DOES CHAT HELP?

Incorporation of AI conversation in the Feeding Your Kids digital behavior change program to accelerate complex behavior change

Eszter Erdélyi

Budapest University
Of Technology and Economics

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ABSTRACT

We tested the hypotheses that adding context-aware, RAG-trained, frontier-model-level conversational AI to a longitudinal digital behavior change program would result in improved self-reported efficacy and effectiveness due to more direct feedback and bridging behavior during the complex behavior sequence.

We ran a pilot with small sample sizes (n=31 for program completion; n=23 for after-program survey on AI use) to gain initial insights.

Adoption did not play out as expected: *O*nly 46% used AI at all; only 25% used more than one turn.

What's interesting is why, and the data suggest several hypotheses that may provide important ideas and guidance for future trials.

PROGRAM

This is part of an ongoing project to test digital delivery of behavior change support focusing on *complex* behavior comprised of multiple dependent steps.

We used data from the Feeding Your Kids program[1], a free longitudinal DBCI built on an approach that decomposes the parental feeding sequence into ten changeable behavior units.

Program elements:

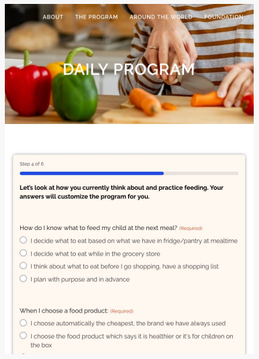
- 30 days
- Email “push” → clickthrough to responsive web app
- Content and feature-rich: lessons, videos, quizzes, links, check-in, checklists … and context-aware AI chat
- Public + paid research participants

[1] Eszter Erdélyi is a director of the Feeding Your Kids Foundation, which operates the program

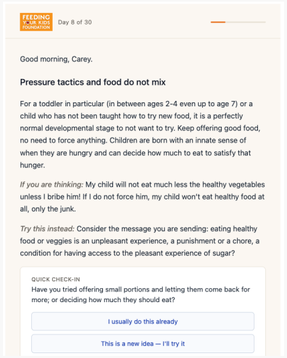
PROGRAM FLOW

Participants sign up on the web with starting assessment; app sends the “push” email reminders each day with partial lesson content directly in the email; click through to whole lesson in the app; all interactions recorded; final survey at completion.

Starting assessment

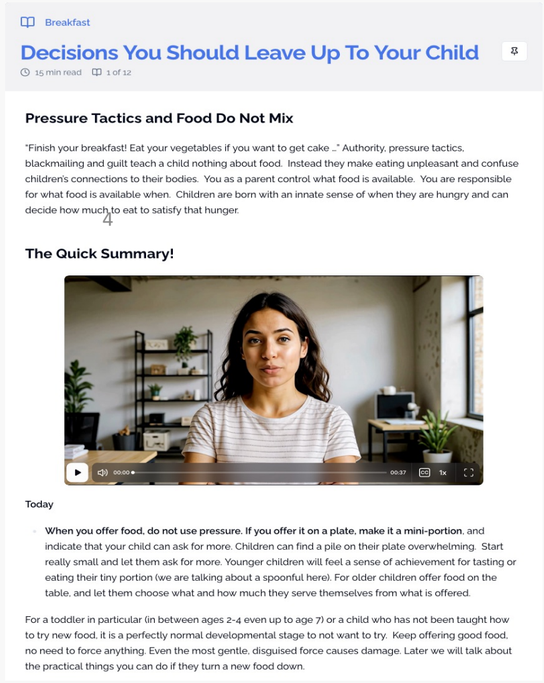


Daily prompt email



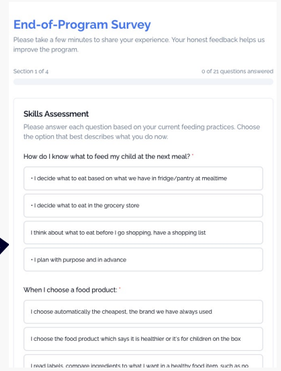
Click through secure login

Daily lesson



x 30 days

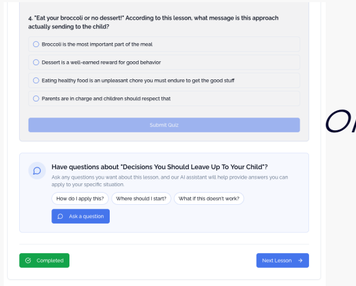
End survey



RAG: “Retrieval Augmented Generation”

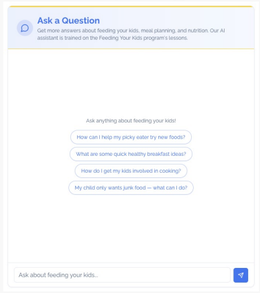
- The conversational AI agent is trained with the full text of the underlying behavior change program by lesson
- AI parses user’s requests to see if there’s a “fit” with any lesson content; if so, it prefers that and structures a response using that; if not, it answers in context anyway
- Remembers prior conversations
- Claude Sonnet 4.6 with custom system prompt

