



# Enhancing Adolescent Mothers' Positive Parenting through EMA: A feasibility study

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## Background

- Adolescent mothers (AMs) have challenges managing the multiple sources of stress in their lives including single parenthood, poverty, and balancing school and work (Letourneau et al., 2004)
- Many AMs have early histories of psychosocial adversity including childhood maltreatment which challenges their ability to adaptively regulate emotions and engage in positive parenting (Cote et al., 2010).
- Ecological Momentary Assessment (EMA) is an ecologically valid assessment and clinical tool that uses mobile technologies to monitor psychological and behavioral states in real-time and in real-life situations.
- As an **assessment tool** EMA evaluates the affect states of AMs in their daily lives.
- As a **clinical tool** EMA allows AMs to practice and enhance skills in daily life learned in the provider-delivered parenting intervention.

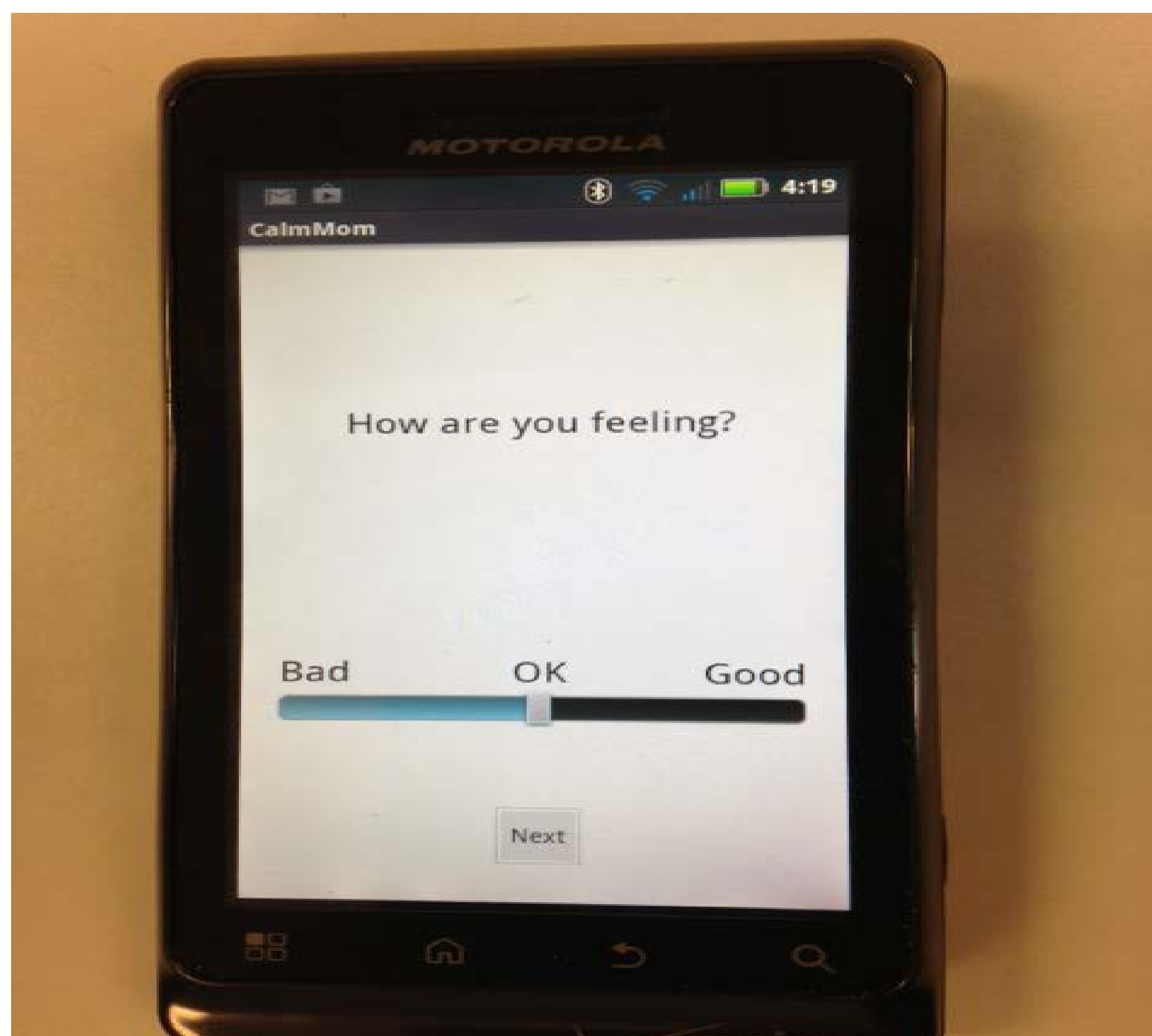
## Objective

- The objective of this pilot study is to examine the feasibility and utilization of EMA with AMs enrolled in a larger provider-delivered parenting intervention study.

