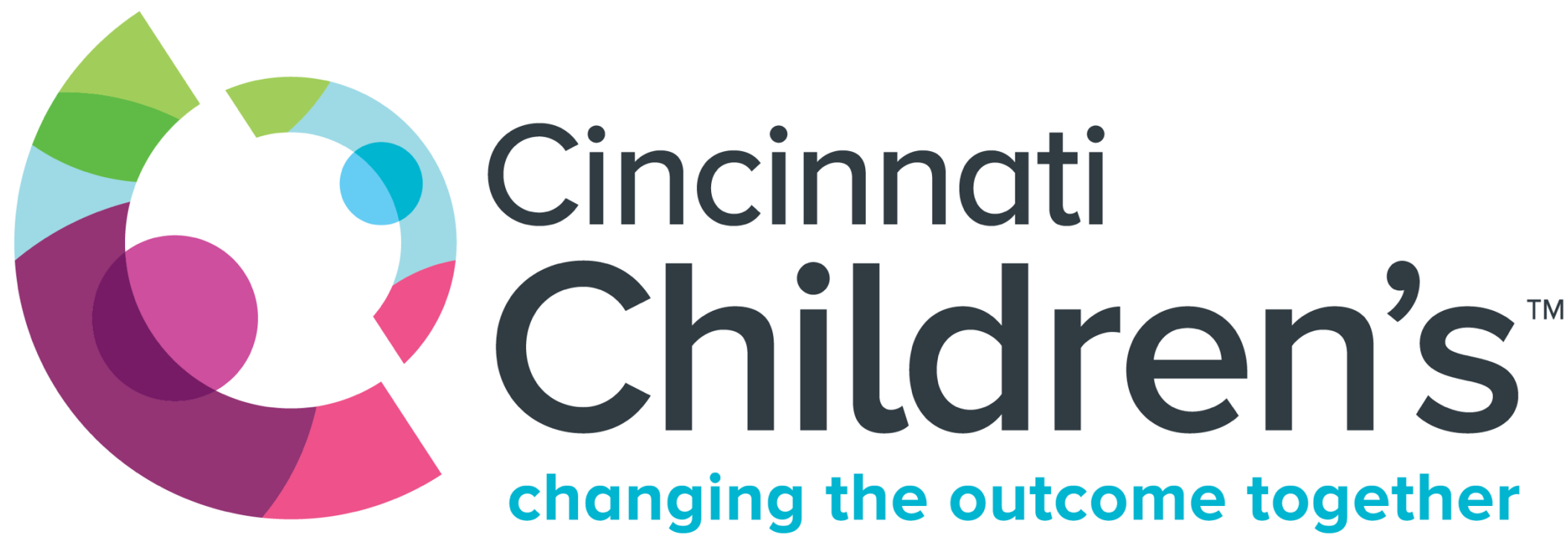# Parental Self-Efficacy, Parental Investment, and Early Child Development in an Urban Setting in Peru

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Background

- Brain architecture undergoes rapid development in the first three years, influenced by multiple factors.
- In low-middle income countries (LMICs), 39% of children under 5 years are at risk of not achieving their developmental potential.
- Parental self-efficacy (PSE) and parental investment (PI) are factors that may influence early child development (ECD) and could serve as intervention targets.

Objective

- To assess the association between PSE, PI and ECD in an urban setting of a LMIC.

Methods

- Study Design: Cross-sectional study conducted between July and October 2024 in Lima, Peru.
- Participants: 104 caregivers of children aged 9-24 months attending three urban health centers: Angamos, Pablo Bermúdez, and Chincha health centers.
- Data Collection: Surveys measured:
  - Sociodemographic characteristics
  - Developmental milestones (Survey of Well-being of Young Children)
  - Parental self-efficacy (Early Intervention Parenting Self-Efficacy Scale)
  - Parental investment (Family Care Indicators)
- Ethics: informed consent obtained. We respected confidentiality,
- Analysis:
  - Spearman's Rho for correlation assessment.
  - ROC curves (AUC) for diagnostic performance.
  - Prevalence ratios (PR) using Poisson regression models.

Demographics

- Infants
  - The male:female ratio was 1.16 and median age was 14.5 months (IQR 11-19)
  - Median gestational age at birth was 38 weeks (IQR 37-39) with an average birth weight of 3.42kg.
- Parents
  - Average age of mothers and fathers was 34 and 37 years respectively.
  - Fathers of the infants were more likely to have higher educational level than mothers (75% vs 23%).
  - 96% of parents lived together.
  - The primary caregiver of the infant was most commonly the mother (79.8%) and 56% of them had a current job.

Results

Figure 1. Correlation of a) Parental self-efficacy and b) Parental investment with psychomotor development.

