IMPLICATIONS OF COMMUNITY SUPPORTED AGRICULTURE—FARMSHARE PROGRAMS AS ALTERNATIVE FOOD NETWORKS

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Background: Obesity Problem in the US

❑ Currently, more than **35 percent** of American adults are obese

▪ About one-third of children and teens are either obese or overweight (Ogden, Carroll, Kit, & Flegal, 2014).

❑ Obese children have poor quality of life: physically, emotionally, socially, psychosocially, and generally—quality of life (Poeta, Duarte, & Giuliano, 2010).

❑ Future obesity projections:

▪ In 20 years, it may reach 44% in all states; 60% in 13 states

(TFAH/RWJF, 2012)

▪ Obesity related expenses accounts for about $75 billion yearly (Resnik, 2007).

Background: San Bernardino City

| Population	San Bernardino	California	United States
Population	2,088, 371	38,332, 521	316,128,839
Person per Household	3.33	2.93	2.61
Per capital income	$21,636	$29, 551	$28,051
Median Household income	$54,750	$61,400	$53,046
Persons below poverty level	17.6%	15.3%	14.9%

(United States Census Bureau, 2014)

Note. The Supplemental Poverty Measure indicate that California residents may not be as financially buoyant as assumed, persons below poverty: 23.8% (Gabe, 2014).

Background: The Economics of Fruit and Vegetables Consumption

❑ In the U.S. (2010-2012)–CA ranked the highest in poverty w/ 23.8% (ACS as cited in Gabe, 2014).

- People with low income are likely to consume less fruits and vegetables (Di Noia, J., & Byrd-Bredbenner, 2014).

- Low fruit and vegetable consumption (FVC) are associated with diabetes, cardiovascular diseases (Montonen et al., 2005; Liu et al., 2012).

    - Low FVC correlated with high BMI (Spense et al., 2009; He et al., 2010)

    - High body mass index (BMI) is associated with diabetes, hypertension, hypercholesterolemia and coronary risks (Chapman, Redfern, McGovern, & Giral, 2010; Flegal et al., 2012)

Retail Food Environment Index (RFEI)
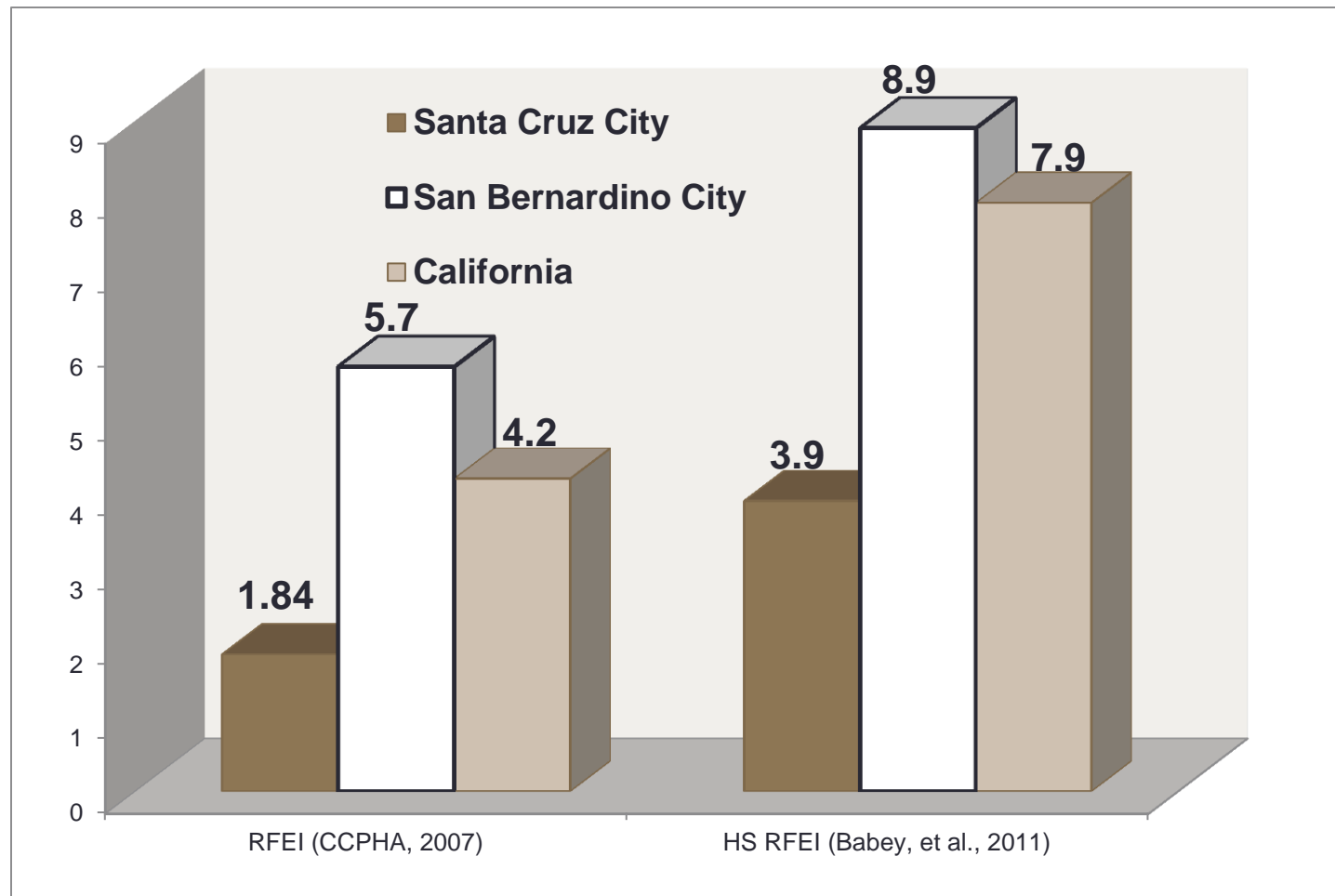
Note. RFEI is a rating of number of unhealthy food stores to healthy ones in an area; HS RFEI is the average RFEI within 0.5 miles of Adolescent's Home and School (HS) in selected area.

