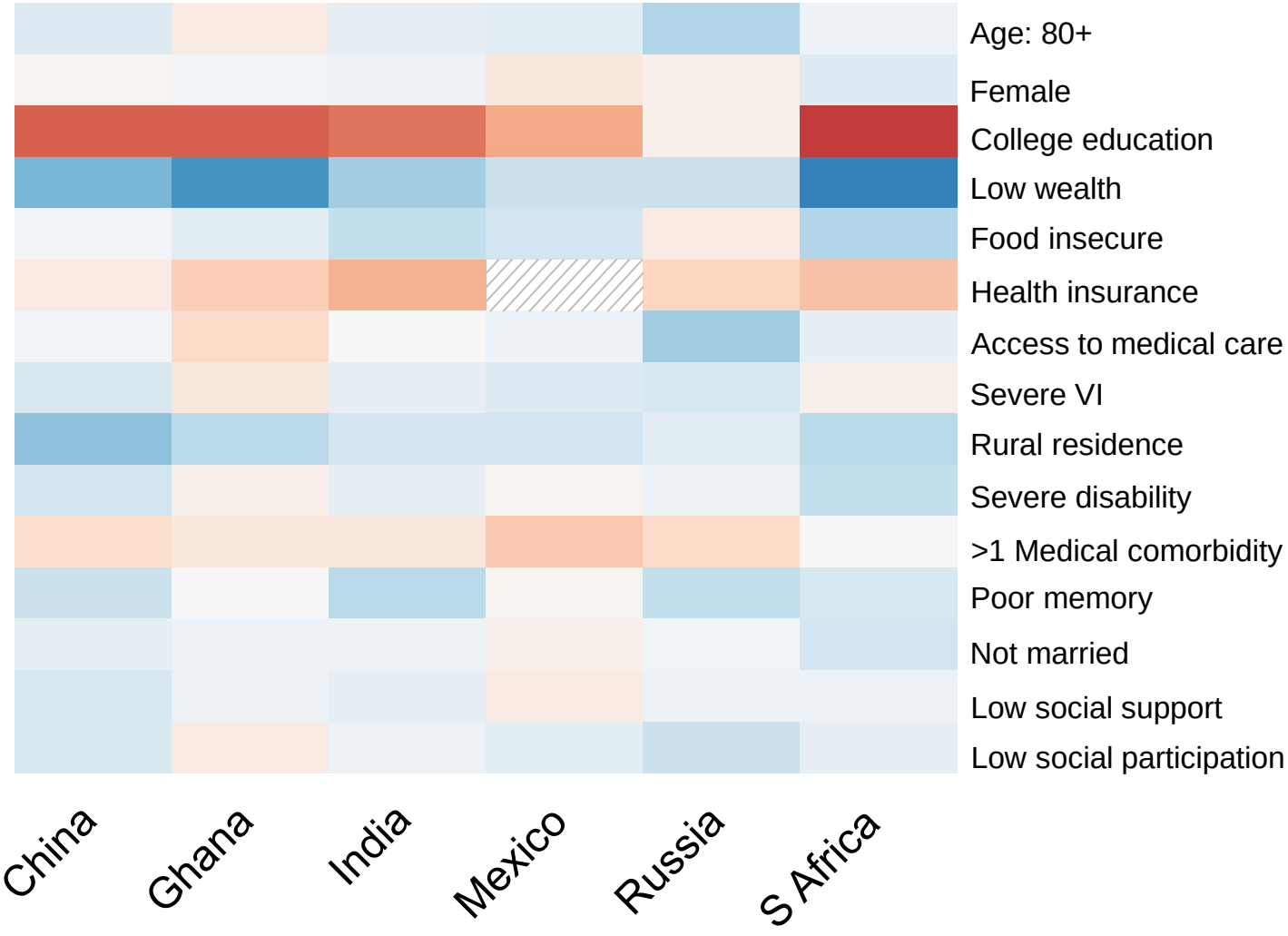
  - Unmarried
  - Less participation

Results

- Common associations with both near and distance VI:
  - Older age
  - Less education
  - Greater disability
  - More comorbidities
- Less common associations:
  - Lack of health insurance
  - Rural residence

- Common associations with only distance VI:
  - Female sex
  - Less wealth
  - Unmarried
  - Less participation
  - Less social support
  - Food insecurity

