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# Measurement of population mental health Evidence from a mobile phone survey

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# Thanks!

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# Motivation

- Community studies suggest a high burden of poor mental health in low- and middle-income countries.
- Policies such as India's National Mental Health Policy aim to reduce it.
- Yet, the measurement of mental health in population surveys is uncommon outside of high-income countries.

# Two research questions

Can mobile phone surveys be used to measure and monitor population-level mental health in India?

Which questions are best suited to the phone survey medium?

Background:  
Mobile phone ownership is high,  
even in rural households in poor states

State	Urban (%)	Rural (%)	Total (%)
Bihar	95	89	90
Jharkhand	95	80	84
Maharashtra	97	86	91
Total	96	87	90

Note: Data source: National Family Health Survey, 2015-16.

# Background: The SARI survey

SPECIAL ARTICLE



## Explicit Prejudice Evidence from a New Survey

DIANE COFFEY, PAYAL HATHI, NIDHI KHURANA, AMIT THORAT

A representative phone survey to study explicit prejudice against women and Dalits in Delhi, Mumbai, Uttar Pradesh, and Rajasthan reveals widespread prejudice in several domains and discusses the consequences for women and Dalits, and society as a whole. The results suggest the need for a more robust public discourse and active approach to measuring and challenging prejudice and discrimination.

**Both reports are available  
at [www.riceinstitute.org](http://www.riceinstitute.org).**

MOBILE PHONE SURVEY METHODS  
FOR MEASURING SOCIAL  
DISCRIMINATION

June 2020



# SARI Survey Methods

- SARI builds representative samples of adults ages 18-65 using probability weighted random digit dialing and within household respondent selection.
- Men interview men and women interview women.
- Survey weights based on the 2011 Census adjust for respondent sex, age, urban/rural residence, and education.

# Testing mental health questionnaires

- We randomly assigned respondents in Bihar, Jharkhand and Maharashtra one of two mental health questionnaires.
- We consider a questionnaire to perform well if it identifies geographic & demographic variation described by the prior literature and does not suffer from selective non-response.



# Adapted Kessler-6 Questionnaire

About how often during the past 30 days did you feel **nervous** – would you say *all of the time*, *some of the time*, or *none of the time*?

**hopeless**

**restless or fidgety**

**that everything was an effort**

**worthless**

**so depressed nothing could cheer you up**

# Adapted Self-Reporting Questionnaire

I will ask you about the sadness or problems you faced in the last 30 days...

1. Is your appetite poor?
2. Do you have trouble sleeping?
3. Do you have trouble thinking clearly?
4. Do you find it difficult to make decisions?
5. Do you feel tired all the time?
6. Has the thought of ending your life been on your mind?

# Sample sizes & response rates for the survey

State	<u>Sample sizes</u>			<u>Response rates</u>
	Men	Women	Total	(%)
Bihar	1450	1988	3438	19
Jharkhand	459	550	1009	
Maharashtra	920	746	1666	25
Total	2829	3284	6113	

# Response rates for the mental health questions

## adapted Kessler-6 questionnaire

state	answered all questions	answered some questions	answered no questions	<i>n</i>
Bihar	0.76 [0.72, 0.79]	0.18 [0.15, 0.21]	0.06 [0.05, 0.08]	1676
Jharkhand	0.73 [0.66, 0.79]	0.19 [0.14, 0.25]	0.08 [0.05, 0.14]	466
Maharashtra	0.87 [0.83, 0.90]	0.06 [0.04, 0.10]	0.07 [0.04, 0.10]	820
Total	0.82 [0.79, 0.84]	0.11 [0.10, 0.14]	0.07 [0.05, 0.09]	2964

## adapted Self-Reporting Questionnaire

state	answered all questions	answered some questions	answered no questions	<i>n</i>
Bihar	0.93 [0.91, 0.94]	0.03 [0.02, 0.05]	0.04 [0.03, 0.05]	1619
Jharkhand	0.89 [0.84, 0.93]	0.04 [0.02, 0.07]	0.07 [0.04, 0.11]	500
Maharashtra	0.95 [0.93, 0.97]	0.01 [0.01, 0.03]	0.03 [0.02, 0.05]	784
Total	0.94 [0.93, 0.95]	0.02 [0.02, 0.03]	0.03 [0.03, 0.05]	2903