Community Supported Agriculture- Farmshare Programs:

❑ Farmers partner with local residents to supply them <u>direct</u> (prepaid) farm goods: poultry, diary, meats, fruits, vegetables, etc. for a planting season.

- Reduces food mile (fossil-fuel from undue transportation/ environmental carbon imprint) from harvest to consumers' tables

- Sustains agriculture

- Enhance community interactions

- Promotes environmental responsibility

- Contribute to local economy

- Provide fresher fruits, and vegetables

  (Follett, 2009; Press & Arnould, 2011; Uribe, Winham, & Wharton, 2012)

Economy

Community

Food

nment
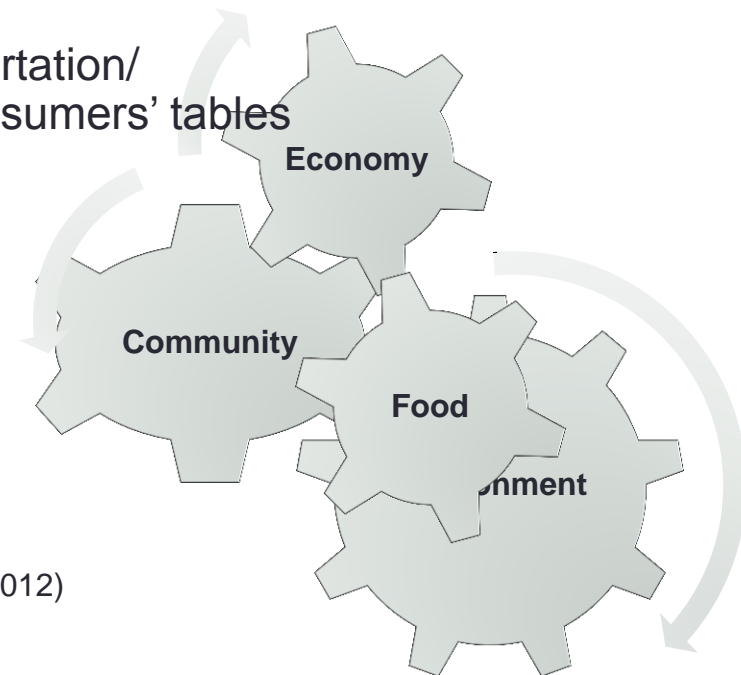
Research Questions

#1

☐ **Is there any significant difference in health outcomes of** participants who participate in Community Supported Agriculture (CSA) Farmshare programs compared to another group who do not (comparison group)?

