THE UNIVERSITY OF TEXAS
MD Anderson Cancer Center

Keck School of Medicine of USC

USING ECOLOGICAL MOMENTARY ASSESSMENT TO EXAMINE POST-FOOD CONSUMPTION AFFECT IN MOMS

Yue Liao, MPH, PhD[1]

Susan M. Schembre, PhD, RD[1]

Genevieve F. Dunton, PhD, MPH[2]

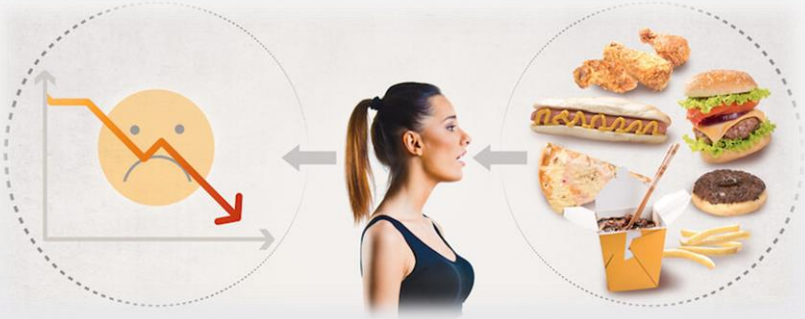
[1]University of Texas MD Anderson Cancer Center

[2]University of Southern California Keck School of Medicine

SOCIETY of BEHAVIORAL MEDICINE
Better Health Through Behavior Change

Eating Behaviors and Affective Experience

Literature suggest that food consumption could have a direct impact on subsequent affective states



Benton, 2002; Macht & Dettmer, 2006

Eating Behaviors and Social Context

- Previous studies suggested social context could influence eating behaviors
- However, it is unclear whether social context might also influence post-eating affective states

Patel & Schlundt, 2001; Hetherington et al., 2006

Capturing Eating Behaviors in Everyday Lives

- Ecological Momentary Assessment (**EMA**) – a real-time self-report method to measure behaviors and experiences repeatedly in people's daily lives
- Also allows the opportunity to assess contextual information about a behavior

Aims of Current Study

- To examine affective states after food consumption in a sample of mothers' everyday lives using EMA method
- To explore whether post-food consumption affective states differed by social context
- To explore any differences in these associations by weight status

Mothers' and Their Children's Health (MATCH) Study

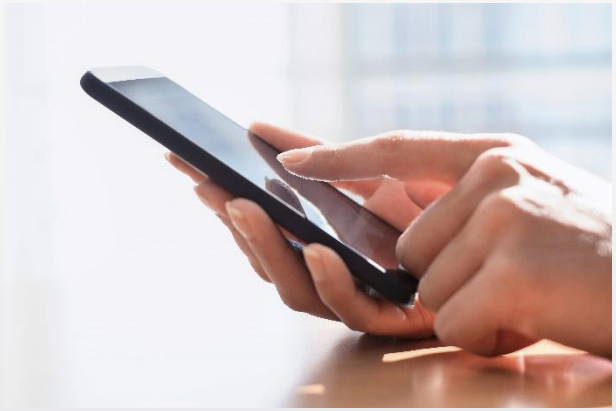
- MATCH is a longitudinal observational dyadic study in a sample of mother-child pairs
  - 7-day free-living monitoring period for each of 6 waves

