



Refining a Maternal Self-Care Intervention to Promote Family Health Using the Plan, Do, Study, Act (PDSA) Model

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INTRODUCTION

BACKGROUND

- Maternal health is a target for child obesity prevention efforts and there is a need for optimization of interventions
- The Plan, Do, Study, Act (PDSA) Model, a quality improvement process using rapid cycle testing to develop and refine interventions within healthcare settings, is less often used in health and nutrition studies

Study Objective:

PDSA Cycles were applied during the development of the Healthy EnviRONments (HEROs) Self-Care program optimize intervention components: content, delivery methods, and digital supports.

METHODS

INTERVENTION COMPONENTS

The HEROs Self-Care program was designed for mothers of preschoolers in rural Colorado to improve their own healthy eating, physical activity, and stress management. The program had 3 major components:

1. **Content:** Program content topics (self-care, healthy eating, PA, and stress management), activities, flow, and handouts
2. **Delivery Methods:** Meeting strategies, session duration, and an electronic binder (eBinder)
3. **Digital Supports:** Website, mobile applications, and an activity tracker

PLAN-DO-STUDY-ACT CYCLES

Participants and Data Collection

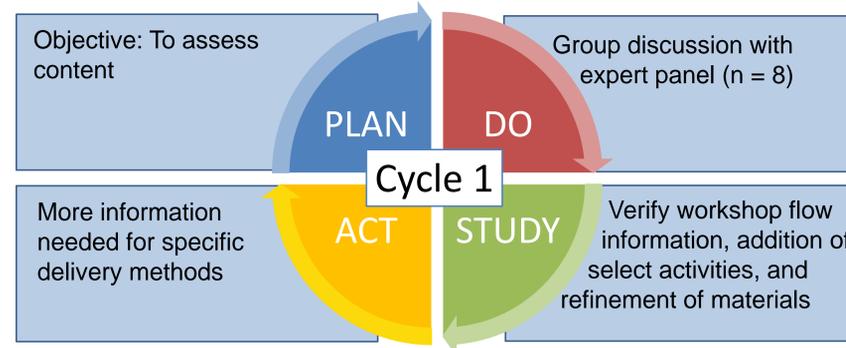
- Three PDSA cycles provided insights into intervention components and were assessed via group or individual interviews with:
 - Cycle 1: an expert panel (n = 8)
 - Cycle 2: a convenience sample (n = 5)
 - Cycle 3: target audience (n = 6)
- Interview data from each cycle was analyzed for emergent themes and intervention components were refined, as needed



RESULTS

INTERVENTION COMPONENT REFINEMENT

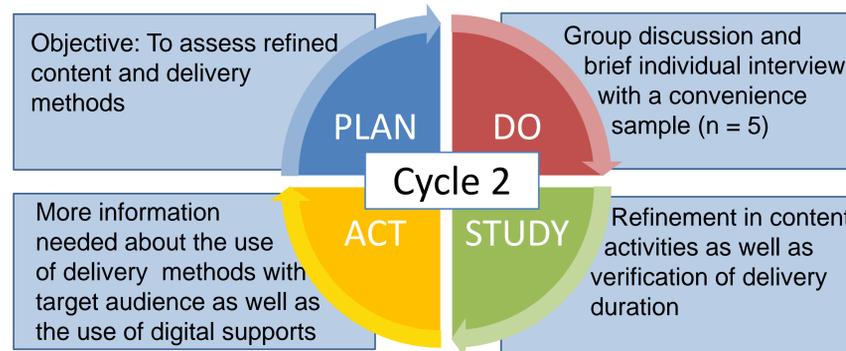
Figure 1: PDSA Cycle 1 (Content) Refinement



"I like how you do [the mindful breathing activity] at the beginning so that you can just clear your mind as you come from your daily activity."

Cycle 1 led to refinement to content including addition of activities, revision of handouts for literacy level, and inclusion of a group mindful listening activity

Figure 2: PDSA Cycle 2 (Content + Delivery) Refinement



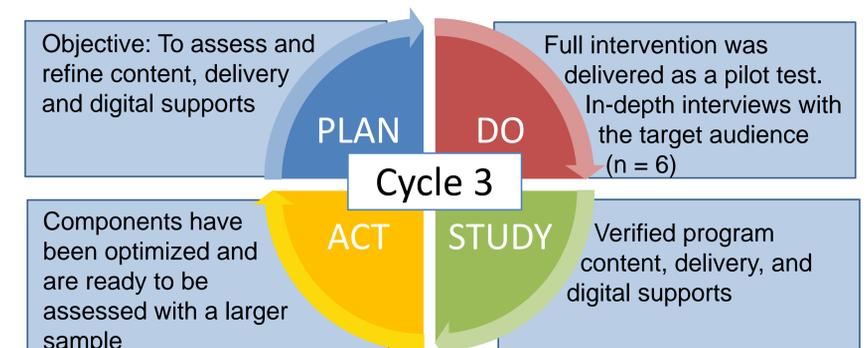
"Just to be able to get together as a group and talk a little bit more would be good to see. It was just a nice group activity to be able to talk and have that time with the other moms... it would be cool to incorporate [more time]."

Cycle 2 led to refinements in workshop duration and activity order and verified that content and delivery methods (videoconferencing strategies) were acceptable

RESULTS (CONT.)

INTERVENTION COMPONENT REFINEMENT CONT.

Figure 3: PDSA Cycle 3 (Content + Delivery + Digital) Refinement



"I thought they were all really good tools for what we're all trying to accomplish."

Cycle 3 led to the verification of digital supports, content, and delivery methods and ensured digital supports and delivery functioned as intended (especially in rural areas)

DISCUSSION

- PDSA cycles are an effective optimization tool to refine and improve intervention components, especially in traditionally difficult to reach populations such as mothers living in rural communities
- Through this optimization process, potential barriers to implementation and effectiveness can be avoided, but should be assessed over various conditions
- Refinement of intervention components through the PDSA optimization process may lead to enhanced uptake of targeted and desired health behaviors, improved effectiveness of interventions, and better cost-effectiveness

CONCLUSION

PDSA cycles may be an effective tool for the optimization of intervention components prior to full-scale implementation, potentially saving resources and resulting in more efficacious interventions.

Nutrition Educator Competencies: 8.7. Design or select strategies, activities and materials that are appropriate for diverse audiences; and 8.11. Revise the program based on process and outcome evaluation findings