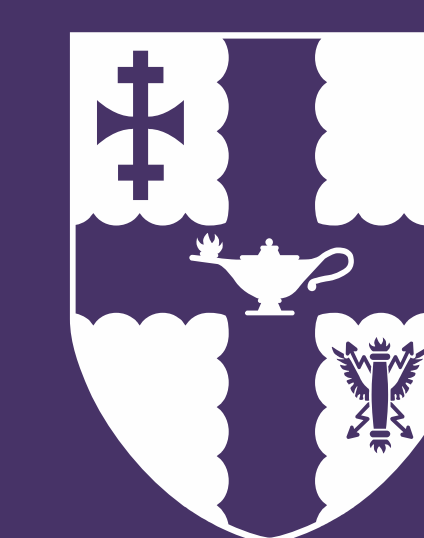


Socioeconomic inequalities in early childhood growth and development in south Asia: a rapid systematic review



Loughborough University

Damith Chaturanga, Oonagh Markey, William Johnson, Paula Griffiths

E-mail: d.c.Chacrawarthige@lboro.ac.uk

Research Question

What evidence exists on the relationship of socioeconomic position (SEP) with early childhood growth and development in South Asia?

Background

Given the high prevalence of poor growth outcomes and elevated levels of poverty in the South Asian region (Grantham-McGregor et al., 2007) as well as the interconnectedness between growth and Early child Development (ECD) (Kang et al., 2018), answering this research question will be useful for interventions to reduce growth retardation and developmental delay among young children in the region.

Methods

Followed the guidelines of Preferred Reporting Items of Systematic Reviews and Meta-analysis (PRISMA) statement.

Themes of Searching keywords: socio-economic terms, infant and young children's terms, human growth terms, child development terms, South Asian terms.

Household Socioeconomic position (SEP):

SEP of a household was measured by variables such as Parent's higher education level, wealth, family income, paternal occupation, caste.

Inclusion criteria:

- with infants and young children aged 0-35 months

Exclusion criteria:

- Studies outside of south Asia.
- Studies not published in English.
- Studies not available in full text.
- Hospital based studies.

