D4N 2023
Delivering for Nutrition in South Asia
Equity and Inclusion
November 2, 2023

Teenage marriage and birth predict anemia, learning skills, and depression among adolescent girls in India

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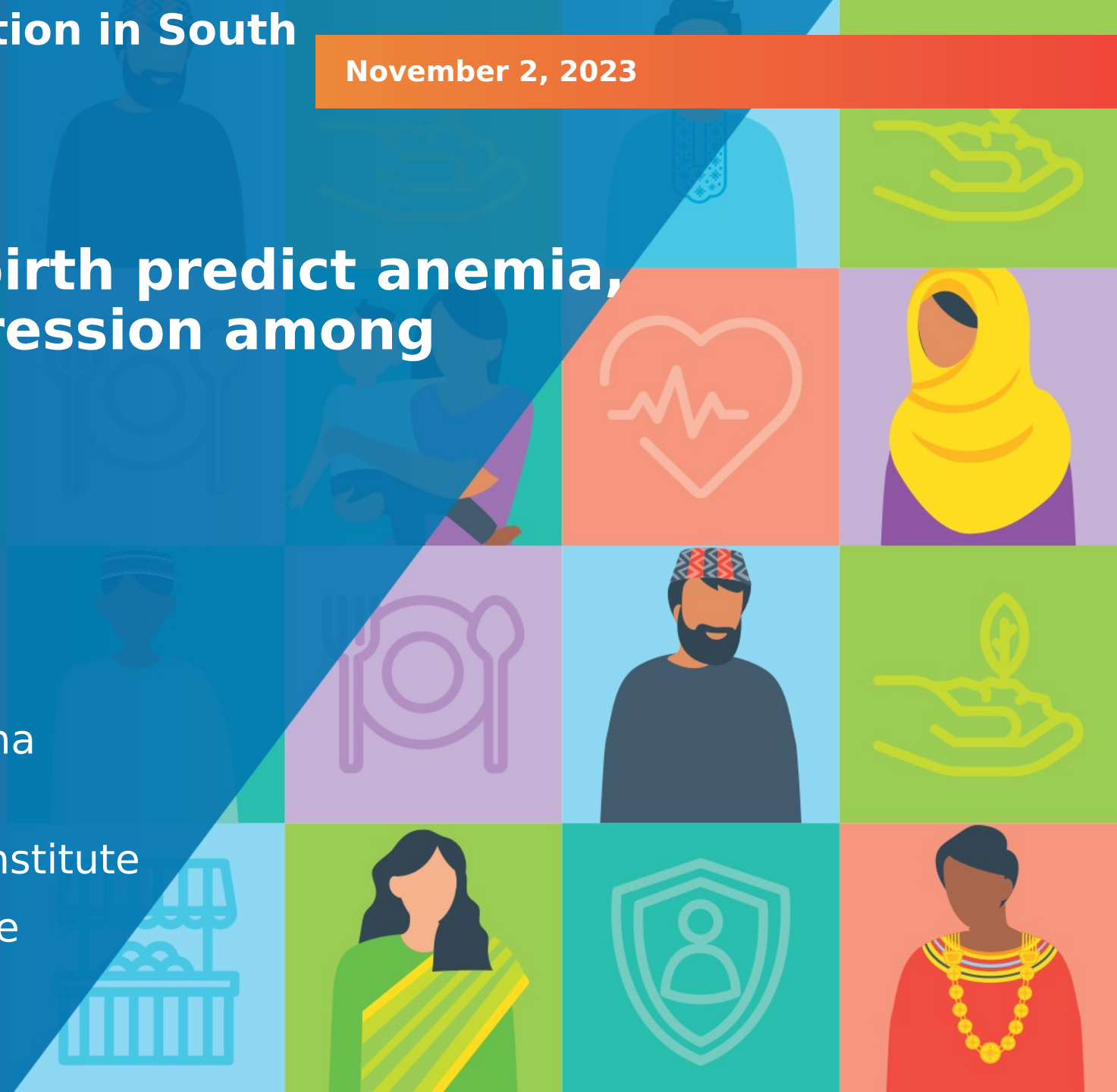


Study rationale

- **South Asia** accounts for 45% of global teenage marriages (*age at marriage <18y*); cuts across religions & ethnicities

- Early marriage is an equity problem
  - Early marriage -> early childbearing
  - Girls married early are deprived of quality educational and health outcomes

Study rationale

- Teenage marriage is important in Indian context:
  - 1/5th population 10-19 years old (Census 2011)
  - Despite being prohibited by national law, child marriage is still common

- *Study motivation*: Limited evidence on effects of teenage marriage and birth on girls' holistic wellbeing in India

Study objective

Examine the effect of teen marriage and birth on the following well-being outcomes among Indian girls between 2015-16 and 2018-19:

