



# Achieving Nutrition Equity in the 1<sup>st</sup> 1,000 Days of Life: A California Needs Assessment

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# Disclosures

- I have **no relevant financial relationships with the manufacturer(s) of any commercial product(s) and/or provider(s)** of commercial services discussed in this CME activity.
- I do not intend to discuss an **unapproved/investigative use of a commercial product/device** in my presentation
- **Funding for this study** was provided by the UC Irvine Institute for Clinical and Translational Science Campus-Community Incubator Award, NIH Grant UL1 TR001414 (\$10,000)
- **Community partner for this study is Dairy Council of California**, who is under the authority of the California Department of Food and Agriculture. Support provided as a result of feedback provided during the 2021 *Well Nourished, Brighter Futures convening*
  - *Images/photos used were provided courtesy of Dairy Council of California, unless otherwise stated*

# Land Acknowledgment

UC Irvine campus and UCI Libraries are located on the homelands of the Ajachemen and Tongva peoples.

Ref. <https://diversity.lib.uci.edu/land-acknowledgement>



**BACKGROUND**



## Background

### *First 1,000 Days*

First 1,000 days of life = Period from conception to child age of two years<sup>1</sup>

A critical window to support healthy growth and development<sup>1</sup>

1. Schwarzenberg SJ, Georgieff MK, AAP COMMITTEE ON NUTRITION. Advocacy for Improving Nutrition in the First 1000 Days To Support Childhood Development and Adult Health. Pediatrics. 2018;141(2):e20173716 ; Image Ref. <https://thousanddays.org/why-1000-days/>

# Background

## Health inequities in childhood obesity start early<sup>1</sup>

- Higher prevalence among low-income and marginalized populations
- Structural inequities exist



1. Taveras EM, Gillman MW, Kleinman K, Rich-Edwards JW, Rifas-Shiman SL. Racial/ethnic differences in early-life risk factors for childhood obesity. *Pediatrics*. 2010 Apr;125(4):686-95. doi: 10.1542/peds.2009-2100. Epub 2010 Mar 1. PMID: 20194284; PMCID: PMC3836212.

# Nutrition Equity Matters

- “Nutrition equity ensures that **all people have the ability to access nutritious and culturally appropriate foods regardless of race, education, gender, employment, ability or community.** Identifying barriers and allocating resources to remove those barriers is vital to achieving nutrition equity.”



# Study Objectives

- 1) To conduct a **needs assessment of nutritional resources and services** provided to low-income pregnant and postpartum women and their young children in California
- 2) To identify **topics for professional development** addressing the promotion of nutrition in the first 1,000 days



# METHODS

# Methods

## *Study Design*

- **Cross-sectional**
- **Survey (26-items) distributed in October to December 2021**
  - **24 multiple choice and 2 open-ended** response questions
  - **Developed by an interdisciplinary task-force** of physicians, advocates, researchers, and public health providers with expertise in pediatrics, obstetrics and gynecology, health equity, integrative health, and nutrition (*6 team members*).

# Methods *Survey*

**5 pillars** of nutrition  
service provision in  
the First 1,000 Days



# Methods

## *Study Participants*

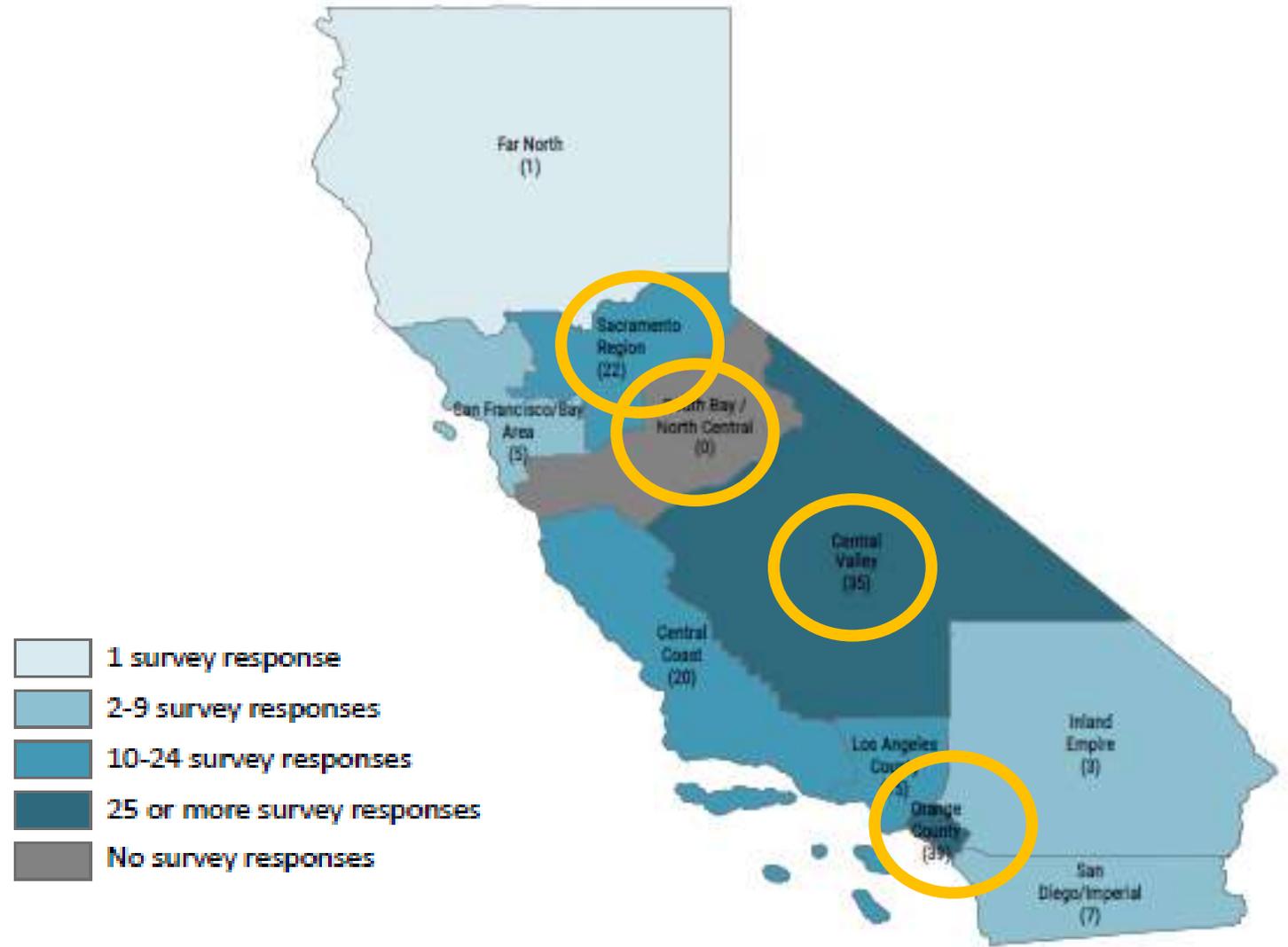
- **Inclusion Criteria**
  - **Providers and staff from California affiliated with clinical, government, nonprofit/community organizations, and childcare organizations** who provide health and nutrition-related services or resources to families during the time frame of pregnancy to child age 2 years
  - English or Spanish proficiency
- **Purposeful sampling methods**
  - **Prioritized providers and advocates** working in diverse settings (i.e., FQHCs, WIC, Healthcare agencies, Head Start, and Academic centers), **who care for women and young children less than 2 years in families with low-income**

# Methods *Analysis*

- SPSS version 26.0
- **Descriptive analyses** conducted to identify summative data and means
- **Chi-square test was used with post-hoc Bonferroni adjustment** to identify where significant differences occurred in differences in modes of and attitudes towards delivery of nutrition education between respondents from different organization types
- **Descriptive and qualitative analysis of open-ended responses**
  - **Initial review** - assessed frequency of comments noted in open-ended responses
  - **Secondary review** – conducted thematic analyses collaboratively with four co-investigators in an iterative process, utilizing Grounded Theory
    - Reviewing content to identify, discuss, and come to consensus about themes