- The current study only used mothers' EMA data from wave 1 assessment

EMA Design

EMA survey was delivered via a custom Andriod app

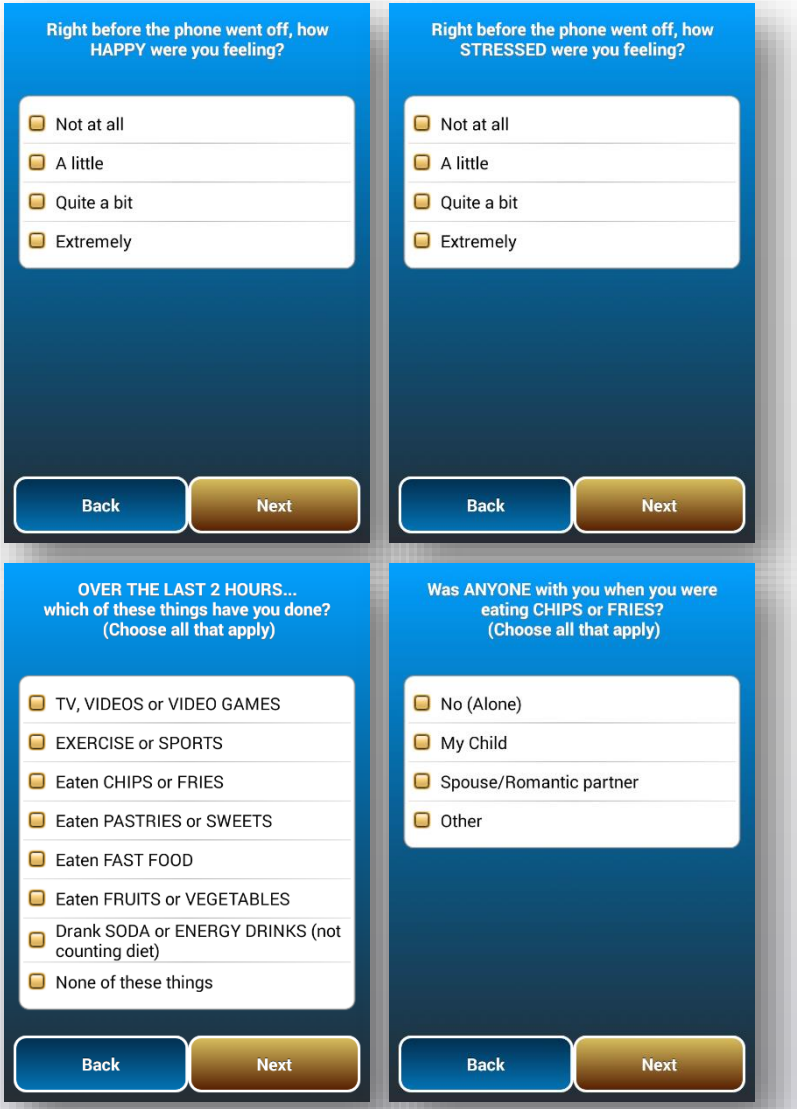
- 4 times per day on weekdays between 3 – 9:30 pm
- 8 times per day on weekend days between 7 am – 9:30 pm
- Random-interval schedule



EMA Questions

Each EMA survey asked a series of questions, which included

- **Current affective state**
  - Happy
  - Stressed
- **Eating behavior over the past 2 hours**
  - Chips/Fries
  - Pastries/Sweets
  - Fast Food
  - Fruits or Vegetables
- Social context for each selected eating behavior



Methods

- Selection of chips/fries, pastries/sweets, or fast food was recoded as **junk food** consumption
- **Fruits or vegetable** consumption excludes any junk food selection
- EMA entries that indicated both junk food and fruits or vegetable were excluded

Social Context

For each food category, social context was coded as either being

- Alone
- With child
- With people other than child

Statistical Analysis

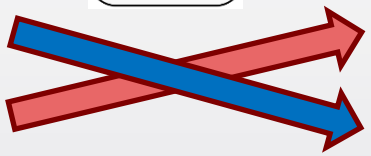
- Multilevel linear regression model to control for clustering within individuals
  - Outcome: Current affective state
  - Predictor: Food consumption in the past 2 hours
    - ***Within-person (WP) effect***: one's consumption relative to her usual frequency
    - ***Between-person (BP) effect***: one's usual frequency relative to other mom's in the sample
- Subset analysis for EMA prompts that indicated food consumption
  - Outcome: Current affective state
  - Predictor: Social context while eating
- All models tested **weight status** as a moderator and controlled for age, ethnicity, day of the week, and time of the day