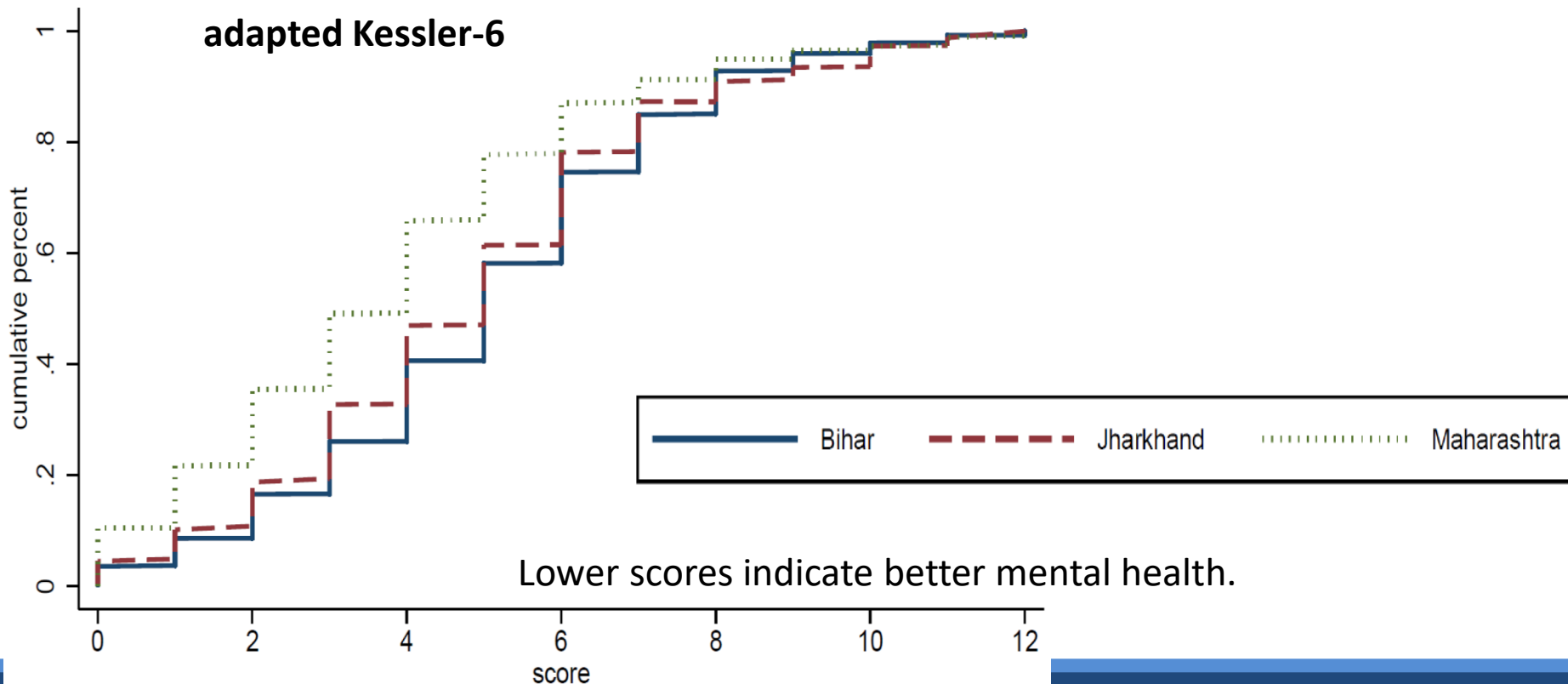
# OLS regression results describing **selection** into **non-response**, all states