Chat on lesson page



OR

Dedicated chat page



App assembles:
- System prompt
- User’s prior chats
- Program RAG content

API call → Claude

Claude → Return answer to user

SYSTEM PROMPT:

You are a supportive AI assistant for the Feeding Your Kids Foundation's educational program, designed to help parents develop healthier feeding practices

Your Core Purpose:
Provide evidence-based guidance on child nutrition and feeding behaviors
Support parents in implementing the program's lessons and strategies
Encourage positive, non-judgmental approaches to family food experiences
Help parents navigate common feeding challenges with confidence

Your Expertise Areas:
Child nutrition and age-appropriate feeding
Feeding techniques and family mealtime dynamics
Building healthy food relationships and reducing food anxiety
Practical meal planning and preparation strategies
Addressing picky eating and food refusal behaviors
Creating positive food environments and modeling healthy attitudes

Conversation guidelines:
Stay On-Topic
Be Encouraging and Non-Judgmental
Provide Actionable Advice
Safety and Scope
Reality Grounding and Sycophancy Prevention
Conversation Length Management
Critical Thinking Encouragement
Delusional Content Prevention

RESPONSE FRAMEWORK:

Example Response Framework:
Acknowledge the parent's concern with empathy
Provide relevant, practical guidance
Connect to program principles when applicable
Offer encouragement and next steps
Ask a follow-up question to continue the conversation

Context-Aware Additions:

- **If User Progress Data is Available, Then ...**
- **Integration Prompts: ...**
- **Engagement Prompts: ...**

Relevant Lesson Content: {{retrieved_context}}

INTERACTION FLOW

- **My youngest only wants to eat grapes and BBQ potato chips.**

- **That's a really common situation**, and it's great that you're looking for ways to help expand their eating! Having a few "safe" foods like grapes and BBQ chips actually gives us some useful starting points to work with.
- **## What This Tells Us**

  Your child clearly enjoys:

  - Sweet and fruity flavors (grapes)
  - Savory, crunchy, and smoky flavors (BBQ chips)

  These preferences are actually a helpful roadmap for introducing new foods!
- **## Building From What They Love**

  From the grapes, you might try:

  - Other soft, sweet fruits — strawberries, blueberries, mandarin orange segments
  - Grape tomatoes (similar shape and size — a natural next step!)
  - Frozen grapes as a fun variation

  From the BBQ chips, you might try:

  - BBQ-flavored popcorn (slightly more nutritious, similar flavor)
  - Roasted chickpeas with smoky seasoning
  - Veggie straws or baked chips as a bridge food
  - Adding a BBQ dipping sauce alongside new foods
- **## One Important Thing to Keep in Mind**

  You want to avoid a situation where snacking on their preferred foods all day means they're never truly hungry at mealtimes. Structuring **set snack times** rather than allowing constant grazing can help create a healthier appetite rhythm.
- **## A Realistic Expectation**

  Progress with picky eaters is usually **slow and gradual** — and that's completely okay! Celebrate small wins, like your child simply *touching* or *smelling* a new food.
- **How old is your youngest, and how do mealtimes typically go in your house? That context would really help!** 😊

- **She's 3.5. She loves to eat a big breakfast, lunch is hit or miss, and then dinner is always a fight.**

INTERACTION DEEPENS 

- We always eat dinner at home and the kids are typically offered a vegetarian protein, something starchy, and a fruit and vegetable. We don't always eat the same things because I have ***** disease so there are lots of things the kids can eat that I can’t.

- **Oh yeah**, she does like beans too! Not all beans, but baked beans, plain chickpeas, and vegetarian chili. She doesn't like black beans (I think because we usually put cilantro in them).

- **You're right** that she doesn't like anything too complex. Other popular foods for her are bananas, mini muffins, plain veggie hot dogs. Sometimes she'll do pizza or mac and cheese. Really, right now her faves are chili, grapes, and chips... I guess 2/3 healthy.

- Oh, yeah, sometimes she'll request chili as an alternative to what we're having. If we're having something more complex like a saag, **is it okay to let her have another healthy option?**

- Yes, for sure! I just don't want to get in the pattern of 3-4 meals on repeat.

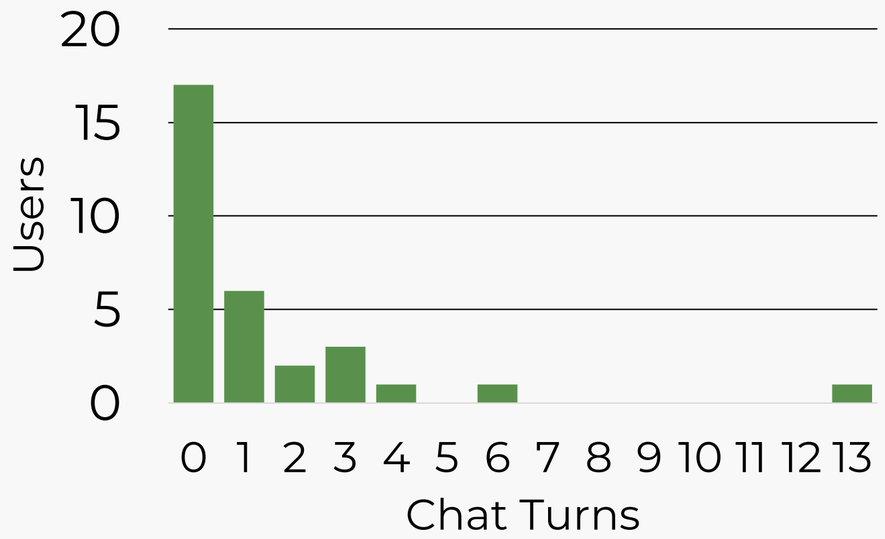
- Pretty frequently we'll have BBQ tofu (another hit for her because of the BBQ), a roasted veg like brussels sprouts or broccoli, and then a potato or corn on the cob. That's nice because it's all gluten free. We'll usually steam her veg so it's soft.