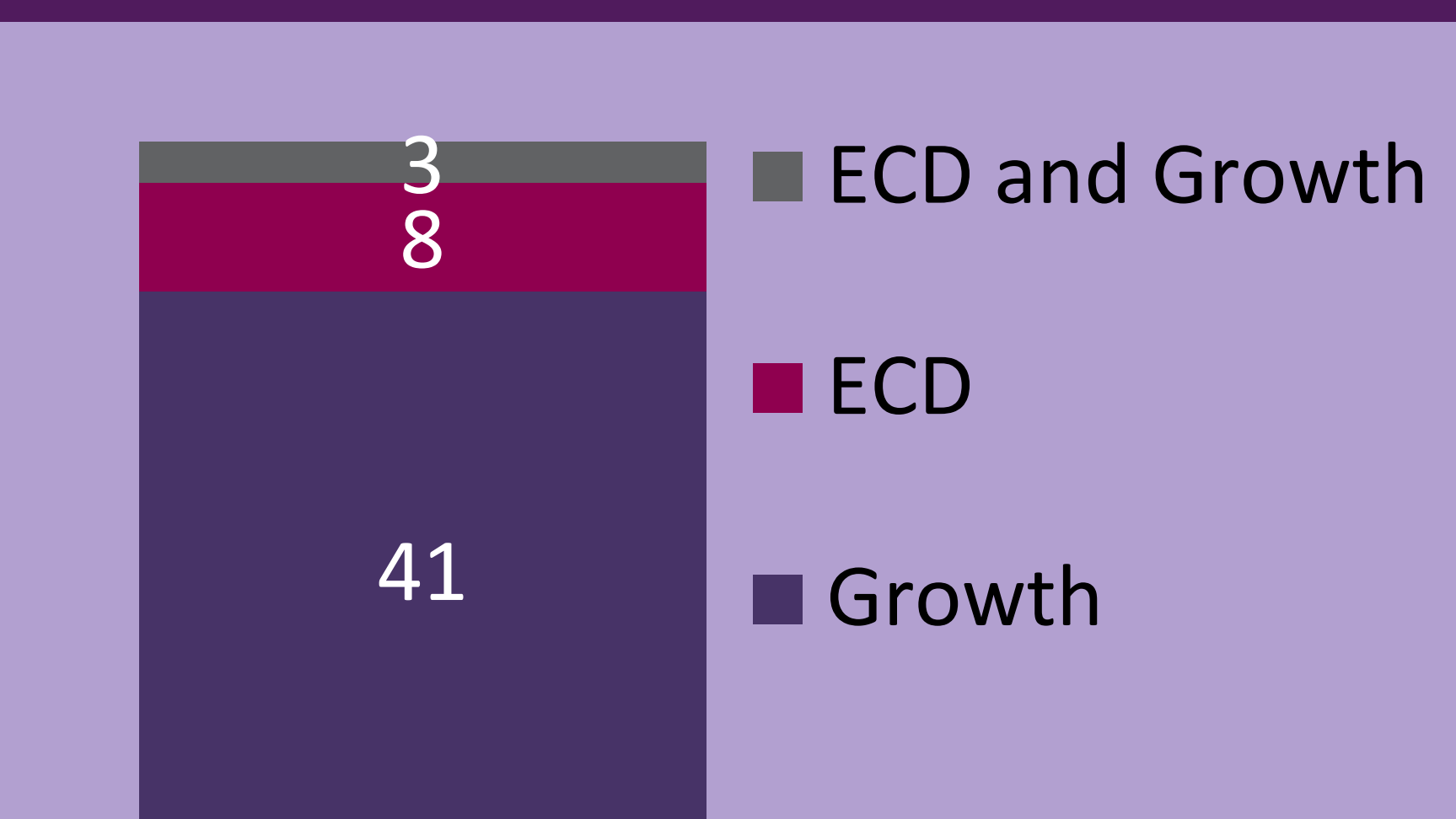
Search strategy: PubMed, Cochrane Library