- Anemia
- Learning skills (reading and math abilities)
- Depression

Data

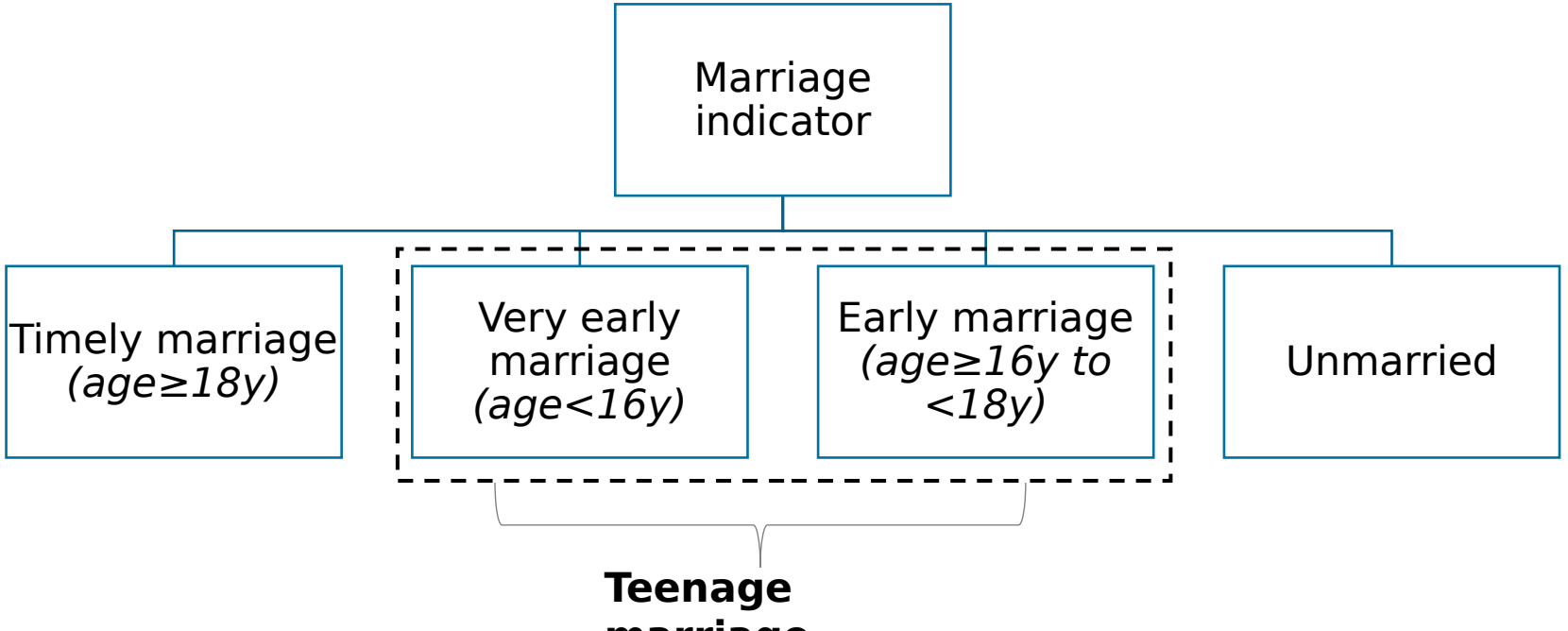
- Data: Population Council's Understanding the Lives of Adolescents and Young Adults (UDAYA) longitudinal data
- Years: 2015-16 (wave 1), with a follow-up round in the year 2018-19 (wave 2)
- Location: India (Uttar Pradesh and Bihar)
- Data representative at state level
- Sample: ~11,700 girls

(Anemia sub-sample: ~3400 girls)

Variables

- Key explanatory variables

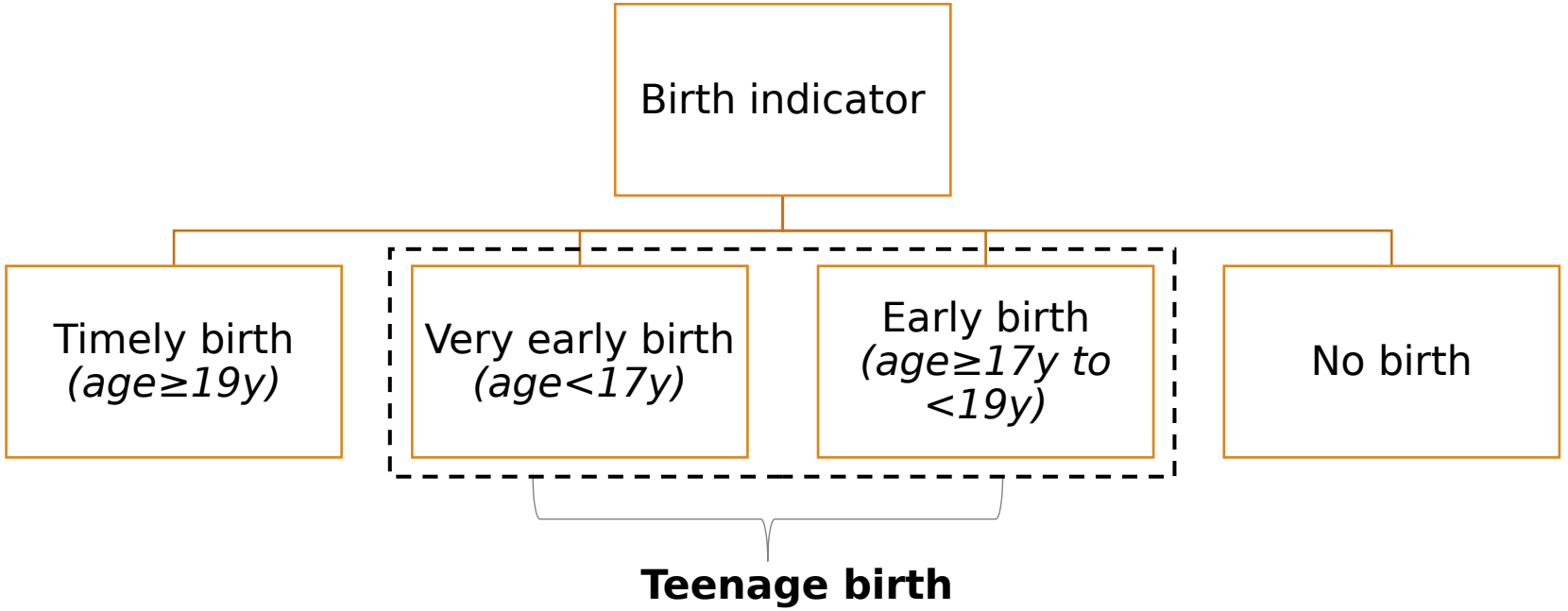
Teenage marriage: age at first marriage is <18y