Dependents Variables (DVs):

- BMI
- % of body fat
- % of muscle
- body age difference
- resting metabolism
- visceral fat
- heart rate,
- blood pressure
- Health Quality of Life

#2

☐ **How do CSA Farmshare participants' behavioral intentions, attitudes, and perceived behavioral control for fruits and vegetable consumption differ from non-**participants (comparison group)?

Dependents Variables (DVs):

- Attitudes
- Behavioral Intentions
- Perceived Behavioral Control
- Fruit and Vegetables consumption

#3

☐ **What lessons can be learned from participants' accounts of factors that promote or discourage their choices of fruit and vegetables in their diets?**

Study Design:
Mixed, Longitudinal, Quasi-experimental w/Non- equivalent Comparison Group

	Pre-test (weeks 0-1)		Post test: 7-8 weeks		Post test 12-13 weeks
‡ NR	O_1	X	O_2	X	O_3
† NR	O_1		O_2		O_3

‡NR, Intervention Group (Non-randomized)
†NR, Comparison Group (Non-randomized)
   O, Survey Cohorts at indicated milestones
   X, Interventions: Weekly Farmshare + Health Education

Interventions

Intervention Group
n=60

Comparison Group
n=60

Group (G1)
Farmshare Study Participants—Waterman Gardens Residents
- Free weekly Farmshare produce
- Free 1-hour weekly health education session
- Free 1-hour weekly physical activity participatory program
- Free health screening
- Free weekly health education materials

Group (G2)
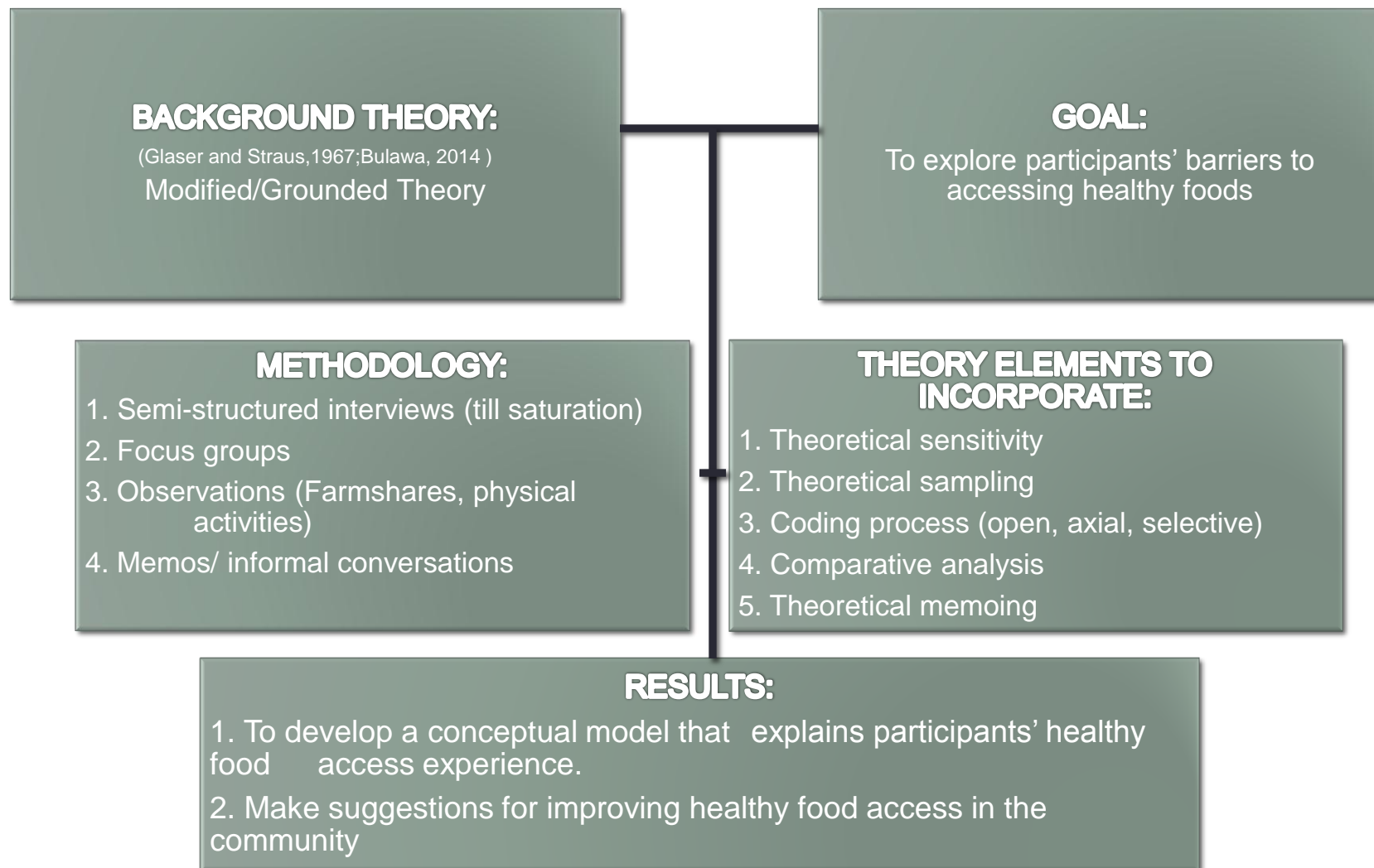**San Bernardino Latino Health Collaborative Striders'— Comparison Group**
- Free 1-hour weekly physical activity participatory program
- Free health screening
- $10 Gift card
- Gift Raffle Items
- Free Health Education Materials *(at the end of the 13 weeks).*

