The Family Matters Intervention: A Pragmatic Family-based Approach to Whole-Person Health

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family matters

Background

- Prevalence of child cardiovascular disease (CVD) risk is high and is associated with worse whole-person health outcomes.
- Family-based interventions for reducing CVD typically intervene with one child in the family, require families to travel to the study site, and target a wide range of behaviors (e.g., physical activity, eating, parenting).
- The Family Matters Intervention takes a pragmatic approach to addressing CVD disparities and reducing barriers to participation.
- The state-of-the-art intervention uses a combination of evidence-based and novel components including motivational interviewing to increase the quantity and quality (e.g., foods served, family atmosphere) of family meals.

Main Aims

1. To intervene in a common family context (i.e., family meals) associated with child eating, food parenting practices, and family interpersonal dynamics.
2. Use innovative mHealth and real-time methods (i.e., ecological momentary intervention [EMI], video feedback) with community health workers embedded within existing models of care to increase whole-person health.

Eligibility Criteria and Study Population

Recruitment:
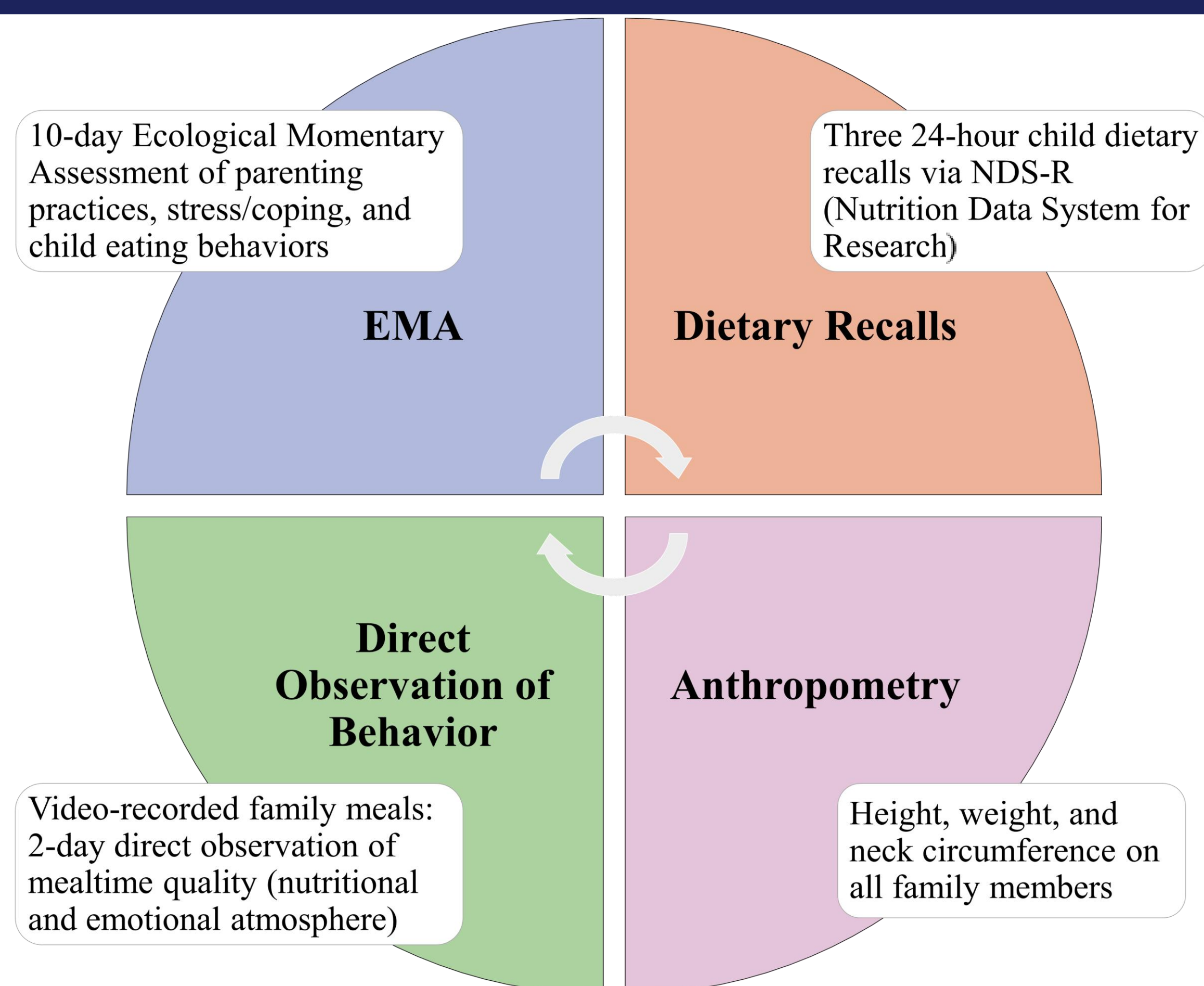Pediatric and Family Medicine clinics in Twin Cities, MN and Denver, CO

