

Social capital and maternal and child health in low- and middle-income countries: Evidence from India

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Motivation

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**Innovative
community-
based
interventions**

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**Improve
maternal and
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Motivation

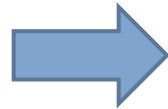
**Innovative
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?

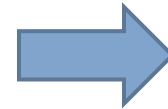
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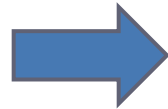
**Mechanisms
of action**
Families
Communities



**Improve
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Motivation



Examine the effect of families and communities on health behaviors, particularly health care utilization, in resource-poor settings

Overall research aims

Families



Communities



Evaluation



Communities and maternal and child health

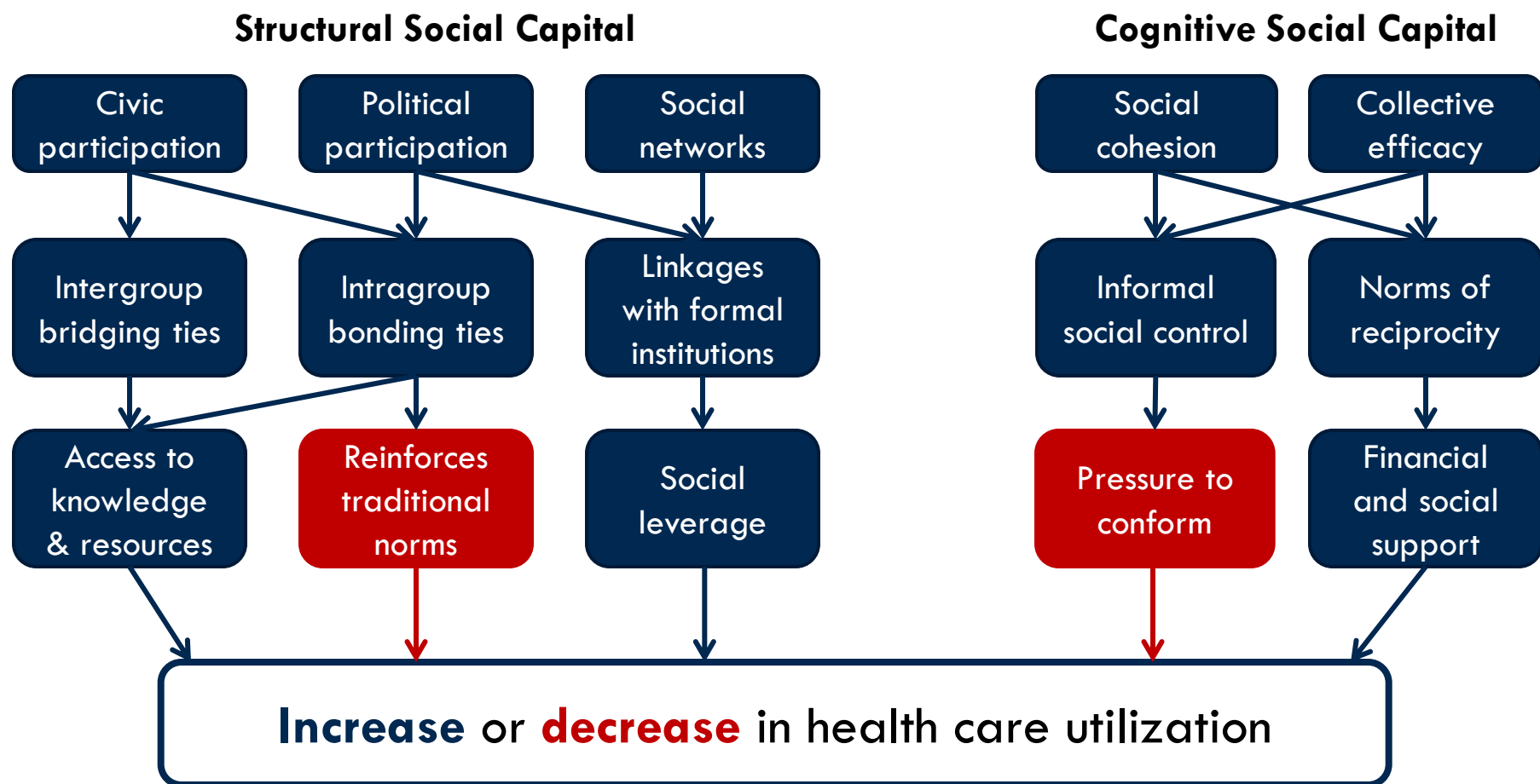
- Disparities due to lack of community involvement and participation in health programs
- **Community-based approaches** emphasize participation, empowerment, and collective action
- Advantages include enhanced sustainability, improved efficiency and effectiveness, and greater agency for the poor
- Link with maternal and child health outcomes unclear