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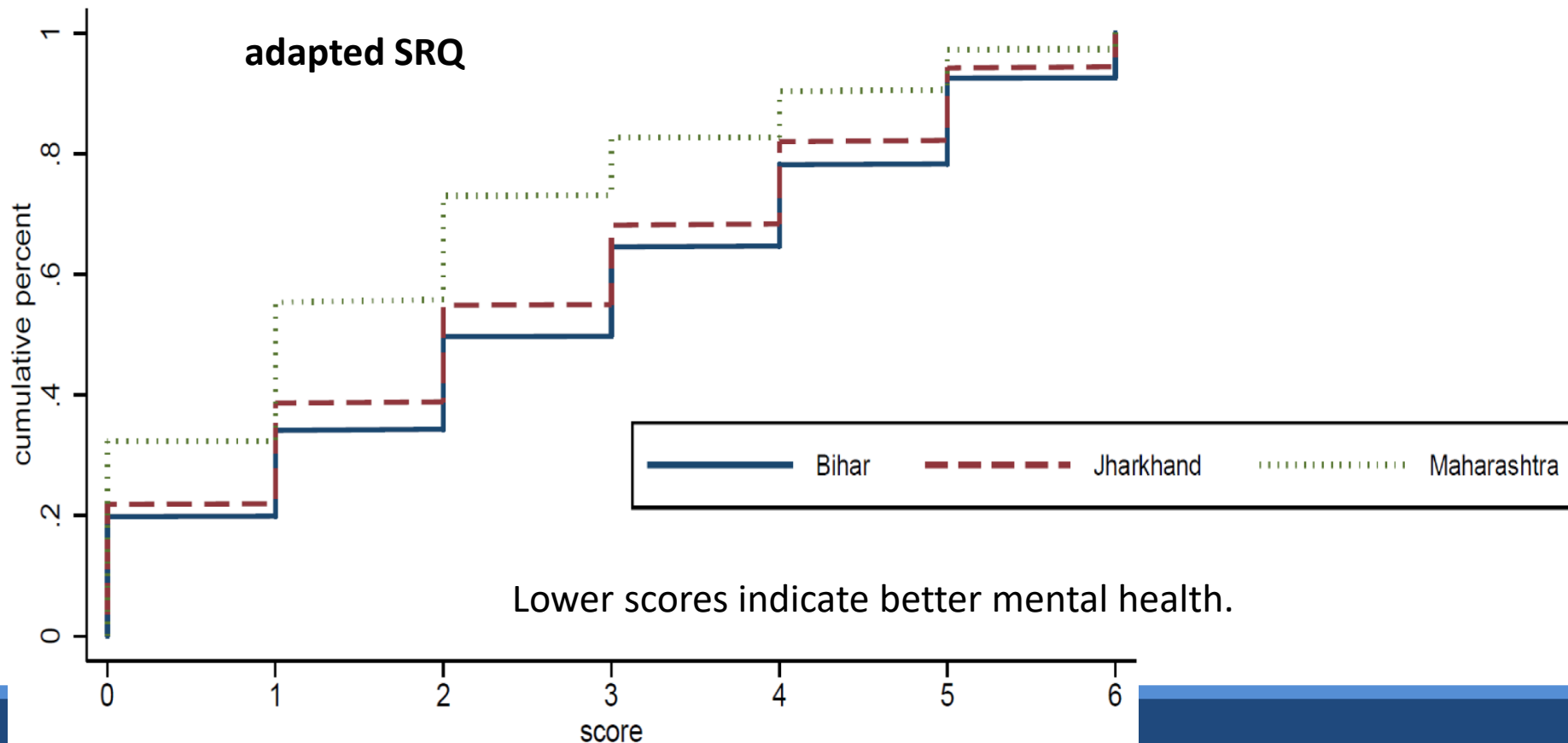
	<u>Kessler-6</u>	<u>SRQ</u>
female	0.0696*** (0.0141)	-0.0103 (0.00868)
older adult (age 45-65)	0.0354* (0.0157)	0.00159 (0.00983)
less than secondary education (0-8 years)	0.106*** (0.0151)	0.00412 (0.00911)
have 2 or fewer assets (of 5)	0.0790*** (0.0144)	0.0196* (0.00885)
<i>n</i>	2964	2903

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# Both questionnaires found better mental health in Maharashtra than Bihar/Jhark.