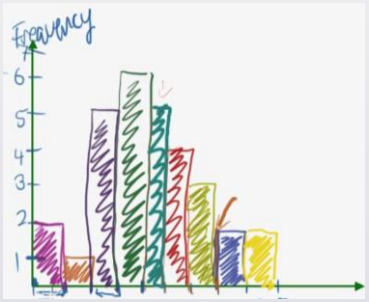
Participant Descriptive

- A total of 179 mothers were in the sample
  - Mean age = 41.3 (SD = 6.11)
  - 47.0% Hispanic
  - 66.3% overweight/obese

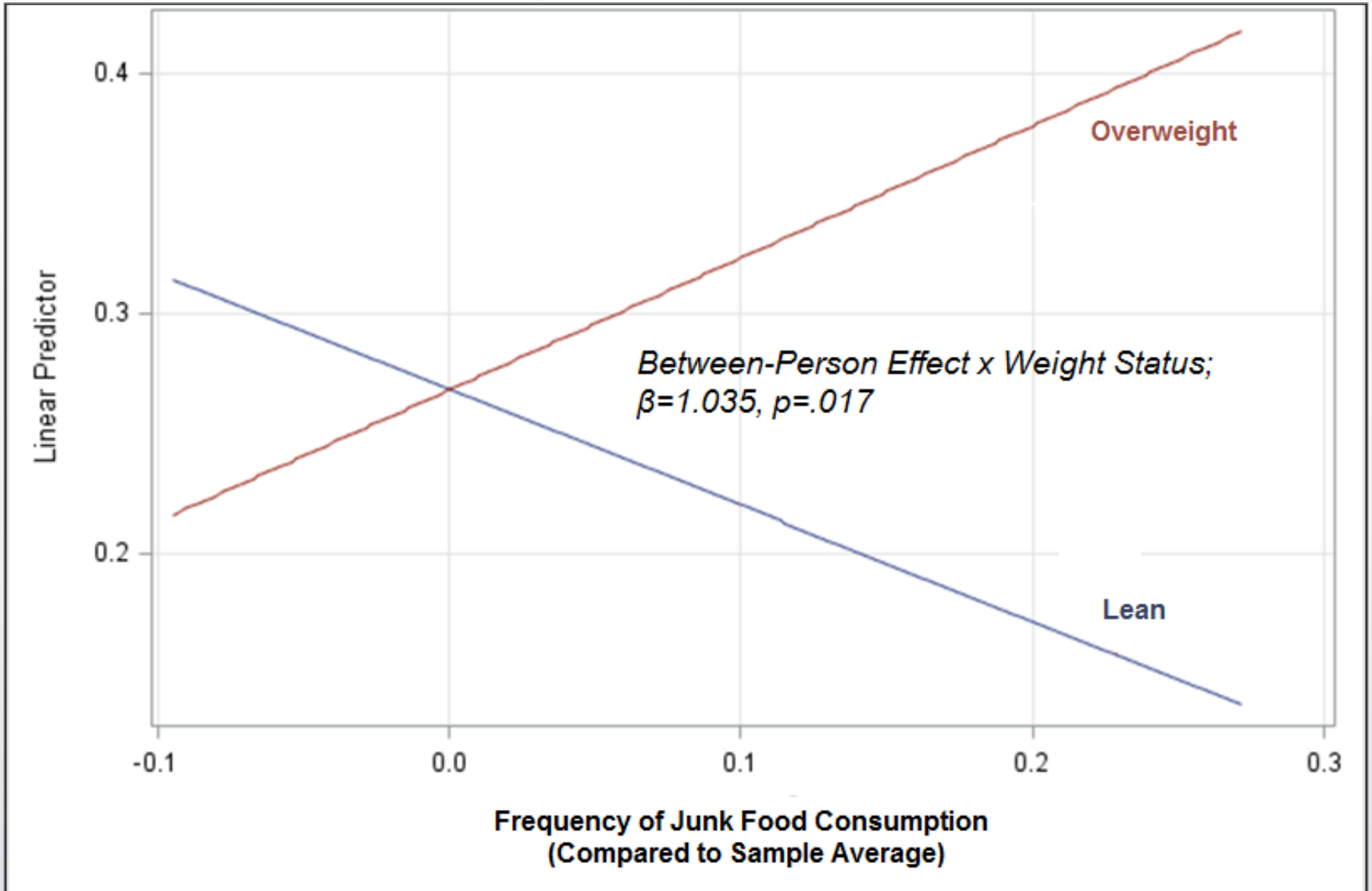
- On average, moms reported junk food consumption in the past 2 hours 9.5% of the EMA prompts
  - When eating junk food, 25.7% were alone, 47.9% were with child
- Fruits or vegetables consumption was reported 16.7% of all EMA prompts
  - When eating fruits or vegetables, 18.8% were alone, 63.0% were with child