The missing link

- **Social capital** has been cited as the missing link between community-based approaches and healthy behaviors, including health care utilization
- A broad term including social relationships, networks, and values that facilitate collective action for mutual benefit



How does social capital affect health care utilization?



Why study social capital in India?

- Little is known about social capital and health care use in India
- Access to resources through communities with social connections to diverse groups of people
- Pressure to forgo care in communities with strong social ties to religious and caste groups



Study aims

- 1) Examine whether social capital has an independent, **community-level** effect on maternal and child health care utilization
- 2) Compare the association between various forms of social capital and three **different** types of health service utilization
- 3) Explore the **negative** effects of social capital on health care utilization

Data

- Data source
 - 2005 India Human Development Survey (IHDS)
- Analytic sample
 - 10,739 women who have given birth in the last 5 years
 - 7,403 children between 1 and 5 years of age
 - 2,359 villages/urban neighborhoods
- Unit of analysis
 - Women and children nested within villages/urban neighborhoods

Response variables

- 1) Four or more **antenatal care visits**
 - 2) Last birth was **attended by a doctor, nurse, or midwife**
 - 3) Child received **all immunizations** (i.e., BCG, DPT, OPV, Measles)
- Different types of care-seeking behaviors:
 - ▣ **Antenatal care** and **immunizations** are preventive behaviors and are often planned
 - ▣ **Skilled delivery care** can be unplanned and require substantial financial resources

Factor analysis

- **Exploratory factor analysis** was used to uncover the underlying components of social capital in the IHDS
- 6 factors were identified and explained 82.6% of the total variance in the 15 social capital questions
- Factor scores were calculated for each individual
- Community-level factor scores were calculated by taking the average for each village or neighborhood using the entire sample of 41,554 households

Primary predictor variables

- Structural social capital
 - Civic participation
 - Intergroup bridging ties (e.g., women's groups, saving and credit groups, youth groups)
 - Intragroup bonding ties (e.g., religious or caste groups)
 - Political participation (e.g., attending a public meeting)
 - Social networks (e.g., acquaintances with a doctor, teacher, or government official)

Primary predictor variables

- Cognitive social capital
 - Social cohesion (e.g., people in community generally get along)
 - Collective efficacy (e.g., people in community bond together to solve problems)

Analytic strategy

- **Multilevel logistic regression analysis** was used to estimate:
 - The overall association between community-level social capital and health care use adjusting for community and individual characteristics
 - The variation in health care use between communities
 - Cross-level interactions between each community-level social capital variable and its individual-level counterpart

Individual- and household-level characteristics

Variables	Mean	Min	Max
<i>Dependent variables</i>			
Four or more ANC visits	0.42	0	1
Delivery by a skilled provider	0.56	0	1
Complete immunization	0.57	0	1
<i>Individual- and household-level covariates</i>			
Number of children	1.41	1	5
Previous complication	0.19	0	1
Wife's age	27.38	15	49
Child's age	2.68	1	5
Female child	0.46	0	1
Wife has no education	0.42	0	1
Husband has no education	0.22	0	1
Brahmin	0.05	0	1
Hindu	0.79	0	1
HH asset score	11.50	0	30

Note: N=10,739 women or 7,403 children

Community-level characteristics

Variables	Mean	Min	Max
Mean HH asset score	11.53	2	29
Mean HH education level	7.16	0	15
Urban neighborhoods	0.34	0	1
Rural villages w/ good infrastructure	0.27	0	1
Rural villages w/ poor infrastructure	0.39	0	1