Variables

- Key explanatory variables

Teenage birth: age at first birth is <19y



Variables

- 4 outcomes:

Anemia → Hemoglobin age-based cut-offs from WHO

Reading skills (can read standard II text) → *Annual Status of Education Report (ASER)*

Math skills (can solve division problems) → *ASER*

Depressive symptoms → *Patient Health Questionnaire (PHQ-9) (cut-off: at least 5 out of 27 points)*

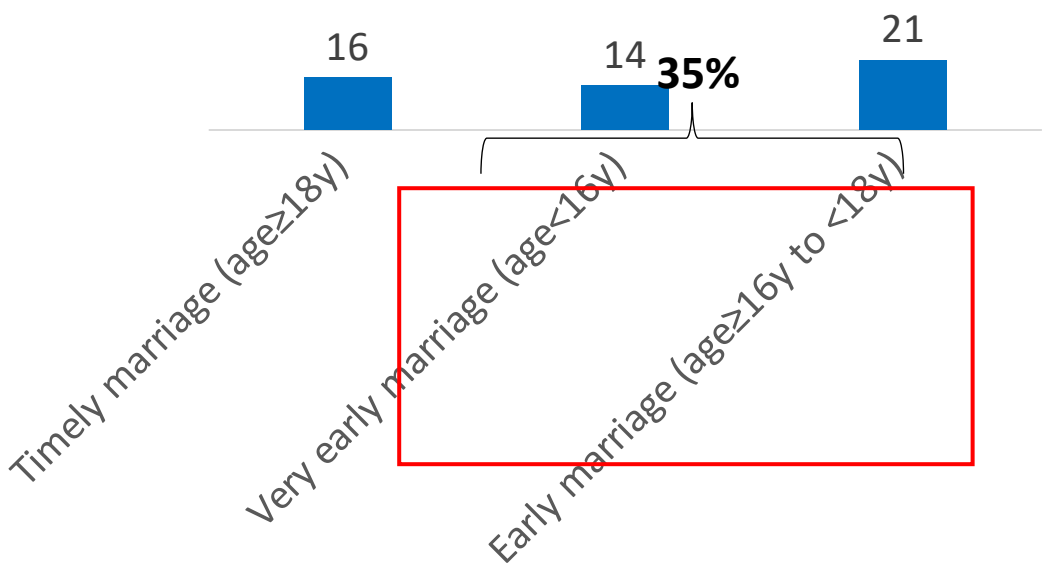
Analytical approach

- Multilevel multivariate mixed-effect logistic regression on repeated measures

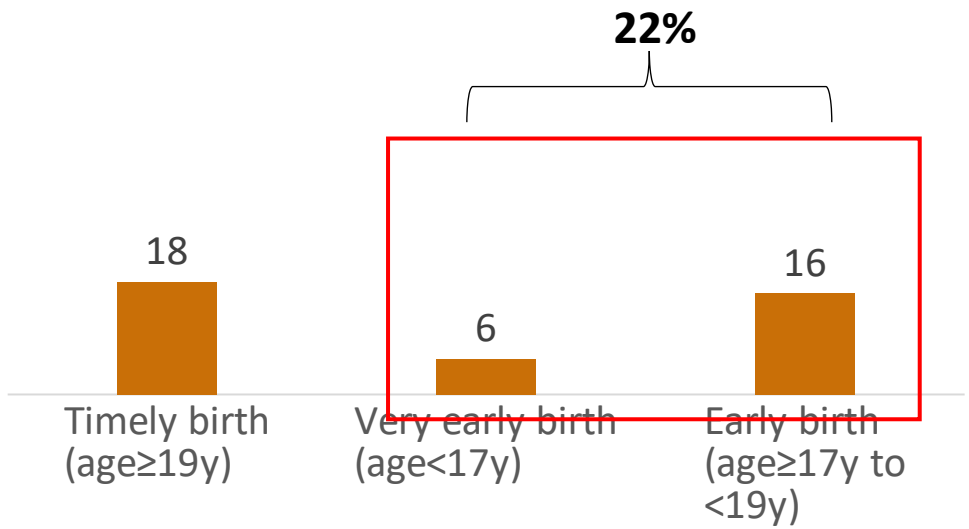
- Models adjusted for demographic and socio-economic factors and survey sampling weights

