

EP17.23 TIMING MATTERS? TRANSPERINEAL ULTRASOUND BIOFEEDBACK IN THE FIRST VERSUS SECOND STAGE OF LABOR

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Introduction & Objectives

This study evaluated transperineal ultrasound (TPU) biofeedback as a visual pushing tool for nulliparous women at term. The primary aim was to assess whether the timing of intervention applied during the first versus the second stage of labor is associated with differences in maternal pushing performance and labor outcomes.

Methods

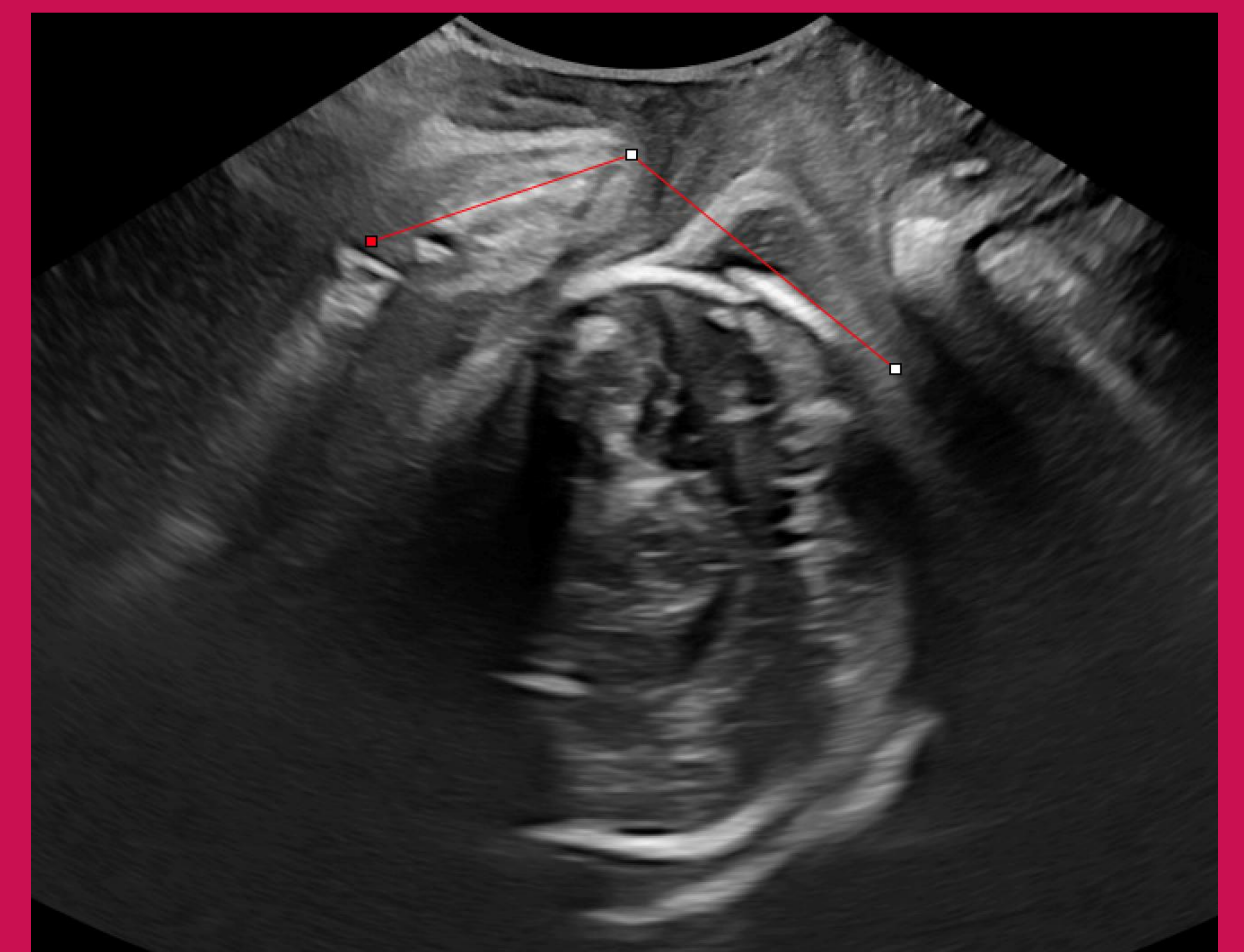
In this prospective, single-blind study, term nulliparous women (≥ 37 weeks) performed three consecutive pushes during a standardized TPU biofeedback session, visualizing Angle of Progression (AoP) and fetal head descent in either the first or second stage of labor. Outcomes included AoP changes, second-stage duration, delivery mode, and maternal satisfaction.