Note: N=2,359

Multilevel logistic regression for the association between social capital and antenatal care (odds ratios)

	Model 1 ^a	Model 2 ^a	Model 3 ^a	Model 4 ^b
Individual-level social capital				
Intergroup bridging ties	1.03		0.98	0.96
Intragroup bonding ties	0.92*		1.02	1.08
Political participation	1.03		1.01	1.02
Social networks	1.12**		1.11*	1.10*
Social cohesion	1.08*		1.05	1.01
Collective efficacy	0.92*		0.96	0.97
Community-level social capital				
Intergroup bridging ties		1.24***	1.26***	1.22**
Intragroup bonding ties		0.77***	0.76***	0.83**
Political participation		1.07	1.06	1.06
Social networks		1.10	1.03	1.02
Social cohesion		1.08	1.04	1.01
Collective efficacy		0.87**	0.90*	0.90*

Note: Level 1: N=10,739; Level 2: N=2,293; *p<0.05; **p<0.01; ***p<0.001

^a Controlling for individual-level and community-level covariates

^b Controlling for individual-level covariates, community-level covariates, and cross-level interactions

Multilevel logistic regression for the association between social capital and skilled delivery care (odds ratios)

	Model 1 ^a	Model 2 ^a	Model 3 ^a	Model 4 ^b
Individual-level social capital				
Intergroup bridging ties	1.08*		1.06	1.04
Intragroup bonding ties	1.01		0.97	1.04
Political participation	1.00		1.02	1.01
Social networks	1.09*		1.05	1.04
Social cohesion	0.92*		0.97	0.97
Collective efficacy	1.00		0.95	0.95
Community-level social capital				
Intergroup bridging ties		1.13*	1.09	1.05
Intragroup bonding ties		1.08	1.10	1.19**
Political participation		0.95	0.93	0.92
Social networks		1.16**	1.12*	1.12*
Social cohesion		0.90*	0.92	0.92
Collective efficacy		1.09*	1.13*	1.12*

Note: Level 1: N=10,739; Level 2: N=2,293; *p<0.05; **p<0.01; ***p<0.001

^a Controlling for individual-level and community-level covariates

^b Controlling for individual-level covariates, community-level covariates, and cross-level interactions

Multilevel logistic regression for the association between social capital and complete immunization (odds ratios)

