



Multidimensional labor pain assessments based on short-term recall are reliable *AFTER* women receive neuraxial pain relief

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BACKGROUND & HYPOTHESIS

- Labor pain is multidimensional; best measured with multidimensional tools e.g. Angle Labor Pain Questionnaire (A-LPQ)
- Extreme pain harder to measure. Knowledge gaps.
- Solutions:
 - Midwifery/Nursing: measure pain AFTER delivery, long-term recall
 - Anesthesia: measure pain AFTER neuraxial pain relief, short-term pain recall
- *Hypothesis: measurement with A-LPQ will be reliable based on short-term pain recall, 20-30mins AFTER epidural Rx.*

A-LPQ: Five Dimensions Labor & Delivery Pain Experience

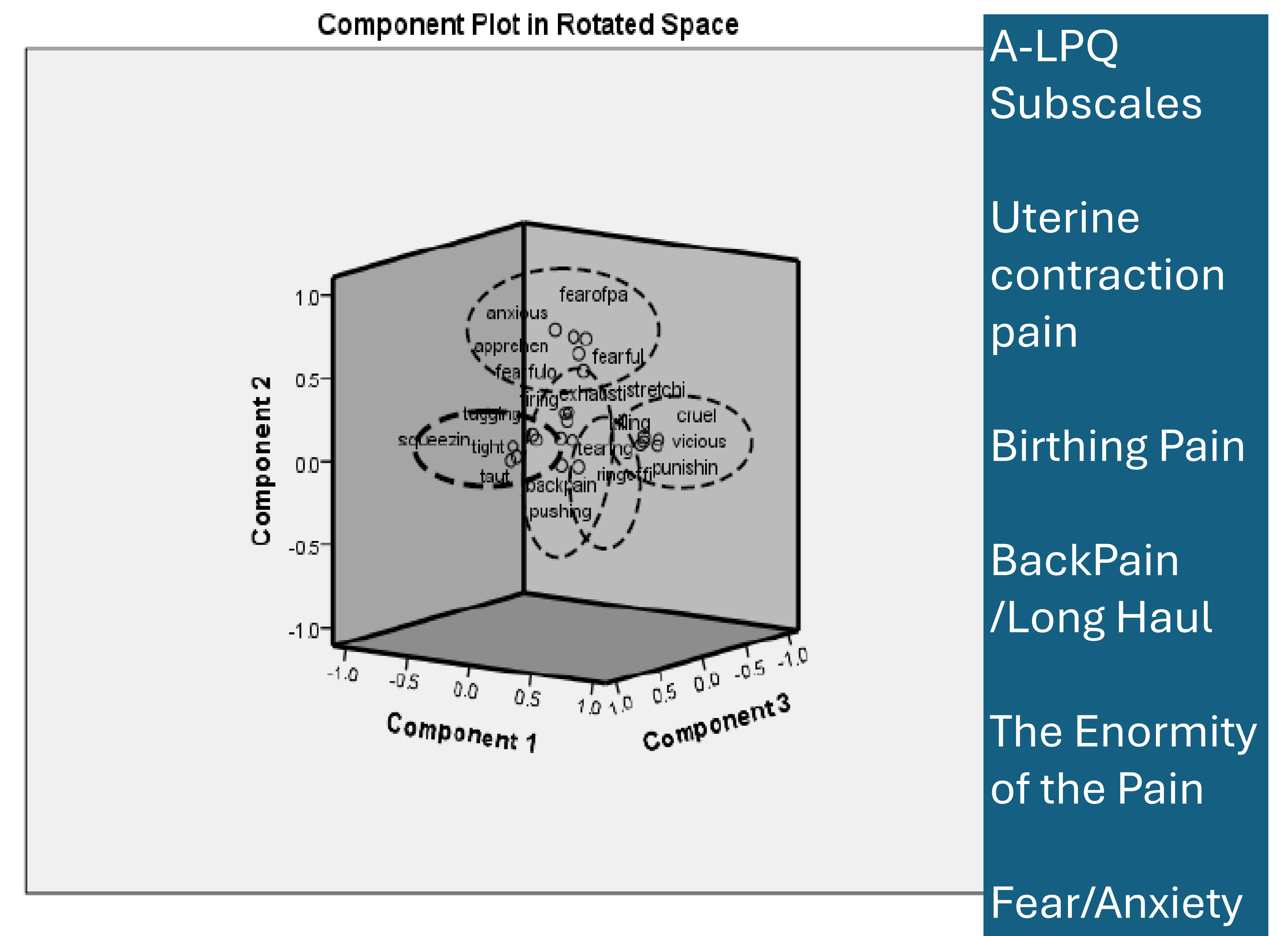


Figure 6. Loading Plot for the Final 22 Item Solution Using PCA and Varimax (Orthogonal) Rotation

