Feasibility of Video Ecological Momentary Assessment for Measuring Infant Behavior

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Introduction

- *Ecological Momentary Assessments* (EMA) that repeatedly assesses the presence of certain behaviors in daily life is a reliable method to characterize changes in infants' daily experiences (Franchak, 2019)

- Previous EMA studies rely on survey questions, which lack the richness of observable behaviors in video studies

- A hybrid **video EMA** (vEMA) method that requests videos of infants during daily activities might resolve this

- The present study investigates the feasibility and reliability of vEMA:
  - Participants' responsivity
  - Video quality
  - Body position data

Method

- Videos were collected through two 14-day sessions at 11 months and 13 months of infants' age (total N = 28)

- Caregivers received notifications from an app called "Expiwell" that requested them to record infants during daily activities

- 140 notifications per session (10 per day over 14 days) were distributed across infants' waking hours

- Researchers hand-coded video quality and infants' body positions

- Body position frequencies were calculated as proportions of overall samples
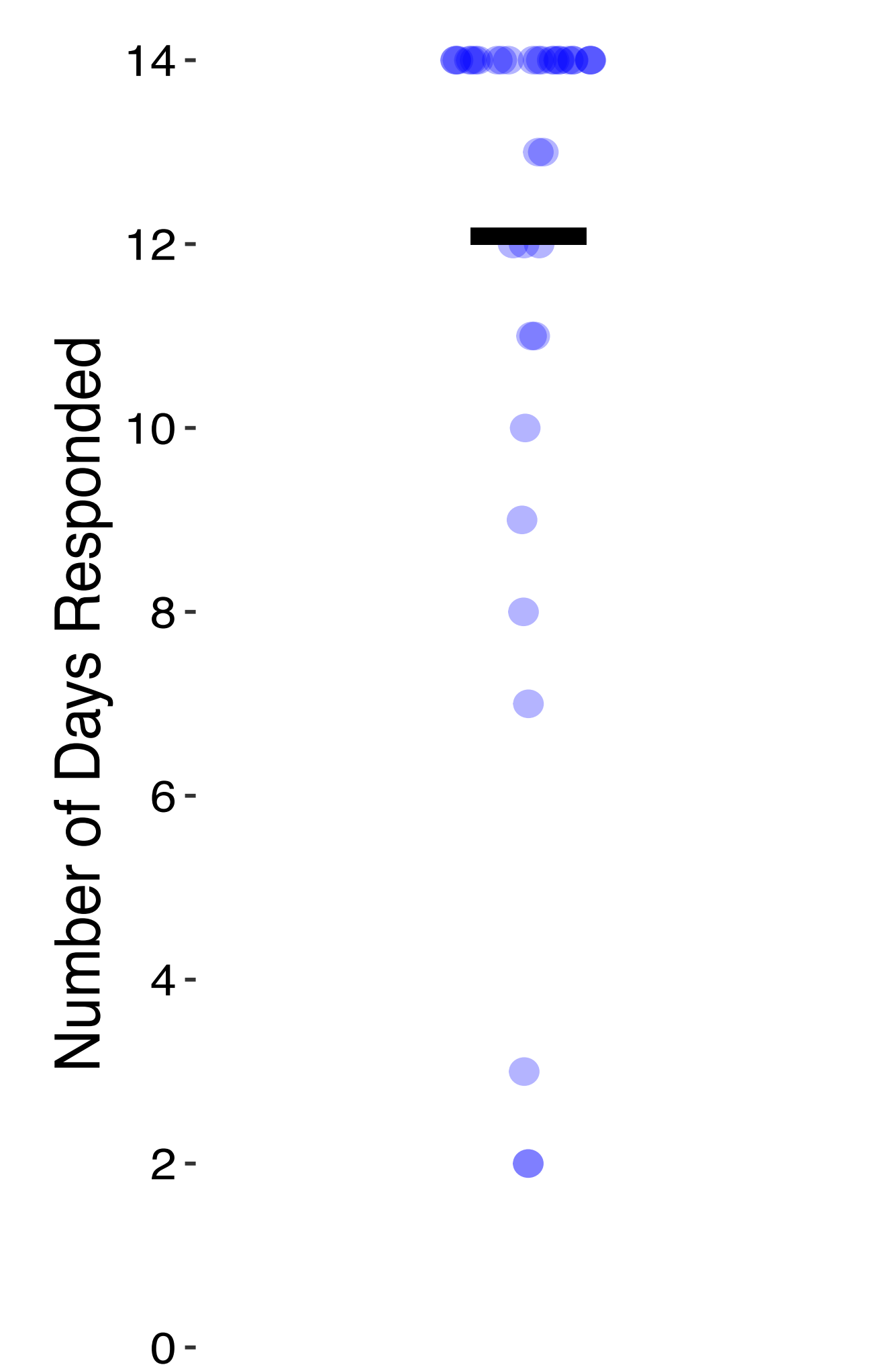
Responsivity & Video Quality