## Methods

- Seven (7) AMs were provided with an android-based smartphone and EMA application for both:
  - Automatically Prompted Reports (nightly)**
  - Self-initiated Reports (at any time)**
- Fig 1 depicts the slider bar visual analogue scale to report stress level for both automatic and self-initiated
  - Negative** ("BAD"; 0 - 49) to **Positive** ("GOOD"; 50- 100)
- Based on the stress level reported, AMs received messages of skills learned in the intervention (e.g. "Freeze, Breathe, Choose").
- All data were collected in real-time over a secure web site. Data reported here cover a 63 day period from May 4, 2013 to July 5, 2013.

Fig.1. Smartphone application with a visual analogue scale



### Measures and Participant Characteristics (Table 1)

- Baseline data were collected approximately 92 days prior to study start date (SD 26.43)

- Demographics and background were collected.
- Center for Epidemiologic Studies Depression Scale -8 (CES-D-8; Radloff, 1997) measures symptoms of depression;  $\geq 7$  is clinically significant.
- Parental Distress scale of the Parenting Stress Index (Abidin, 1997) measures level of stress related to parenting.

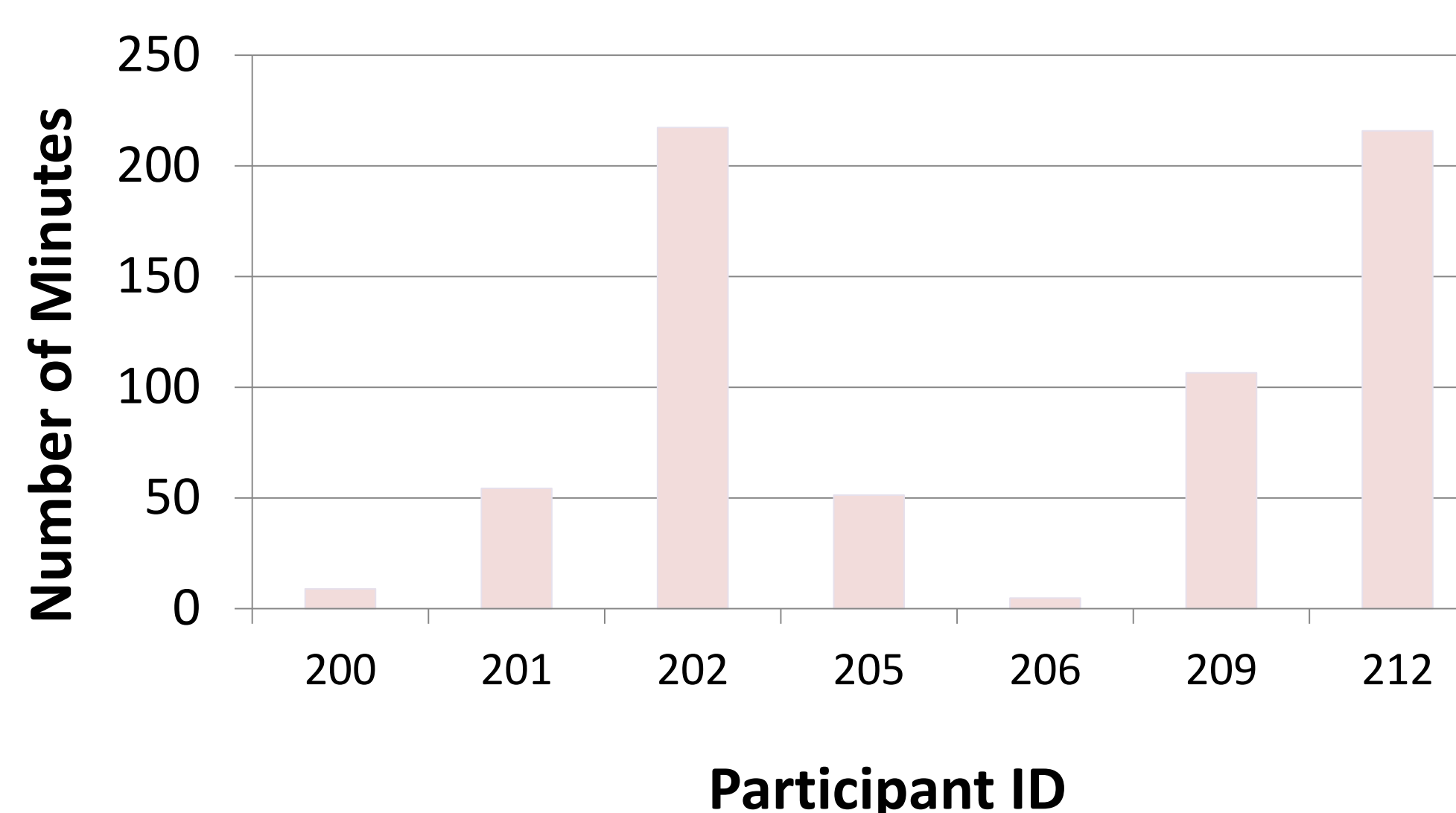
Table 1. Participant Demographics (N=7)