STUDY DESIGN & METHODS

- Study Design: single group, three tests.
 - Examined: A-LPQ, NRS,VRS (overall pain intensity) PMS (pain coping)
- Population: mixed parity, early active labor, requesting epidural analgesia
- Tests:
 - **Test 1: rated pain *just BEFORE* epidural insertion**
 - **Test 2: re-rated Test 1 pain, 20-30mins *AFTER* epidural RX**
 - Test 3: rated current pain
- Analysis: Reliability short-term pain recall for A-LPQ Summary Scores (ICC, primary outcome), Recall reliability: NRS, VRS, PMS, Bland Altman plots

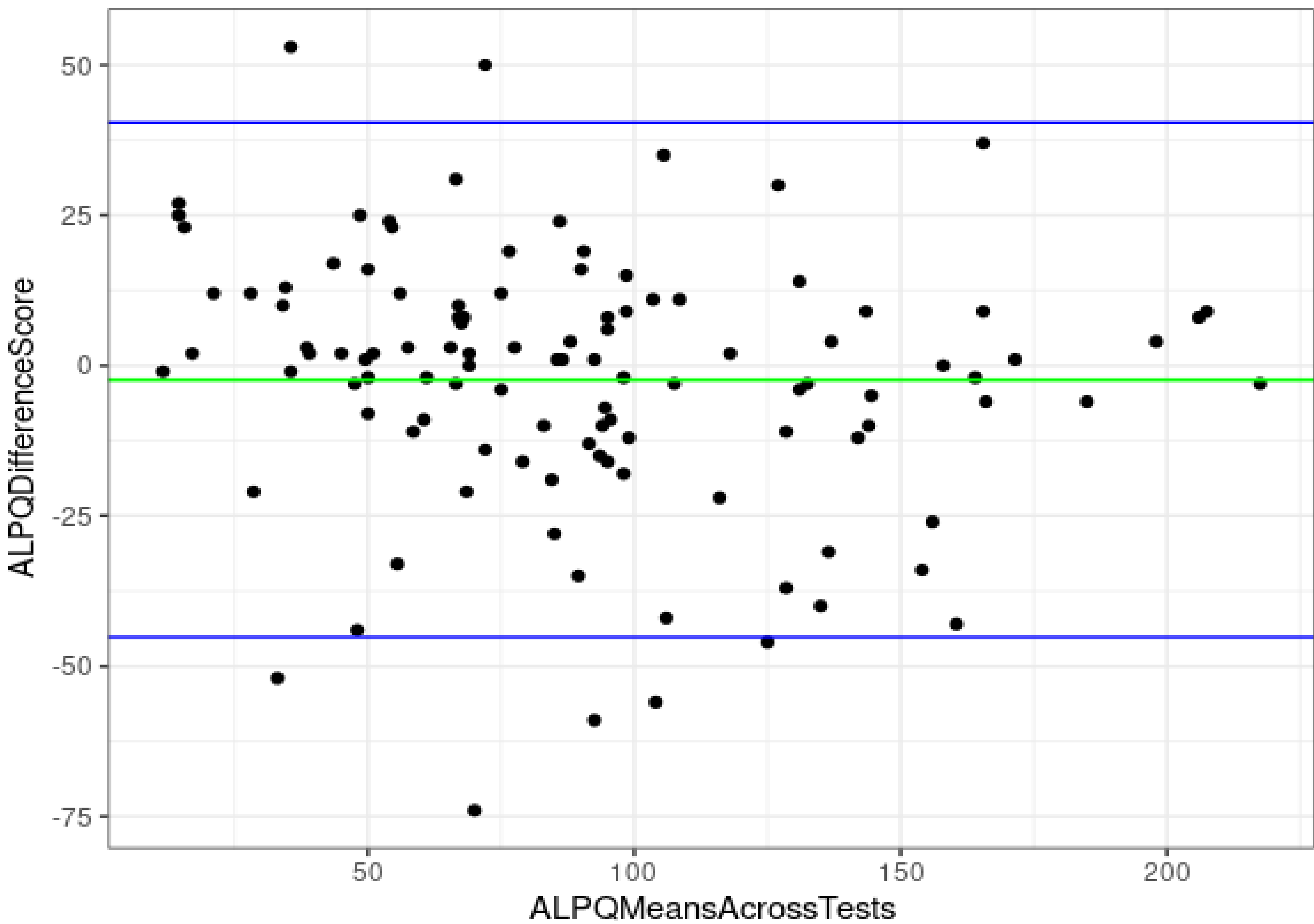


Recall reliability

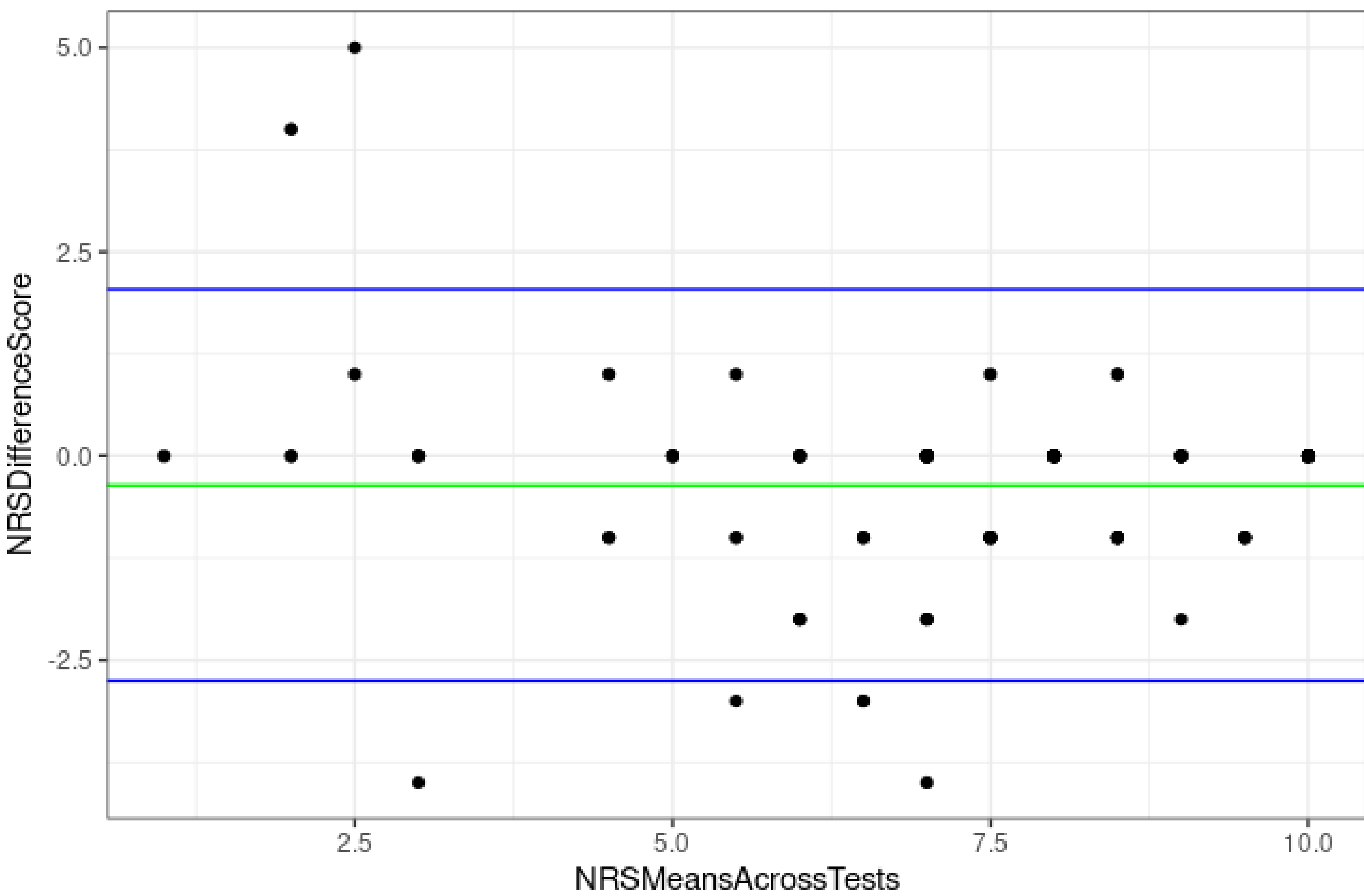
SCALE Mean ± SD or Median [IQR], n/N, %	Test 1: Pain Pre-epidural	Test 2: Pain based on short- term recall	RESULTS		Test 1, Test 2 t-value (df=111) or Z statistic,p-value	Reliability Short-term Pain Recall (ICC, 95% CI)
			Test 3: Current Pain	Cronbach’s Alpha Test 1, Test 2		