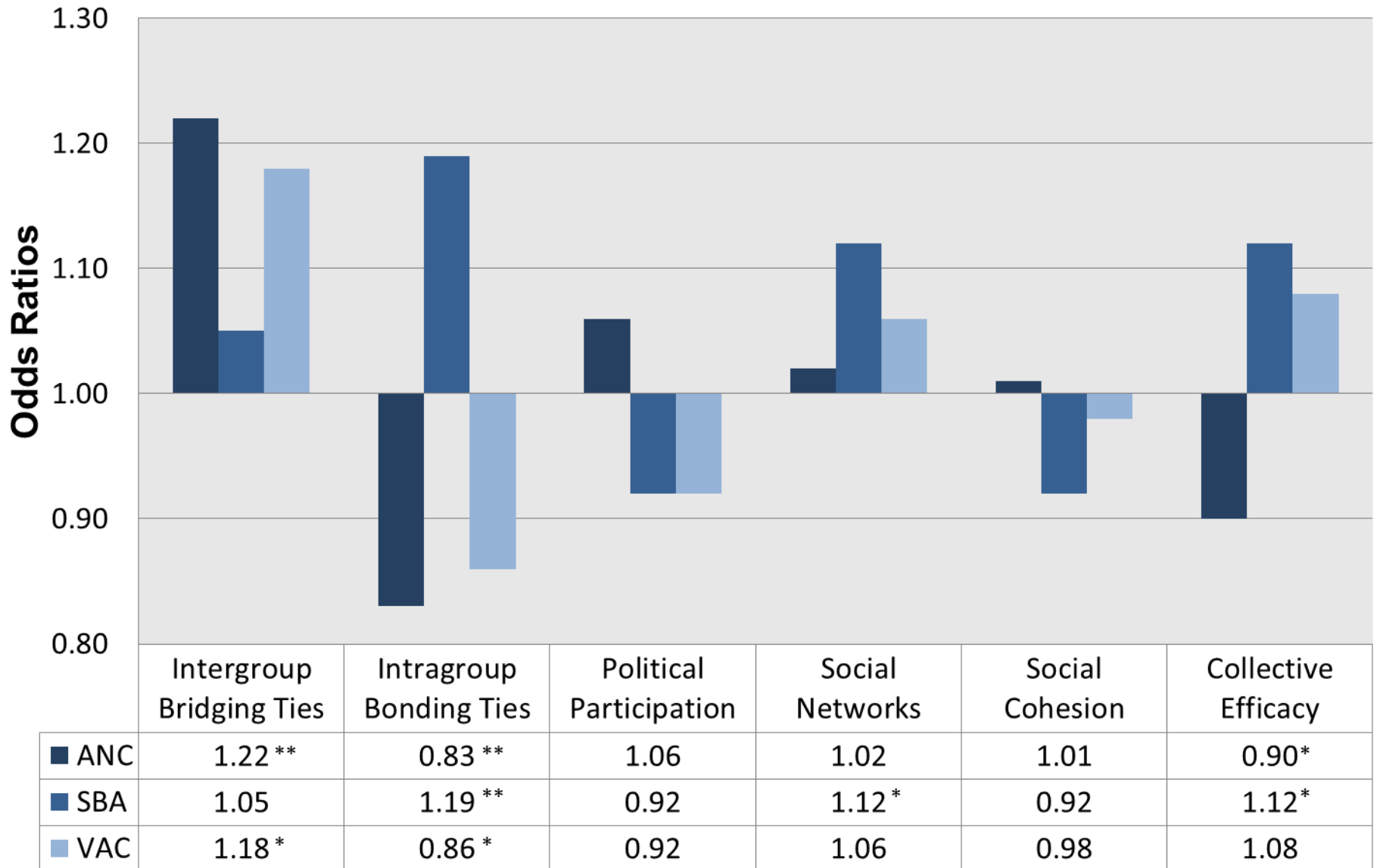
	Model 1 ^a	Model 2 ^a	Model 3 ^a	Model 4 ^b
Individual-level social capital				
Intergroup bridging ties	1.16***		1.11*	1.08
Intragroup bonding ties	0.91*		0.98	1.03
Political participation	1.01		1.02	1.01
Social networks	1.12**		1.11*	1.14*
Social cohesion	0.96		0.97	1.00
Collective efficacy	1.05		1.02	1.01
Community-level social capital				
Intergroup bridging ties		1.29***	1.20*	1.18*
Intragroup bonding ties		0.81***	0.82**	0.86*
Political participation		0.94	0.93	0.92
Social networks		1.11	1.04	1.06
Social cohesion		0.95	0.97	0.98
Collective efficacy		1.09	1.08	1.08

Note: Level 1: N=7,403; Level 2: N=2,293; *p<0.05; **p<0.01; ***p<0.001

^a Controlling for individual-level and community-level covariates

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Comparison of multilevel logistic regression results for the association between community-level social capital and all three health outcomes