# RESULTS

**Results:**  
*Study  
Participants  
(n=147)*

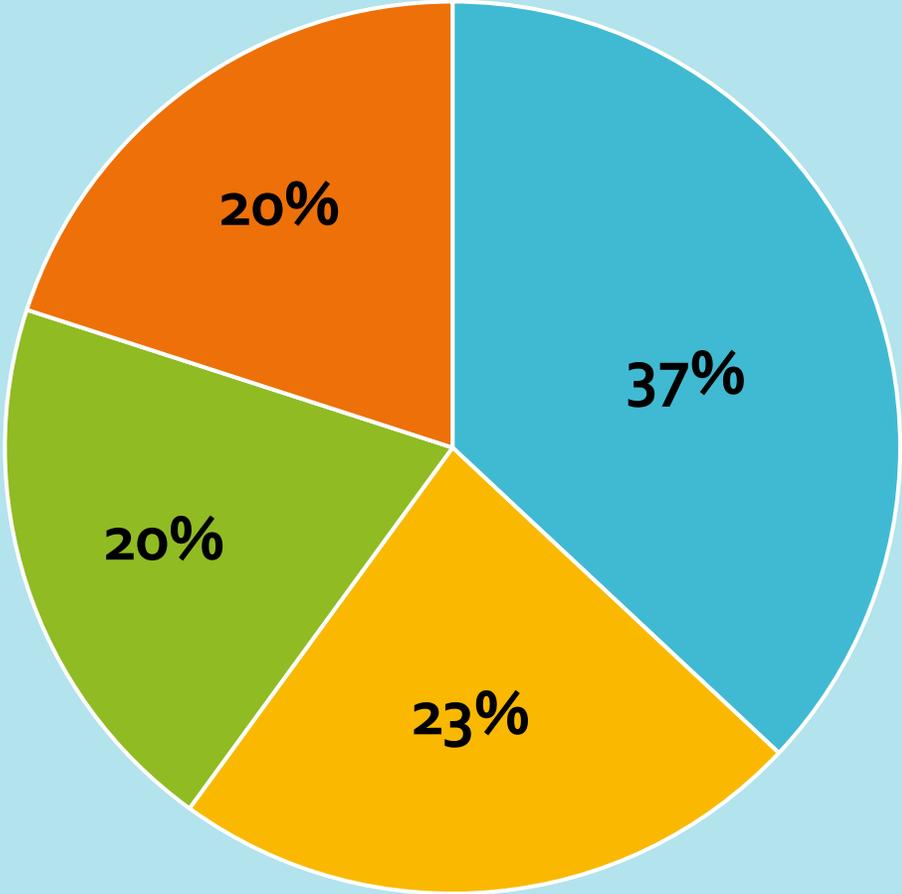


Survey was disseminated across California to health professionals and providers from agencies that provide services to pregnant women and families with infants and young children up to 2 years of age.

# Interdisciplinary Study Participants

60% of respondents estimated 75% or more of their clients are Medi-Cal eligible

Results:  
*Study Participants*  
*(n=147)*



- Healthcare
- Childcare/preschools
- Government Agencies
- Community Organizations

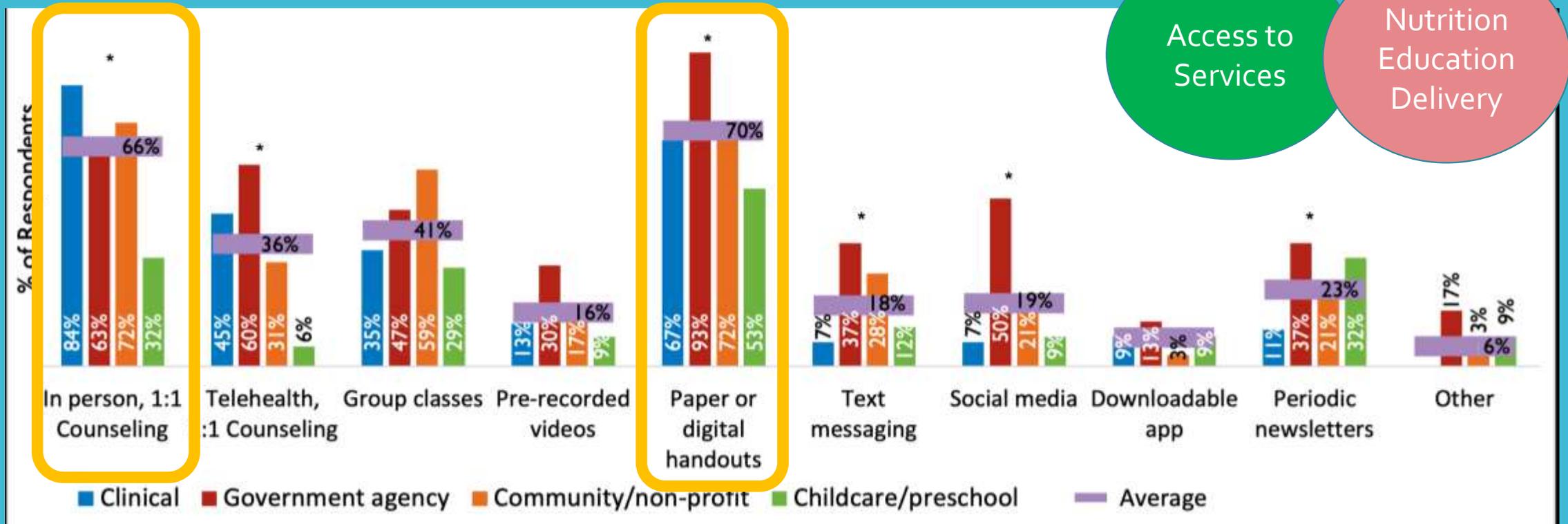
## Results: *Objective 1*

To conduct a **needs assessment of nutritional resources and services** provided to low-income pregnant and postpartum women and their young children in California



# Results:

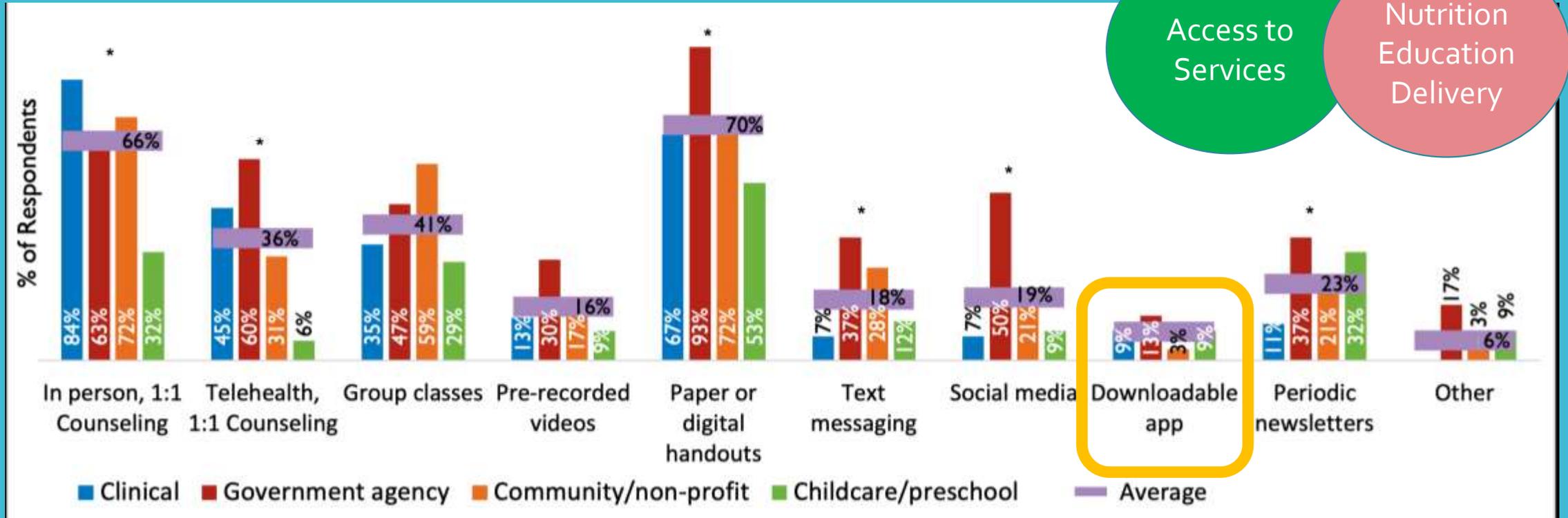
## Current Modes of Delivery of Nutrition Education (n=147)



\*Asterisks imply statistically significant differences in the proportion of responses across provider types within a given nutrition education modality as identified by post-hoc tests. Specifically, significant deviance was identified between Clinical vs Childcare and Community/Non-profit vs Childcare for In-person 1:1 counseling; Clinical vs Childcare and Governmental Agency vs Childcare for Telehealth 1:1 counseling; Clinical vs Governmental Agency and Childcare vs Governmental Agency for Paper or digital handouts; Clinical vs Governmental Agency for Text messaging; Clinical vs Governmental Agency and Childcare vs Government Agency for Social media; Clinical vs Governmental Agency for Periodic newsletters.