MEDLINE, Scopus

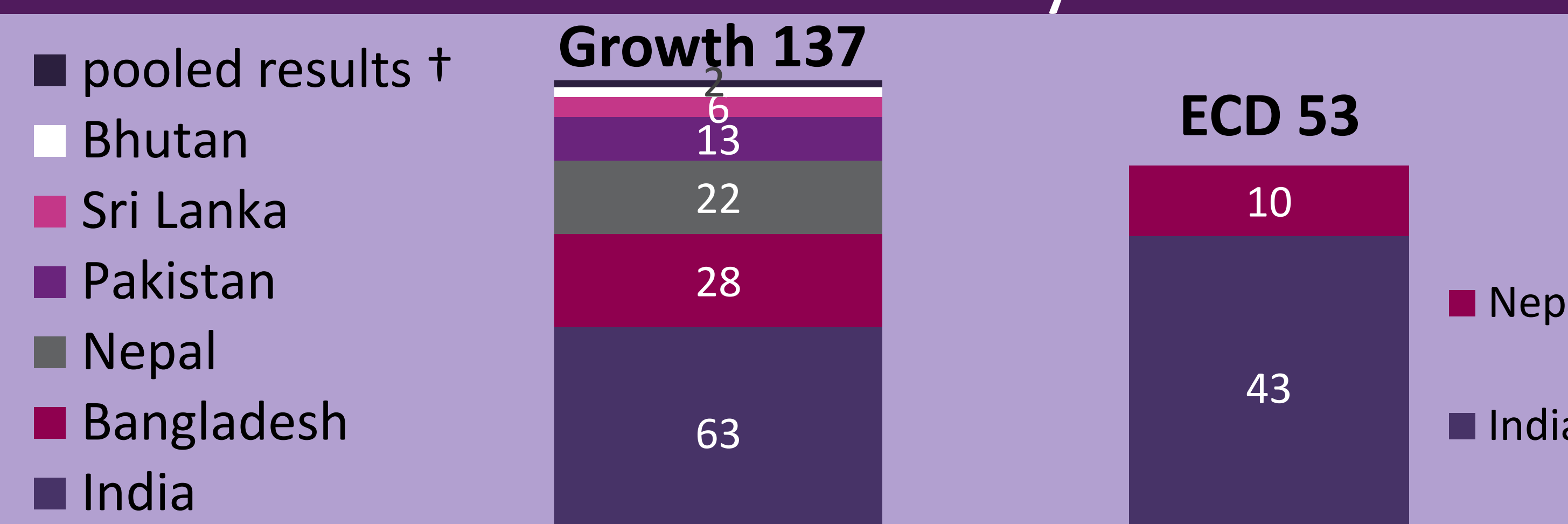
Data



Focus of reviewed articles



Number of outcomes by countries



Preliminary results

Figure 1: Total number of SEP variables for growth outcomes

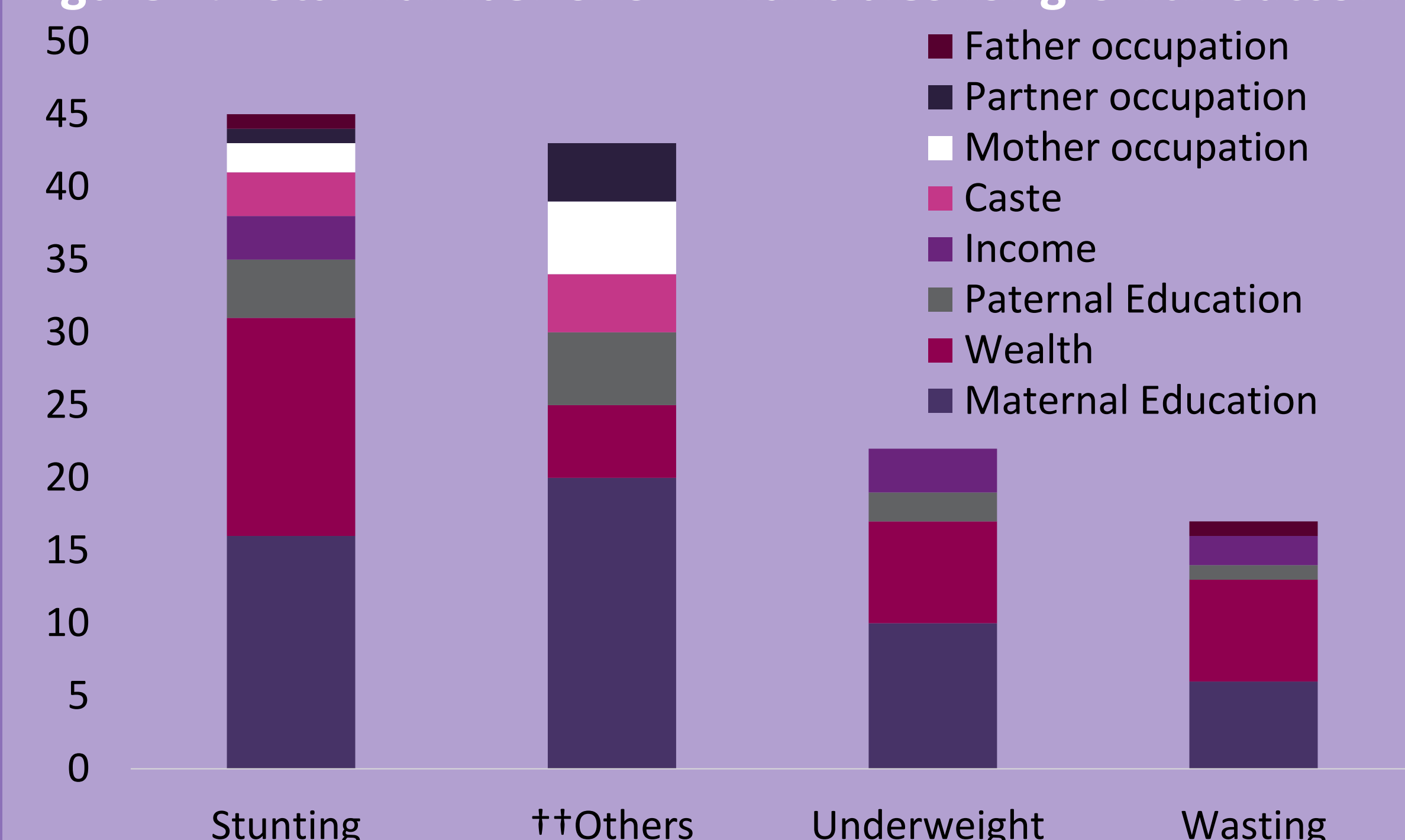


Table 1: Percentage of SEP variables for studies significantly associated (p< 0.05) with growth outcomes¹

Variable	Total	Stunting	Wasting	Under weight	Others
Wealth	91	100	86	100	60
Paternal Education	75	75	100	100	60
Maternal Education	73	81	50	70	75
Caste	29	33	-	-	25
Income	13	33	0	0	-
Father occupation	100	100	100	-	-
Mother occupation	0	0	-	-	0
Partner occupation	40	0	-	-	50