35% of girls were married when <18y and 22% gave birth before 19y

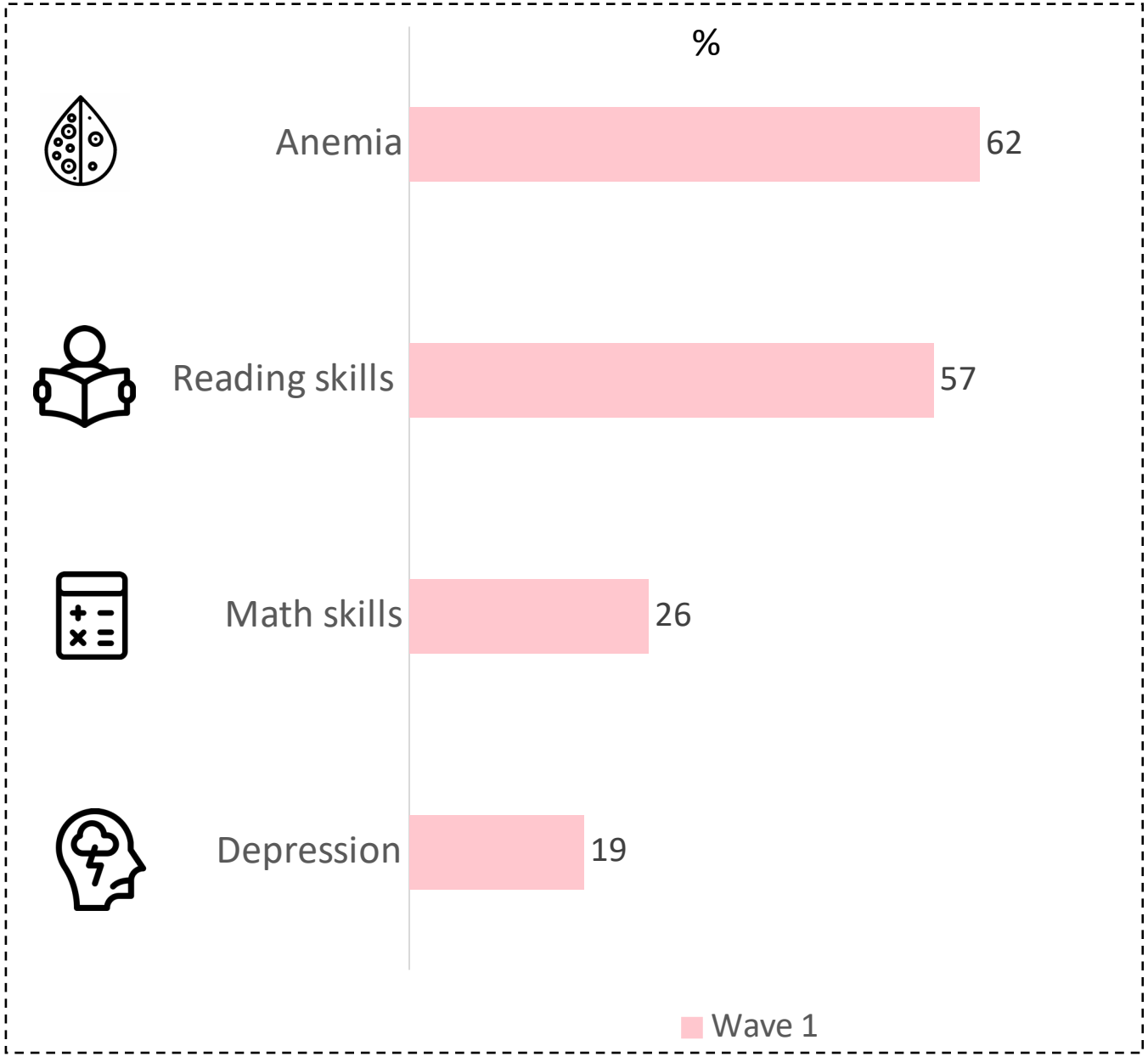
Teenage marriage prevalence, %



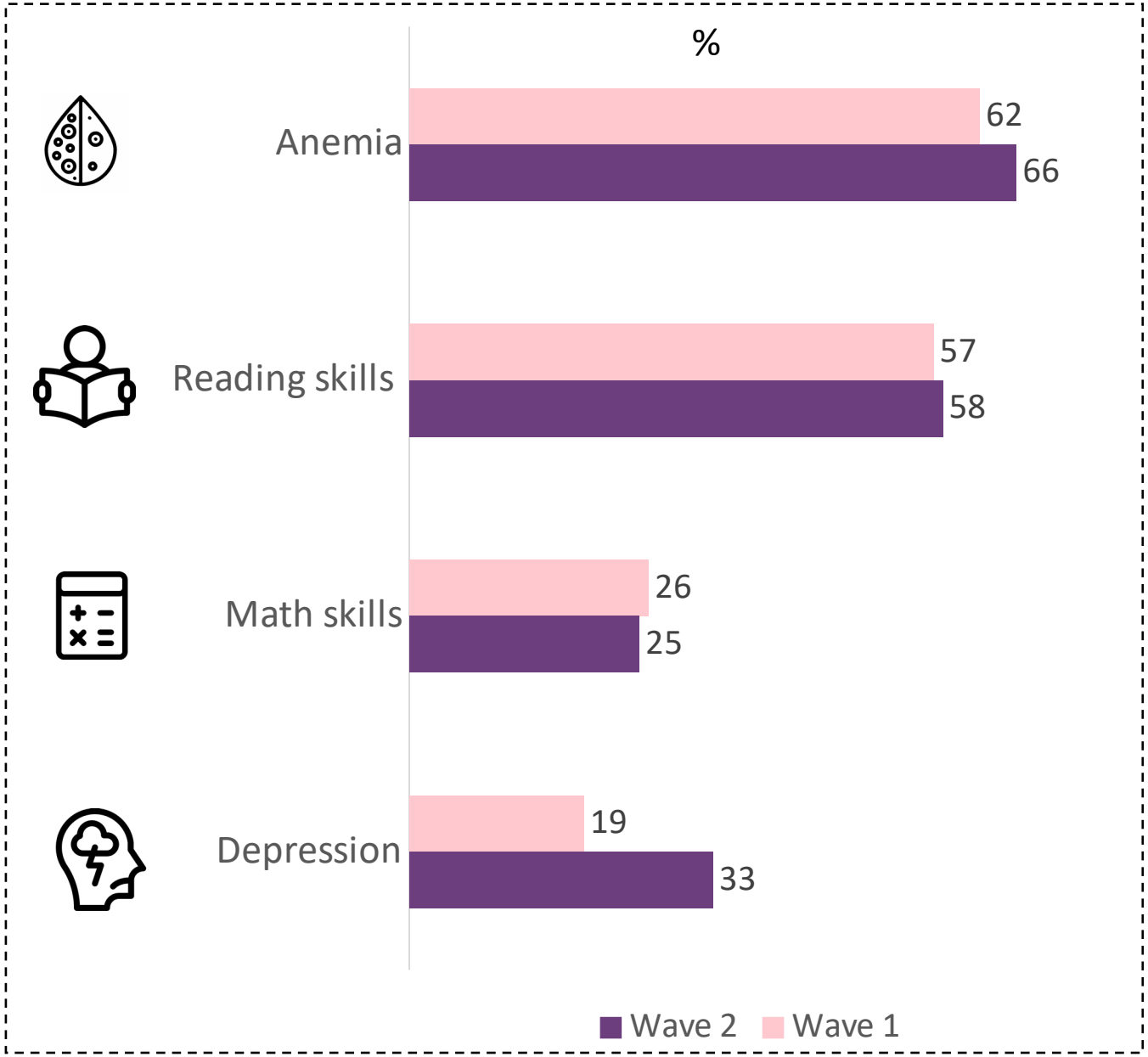