Study population:
Black, Latinx, American Indian, Asian, and White households (N≈105/race)

Eligibility
- Child age 5-10 yrs and BMI ≥ 75%ile
- Eat ≤3 family meals/wk
- Live with a sibling
- Speak English or Spanish

Measures and Evaluation

10-day Ecological Momentary Assessment of parenting practices, stress/coping, and child eating behaviors — **EMA**

Three 24-hour child dietary recalls via NDS-R (Nutrition Data System for Research) — **Dietary Recalls**

Video-recorded family meals: 2-day direct observation of mealtime quality (nutritional and emotional atmosphere) — **Direct Observation of Behavior**

Height, weight, and neck circumference on all family members — **Anthropometry**

Participant Enrollment

Recruitment:
- Primary Care Clinics

Eligibility:
- Child age 5-10 yrs
- Child BMI ≥ 75th%ile
- Eat ≤ 3 family meals/wk
- Live with a sibling
- Speak English or Spanish

Baseline Assessment Measures (10 days)

Child BMI%ile and Parent BMI:
- Anthropometry on child and all family members

Child Diet Quality:
- Three 24-hr. dietary recalls (2 week days; 1 weekend day)

Family Meal Quantity:
- Online survey

Family Meal Quality (dietary, interpersonal):
- Two family meal video-recordings (1 week day; 1 weekend day)

Parent Stress, Coping, and Food Parenting:
- Ten days of EMA measuring parent stress and coping skills
- Video-recordings and ten days of EMA measuring food parenting

Other Measures:
- Child eating behaviors (EMA and video)
- Parenting style (EMA and survey)
- Family functioning (EMA and survey)
- Weight-related behaviors (EMA and survey)

Randomization (n=525); Equal Distribution by Race/Ethnicity

Evidence-Based Randomized Controlled Trial

Family Matters Intervention (24 weeks)

Arm 1 (16 weeks):
- EMI messages delivered via smartphone (2x/day), based on parent stress levels and preferences

Arm 2 (16 weeks):
- All components of Arm 1
- Virtual home visiting by CHW via zoom:
  a. Visits every-other-week focused on family meal quality and quantity with a meal prep activity
- Video feedback
  a. Family records one family meal in between CHW home visits
  b. During visits CHW shows video clips and gives feedback to improve family meal behaviors
- 'Try-it-Yourself' family and kids' activities in between CHW visits

Arm 3 (16 weeks):
- All components of Arms 1 and 2
- 5 sessions in person, 3 virtual via zoom

Maintenance (8 weeks)
EMI messages delivered on 3 highest stress days/week only

Follow-up Assessments @ 6 and 12 Months (Same measures as baseline)

Study Outcomes

Primary Outcomes:
- Child BMI%ile
- Child neck circumference
- Child diet quality

Secondary Outcomes:
- Family meal quantity and quality
- Food parenting practices
- Parent coping skills
- Parent BMI & neck circumference
- Sibling BMI%ile

Intervention Components

Ecological Momentary Intervention (EMI)
- EMI focused on reducing parental stress
- Real-time mobile health (mHealth) technology

Community Health Workers (CHWs)
- CHWs will carry out the intervention

Home Visiting
- Home visiting model focused on health behavior change during mealtimes
- Food preparation and demonstrations
- Try-it-yourself activities

Video Feedback
- Zoom-recorded video of foods served, diet quality, eating behaviors, parent feeding practices, and interpersonal atmosphere during mealtimes
- Using motivational interviewing, CHW gives feedback and sets behavior change goals with family

Conclusions

- The Family Matters Intervention focuses on reducing barriers for participants to engage in research with a pragmatic approach guided by prior research.
- By conducting data collection virtually and examining virtual vs. hybrid options for intervention delivery in real world settings, the Family Matters Intervention seeks to implement an effective and sustainable intervention to reduce childhood obesity disparities and improve cardiovascular health in children and families.
- Using digital health technology will identify key factors that change across time and context in real-time to allow for an increased likelihood of sustainable behavior change.