Results (Junk Food)





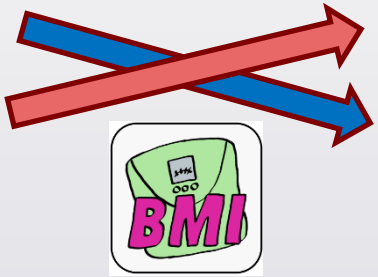
Stress Level by Weight Status and Junk Food Consumption Frequency



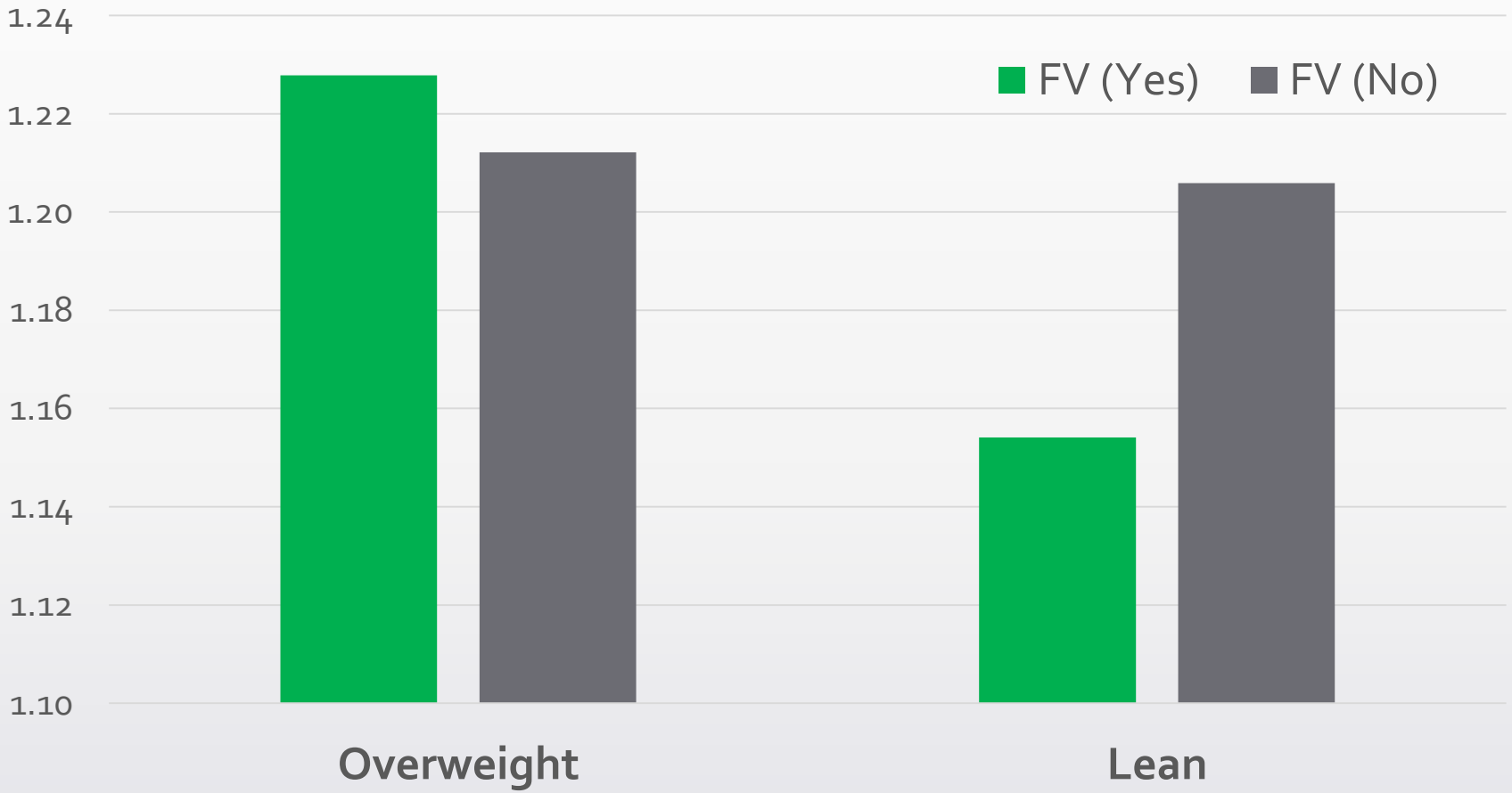
Results (Fruits or Vegetable)