Teenage birth prevalence, %



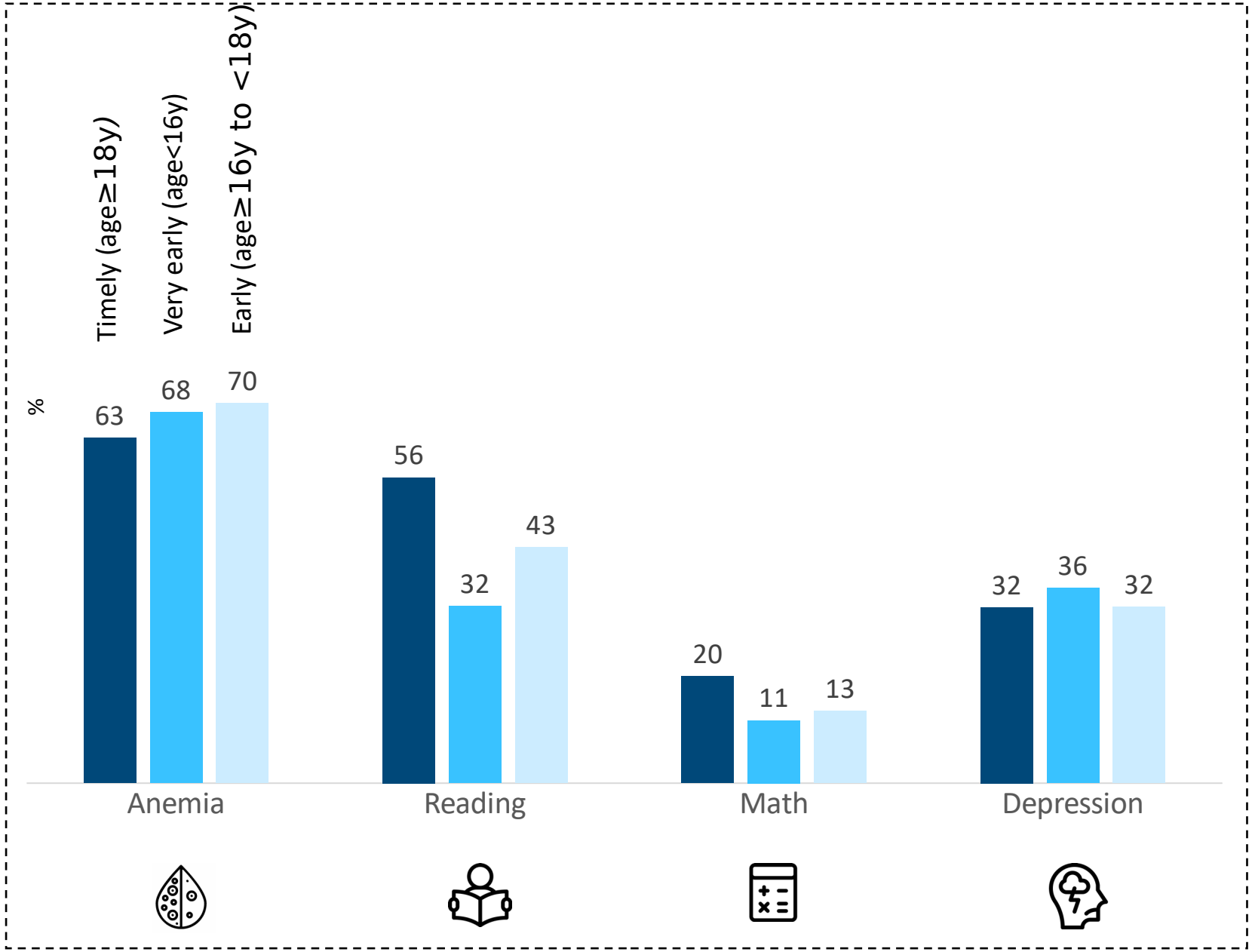
At baseline (wave 1), >60% of girls were anemic, had poor learning skills (~57% of girls could read; 26% could solve division problems), and 