Recent Eye Exam



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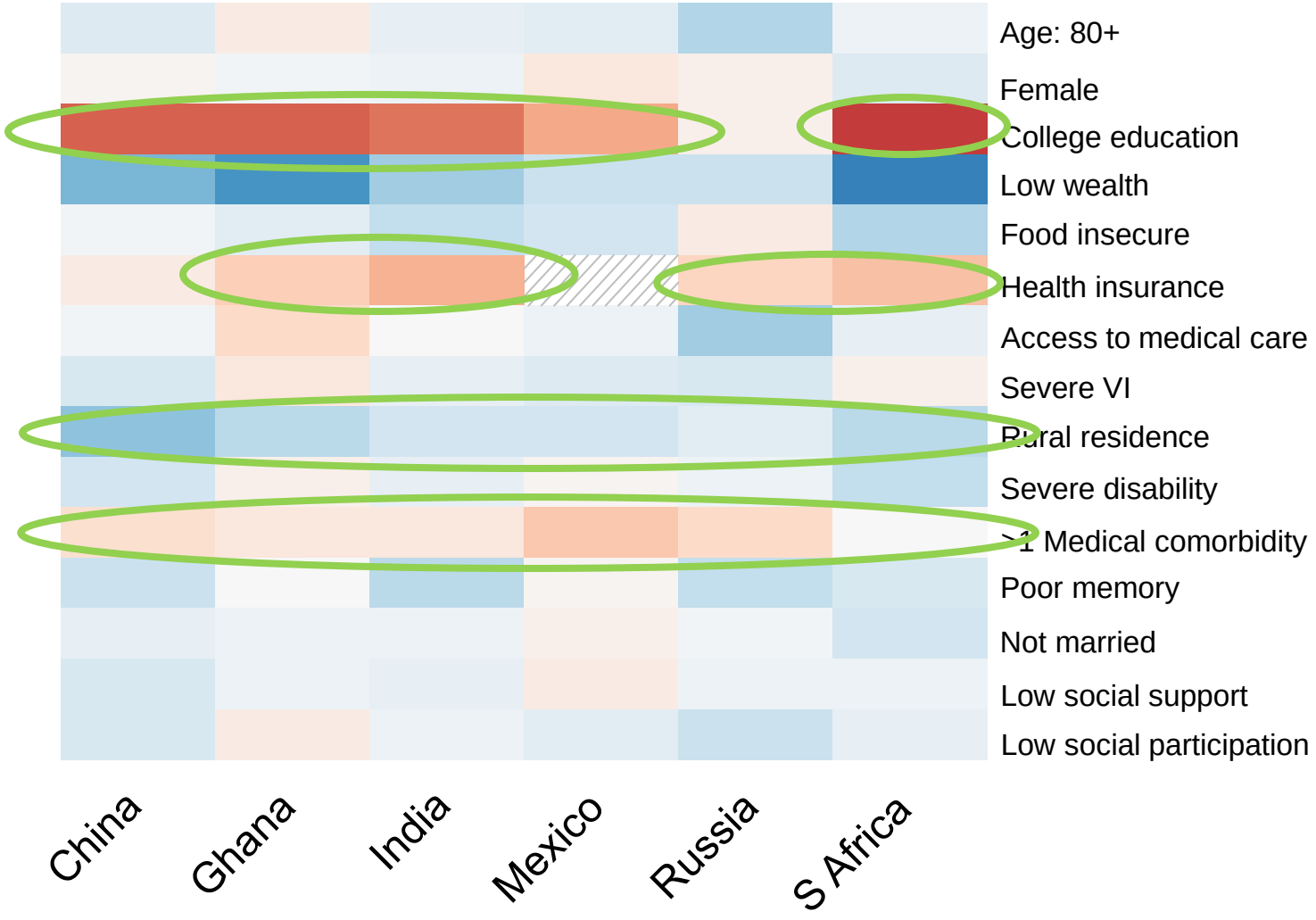

Recent Eye Exam

Results

- Common associations with lack of eye care:
  - Less education
  - Rural household
  - Food insecurity
  - Lack of health insurance
  - *Fewer* comorbidities

Discussion

- There are distinct and shared demographic, economic, and health characteristics associated with VI and eye care among older adults in a diverse set of low and middle income countries (LMICs)

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- There are distinct and shared demographic, economic, and health characteristics associated with VI and eye care among older adults in a diverse set of low and middle income countries (LMICs)

- Data may be useful to focus public health efforts on older adults most likely to have VI and least likely to receive eye care

Discussion

Context is important

- Some constructs, e.g. social support, may have variable cultural significance in different countries
- Healthcare financing and access are highly variable
- Same association may exist for different reasons in different countries

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Context is important

- Some constructs, e.g. social support, may have variable cultural significance in different countries
- Healthcare financing and access are highly variable
- Same association may exist for different reasons in different countries
  - Fewer comorbidities is associated with less eye care
    - Do some individuals not get *any* medical care?
    - Are eye exams common among high risk groups?

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Gender, Vision, and Eye Care

- Globally, women are 30% more likely to be blind
- In some locations, women are less likely to receive cataract surgery and more likely to have trachoma

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In this study, women had…

- More distance VI in a majority of countries
  - 56% more common in Chinese women than men
- A similar likelihood of receiving eye care

Limitations

- Self-reported data may be susceptible to recall bias
- Unknown if relationships are causative, bidirectional, or simply associational
- Country-level data may not adequately capture local context
- Results are not likely generalizable to other LMICs

Future directions

- Future work should consider:
  - data from additional countries beyond SAGE
  - sub-national data
  - why specific associations exist in different countries
  - longitudinal nature of associations (Wave 2 and 3)
  - trends in receipt of eye care, VI, and disability

Conclusions

- Cross-national comparisons reveal the significance of context when studying vision
- There is value to considering traits not routinely assessed – e.g. social participation and isolation, food insecurity, etc.
- Data may be used to target those most likely to be affected by avoidable VI and disability

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