Response Rates
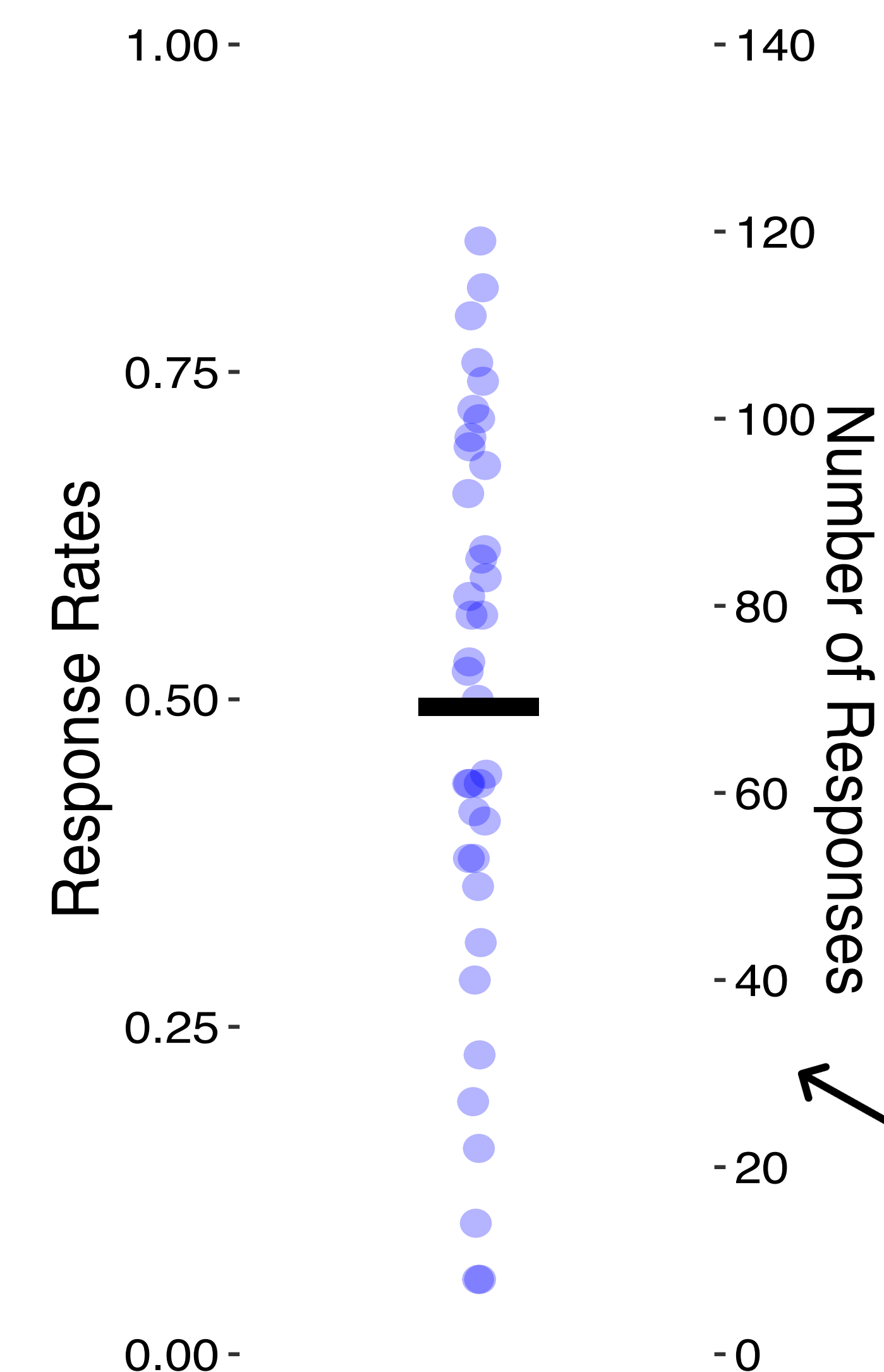
- Participants responded to M = 49.4% of notifications (SD = 21.8)

- Although the response rate was lower than in our prior EMA study (95.6%), the total number of gathered responses was higher because the prior study sent only 35 notifications

Average number of responses in Franchak (2019)

Number of Days Responded

- Participants responded for M = 12.1 days per session (SD = 3.5), suggesting sustained engagement

- In 62.2% of sessions, participants responded on all 14 days

Participants were asked to take videos that met 4 criteria:
  1) be horizontal;
  2) be child-centered;
  3) capture the baby's face;
  4) capture the baby's whole body

- Participants followed video-taking instructions: 69.9% of the videos met all 4 video-taking criteria and 93.9% of the videos met at least 3 criteria