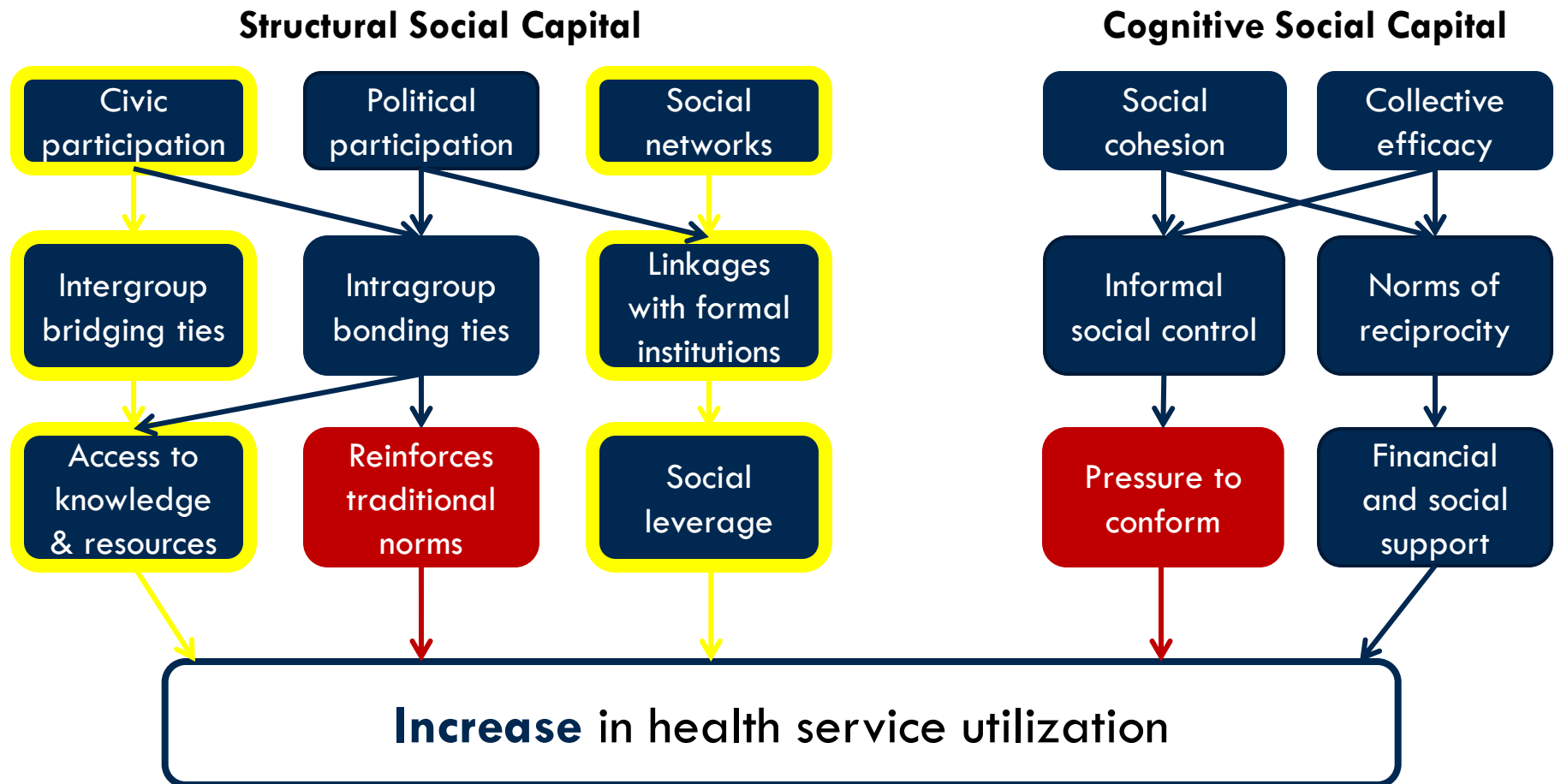


Note: *p<0.05; **p<0.01

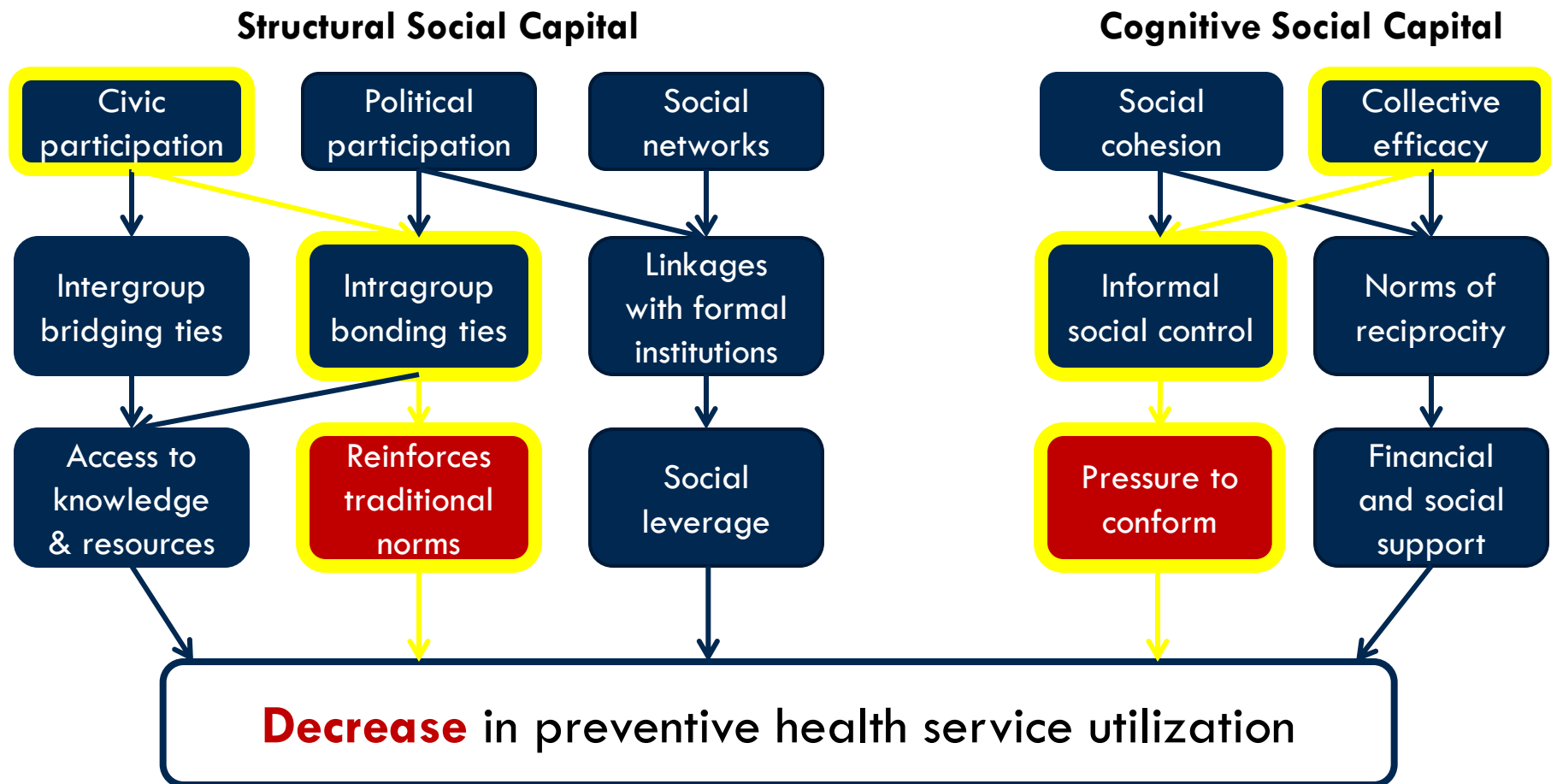
Summary

- Social capital operates at the **community level** in association with all three care-seeking behaviors
- Components of social capital that led to **diverse, heterogeneous ties** were **positively** associated with all three types of health services
- Components of social capital that led to **strong bonding ties** were **negatively** associated with use of preventive care, but **positively** associated with skilled delivery care