# Results:

## Current Modes of Delivery of Nutrition Education (n=147)



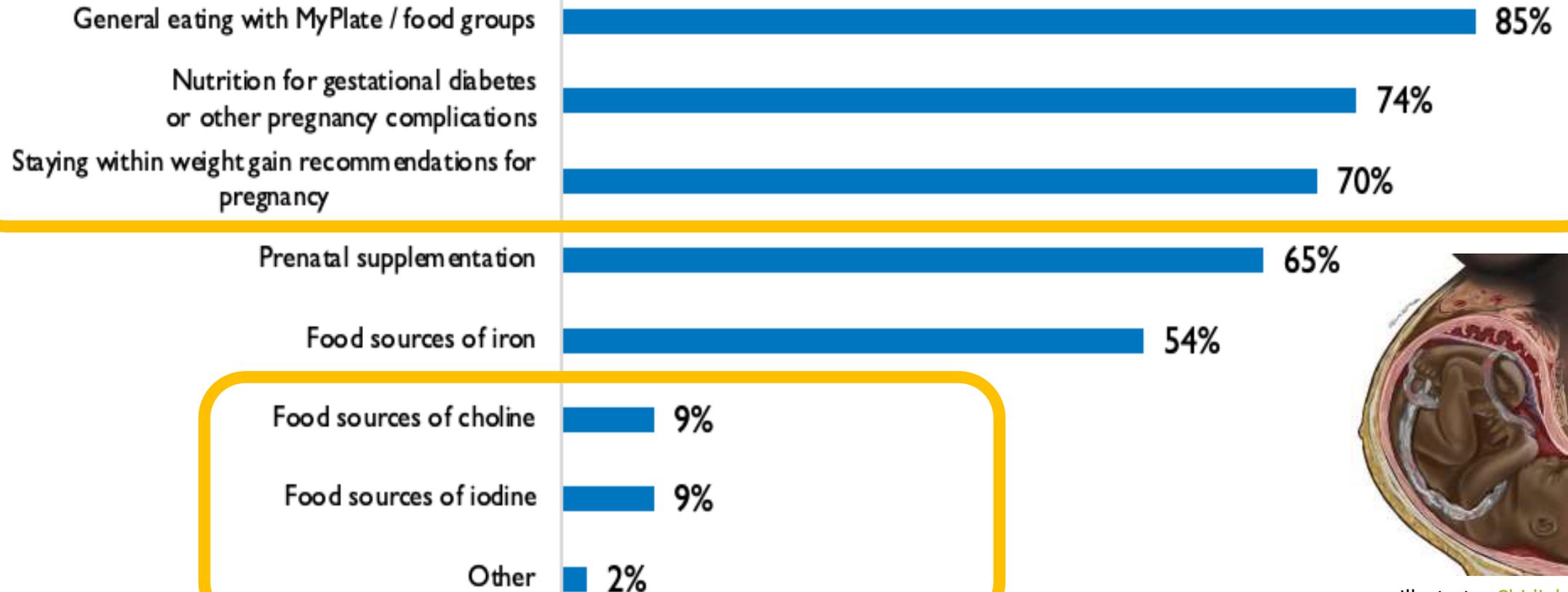
\*Asterisks imply statistically significant differences in the proportion of responses across provider types within a given nutrition education modality as identified by post-hoc tests. Specifically, significant deviance was identified between Clinical vs Childcare and Community/Non-profit vs Childcare for In-person 1:1 counseling; Clinical vs Childcare and Governmental Agency vs Childcare for Telehealth 1:1 counseling; Clinical vs Governmental Agency and Childcare vs Governmental Agency for Paper or digital handouts; Clinical vs Governmental Agency for Text messaging; Clinical vs Governmental Agency and Childcare vs Government Agency for Social media; Clinical vs Governmental Agency for Periodic newsletters.

# Results: Current Nutrition Messaging (Pregnancy)

## Key nutritional messages organization provides regarding mothers' food intake during pregnancy

N=81

Nutrition  
Content



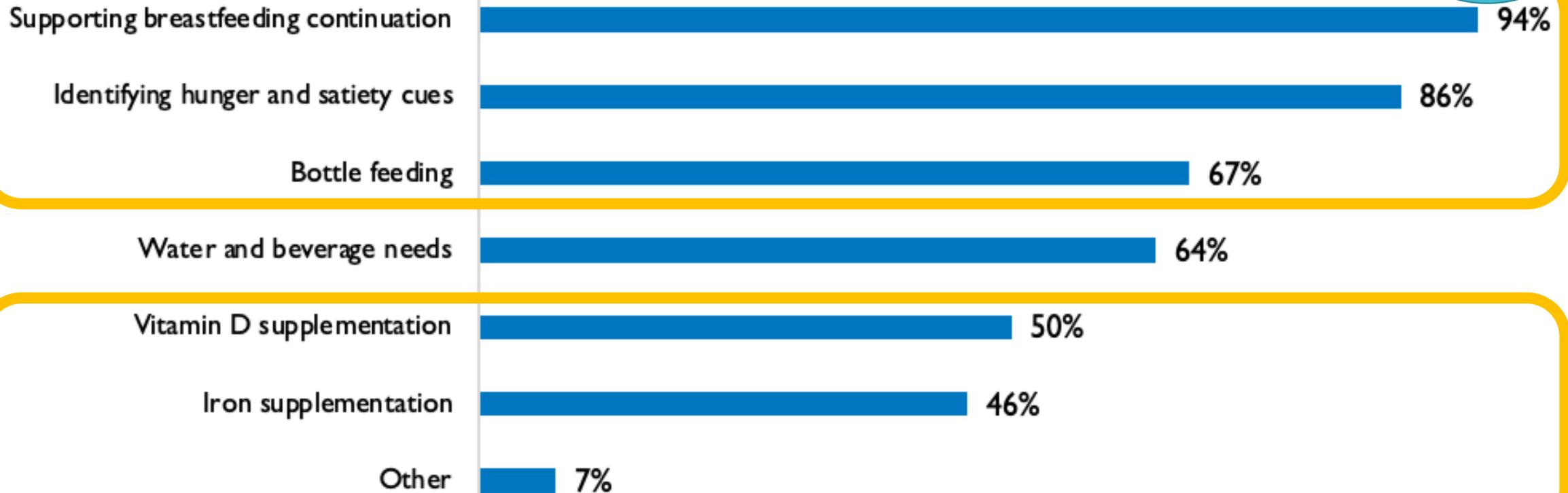
Illustrator [Chidiebere Ibe](#)