N=120

Study Variables (V) and Measurements

Research Question	Dependent V/ Type	Independent V/ Type	Statistical Analysis
1. Is there any significant difference in health outcomes of participants who participate in CSA programs compared to another group who do not (comparison group)?	BMI, percentage [%] of body fat, % of muscle, body age difference, visceral fat, resting metabolism, heart rate, and blood (pulse) pressures [Continuous V]	Time: I , II, III Groups : 1 & 2 [Categorical V]	**Repeated Measures ANOVA** - Within and Between Group Analysis - Test interaction between time and group - Determine whether simple or main effect - Pairwise comparisons (post hoc)
2. How do CSA Farmshare participants' behavioral intentions, attitudes, and perceived behavioral control for fruits and vegetable consumption differ from non-participants'?	Fruit and Vegetable scores; Attitudes/ Behavioral intention/ Perceived Behavioral Control [*To be treated as* Continuous V]	Time: I , II, III Groups : 1 & 2 [Categorical V]	

Qualitative Component

BACKGROUND THEORY:
(Glaser and Straus,1967;Bulawa, 2014)
Modified/Grounded Theory

GOAL:
To explore participants' barriers to accessing healthy foods

METHODOLOGY:

1. Semi-structured interviews (till saturation)
2. Focus groups
3. Observations (Farmshares, physical activities)
4. Memos/ informal conversations

THEORY ELEMENTS TO INCORPORATE:

1. Theoretical sensitivity
2. Theoretical sampling
3. Coding process (open, axial, selective)
4. Comparative analysis
5. Theoretical memoing

RESULTS:

1. To develop a conceptual model that explains participants' healthy food access experience.

2. Make suggestions for improving healthy food access in the community

Anticipated Study Limitations: Some Validity Threats

❑ *Experimental Mortality (Attrition):* People may drop out for many reasons; to be minimized by adding 8 additional participants to the estimated sample

❑ *Diffusion of treatment:* Comparison participants do not receive Farmshare produce

❑ *Selection:* possible though participants have to be in either of the study populations already

❑ *Non random selection:* External validity threat. Precludes generalization of study findings to other populations

❖**Other Limitations:**

   ❑ Farmshare cost

   ❑ Sample size

   ❑ Study is still progress