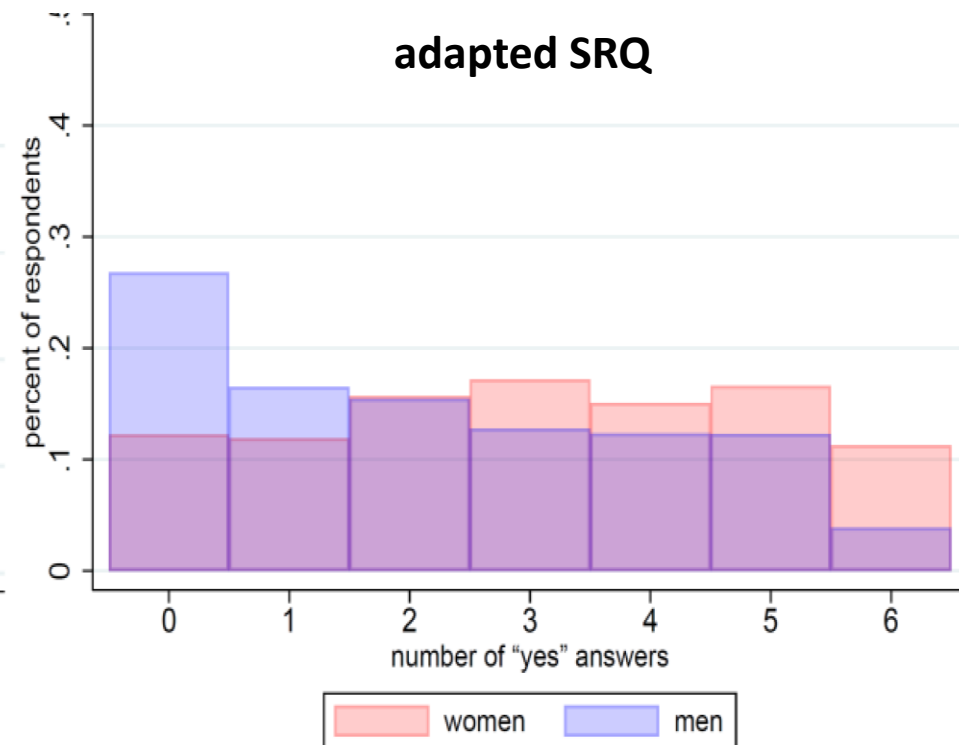
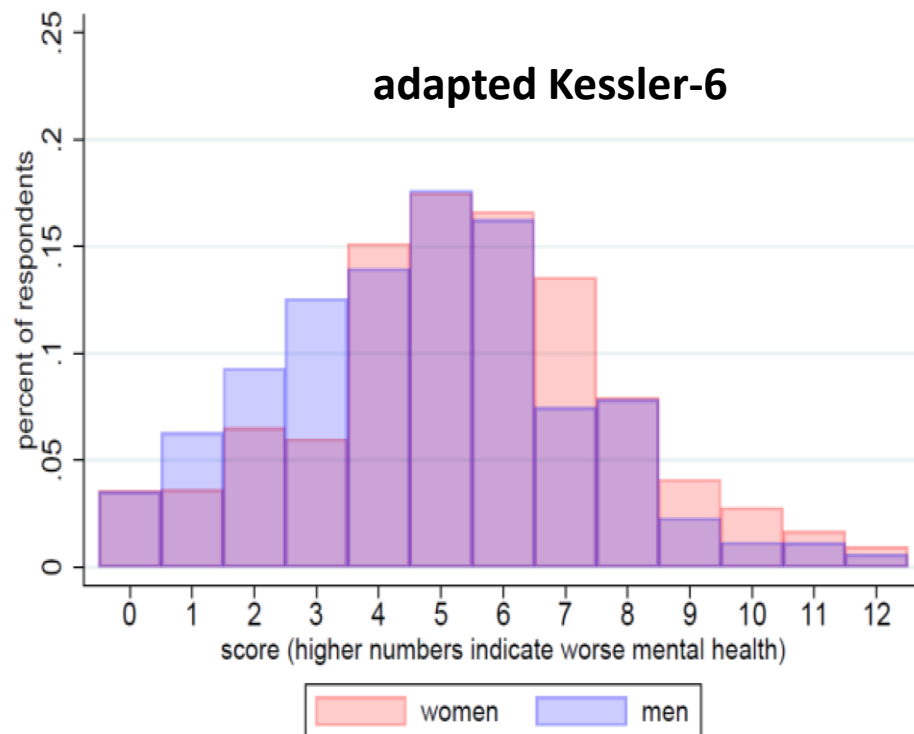


# Both questionnaires found better mental health in Maharashtra than Bihar/Jhark.



# Both questionnaires found worse mental health for women in Bihar & Jharkhand

## Distributions of mental health by sex in Bihar





# Summary of findings on **correlates of mental health**

- The Kessler-6 does not identify a sex difference in mental health in Maharashtra; SRQ does.
- Education gradients in mental health are more apparent in the SRQ than in the Kessler-6.
- This is likely due to selective non-response to the Kessler-6.

# Discussion & Conclusion

- Population-based mobile phone surveys can be used to measure mental health.
- Simple, “yes/no” questions related to everyday symptoms may be better suited to the mobile phone medium in LMIC contexts than questions related to emotions.
- Future research should extend this research to new questionnaires and regions.