# Results: Current Nutrition Messaging (Infants)

Nutrition  
Content

## Key nutritional messages your organization provides regarding infant feeding

N=96

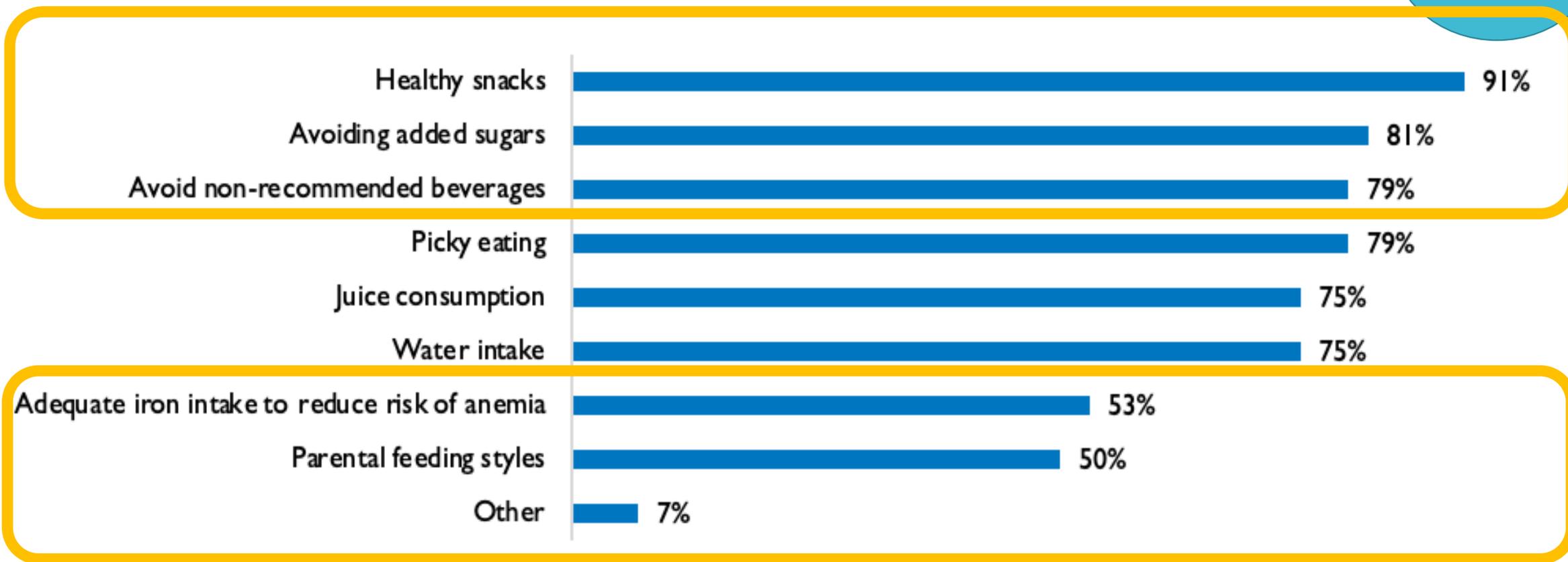


# Results: Current Nutrition Messaging (Age 1-2 years)

## Key nutritional messages organization provides regarding feeding children ages 1 to 2 years

N=102

Nutrition  
Content



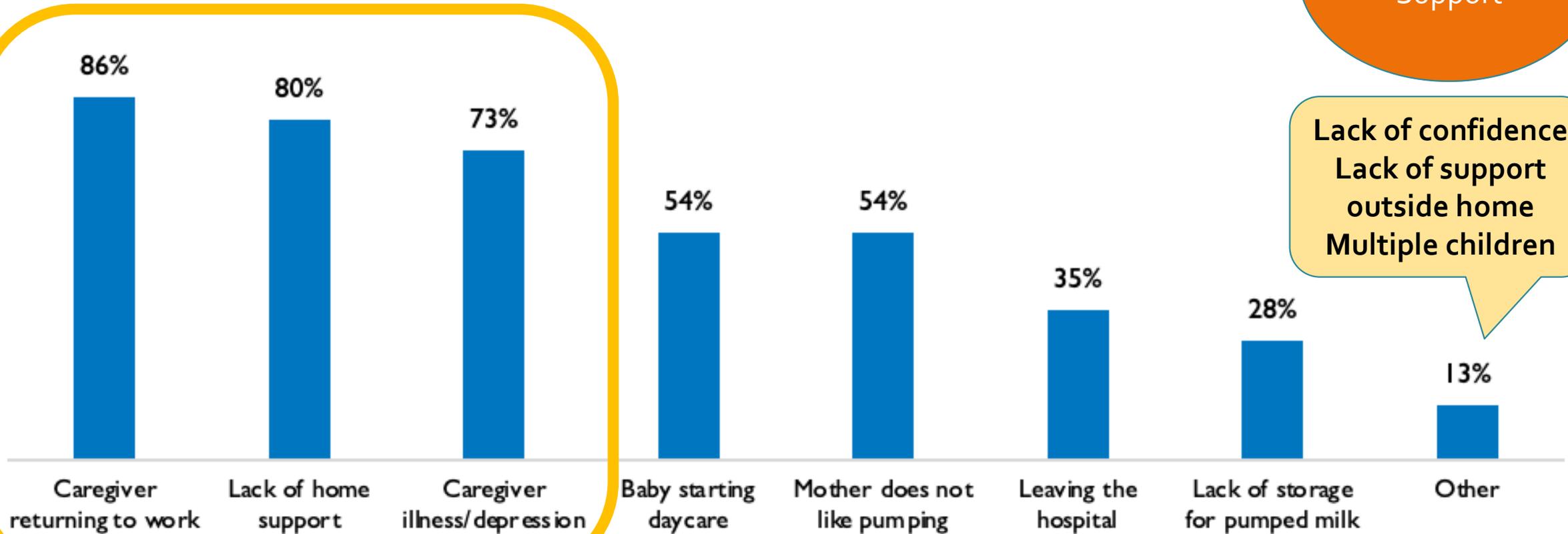
# Results: Perceived Risks for Stopping Breastfeeding



