Adherence to behavioral prevention intervention program is a prerequisite. No effects on BMI for mothers or BMI. Baseline characteristics: Low education is associated with low attendance in both groups. Full information maximum likelihood (FIML) was used to account for missingness in the estimation of class membership for the control group.

This study extended our previous study based on ITT that did not find an intervention effect at 6 month follow up and assessed whether there was a significant intervention effect on promotion of physical activity and reduction of BMI (mothers) or BMI z score (toddlers) among mother-toddler dyads who complied to the intervention with CACE analyses.

### Results

- For MVPA, there was no intervention effect at 6 months in ITT analysis. However, there were significant intervention effects on promoting MVPA of both mothers and toddlers in Mom-Tops group (vs. control), but the effect was significant only for toddlers, not for mothers in Top-Tops group based on the CACE analysis.
- No effects on BMI for mothers or BMI zscore for toddlers were found in either Mom-Tops or Top-Tops group.

### Discussion

- CACE modeling extended ITT analysis by assessing the intervention efficacy. The intervention effects on MVPA among the participants who complied to the intervention suggest that compliance has played critical role in the success of the intervention programs.
- Behavioral intervention programs may consider the integration of promotion of compliance, especially among the mothers with high depressive symptoms and high BMI.

### Measures

- Outcomes: (baseline, 6 months)
  - Maternal and toddler physical activity-- ankle accelerometer (Phillips Respironics, Inc.)
  - Maternal BMI: BMI-for-age z scores and percentiles for toddlers calculated based on WHO standards (WHO, 2006)
- Baseline characteristics:
  - Age; race/ethnicity (AA vs. other), marriage (Married vs. other), education (<HS vs. HS graduate vs. => HS graduate), income (<100% poverty level vs. higher), and toddler sex (M vs. F).
  - Depressive symptoms: Beck Depression Inventory (BDI); higher score indicating more symptoms
  - Parental BMI
- Compliance defined as >=5 sessions out of 8 (49.5% compliers in Mom-Tops, 54% in Top-Tops)

### Statistical analysis

- Baseline characteristics in relation to adherence within each intervention group
- Poisson Regression Models were used to estimate the rate ratios of attendance with regard to baseline predictors (Chen, Qian, Shi, & Franklin, 2018).
- Compiler Average Causal Effect Model (latent change score combined with mixture modeling)

### Study Design

- Toddler Obesity Prevention (TOPS) intervention, a randomized controlled trial among 277 mothers (mean age=27.3 yrs) and their toddlers (mean age=20.1 months) in 2009-2013.
- Three groups:
  - Tot-Tops (n=92): Responsive parenting intervention to provide healthy toddler meal and promote toddler physical activity (PA)
  - Mom-Tops (n=94): Maternal lifestyle intervention focusing on maternal diet and PA
  - Attention control group (n=91): Home safety intervention with no mention of diet or PA
- Each intervention included eight sessions (four group sessions, three individual telephone coaching sessions and a final group session) over 4 months, based on the Triple-P (Positive Parenting Program) model (Sanders, Kirby, Tellegen, & Day, 2014)