CASE WESTERN RESERVE UNIVERSITY
School of Medicine

Master of Public Health Program

DICE
Diabetes-Inspired Culinary Education
Cooking for glucose control

Evaluating Participant-Reported Experiences and Engagement in DICE, a Family-Centered Culinary Education Program for Youth with Type 1 Diabetes

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Background

- Pediatric type 1 diabetes (T1D) management requires ongoing education, self-management, and family involvement[1]
- Family-centered culinary education integrates hands-on cooking with nutrition education to support practical skill development[2,3]
- Less is known about what participants report learning, which intervention components they value, and whether educational content is applied between sessions[2,3]

Diabetes Inspired Culinary Education (DICE)

- Evidence and theory-based intervention (Social Cognitive Theory)
- **Lesson Modules:** 10 weekly, 90-minute sessions
- **Components:** Hands-on cooking, interactive T1D and nutrition education, family meal planning, behavior goal-setting, psychosocial discussions

Parent Study Design

- Two-cohort, two-group waitlist randomized control trial
- Participants: 8-14-year-old youth diagnosed with T1D within 5 years and participating caregivers and siblings
- Setting: CWRU Nutrition Department Teaching Kitchen



Study Objective

To characterize participant-reported experiences and aspects of engagement with DICE by examining reported learning, favorite lesson components, suggested changes, use of previously learned information, and peer or instructor recognition across lessons and implementation periods

Methods

Study Design & Data Collection

- Descriptive secondary analysis of existing DICE exit-ticket data collected across four implementation periods: Spring/Summer 2024 and 2025
- Youth with T1D, caregivers, and siblings provided responses independently

Exit Ticket Measures and Coding

- Five primary questions analyzed: three open-ended and two Yes/No items
- Open-ended responses coded by one researcher (A.B) using a predefined thematic coding dictionary
- Multiple codes permitted for learning and favorite components

Data Analysis

- Frequencies and percentages calculated in Microsoft Excel using valid item-level responses
- Patterns examined across lessons and implementation periods
- Blank and ineligible responses excluded as applicable

Unit of Analysis: *Individual exit-ticket response, not unique participant. Individuals could contribute responses across multiple lessons.*



Results

Participant-Reported Learning Theme	DICE Lesson									
	1	2	3	4	5	6	7	8	9	10
Cooking	31.5%	31.7%	25.0%	30.2%	33.3%	41.8%	30.8%	34.1%	29.2%	35.4%
Diabetes Mgmt	5.6%	36.5%	35.4%	50.8%	24.6%	12.7%	11.5%	2.3%	16.7%	18.8%
Family Interaction	25.9%	3.2%	0.0%	1.6%	0.0%	0.0%	1.9%	0.0%	2.1%	2.1%
Nutrition Ed	25.9%	17.5%	22.9%	3.2%	35.1%	36.4%	25.0%	22.7%	29.2%	16.7%
Other	24.1%	6.3%	14.6%	12.7%	8.8%	9.1%	19.2%	38.6%	12.5%	20.8%
Nothing	0.0%	4.8%	6.3%	4.8%	1.8%	5.5%	17.3%	9.1%	14.6%	10.4%

Figure 1: Distribution of Participant-Reported Learning Themes Across the Ten DICE lessons

Preferred Program Component Theme	DICE Lesson									
	1	2	3	4	5	6	7	8	9	10
Cooking	37.0%	27.0%	20.4%	24.6%	24.6%	26.9%	26.9%	15.6%	22.9%	41.7%
Diabetes Mgmt	3.7%	11.1%	4.1%	13.1%	5.3%	5.8%	5.8%	4.4%	8.3%	0.0%
Family Interaction	35.2%	11.1%	22.4%	24.6%	15.8%	11.5%	7.7%	15.6%	6.3%	16.7%
Eating Food	27.8%	34.9%	32.7%	29.5%	31.6%	42.3%	51.9%	46.7%	47.9%	37.5%
Games/Activities	11.1%	12.7%	18.4%	23.0%	21.1%	26.9%	11.5%	4.4%	12.5%	25.0%
Other	3.7%	7.9%	8.2%	4.9%	7.0%	5.8%	3.8%	13.3%	6.3%	6.3%

Cooking was the **leading reported learning theme (32.2%),** whereas **eating food** was the most frequently identified **favorite component (37.8%).**

46.8%
Previous- lesson information used
166/355 eligible responses

68.2%
No changes suggested
345/506 eligible responses

57.7%
Willing to recognize a peer or instructor
302/523 eligible responses

Figure 2: Distribution of Preferred Program Component Themes Across the Ten DICE lessons

Discussion / Interpretation

- **Learning vs. Enjoyment:** Reported learning and favorite activities reflected distinct aspects of DICE
- **Curricular Alignment:** Prominent learning themes were consistent with lesson objectives, with patterns varying across implementation periods
- **Application:** Some families reported using DICE content beyond sessions; sustained use remains unknown

Strengths: Session-level data across ten lessons and four implementation periods, including youth and family perspectives

Limitations: Self-reported responses, single-coder analysis, repeated responses, and no causal inference

Key Takeaway: Separately examining reported learning, preferred activities, and between-session application reveals complementary dimensions of participant experiences and identifies opportunities for targeted refinement of pediatric T1D interventions

Public Health Relevance / Implications

- **Improve Evaluation:** Assess learning, enjoyment, and real-world application separately.
- **Refine Curricula:** Use lesson-specific feedback to identify areas for improvement for pediatric T1D interventions.
- **Support Application:** Identify opportunities to translate educational content into daily routines to improve pediatric T1D management .

Future Directions

- **Qualitative Analysis:** Examine specific tips applied and reasons for peer/instructor recognition.
- **Participant Perspectives:** Compare experiences among youth, caregivers, and siblings.
- **Sustained Application:** Investigate barriers to application and whether reported practices are sustained.

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