Breastfeeding Support

## Potential risk factors for breastfeeding declines or termination

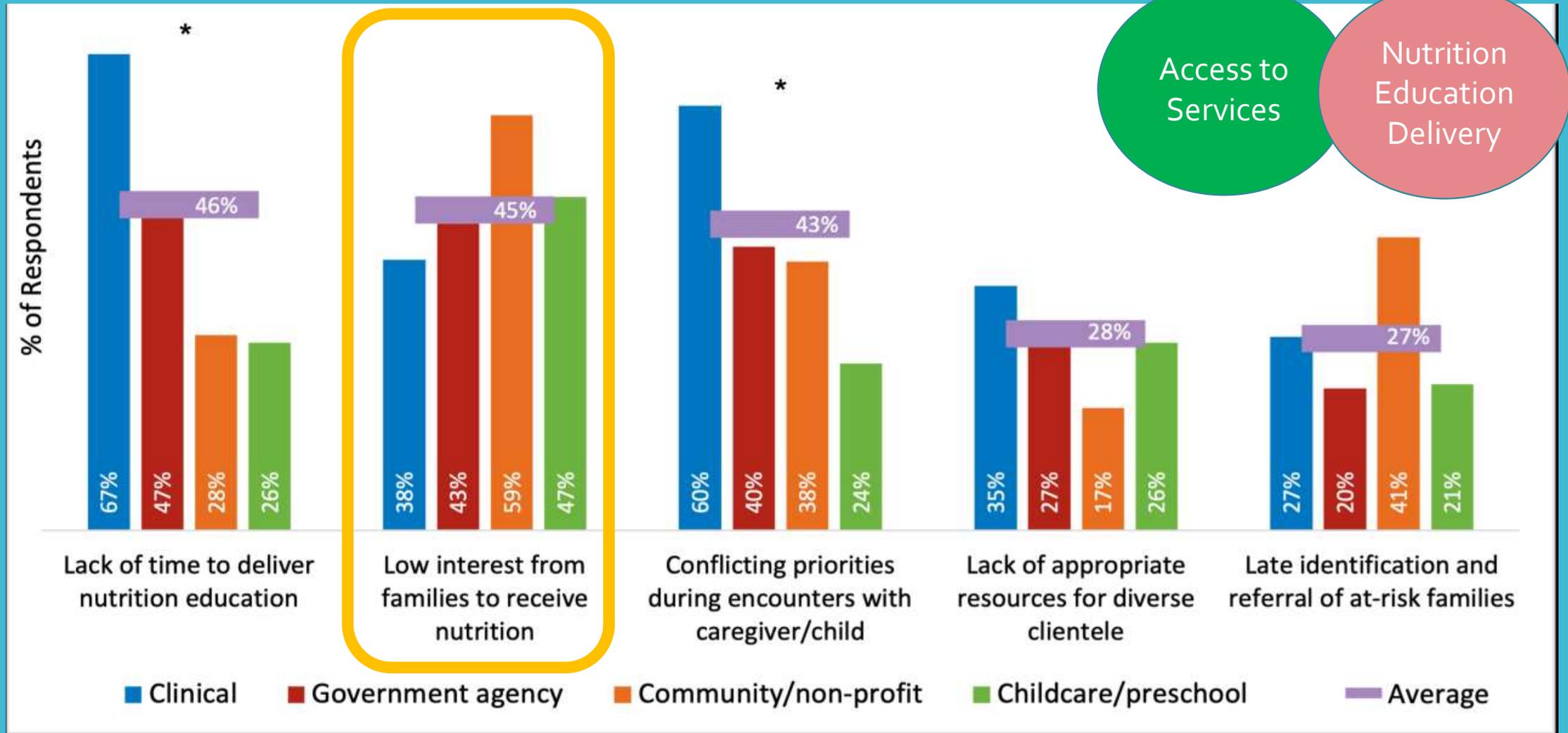
N=71



Lack of confidence  
Lack of support outside home  
Multiple children

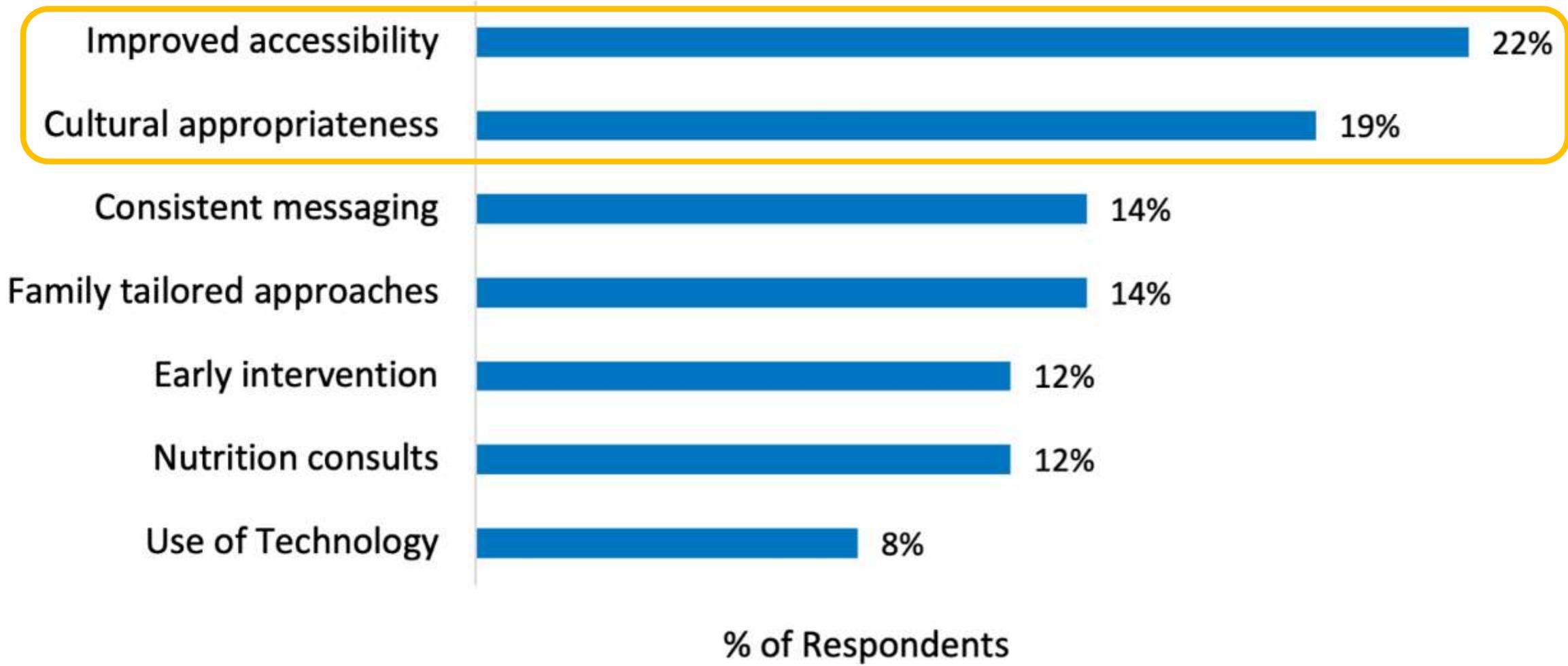
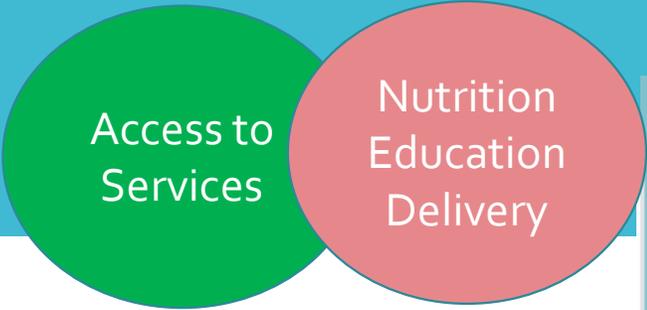
# Results:

## Perceived Barriers in Providing Nutrition Education and Resources (n=148)



# Results:

How can barriers be overcome?  
(n=59)



# Qualitative Analyses: *Participant Perspectives*

*Q. 6b. What  
additional needs do  
you perceive low-  
income families  
have for food  
resources?*

## Additional Needs: Preliminary Thematic Domains

- 1. Programs Supporting Food Access**
  - WIC, SNAP, Food banks, 211
- 2. Availability of Healthy Food & Food Options**
- 3. Knowledge and Skills**
  - Healthy foods, food preparation, and waste management
  - Behavioral management (i.e., use of food as a reward)
- 4. Resource Navigation**
- 5. Addressing Social and Structural Determinants of Health**
  - Insurance, housing, storage space, transportation, safety, time, & income

# Perceptions Shared

“Medi-cal managed care programs put up roadblocks for clients and push WIC to provide this service as the first option when the insurance companies are paid to provide this benefit. **The back and forth between Medi-Cal managed care/providers/WIC office adds undue stress on the client.**”

*Community Health Manager*

“We are in a rural area and **the cost of gas has become an increasing hardship** when trying to access food resources.”

*Registered Dietitian*

“Walkable, in neighborhood **access to appropriate food.**”

*Pediatrician*

“Low-cost cooking appliances.”

*Food Bank Representative*

# Qualitative Analyses: *Participant Perspectives*

*Q.15 Please provide suggestions for helping families overcome barriers to receiving nutrition education...*

## Solutions to Barriers: Preliminary Thematic Domains

1. **Access**
2. **Addressing Social and Structural Determinants of Health**
  - Competing Challenges: Poverty, time, & safety
3. **Cultural Relevance**
4. **Diverse Educational Modalities**
  - Tailored programming
  - Earlier education and intervention
5. **Professional Development**
6. **Resource Navigation**
7. **Clear and Plain Language**
  - Simple, focused, consistent and tailored
8. **Parent Motivation**
  - Incentives, parent empowerment/activation

# Qualitative Analyses: *Participant Perspectives*

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## Solutions to Barriers: Preliminary Thematic Domains

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  - Incentives, parent empowerment/activation

## Perceptions Shared

"Need the resources to implement, ex. \$ and money for food, and a place and time to prepare it. **Make it accessible over the phone** rather than requiring in person to improve efficiency and remove transportation barriers."

*Registered Dietitian*

"For many families struggling to meet daily demands of life, **nutrition education may not be a top priority.**"

*Lactation Consultant (IBCLC)*

"Asking families for their input on what they will like to be informed in and what times and days they are available to meet for classes or to pick up resources."

*Preschool Site Supervisor*

"Provide safe places for this education. Safe can mean a place where families feel they will not be bullied or if they are immigrants that they will not be turned in to immigration police."

