

## 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.

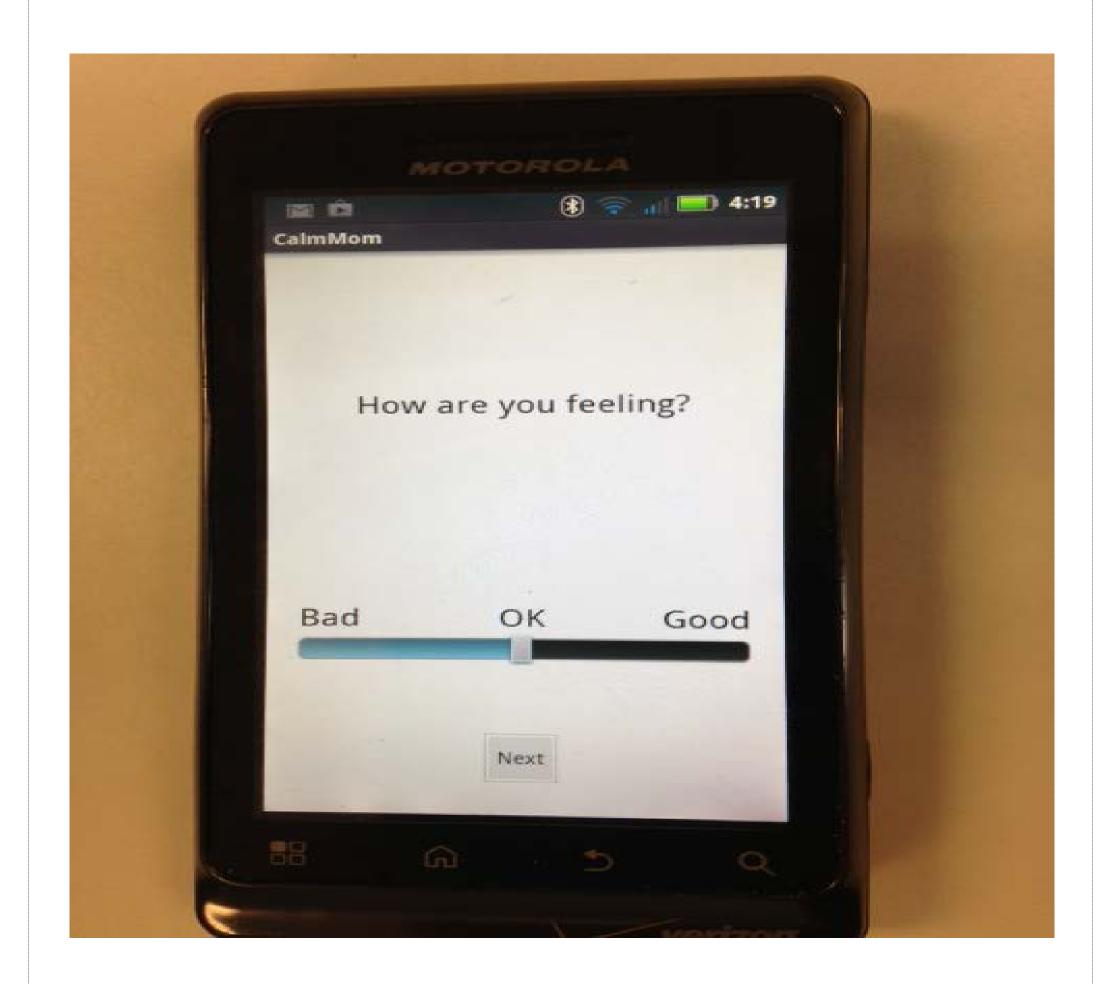
## Objective

• 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; ≥ 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% 14.3% Mixed: Black/White Mixed: Black/White/Latina 14.3% Held back a school grade 100% CES-D8 clinical depression symptoms 42.8% Parental Distress Scale ≥ 90<sup>th</sup> %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

# 250 150 100 50 200 201 202 205 206 209 212

• Mean valence to automatically prompted reports was in the positive range, 61.2 (SD = 26.55).

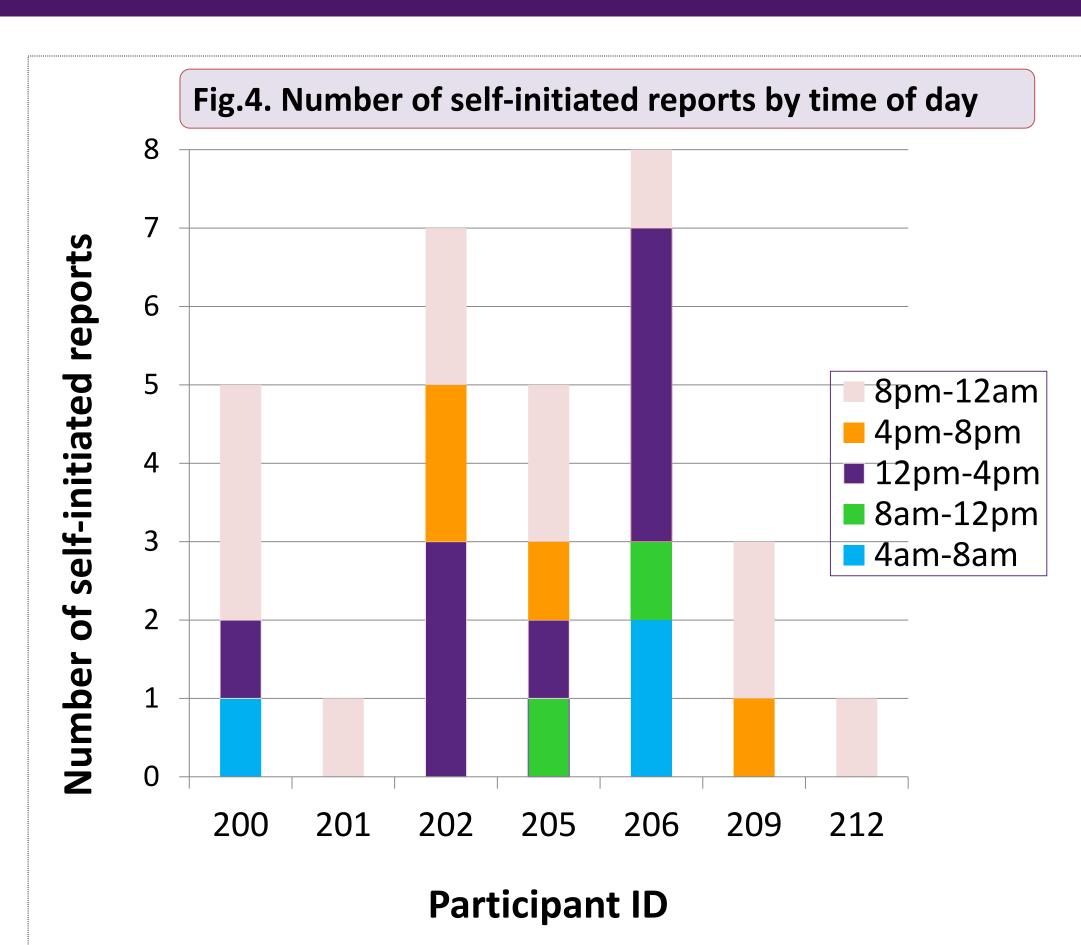
**Participant ID** 

• 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).



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, selfinitiated reports were in the often positive range.

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