19% of girls were depressed



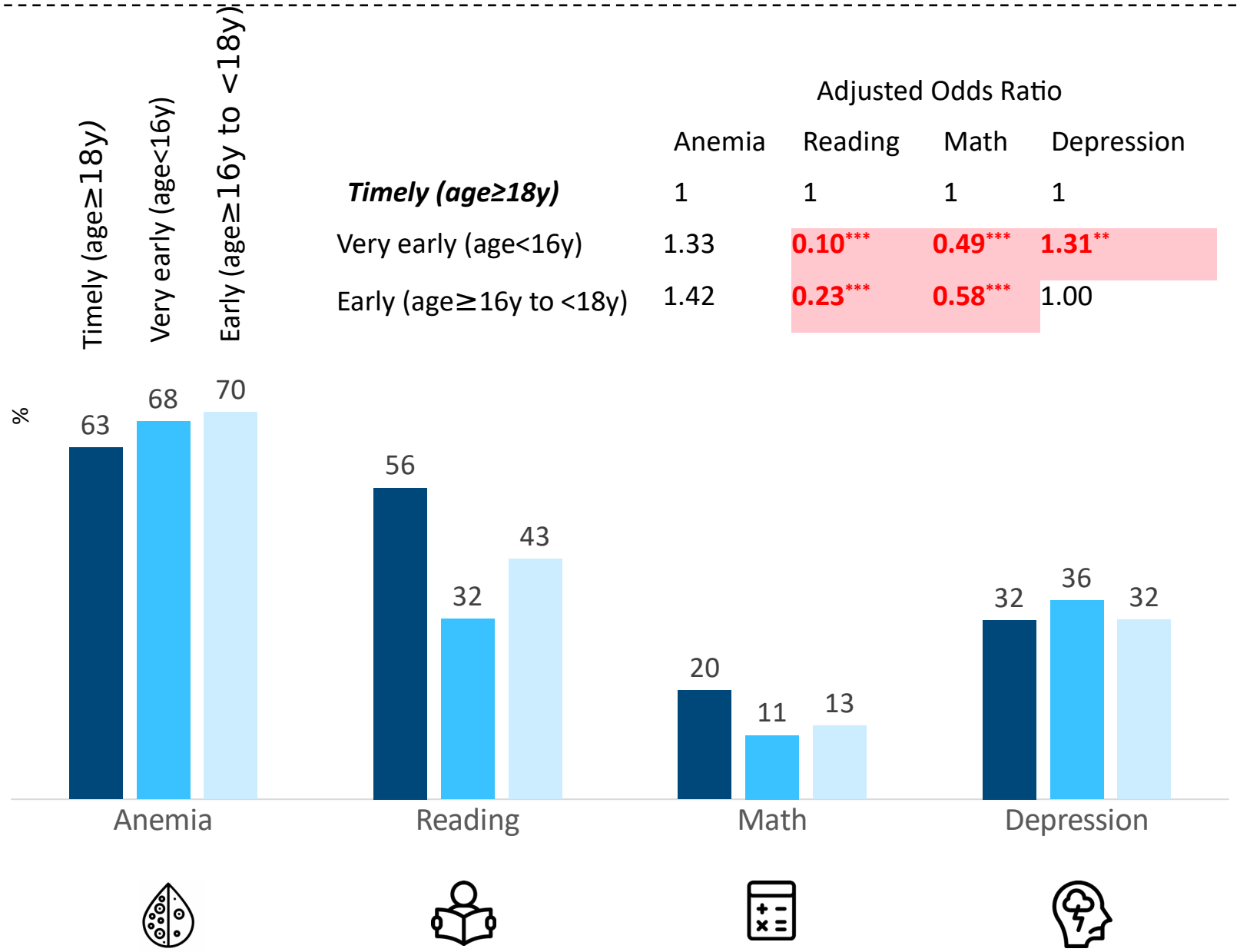
At follow-up round (wave 2), there was 4 percentage point (pp) increase in anemia and 14pp increase in depression