*Health Educator*



## Results: *Objective 2*

To identify **topics for professional development** addressing the promotion of nutrition in the first 1,000 days

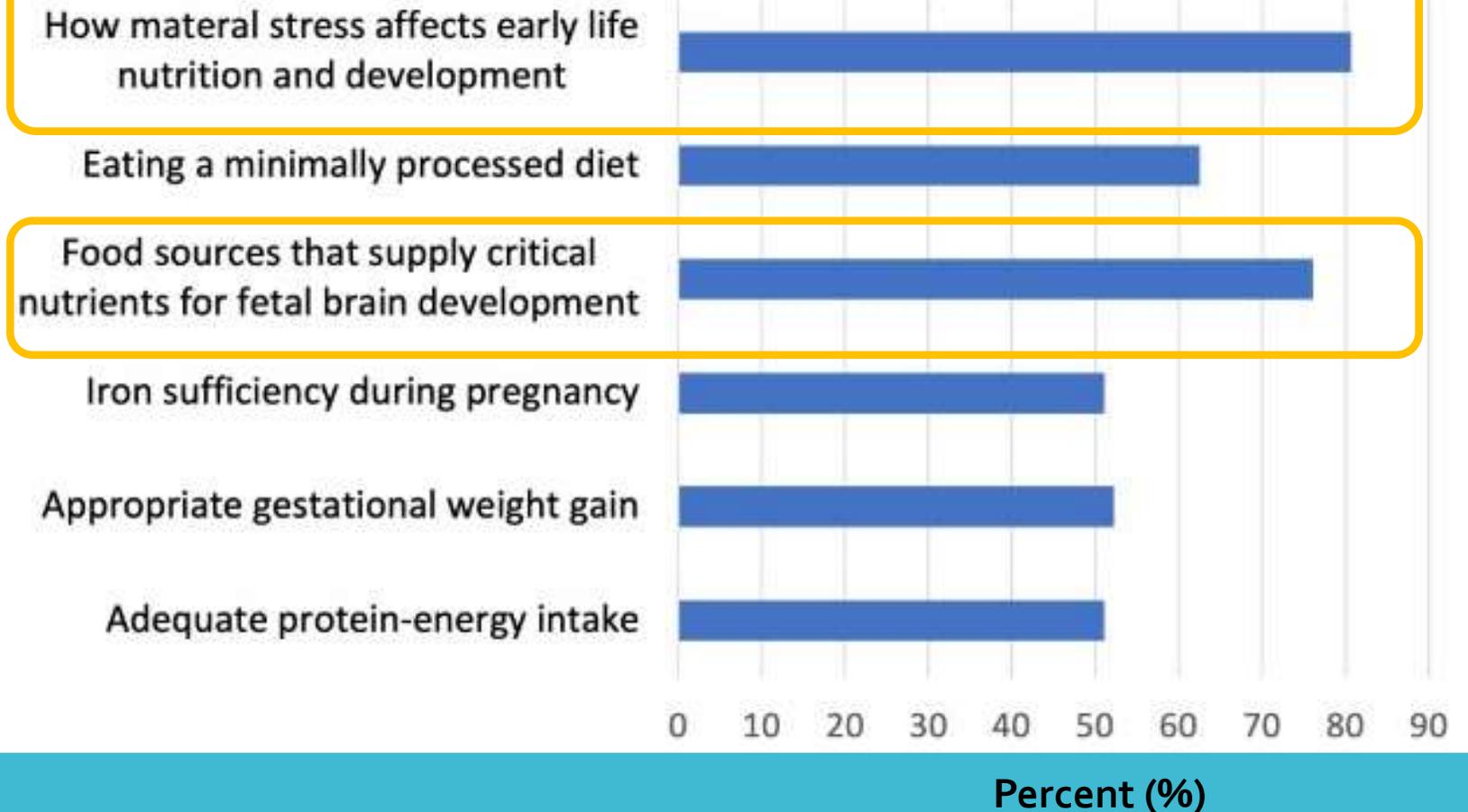
Professional  
Education

# Professional Development Topics on Prenatal Nutrition

(n=88)

## Results:

*Organizations  
serving pregnant  
women*

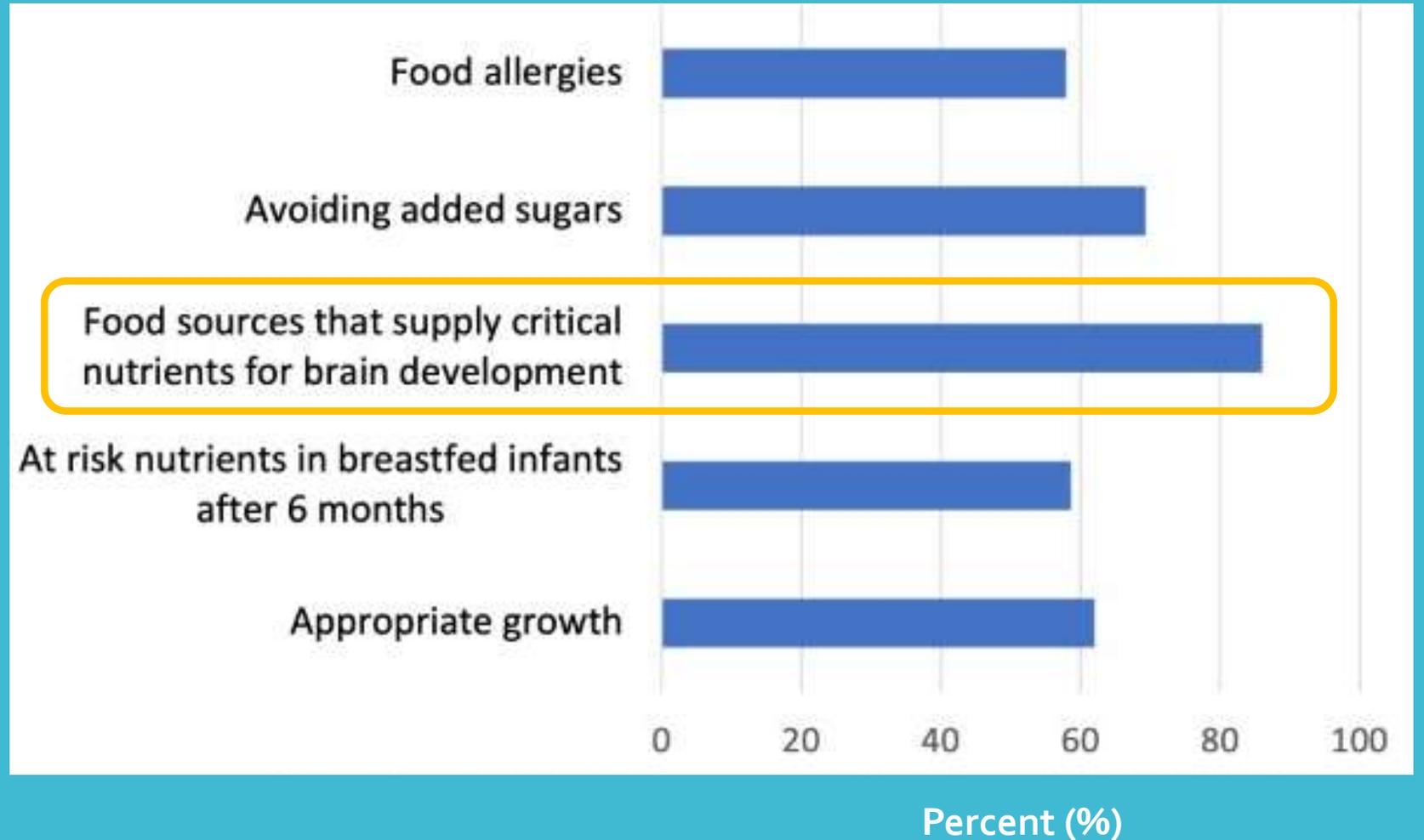


Professional  
Education

# Professional Development Topics on Nutrition for Children 0 – 2 years old (n=121)

## Results:

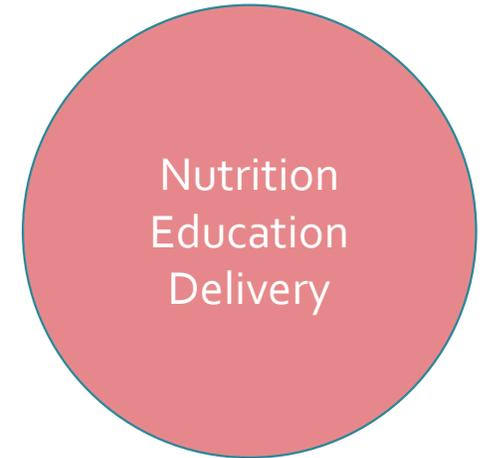
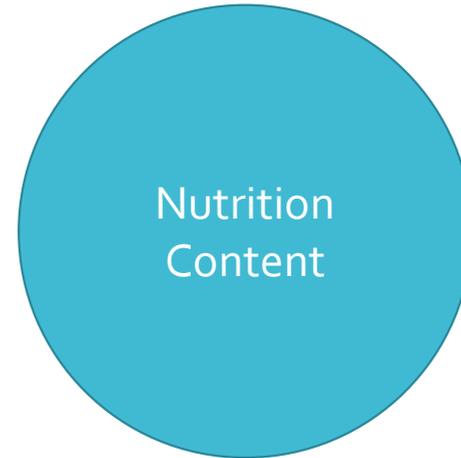
*Organizations  
serving children  
0-2 years*