Factors	Categories	Adjusted Analysis	
		PR (95% CI)	p
Parental Self-Efficacy Test Score	≤p25	Reference	-
	>p25-p50	1.21 (0.73-2.13)	0.462
	>p50-p75	1.25 (0.73-2.13)	0.422
	>p75	1.63 (1.01-2.62)	**0.045**
Parental Investment Test Score	≤p25	Reference	-
	>p25-p50	1.36 (0.90-2.07)	0.149
	>p50-p75	1.15 (0.7-1.88)	0.589
	>p75	1.44 (0.93-2.22)	0.106
Primary Caregiver	Others	Reference	-
	Both parents	0.43 (0.16-1.15)	0.091
	Father	0.36 (0.13-0.99)	**0.047**
	Mother	0.64 (0.39-1.03)	0.066

Table 1. Association of PSE and PI with ECD in infants attending health centers in Lima, Peru.

Higher parental self-efficacy scores were associated with adequate early child development

(adjusted PR 1.63; 95% CI 1.01-2.62; p=0.045)

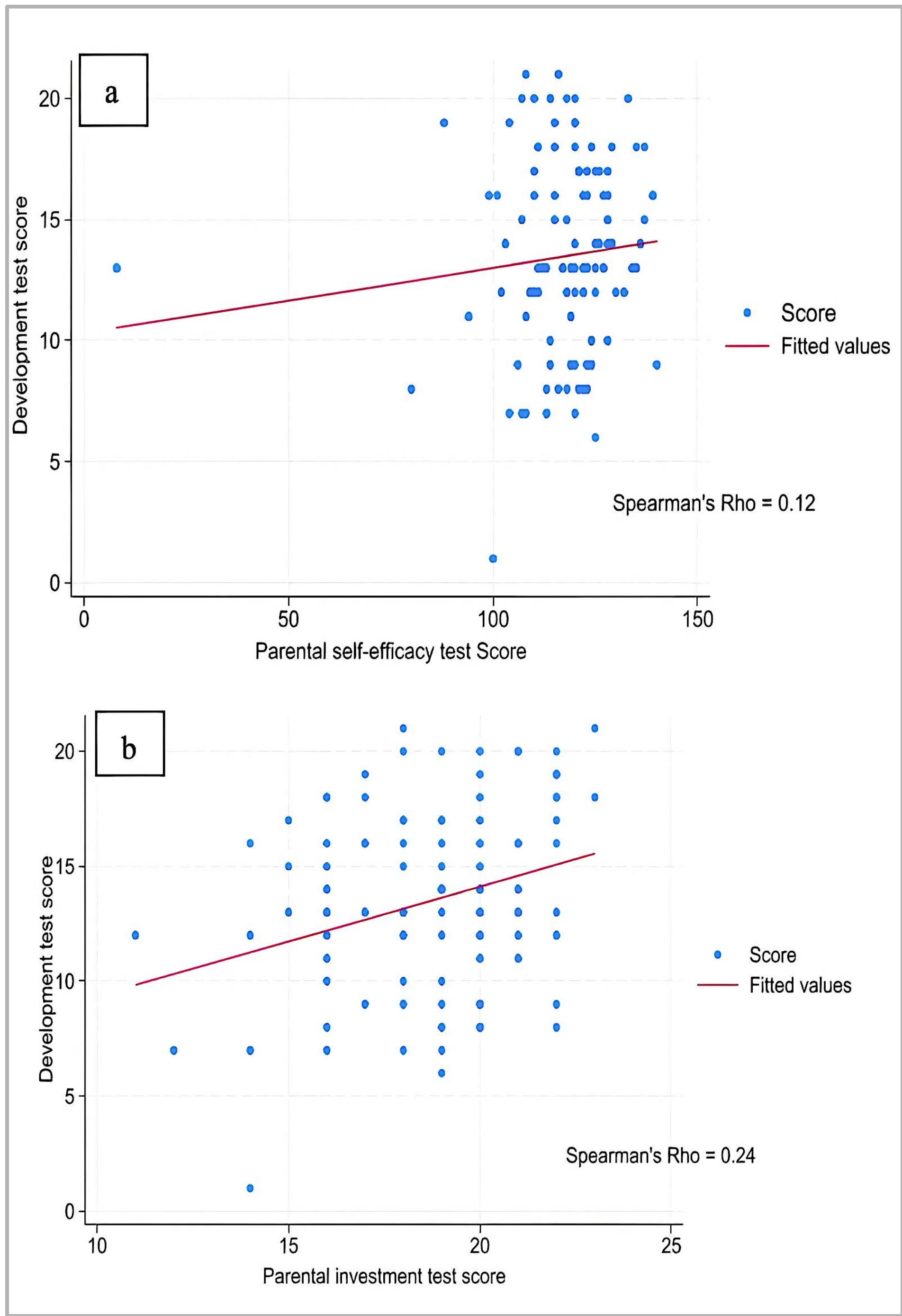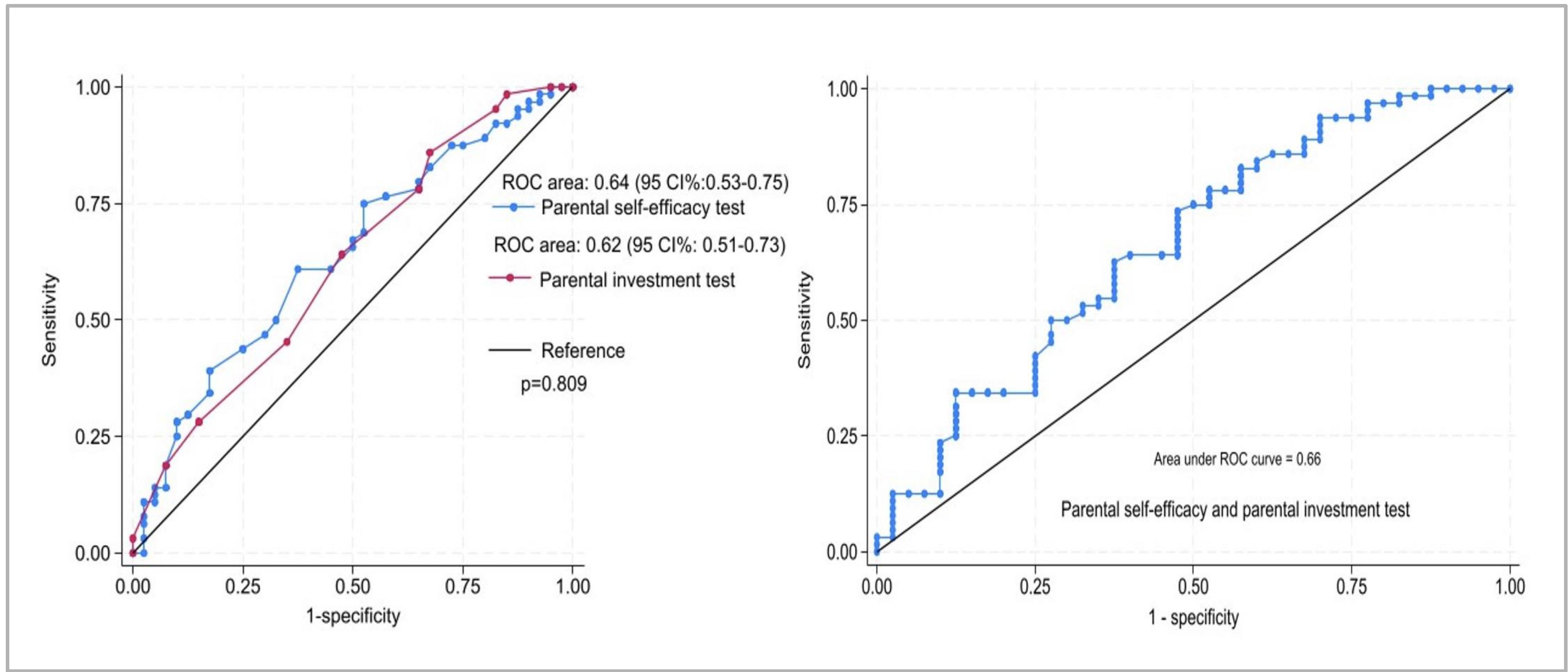**Figure 2.** Diagnostic performance of the parental self-efficacy and parental investment test (Left, separately; Right, combined).

Test Scores	Correlation Spearman's Rho		Score Comparison Median (IQR)			Diagnostic Performance AUC (CI95%)
	Development Test Score	p	Impaired Development (n=48)	Normal Development (n=56)	p	Normal Development (n=56)
Parental Self Efficacy	0.12	0.224	117 (108.5-112.5)	120.5 (114.5-127.5)	**0.017***	0.64 (0.53-0.75)
Parental Investment	0.24	**0.016**	18 (16-20)	19 (18-21)	**0.035***	0.62 (0.51-0.73)

Table 2. Test of self-efficacy and parental investment and their relationship with psychomotor development in infants attending three health centers, Lima, Peru, 2024.
* Mann-Whitney U Test | AUC: Area Under the Curve

Conclusions

- PSE is associated with adequate ECD in this urban LMIC setting.
- Findings highlight the need for larger prospective studies in similar settings.
- Interventions targeting PSE could be valuable in promoting child development.

Limitations & Next Steps

- The study was cross-sectional, limiting causal inferences.
- Future larger, prospective studies in LMICs are needed.
- Need to explore interventions that strengthen parental self-efficacy.

Acknowledgements

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Access to full Abstract