VRS (n/N, %)						ICC, good 0.78 95% CI (0.70, 0.84)
None	2% (2/112)	3% (3/112)	70% (51/73)			Weighted Kappa
Mild	9%(10/112)	6%(7/112)	26% (19/73)			= substantive agreement
Moderate	54% (61/112)	54% (61/112)	3% (2/73)		Z=-.63, p=0.53	0.78 95% CI (0.66, 0.91), p<.001
Severe	35% (39/112)	37% (41/112)	1% (1/73)			
NRS	7.0 [5.3, 8.0]	8.0 [6.3,9.0]	0.0 [0.0, 1.0]		Z-3.7, p<0.001	ICC, Good, 0.84 (0.77, 89)
PMS (n/N, %)	30% (33/112)	37%, 41/112)	1% (1/73)		Z=-2.4, p=0.2	ICC, Good, 0.75 (0.66, 0.82)
Unbearable						Weighted kappa substantive agreement, 0.75 95%CI (0.64, 0.86) p<0.001
A-LPQ Summary (Total) Score	90.6 ± 43	93.1± 48	4.0 [0.0, 10.5]	0.94, 0.95	Z= -.47, p=0.64	Good, 0.89 (0.85,0.93)
<i>Uterine Contraction Pain subscale</i>	22.1 ±9.0	22.6 ±10.1	2.0 [0,4.0]	0.71, 0.81	t=-1.3 p=0.20	Moderate, 0.71, (0.61, 0.79)
<i>Back Pain/Long Haul subscale</i>	25.0 ±11.4	26.5±11.4	0.0[0,3]	0.83, 0.82	t=-1.8, p=0.08	Good, 0 .84 (0.77, 0.88)