Within-Person Effect,
β=.07, p<.01

Between-Person Effect,
β=.62, p<.03



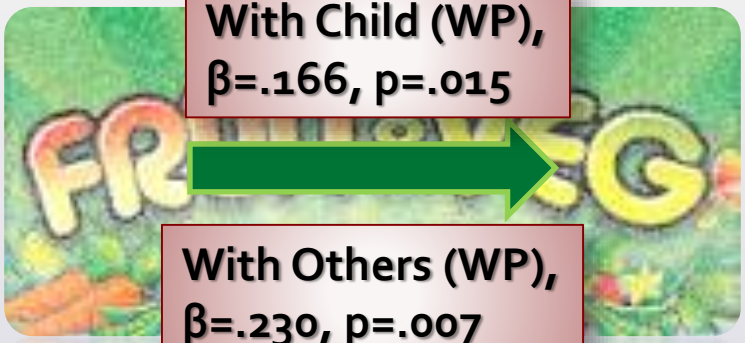
Stress Level by Weight Status and Fruits or Vegetables Consumption in the Past 2 Hours



Within-Person Effect x Weight Status; β=-.057, p=.047

Results (Social Context)

With Child (WP), β=.166, p=.015



With Others (WP), β=.230, p=.007

Conclusions

- Post-food consumption affective state differed by weight status
  - More frequent junk food consumption was associated with higher stress for overweight moms
  - FV consumption was associated with subsequent lower stress for lean moms
- Social context could influence post-eating affective experience
  - Feeling happier after eating FV with family/friends vs. alone

Limitations

- The current EMA protocol was not designed to capture all eating events
  - Did not measure all food types
  - Did not measure portion size
- Current affective states might be influenced by more recently occurred events
- Might not capture some other affective states that may relate to food consumption (e.g., guilty, energetic)
- Did not examine mood change

Implications

- Demonstrates the use of EMA via smartphones to capture eating behaviors, contextual information, and subsequent affective experience
- A better understanding of post-food consumption affect might help explain individuals' future decision making about food consumption

Acknowledgments

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Northeastern University
Bouvé College of Health Sciences

REACH
The Real-Time Eating Activity and Children's Health Lab