Results

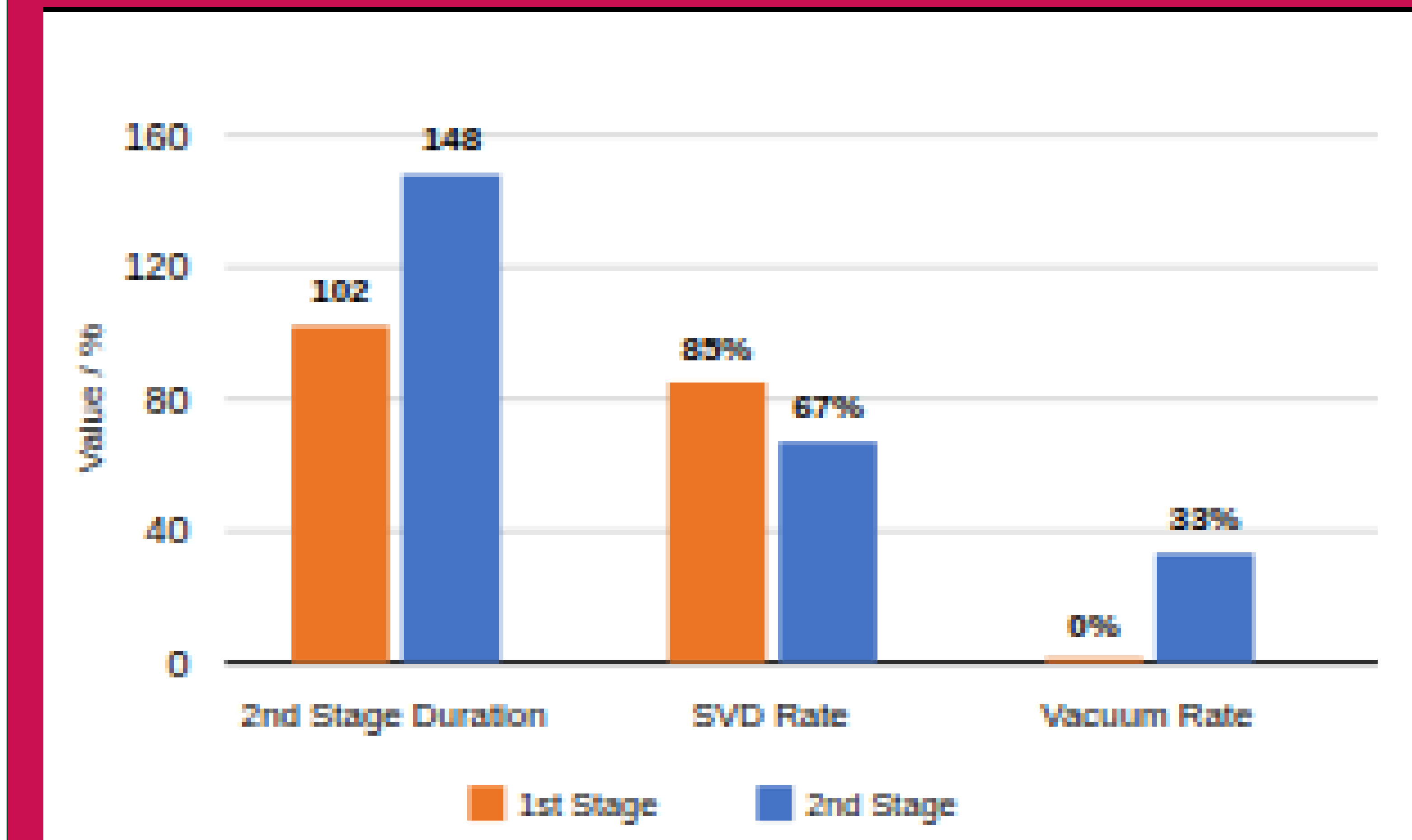
- The intervention was safe and feasible, yielding high maternal satisfaction (mean 4.8/5) and no adverse events.
- Pushing performance improved during the session, with mean AoP increasing from $5.4^\circ (\pm 3.8^\circ)$ to $9.2^\circ (\pm 4.5^\circ)$, and 72% showing progressive improvement.
- First-stage intervention ($n=12$) was associated with shorter second-stage duration (102 vs. 148 min), higher spontaneous vaginal delivery rates (85% vs. 67%), and lower vacuum extraction (0% vs. 33%).

Conclusion

TPU biofeedback yields immediate improvements in maternal pushing performance. Applying TPU biofeedback early during the first stage of labor is associated with a shorter second stage and higher spontaneous vaginal delivery rates compared to intervention in the second stage.



Transperineal ultrasound visualization of Angle of Progression (AoP) and fetal head descent.



Comparison of key labor outcomes between 1st stage and 2nd stage intervention groups.