Girls who married at teenage have poor wellbeing v/s girls who married timely; cognitive skills and depression were worse in girls who married very early



Association between teenage marriage and girls' wellbeing significant only for cognitive skills and depression

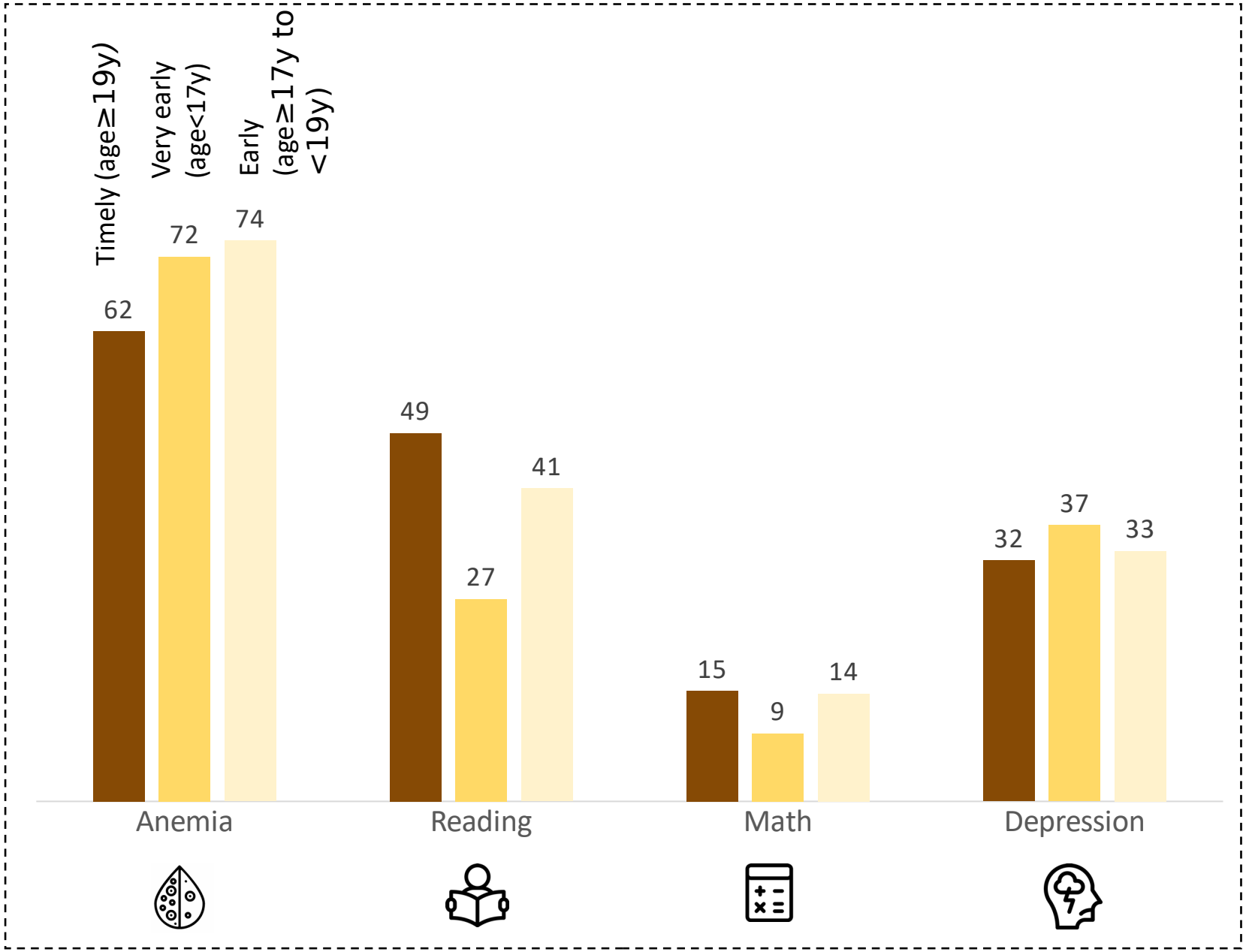


Adjusted Odds Ratio

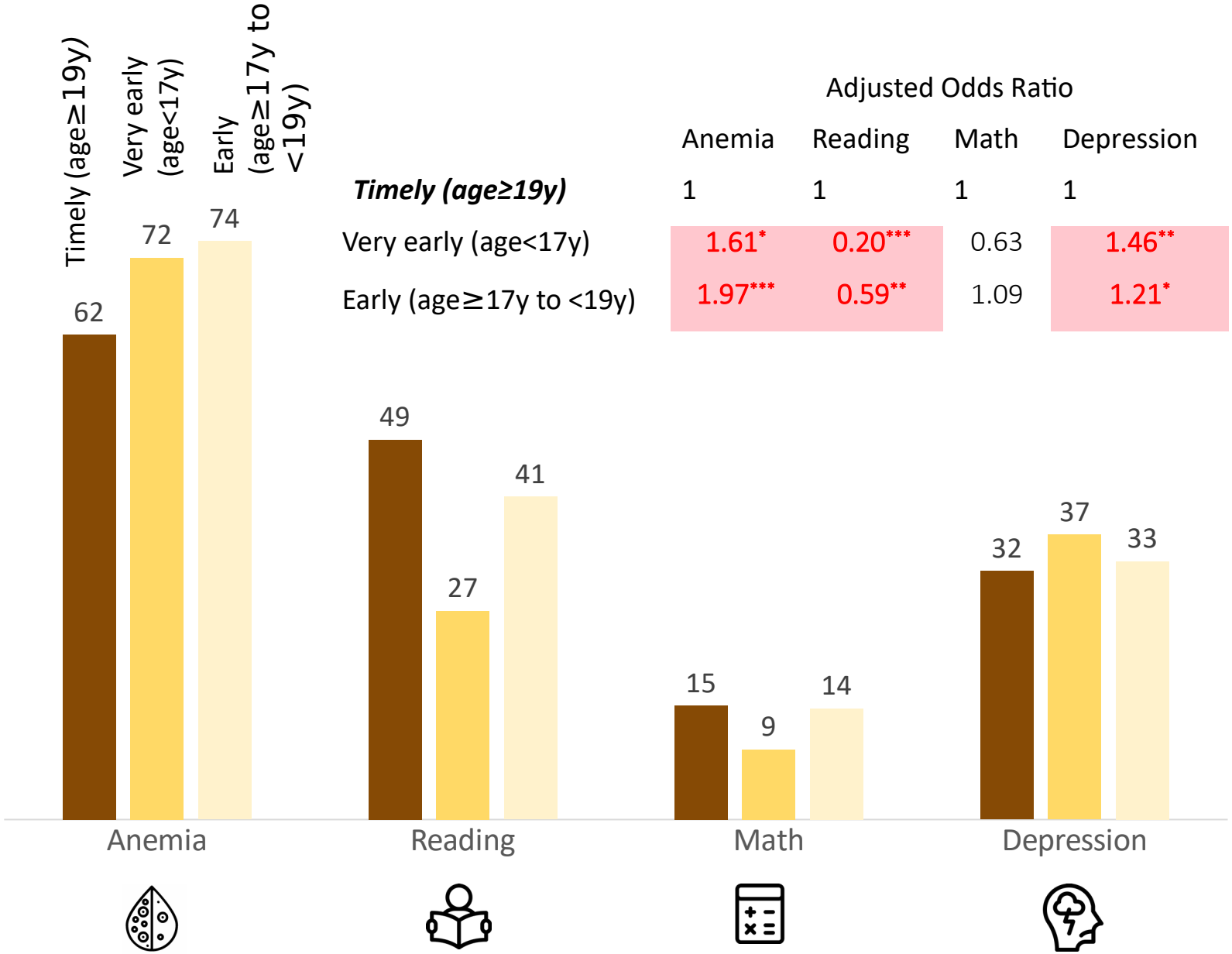
	Anemia	Reading	Math	Depression
Timely (age≥18y)	1	1	1	1
Very early (age<16y)	1.33	**0.10*****	**0.49*****	**1.31****
Early (age≥16y to <18y)	1.42	**0.23*****	**0.58*****	1.00

*p < 0.05, **p < 0.01, ***p < 0.001

Girls who gave birth at teenage have poor wellbeing v/s girls who gave birth timely; cognitive skills and depression were worse in girls who married very early



Significant association between teenage birth and girls' wellbeing for most outcomes



Adjusted Odds Ratio

	Anemia	Reading	Math	Depression
Timely (age≥19y)	1	1	1	1
Very early (age<17y)	1.61*	0.20***	0.63	1.46**
Early (age≥17y to <19y)	1.97***	0.59**	1.09	1.21*

*p < 0.05, **p < 0.01, ***p < 0.001

Study implications

- Teenage marriage and birth -> anemia, poor learning skills, and depressive symptoms among adolescent girls
  - Girls who married or gave birth very early were gravely affected
- Ensure implementation of existing child marriage policy guidelines – might be challenging due to social norms in India
- Need efforts to delay childbearing among married girls
- Provide health support and vocational training to adolescent mothers