Preventing Early Childhood Obesity: Family Spirit Nurture Study Design and Methods

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Presentation Agenda

• Background on Family Spirit Program
• Development of Family Spirit Nurture
• Family Spirit Nurture Study Design and Methods
• Acknowledgements
• Questions/Discussion
Family Spirit: An Indigenous Strengths-Based Early Childhood Home-Visiting Intervention
What is the Family Spirit Program?

- Home-Based Outreach
- Family Involvement
- Evidence-based home visiting program taught by American Indian home visitors to young mothers from pregnancy – 36 mos post-partum
- Community Referrals
Tribal Communities in Southwest US
Co-Created Family Spirit
Family Spirit Video
Current Status - Replication Nationwide
SPIRIT Affiliate Communities

- Native Communities
- Non-Native Communities
New Direction: Family Spirit Nurture

• Goal: In response to community needs, tailor Family Spirit curriculum to address early childhood obesity

• Why is this important?
  – Childhood obesity (<5 years old) can affect children’s health for the rest of their lives.
  – Native American children suffer the highest rates of early childhood obesity and related lifetime consequences of any racial or ethnic group in the US.
    • 41.2% of Native preschoolers are overweight/obese compared to 30.5% of all races/ethnicities.
    • Diabetes rates among Native youth ages 10-19 are 2.6 times higher than US general population and 7.0 times higher than whites.
Why Focus on Pregnancy & Early Childhood?

Risks for early childhood obesity begin in the womb.
- Mothers’ biology and habits matter.

Early childhood overweight starts at birth.
- 12% of Native children large for gestational age at birth.

Early childhood is a critical time for obesity prevention. Children are:
- Developing taste preferences
- Learning to walk and play
- Mimicking healthy and unhealthy behaviors of their caregivers
Goals for Family Spirit Nurture Research

Develop and evaluate a Family Spirit Nurture curriculum that:

• Promotes breastfeeding & the proper introduction of complementary foods
• Promotes responsive parenting and feeding practices
• Delays the introduction of sugar sweetened beverages (SSBs)
• Promotes early childhood physical activity
Family Spirit Nurture Study, Part 1

Evaluation of a Brief Family Spirit Nurture Curriculum (3-9 Months Postpartum)

- **Site:** Shiprock, NM
- **Participants:** 136 moms with infants
- **Recruitment Timeline:** March 2017 – February 2018
- **Intervention:** 6 home-based Family Spirit Nurture lessons focused on eliminating/reducing Sugar Sweetened Beverage (SSB) intake among infants and positive infant feeding practices
- **Design:** Randomized Controlled Trial, with control group receiving home safety education
- **Additional key components:**
  - Delivery of **drinking water** for all participants to look at the impact of water insecurity on SSB intake
  - **Oral health** data collection to inform future intervention development
Part 1: Randomized Controlled Trial

Figure 1: Study Design

Phase I
- 0.25 mon pp
  - Recruitment & Consent
  - N=136
- 1.52.5 mon pp
  - Baseline Assessment
  - N=136

Phase 2
- 3-6 mon pp
  - Intervention: Obesity Prevention Education (n=68)
  - Control: Home safety information (n=68)

Phase 3
- 6-9 mon pp
  - Water Delivery
  - (n=136)

Phase 3
- 12 mon pp
  - Study End Point

Part 4
- Data Collection Follow-up:
  - 4 months pp
  - 6 months pp
  - 9 months pp
  - 12 months pp
Family Spirit Nurture Study, Part 2

Evaluation of the Full Family Spirit Nurture Curriculum (Prenatal - 18 Months Postpartum)

- **Sites:** Shiprock, Fort Defiance, Gallup, Whiteriver
- **Participants:** 338 expectant women age 14-22 years old
- **Recruitment Timeline:** September 2017 – August 2019
- **Intervention:** Home-based Family Spirit Nurture lessons between pregnancy and 18 months, focused on: optimal infant feeding; infant/toddler physical activity; maternal psychosocial well-being; optimization of food/beverage availability; safe play spaces in the home
- **Design:** Randomized Controlled Trial, with control group receiving injury prevention education
- **Additional Key Components:**
  - All participants receive transportation to prenatal and well-baby visits
Part 2:
Randomized Controlled Trial

Figure 2: Study Design

Phase 1
- Recruitment & Consent
  N=336
- Baseline Assessment
  N=338

Phase 2
- Intervention:
  FSN Obesity Prevention Education (n=169)
- Control:
  Injury Prevention Education (n=169)

Study End Point
- 24 mos pp

Phase 3: Follow-up
- 36 wks gestation
- Delivery
- 2 weeks pp
- 2 mos pp
- 4 mos pp
- 6 mos pp
- 9 mos pp
- 12 mos pp
- 18 mos pp
- 24 mos pp

28 wks gestation-18 mos pp
Blood Sample Collection

Maternal and infant blood samples will be collected at delivery (cord blood for infants) and at 6 months postpartum. Infant blood samples will also be collected at 12 months postpartum.

The blood samples will be used to measure:
- Glucose
- Lipids
- Insulin
- Leptin
- Adiponectin
- c-reactive protein

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<tr>
<td>12 months - Baby</td>
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Who Is Delivering the Lessons?

*Family Health Coaches*

- **Local Community Health Professionals**
  - Deliver FSN curriculum to intervention participants;
  - Provide social support, help with problem solving;
  - Facilitate referrals to community services; and
  - Maintain relationships with participants and healthcare providers.
Evaluation Measures

All measures below are used in the Part 2 study; a subset of these measures are used in the Part 1 study.

Interviews:
- Maternal Demographics
- Modified Child Beverage Intake Questionnaire (BEVQ)
- Household Food Security Survey

Self-Report:
- Current Eating Environment Assessment
- Infant/Toddler Responsive Feeding Scales
- Baby/Children’s Eating Behavior Questionnaire
- Perceptions of Growth Scale
- Child Physical Activity Assessment
- Maternal Knowledge Questionnaire – Nutrition/Physical Activity Practices
- Water Availability Assessment
- Parenting Stress Index – Short Form
- CESDR-10
- Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST)
- Mastery Scale
- Infant Temperament
- BITSEA
- Brief Infant Sleep Questionnaire (BISQ)
- Participant Satisfaction Questionnaire
- Maternal Knowledge – Injury Assessment

Observations:
- Toddler PA Assessment (Accelerometer)
- Maternal/Child Height & Weight
- Home Safety Environment Scan

Blood Sample Collection (Mother & Child)

Process Form: Session Summary Form

Medical Chart Reviews (Mother & Child)
Current Status

• Part 1 has enrolled 66 participants in Shiprock
  – 76 lessons taught
  – 101 assessments completed
  – 37 water deliveries completed
• Part 2 was recently launched in Fort Defiance/Gallup, Shiprock and Whiteriver.

• The curriculum and study methods are well-received by staff, participants, and community partners.
Acknowledgements

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Questions / Discussion