# DISCUSSION

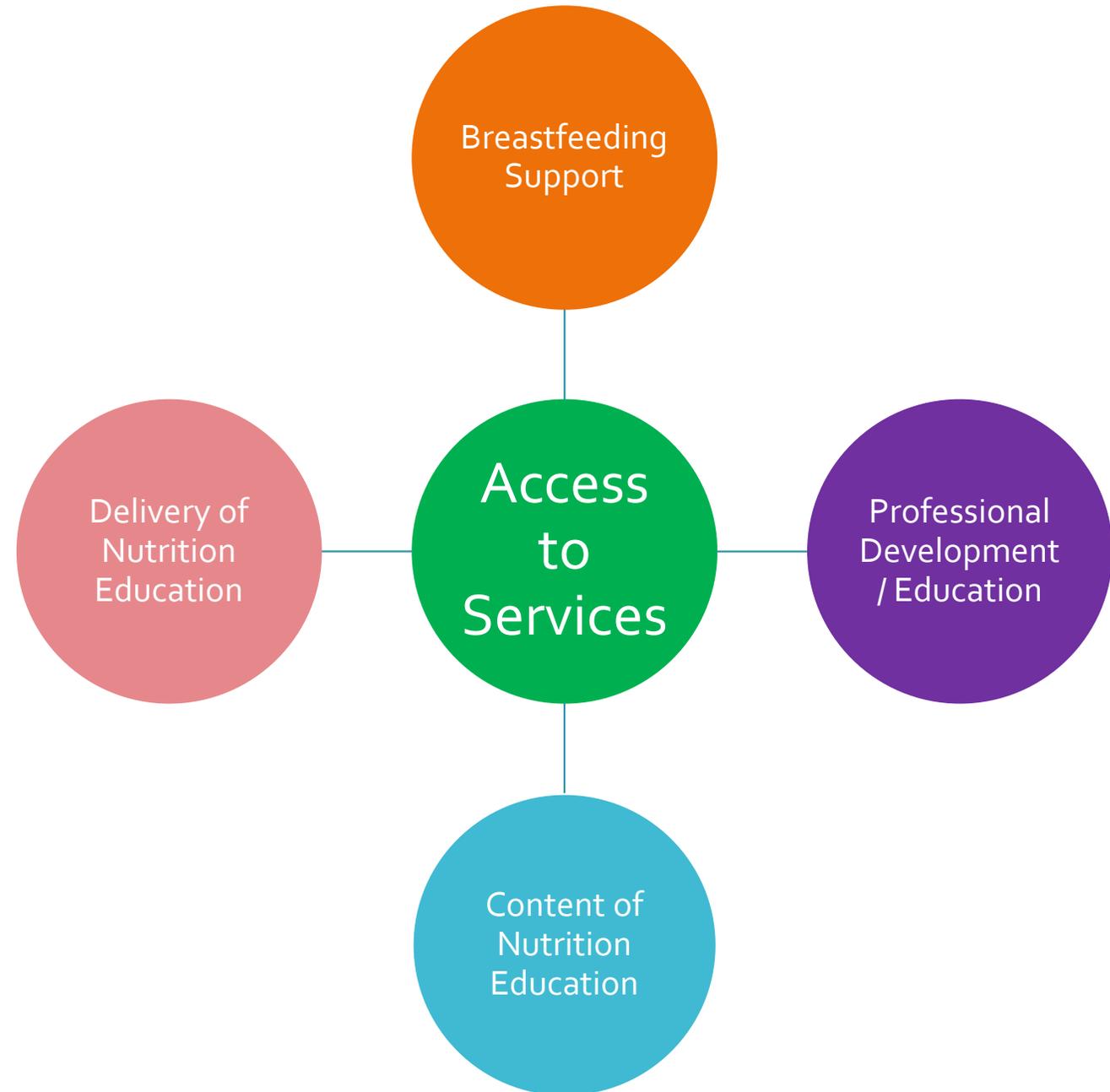
## Discussion: *Survey*

*5 pillars of nutrition service provision in the First 1,000 Days discussed previously*



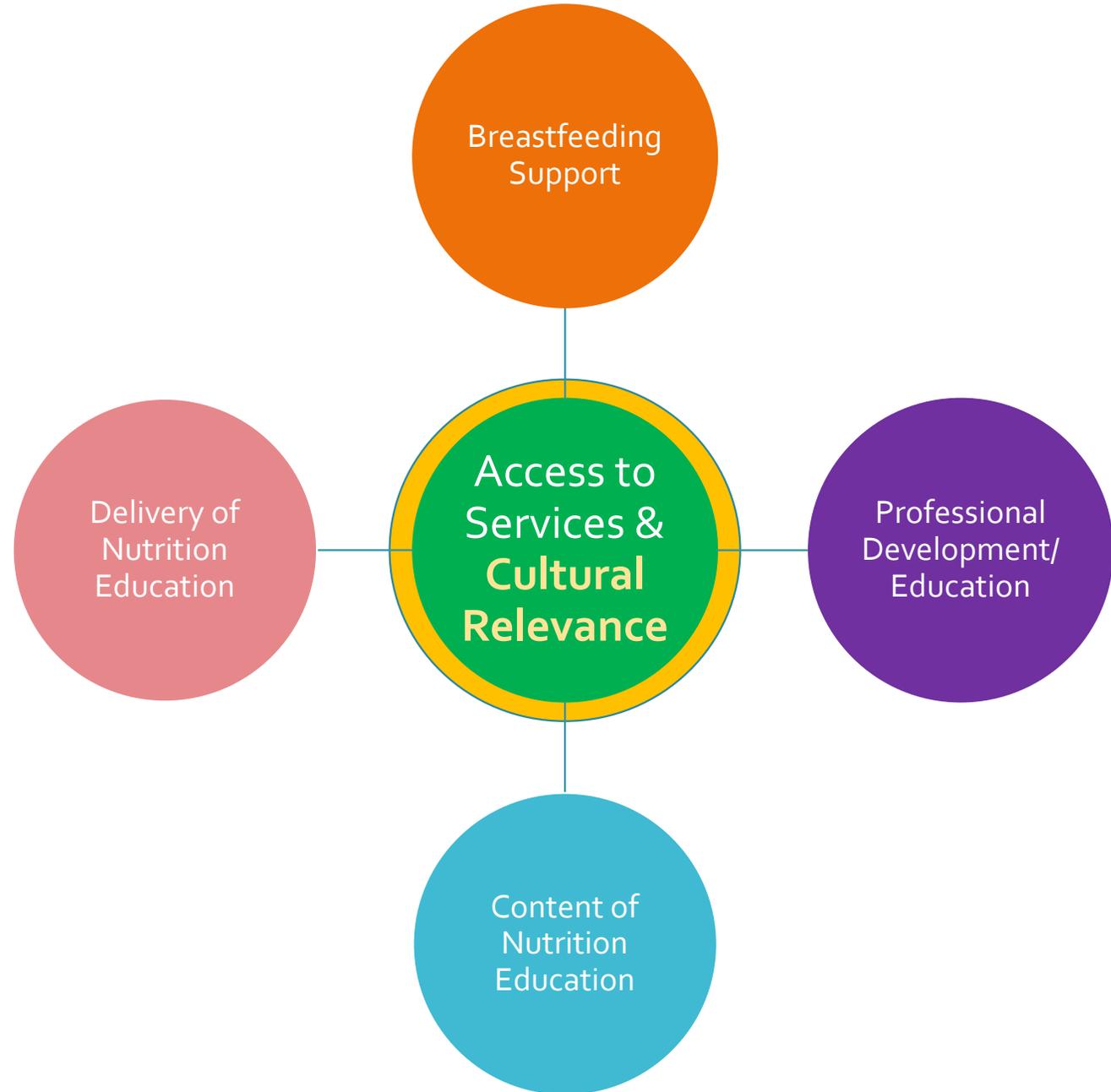
## Discussion: *Survey*

*Potential relationship of 5 pillars of nutrition service provision in the First 1,000 Days, with consideration of initial review of qualitative responses*