Participant's Age (yrs.) (M, SD)	19.6 (.53)
Child's Age (mos.) (M, SD)	18.4 (8.4)
Race/Ethnicity	
• Latina	71.4%
• Mixed: Black/White	14.3%
• Mixed: Black/White/Latina	14.3%
Held back a school grade	100%
CES-D8 clinical depression symptoms	42.8%
Parental Distress Scale $\geq 90^{\text{th}}$ %ile	100%

## Results

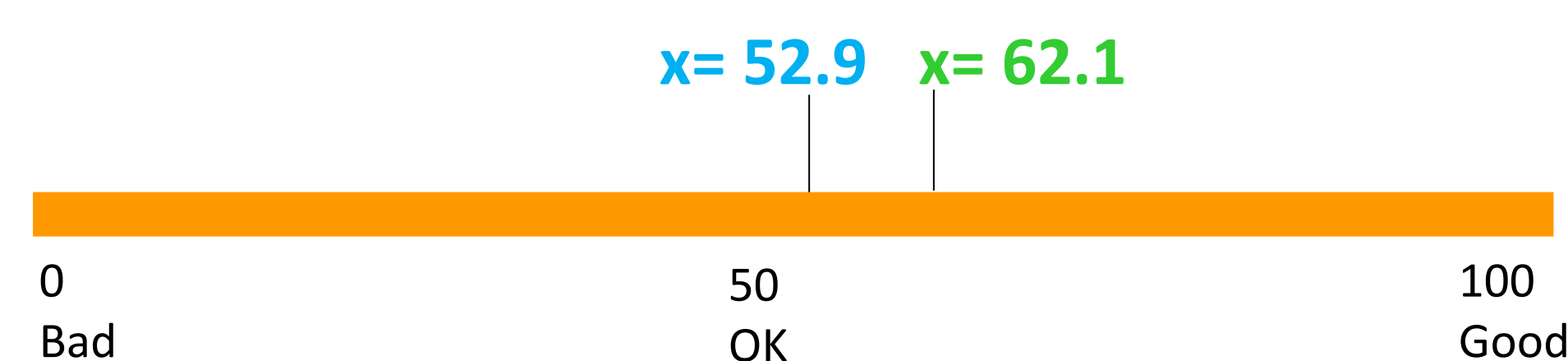
- Response rates to automatic prompts were calculated (possible responses to nightly prompts is 63 total x 7 participants = 441 total possible responses).
- Response rate was nearly 40% (174/441) with high variability between participants (range 10% (6/63) to 62% (39/63).
- Fig. 2 depicts the mean response time to automatic prompts was 118.5 minutes (SD=261.17; range, 0-1202).