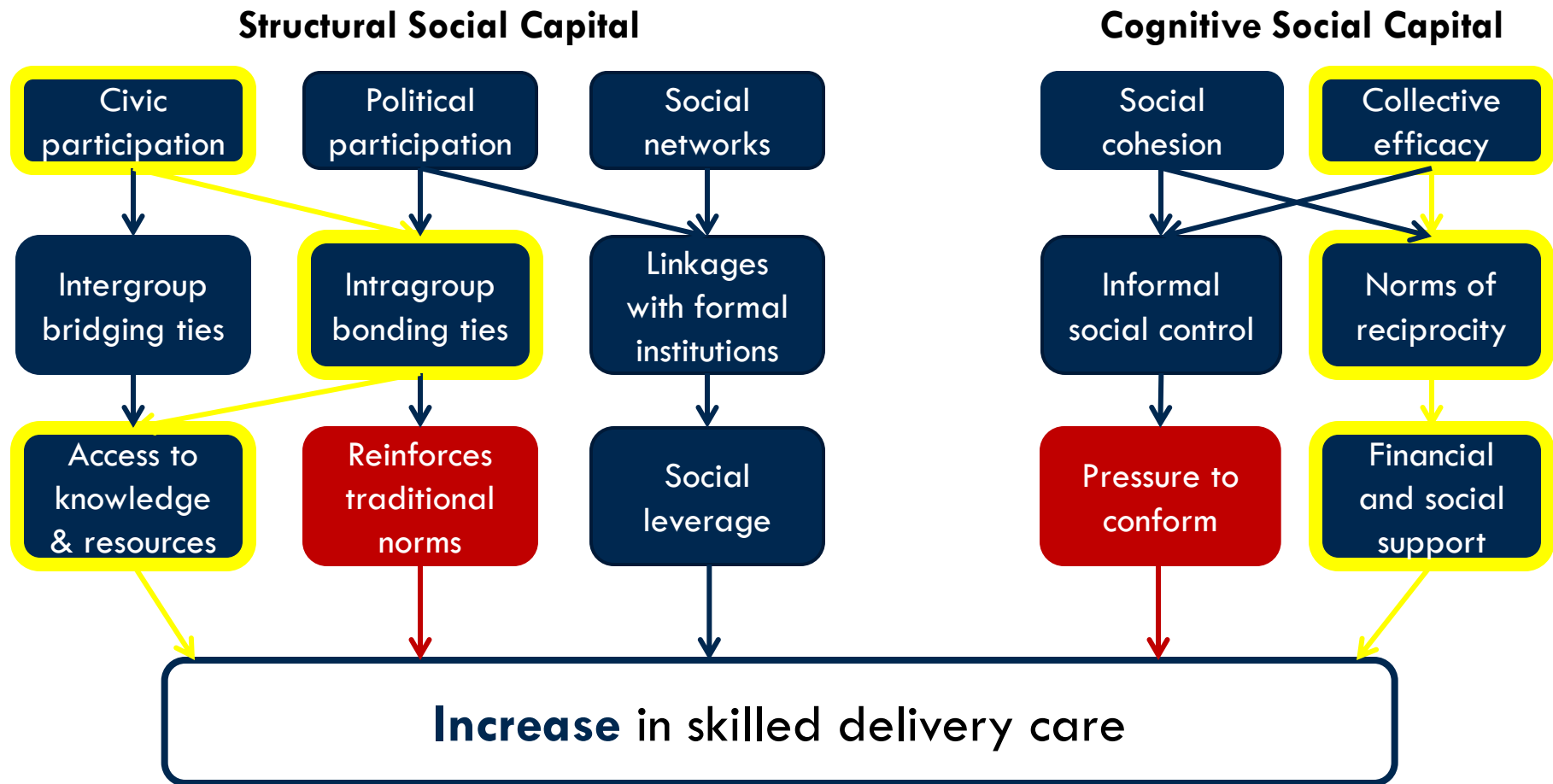
Diverse, heterogeneous ties and health care use



Strong bonding ties and preventive health care use



Strong bonding ties and skilled delivery care



Intervention and policy implications

- Investments in social capital can have significant **spillover effects**
- Promoting **diverse, heterogeneous networks** can give communities better access to resources and information
- **Negative aspects** of social capital cannot be ignored
- Careful attention must be made to addressing **social norms** related to preventive behaviors before building or strengthening **bonding ties** in a community

Future research directions

- Examine causal pathways that underlie the associations between social capital and health behaviors using longitudinal data
- Develop contextualized social capital survey instruments for use in developing countries
- Conduct intervention studies to examine whether social capital can be strengthened and whether increased social capital leads to improved health behaviors

Other work on social capital

- General overview of social capital in the developing world
 - Story WT. (2013). Social capital and health in the least developed countries: A critical review of the literature and implications for a future research agenda. *Global Public Health*, 8:9, 983-999.
- Measuring social capital using a short questionnaire
 - Story WT, Taleb F, Ahasan SM, and Ali NA. Validating the measurement of social capital in Bangladesh: A cognitive approach. *Qualitative Health Research* (Under review).
- A closer look at how child health is related to where you live and who you know
 - Story WT and Carpiano RM. Household social capital and child undernutrition in India: Social networks and structural assests (In progress).

Thank you

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