## Discussion: *Survey*

*Potential relationship of **5 pillars** of nutrition service provision in the First 1,000 Days, with consideration of **secondary review** of qualitative responses*



# Conclusion

## Key needs identified to better support nutrition equity in the *First 1,000 days*

- 1) **Improved access** to nutritious food and diverse educational resources for low-income families
- 2) **Improved cultural responsiveness** in the delivery and content of nutrition education (*including tailored programs and resources*)
- 3) **Resource navigation and support** to assist families in accessing resources and offering guidance responsive to parent/family needs (i.e., breastfeeding support, referrals)
- 4) **Attention to social and structural determinants of health** to address competing challenges/priorities
- 5) **Simple, focused, consistent, and tailored** nutrition education messaging and resources
- 6) **Further professional development opportunities** on early life nutrition and key micronutrients for fetal and early child development



Participation bias



Response bias



External validity – may not be generalizable to other areas or regions not represented in this study

## Limitations

# Strengths



DIVERSE PROVIDER  
PERSPECTIVES



FOCUS ON FIRST  
1,000 DAYS



INTERDISCIPLINARY  
RESEARCH TEAM

# Next Steps

## Review

Review data gathered in **semi-structured interviews** from a subset of study participants



## Develop

Develop **culturally relevant, feasible, and tailored resources and professional development** opportunities for diverse healthcare providers, educators, and health advocates



## Partner

Partner with community stakeholders to disseminate results and resources, **engage parents to gain community perspectives**, and advocate for policies, systems, and environmental change

# In Gratitude

Our study team wishes to acknowledge the **study participants** for their time and vital contributions to the completion of this study and **you** for your continued service, care and advocacy in addressing the health needs of children and families.



Image ref. <https://www.healthyeating.org/blog/detail/nutrition-equity-supports-healthier-people>

# Achieving Nutrition Equity in the First 1,000 Days Study Team Contact Information



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# THANK YOU

First 1,000  
Days Listserv



**For more  
information  
on this  
subject, see  
the following  
publications**

Schwarzenberg SJ, Georgieff MK, AAP COMMITTEE ON NUTRITION. Advocacy for Improving Nutrition in the First 1000 Days To Support Childhood Development and Adult Health. *Pediatrics*. 2018;141(2):e20173716

Taveras EM, Gillman MW, Kleinman K, Rich-Edwards JW, Rifas-Shiman SL. Racial/ethnic differences in early-life risk factors for childhood obesity. *Pediatrics*. 2010 Apr;125(4):686-95. doi: 10.1542/peds.2009-2100.

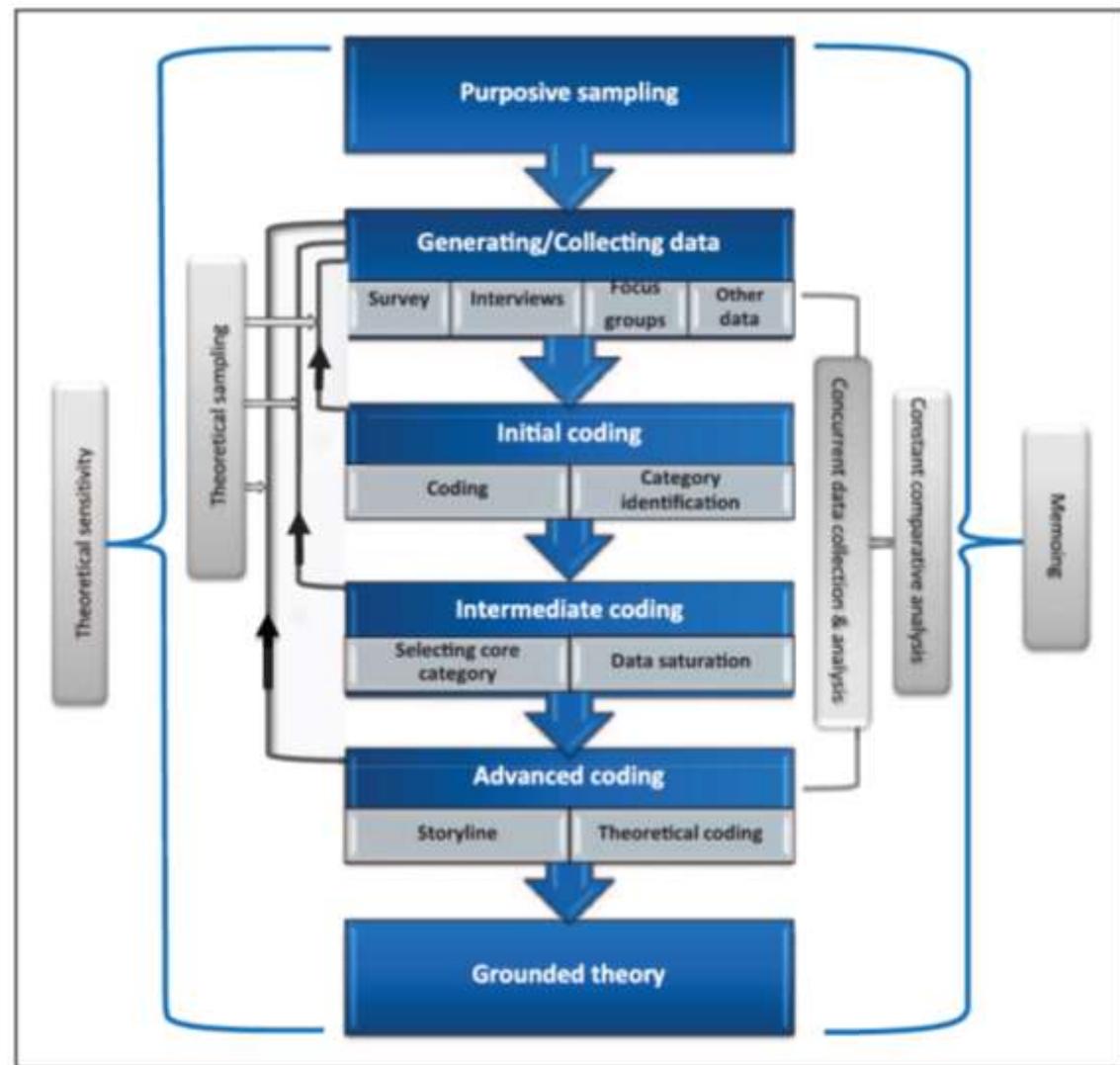
Nisbett N, Harris J, Backholer K, Baker P, Jernigan VB, Friel S. Holding no-one back: the nutrition equity framework in theory and practice. *Global Food Security*. 2022 Mar 1;32:100605.

# BONUS SLIDES

# Investigators

- **Community-Academic Partnership**
  - **Early Childhood Obesity Prevention Action Group**
    - *Supported by First 5 Orange County (2013-2016) and UC Irvine School of Medicine, Department of Pediatrics (2013-2019) (Dr. Taylor Lucas, Dr. Lindsay and Ms. Roberts, members)*
  - **University of California, Irvine**
    - Academic Researchers & Clinicians in the UCI School of Medicine, Department of Pediatrics
      - Pregnancy & Wellness Research Lab (*Dr. Lindsay, Ms. Leka*)
      - UCI Susan Samueli Integrative Health Integrative (*Dr. Lindsay*)
      - Pediatric Exercise and Genomics Research Center (*Dr. Taylor Lucas*)
      - UCI Health, Pediatrics (*Dr. Taylor Lucas*)
    - Leadership Education to Advance Diversity – African, Black and Caribbean (*Dr. Taylor Lucas, Ms. Leka*)
  - **Dairy Council of California, Let's Eat Healthy Initiative**
    - *Based on the Well Nourished, Brighter Futures convening results (Ms. Roberts, Dr. Taylor Lucas, participants)*

# Grounded Theory Framework



**Figure 1.** Research design framework: summary of the interplay between the essential grounded theory methods and processes.

Chun Tie, et al 2019



## Holding no-one back: The Nutrition Equity Framework in theory and practice

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