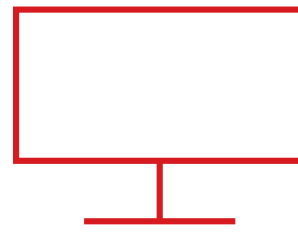


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ISUOG 2026

ePoster

1 OBJECTIVES

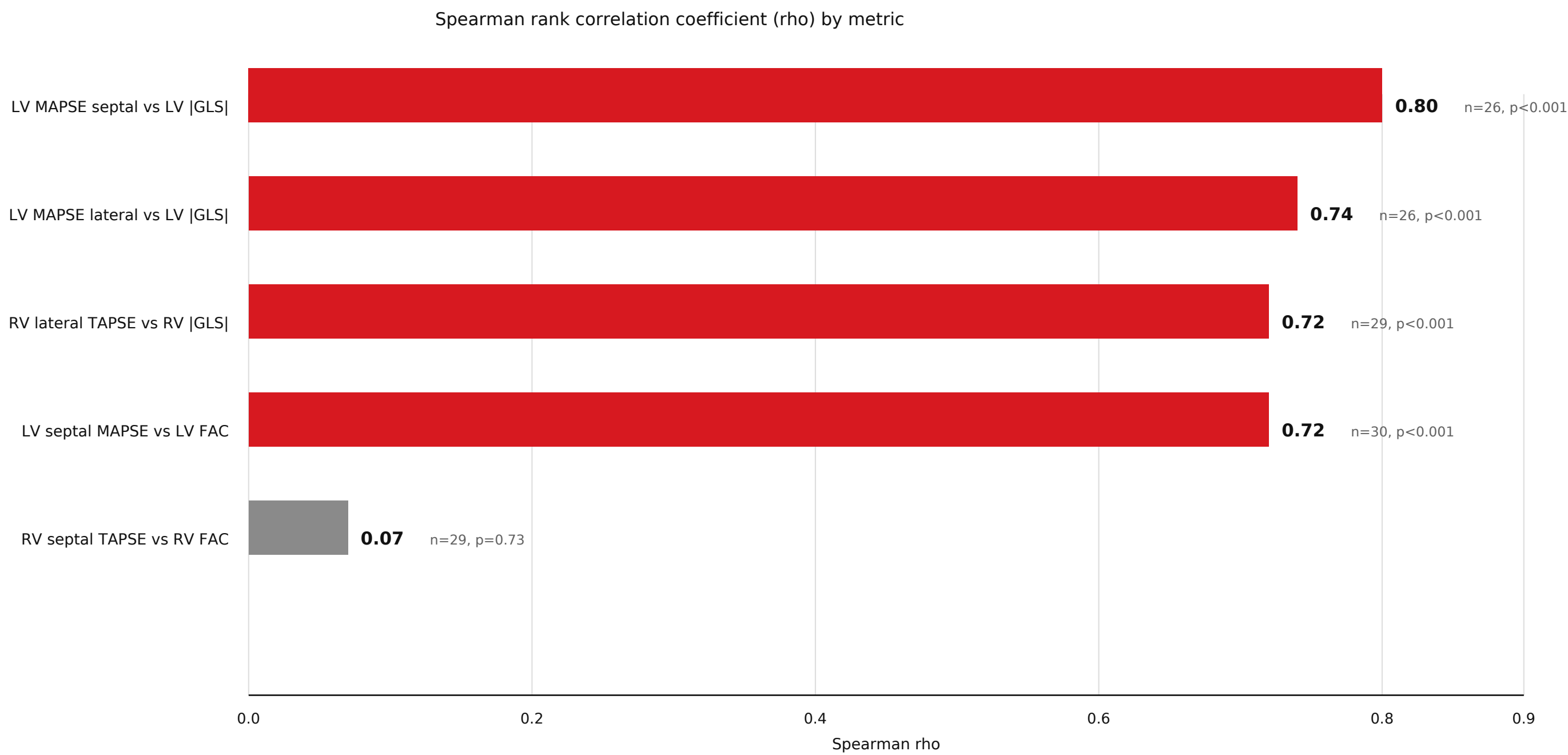
To assess whether mitral annular plane systolic excursion (MAPSE) and tricuspid annular plane systolic excursion (TAPSE) are associated with ventricular deformation and systolic area change.

2 METHODS

- Retrospective dataset of 37 fetal speckle-tracking echocardiography examinations.
- Gestational age range: 18+2 to 35+0 weeks.
- MAPSE and TAPSE were assessed as septal and lateral measurements, in millimetres.
- Spearman correlations were computed between MAPSE/TAPSE and [GLS] as well as FAC.
- Quality-control windows: GLS -45% to -5%; FAC 5% to 70%.
- GA-adjusted multivariable linear regression was used to model GLS.

3 RESULTS

Associations with [GLS] and FAC



LV strain model
LV [GLS] increased by 3.96% per 1 mm higher septal MAPSE; 95% CI 2.86-5.06; R²=0.73.

R²

RV strain model
RV [GLS] increased by 3.23% per 1 mm higher lateral TAPSE; 95% CI 2.30-4.17; R²=0.68.

R²

FAC signal
LV septal MAPSE correlated with LV FAC, but RV septal TAPSE did not correlate with RV FAC.



Interpretation
Long-axis excursion captured much of GLS variability in GA-adjusted models.



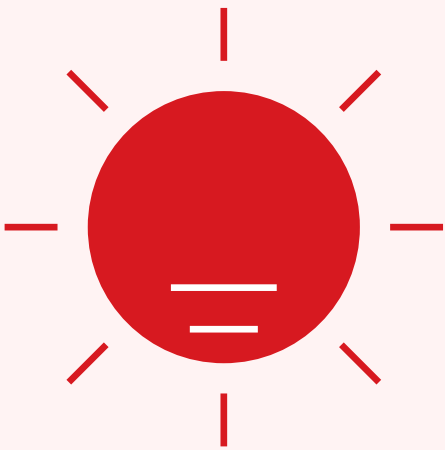
Key correlation and regression results

Association	rho / slope	n	p / 95% CI	Interpretation
LV septal MAPSE vs LV [GLS]	rho 0.80	26	p<0.001	strong
LV lateral MAPSE vs LV [GLS]	rho 0.74	26	p<0.001	strong
RV lateral TAPSE vs RV [GLS]	rho 0.72	29	p<0.001	strong
LV [GLS] per 1 mm septal MAPSE	slope 3.96%	24	95% CI 2.86-5.06	R ² 0.73
RV [GLS] per 1 mm lateral TAPSE	slope 3.23%	27	95% CI 2.30-4.17	R ² 0.68
RV septal TAPSE vs RV FAC	rho 0.07	29	p=0.73	no association

4 CONCLUSIONS

- MAPSE and lateral TAPSE showed strong correlations with the magnitude of GLS.
- GA-adjusted models explained a large proportion of LV and RV [GLS] variability.
- LV septal MAPSE correlated with LV FAC, whereas RV septal TAPSE showed no meaningful association with RV FAC.
- Long-axis excursion may serve as a pragmatic surrogate when deformation outputs are missing or unreliable.

TAKE-HOME MESSAGE



Long-axis excursion measurements, especially septal MAPSE and lateral TAPSE, closely tracked global strain in this dataset. They may be useful pragmatic surrogates when strain outputs are unavailable, incomplete or unreliable.



Keywords: Echocardiography, Second trimester, Third trimester, TEI index.



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