Body Position Frequencies
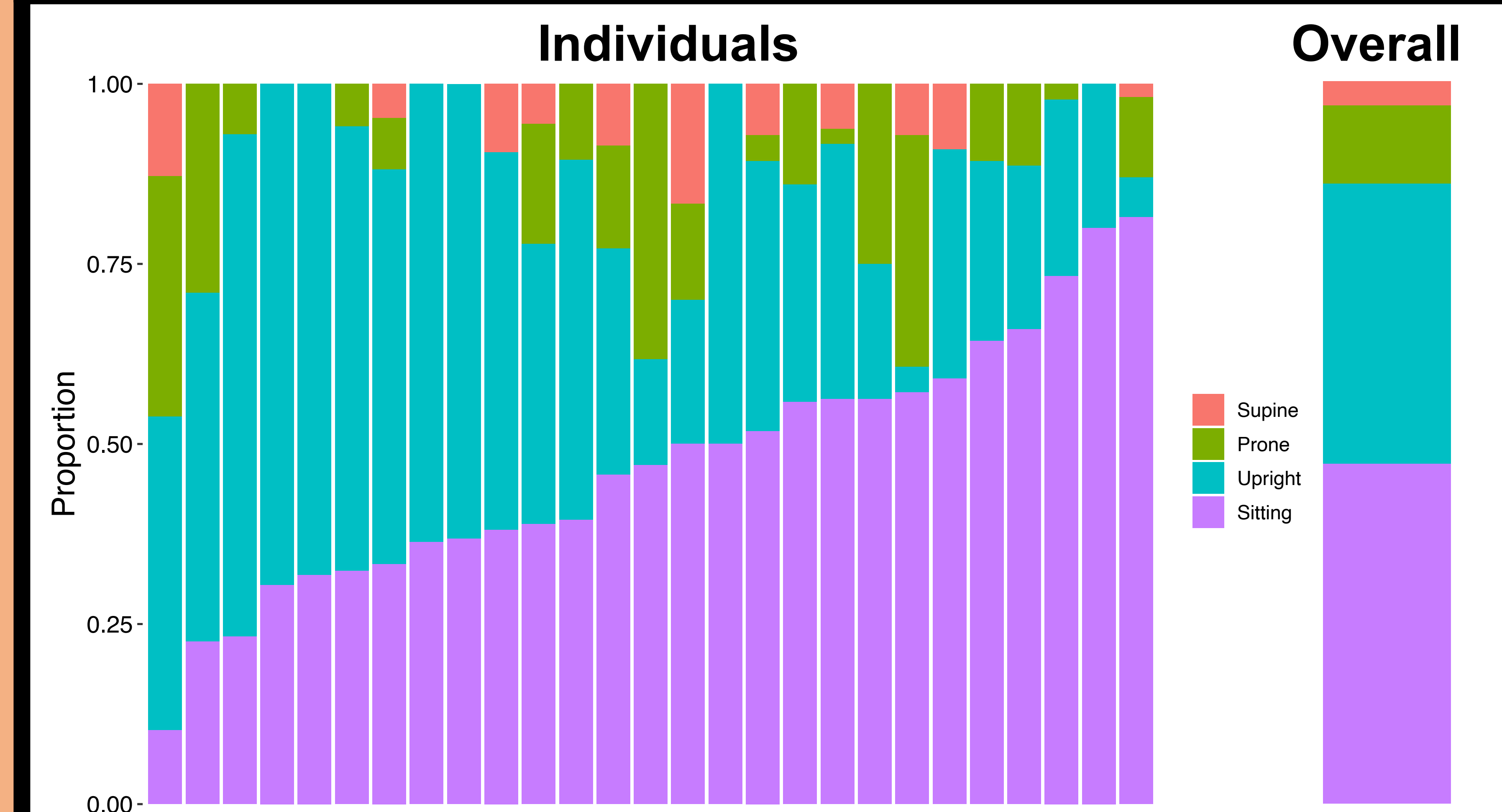
- Similar with survey EMA, vEMA allows us to measure how body position experiences vary across individuals, which replicated findings from the previous EMA study (Franchak, 2019), suggesting the reliability of vEMA

- When awake and not being held, infants were most often sitting (47.1%) and upright (39.3%), less frequently prone (10.3%), and rarely supine (3.2%)

Conclusion

- Participants showed sustained engagement. Although the average response rate was moderate, the study design of vEMA generated richer data

- Participants provided high-quality video data, supporting the role of vEMA in assessing behaviors in the manner of video studies

- The similar findings between vEMA and survey EMA affirmed vEMA's ability in assessing body positions

- Video EMA allows researchers to observe a richer spectrum of behaviors (e.g., object activities) while preserving the unique ecological advantages of EMA