<i>Birthing Pain subscale</i>	2.0[0,9]	4.0[0,12]	0.0 [0, 0]	0.83, 0.80	Z=-1.2, p=0.3	Good, 0.80 (0.73, 0.86)
<i>The Enormity of the Pain subscale</i>	14.5[5, 29]	12.0[3, 32]	0.0 [0,0]	0.89, 0.93	Z=-0.01, p=0.9	Excellent, 0.91 (0.87, 0.94)
<i>Fear/Anxiety</i>	18.0 ±10.2	17.0 [8,28]	0.0 [0,4]	0.83, 0.90	Z=-1.4, p=0.2	Good, 0.81 (0.73, 0.86)

BLAND ALTMAN PLOTS

A-LPQ SUMMARY SCORES: OVERALL INTENSITY AND DISTRESS



NRS OVERALL PAIN INTENSITY SCORES



CONCLUSIONS

- Short-term, recall-based assessments of baseline labor pain
 - were reliable $\leq$ 20-30minutes following epidural Rx
 - Using A-LPQ Summary & A-LPQ subscale scores, vs NRS, VRS and PMS
- Findings open the door multidimensional labor pain assessment in difficult-to-study areas of neuraxial analgesia research
 - Treatment of epidural breakthrough pain
 - Epidural initiation/top ups in late first stage
 - Epidural top ups in 2nd stage labor or at delivery