Using Ripple Effect Mapping in a Culinary Program Targeting Youth and Adult Dyads

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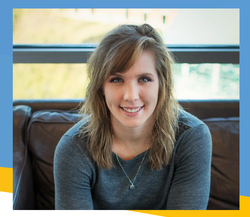

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INTORDUCTION

Effective dissemination and implementation (D&I) tools evaluating research to practice for community based obesity prevention interventions are needed to bridge the current research to application gap. Ripple Effect Mapping (REM) using the Community Capitals Framework (CCF) is a community impact evaluation tool that is hypothesized to positively capture how the research intervention affected multiple levels within communities.

To our knowledge, there is no comprehensive, stepwise process of a REM evaluation tool that uses content analysis and word frequencies to determine and compare participant perceptions. This research study details the exploration of using REM in a detailed stepwise form to evaluate and understand youth and adult participant perceptions on how the iCook 4-H program impacted the individual, family and community. Directed content analysis was used to create homogeneity among REM evaluations for future use and as a sustainable measure for the implementation and dissemination of programs.

iCOOK 4-H

The qualitative analysis of REM, was part of a broader research process assessing quantitative outcomes. The multistate program from five states used a dyad approach to target childhood obesity prevention through increasing culinary skills, meal time and physical activity for youth (9-10 years of age) and their primary adult meal preparer. The randomized, control-treatment, 14-week program emphasized "learning by doing" through a six-lesson intervention. After program completion, intervention participants continued to stay connected through:

1. Website activities
2. Video making
3. Activity challenge competitions
4. Monthly newsletters
5. Seasonal in-person boosters

STUDY OBJECTIVES

Primary: To determine REM's effectiveness in defining positive outcomes as an impact evaluation tool.

Secondary: To determine participants' (youth/adult dyads) perceptions of the ripple effect of a 24 month, iCook 4-H multistate intervention program on self, family and community.

METHODS

Seventy dyad (A=adult, Y=youth ages 9-10 years) participants (35=A, 35=Y) participated across five states (ME, NE, SD, TN, WV) in ten REM sessions, 24 months' post iCook 4-H intervention. The three core themes of the iCook 4-H program were assessed: cooking, eating and playing together. Dyads responded to open ended questions by leader-facilitated group-dialogue regarding how the program affected the individual, family and community. Three main questions were asked:

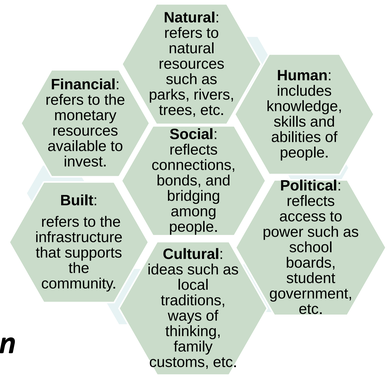
1) **what are people doing differently as a result of the program**
2) **who has benefited from the program**
3) **how are there changes in the way community groups and institutions do things as a result of the program?**

Questions and dialogue were recorded by trained note-takers using a template, which was followed up with directed data content analysis to determine individual, family and community impact.

The primary coding process of directed content analysis:

- Primary researcher studied line by line, the data report templates
- General field notes and initial codes were created
- Restudied data report templates to ensure no other codes were missed
- Codes were merged and summarized creating categories and subcategories for each
- 2 additional researchers reviewed each data report template
- Discussion of theme, categories, subcategories and supporting subcategories took place
- 2 additional subcategories were created during expert researcher meetings
- 2 video sessions were reviewed to ensure accuracy

CCF Breakdown



RESULTS

Data analysis indicated the main, overarching theme of participant perceptions of iCook 4-H was:

Learning new skills together through trying new things (cooking, eating, & playing together) leads to positive individual, family and community change.

Within the all-encompassing, major theme, 7 categories with 8 subcategories, and 41 supporting subcategories were identified.

Categories, Subcategories & Support Subcategories

1. Improved Health — 6 Supporting Subcategories
- 1a. Playing with peers & family through exercise leads to better health
- 1b. Better disease management

2. Increased Community Involvement — 8 Supporting Subcategories
- 2a. Community involvement with friends & peer groups
- 2b. Community involvement through organizational groups

3. Increased Knowledge — 8 Supporting Subcategories
- 3a. Increased knowledge by trying new things
- 3b. Increased knowledge through education & experience

4. Increased Communication — 8 Supporting Subcategories
- 4a. Increased communication during mealtimes
- 4b. Increased communication amongst friends & family

5. Changed Motivation — 4 Supporting Subcategories

6. Financial Mindfulness — 3 Supporting Subcategories

7. Increased Appreciation for family members leads to better understanding of one another — 4 Supporting Subcategories

To confirm accuracy of participant perceptions within the qualitative content analysis, word frequencies were created from the data templates for comparison. The prevalence of words found fit well with both data report templates and participant perceptions (Found as apple word cloud).

Each facilitator was interviewed following REM sessions to consider areas for improvement for future dissemination. Areas for improvement included:

- Time allotment for each session; more time was needed to complete the feedback portion of the discussion.
- Word usage such as community capitals and REM could be modified or simplified for youth participants.
- Capturing the REM sessions could take place prior to the 24-month post intervention time point to decrease any leading done by the facilitator to remind participants of all program activities.

CONCLUSIONS

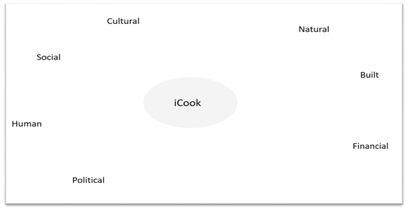
Detailed processes of impact evaluation tools that can be used with preexisting frameworks in dissemination and implementation science for community based programing are currently lacking. REM using CCF is an impact evaluation tool that has been found to effectively capture outcomes of this community-based research iCook 4-H program. Additionally, findings show youth obesity prevention programs such as the iCook 4-H program have the potential to positively affect one's self, family and community.

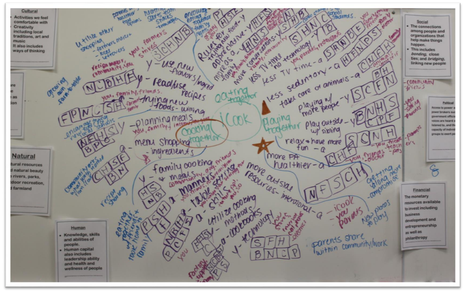
Intervention Sites

- Morgantown, West Virginia (2)
- Scottsbluff, Nebraska (1)
- Orono, Maine (2)
- Dover-Foxcroft, Maine (1)
- Sisseton, South Dakota (1)
- Sioux Falls, South Dakota (1)
- Knoxville, Tennessee (2)

Right: Sample Mapping Template Medium Layout

Below: Sample Mapping Image





Right: Word Cloud from word frequencies data. The prevalence of words found fit well with both data report templates and participant perceptions with most significant experiences through the percent prevalence of words in all comparison groups.

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