Figure 2: Total number of SEP variables for ECD outcomes

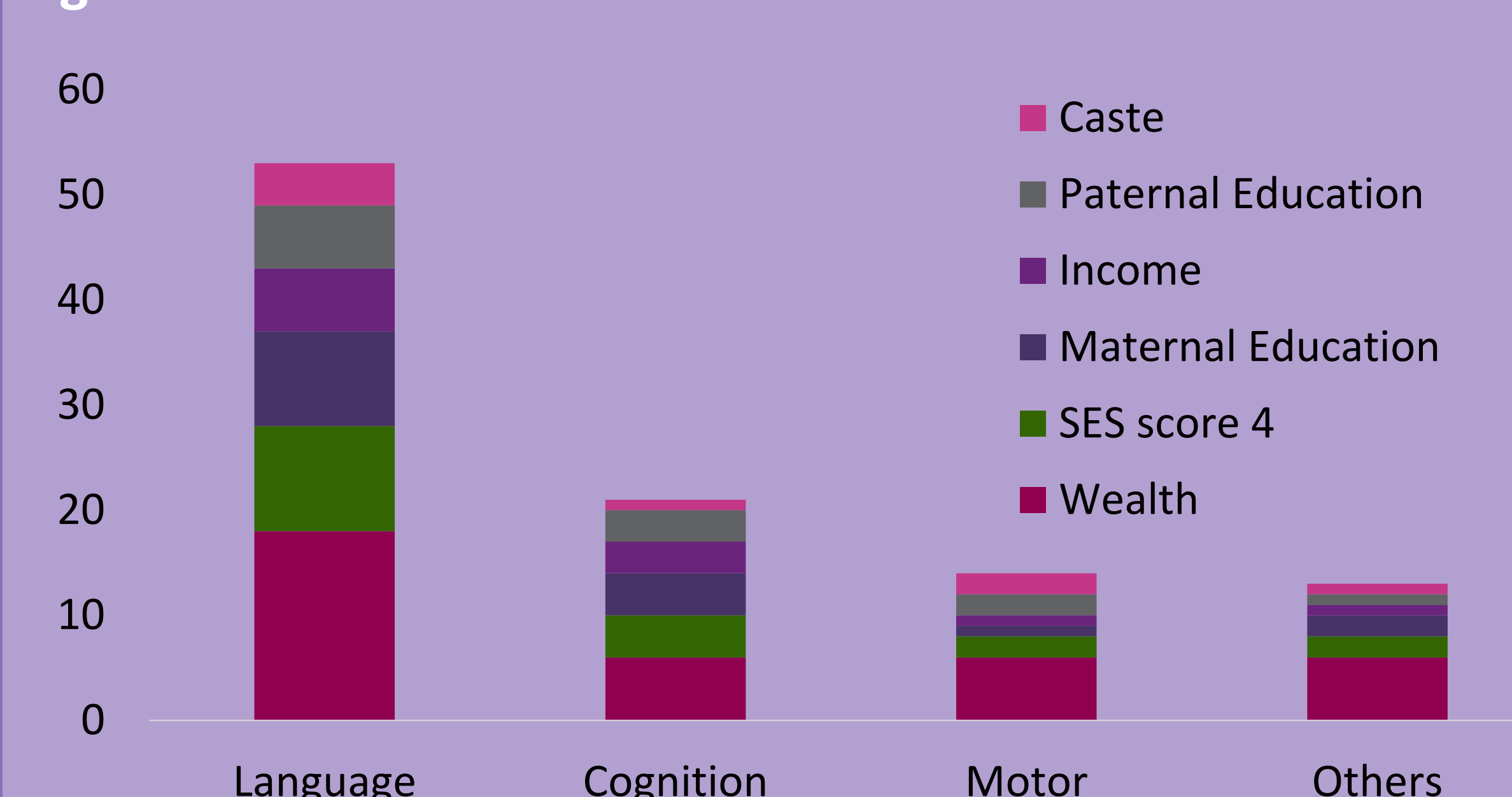


Table 2: Percentage of SEP variables for studies significantly associated (p< 0.05) with ECD outcomes.

Variable	Total	Cognition	Motor	Language	Others
SES score ⁴	70	100	100	50	50
Income	67	100	0	67	100
Paternal Education	50	0	100	67	-
Maternal Education	33	0	50	25	50
Caste	25	0	0	100	-
Wealth	6	0	0	17	-

¹ from the variables that were used in five or more studies.

² S= number of significant outcomes, n= number of total outcomes (includes significant and non-significant outcomes).

³ Percentage of all outcomes tested found to be significant for each variable.

⁴ Socioeconomic status (SES) score was calculated using various scales/index such as Kuppusswamy's SES scores, Revised Kuppusswamy SES scores and Kuppusswamy and Prasad SES scale based on SEP variables such as Parent's education, Occupation and family income per month.

Discussion

Growth

- The globally established positive association between SEP and early child growth was confirmed in South Asia.
- Most of the existing evidence was only in India and Bangladesh.
- less clear evidence of the relationship between SEP and wasting/underweight than for SEP and stunting
- Maternal education and wealth were most significant measures of SEP and the most used measures.
- Income was only significant in 13% studies. Income is notoriously difficult to assess accurately.
- Maternal occupation is changeable during early childhood which may explain the lack of significance of this measure.
- Non-significance may be due to inadequate sample sizes. There were 4 articles with sample size less than 100.

ECD

- Lack of evidence (few studies for motor and socioemotional development)
- Mostly positive relationship between SEP and ECD outcomes but less clear relationship for them than growth studies.
- The existing evidence is only in India and Nepal.

Implications for future research and practice

- Further research should be done to fill the evidence gap on the association between SEP and ECD in south Asia, especially on the development domains of motor and socioemotional.
- Need more ECD studies in other south Asian countries outside of India and Nepal to confirm an association between ECD and SEP in these areas.

† Pool results for 4 countries, Bangladesh, India, Nepal, and Pakistan

† † growth measures such as Height-for-age Z-score, weight-for-height z-score