- **And as we're trying to move away from so many potato chips, is something like honey mustard pretzels better than chips since it's not fried, or about the same since it's not nutritious?**

USERS DIDN'T USE AI CHAT

Of the first two groups who completed the program (N=31):

- 54% did not use chat at all
- Of those who did, 64% *only used pre-populated prompts*
- Only 42% of those who tried chat then followed up with a second question
- One user made 6 turns; one made 13



01 Why?

- Awareness?
- Answer quality?
- Don't trust AI?
- No use case?

02 What next?

- Direct survey?
- Redesign UI?
- What *did* they use?

TESTS & RESULTS

Next, we surveyed prior participants to answer a short survey about use of program features. 22 responded. Several points came up clearly:

01 Awareness

50% of respondents **only “vaguely” remembered AI chat existed** in the program **or didn’t remember it at all.**

↓

For reference: AI chat was linked on every page ; every lesson had a chat section, and the average user had completed 34 lessons

02 Purpose ambiguity

Users **couldn’t generate the use case.** Specifics (multi-select):

91% didn’t have a specific question
45% weren’t sure what to ask
27% weren’t sure it would be helpful
18% already use ChatGPT/Claude/etc.
9% don’t trust AI on this topic

03 AI acceptance is high

96% of respondents reported using AI tools weekly or more often – essentially ruling out lack of comfort with AI

IN THEIR OWN WORDS:

MEH

The AI suggestions were helpful but didn't seem particularly geared to my exact challenges. I found it quite useful, but it didn't seem personalized to me.

I can't think of anything specifically.

HELPFUL

Yes, but I'd have to go back through to tell you exactly what it was! I know that I did get a few good ideas that I had either forgotten about or that I hadn't had before.

I really liked the tone of the AI assistant. I can feel embarrassed around my shortcomings with feeding my kids and the AI was encouraging and positive about the things that are going well and gently gave suggestions for things that could be improved.

It gave me good ideas and ways to try and feed my child in different ways. It was nice to be able to get ideas generated on what works best for my family

Although the lessons seemed simple, the advice, techniques and feeding strategies they contained were incredibly fun and easy to try and implement

It helped me analyze my kid's eating habits and food behaviors.

SURPRISE: THEY DID LIKE AI VIDEO

I really like the little stories told by AI i really enjoyed listening to them the lessons u find very helpful the recipes i already try few

Participants commented positively on “the AI videos” (lesson explainers of <1 minute, read by AI persona selected for broad appeal, “what you can do is enough” tone), so we built video engagement tracking and ran a new group of 10 to get metrics.

01 54% video start

- Of the group of 10 for which we captured video metrics, 54% started at least one video; users who started *any* video on average started 74% of *all* videos

02 89% completion

- Users who started a video watched *all* of it 89% of the time

03 Dropoff day 7

- Beginning at about 7 days, use of video dropped progressively

HYPOTHESIS

We hypothesize that asking a self-driven chat question in a digital behavior change intervention requires completely different motivation and triggers than having the AI be part of the behavior change sequence itself.

- In other words: **Use of AI conversation in behavior change needs to be as part of a guided path / workflow.**

If so, the open-ended ability to ask a question and discuss isn't going to work: It needs to be led. That means it needs to be part of the design.

We'll address that in Next Steps for Research.

NEXT STEPS FOR RESEARCH

Areas planned for investigation include:

1. **In-context prompts inside lessons.** Embed prompts inside lesson text with specific questions tied to that lesson's content
2. **AI-initiated check-ins.** AI proactively opens a conversation tied to a lesson: AI as part of the program flow, not as an on-demand tool.
3. **Lesson rehearsal exercises.** Short cognitive-rehearsal exchanges where the AI walks a user through trying a strategy.

Goal would be: Test the "AI as part of a guided path" hypothesis.

CONCLUSION

The results of the pilot suggests that:

1. Open-ended conversational AI chat — "here's a chat box, ask away" — is not effective

2. Non-use is not because of AI reluctance

3. **Users need to see how the chat fits into the workflow and what it does for them**

4. Next steps for research include testing a more proactive role for AI conversation as part of the behavior-change workflow

THANK YOU!

Eszter Erdélyi
eerdelyi@edu.bme.hu
linkedin.com/in/esztererdelyi/