Fig.2. Response time to automatic prompts



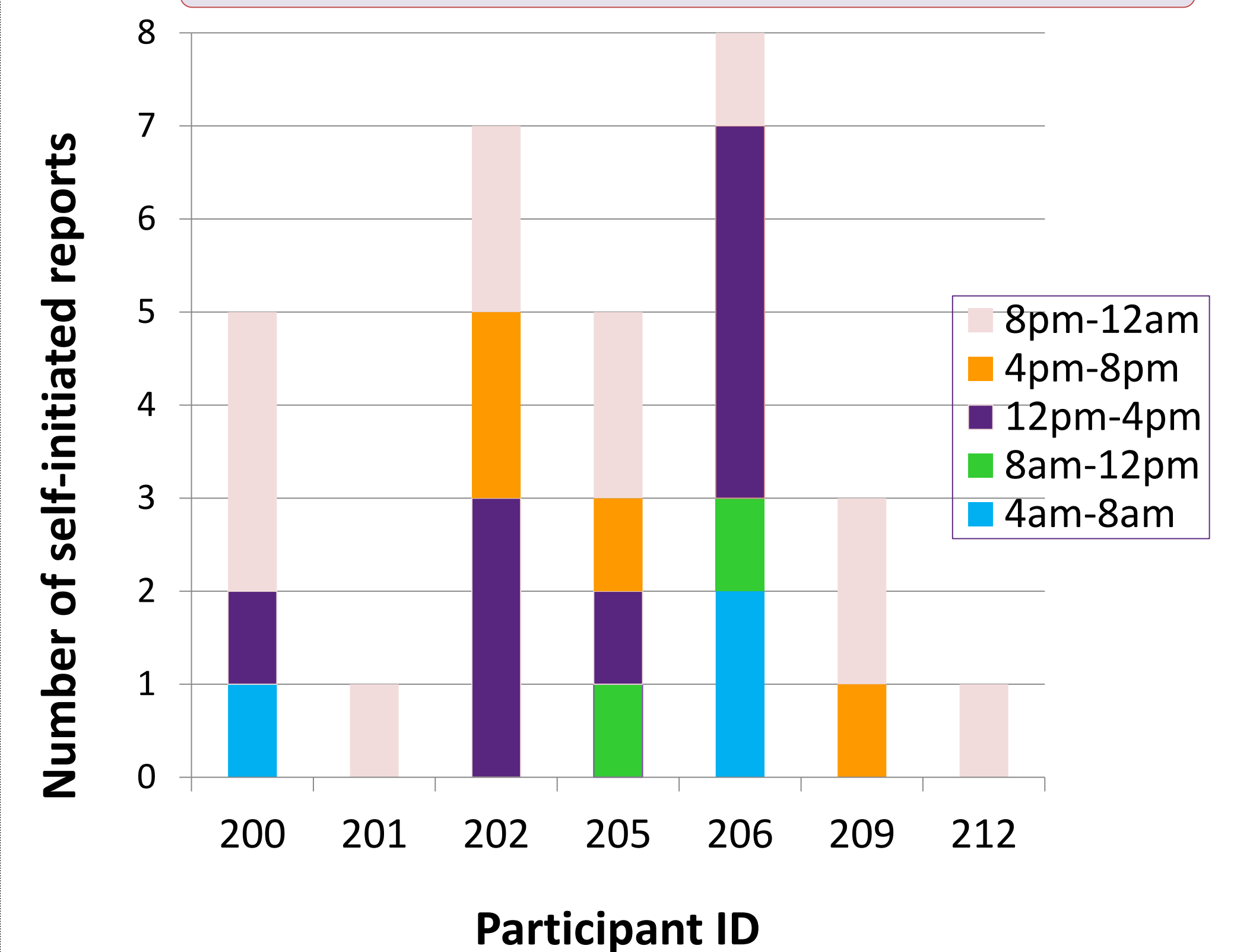
- Mean valence to **automatically prompted reports** was in the positive range, **61.2** (SD = 26.55).
- Mean valence for **self-initiated reports** was **52.90**; SD = 38.48; range, 0-100, just slightly in the positive range (see Fig.3).

Fig.3. Mean valences to automatically prompted reports and self-initiated reports



- Fig.4 shows the number of self-initiated reports over 63 days ranged from 1 to 8 ( $\bar{x}$  = 4.29; SD = 2.75).
- Self-initiated reports most often occurred between 8pm and 12am (Martino, 2012).

Fig.4. Number of self-initiated reports by time of day



- Participants consistently responded to automatic prompt throughout the 63 days of the study (see Table 2).

Table 2. Number of responses to automatic prompts over 63 days divided into 8-day intervals

8-day interval	Number of responses
5/4 - 5/12	24
5/13 - 5/21	29
5/22 - 5/30	23
5/31 - 6/8	28
6/9 - 6/17	25
6/18 - 6/26	20
6/27 - 7/5	21

## Conclusions

- Participants actively engaged with the EMA intervention.
- The participants tended to respond to the automatic prompt immediately and positively. They consistently responded to the automatic prompt from week to week over the course of approximately two months.
- Some more actively made self-initiated reports than others, and self-initiated reports more often occurred at night after parent had completed stressful parenting activities (e.g. bathing and putting child to bed).
- Similar to the automatically prompted reports, self-initiated reports were in the often positive range.

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