

# Enabling Precision Health and Medicine: Improving Family Health History (FHx) Collection



BASS  
CONNECTIONS

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## Introduction

**What is FHx?** FHx collection is currently one of the most effective tools for guiding clinical decision-making

**About MeTree:** MeTree is an FHx clinical decision support system (CDSS) tool that generates action-oriented suggestions tailored for both patients and physician -- and is the only CDSS that provides recommendations for point-of-care settings. However, there are still barriers to uptake of CDSSs like MeTree that can be overcome through patient education. Although text educational materials provided improvements, research identifies more effective avenues for educating patients about information important to their health.<sup>1,2</sup>

**Project Goals:** This study aimed to (1) Identify attitudes, perceived utility and barriers to collecting FHx or MeTree use, and (2) Create and evaluate the efficacy of an educational video intervention in increasing understudied populations' perceived utility of and attitudes surrounding FHx collection.

Our study will ultimately help lend insight into future strategies for improving the clinical utility of FHx CDSS.

## Methods

### Video Intervention Design

- Narrative-framed video with advice about FHx collection strategies & communication
- Addressed family dynamics & structure
- Supplied a 'question toolkit'
- Provided reassurance about common concerns about FHx collection & sharing

### Survey Experiment Design

1. Comparison study of video intervention and control group
2. **Group 1 (Intervention)** = Received narrative educational health video before assessing attitudes and perceived utility
3. **Group 2 (Control)** = Received written educational materials previously proven to improve quality and quantity of FHx collection
4. Open-ended question to identify common barriers to FHx collection
5. Mixed method analysis of intervention and demographic trends in comfort, attitudes, and perceived utility

## Results 1: Narrative Health Video



Fig 1: Addressing Family Dynamic



Figure 2: Addressing Common Concerns



Figure 3: Modeling MeTree Input

The Intervention Group (1) was significantly more likely than the written materials group to:

- Engage in FHx behaviors (collection, initiate conversation with family members, recommend MeTree to family members,  $p = 0.06$ ;  $p = 0.01$ ;  $p = 0.04$ ).
- Endorse the value of FHx collection in helping with risk reduction ( $p = 0.02$ ), and comfortability with sharing their FHx with MeTree ( $p << 0.001$ ). (see Fig. 4)

### Sample Characteristics: 294 Respondents

Gender: 96 males (33%); 197 Females (67%)  
Age: 240 18-29 years (82%); 54  $\geq 30$  (18%)  
Occupation: 162 Undergrad (55%); 61 Graduate (21%); 37 Staff (13%); 34 Other (11%)

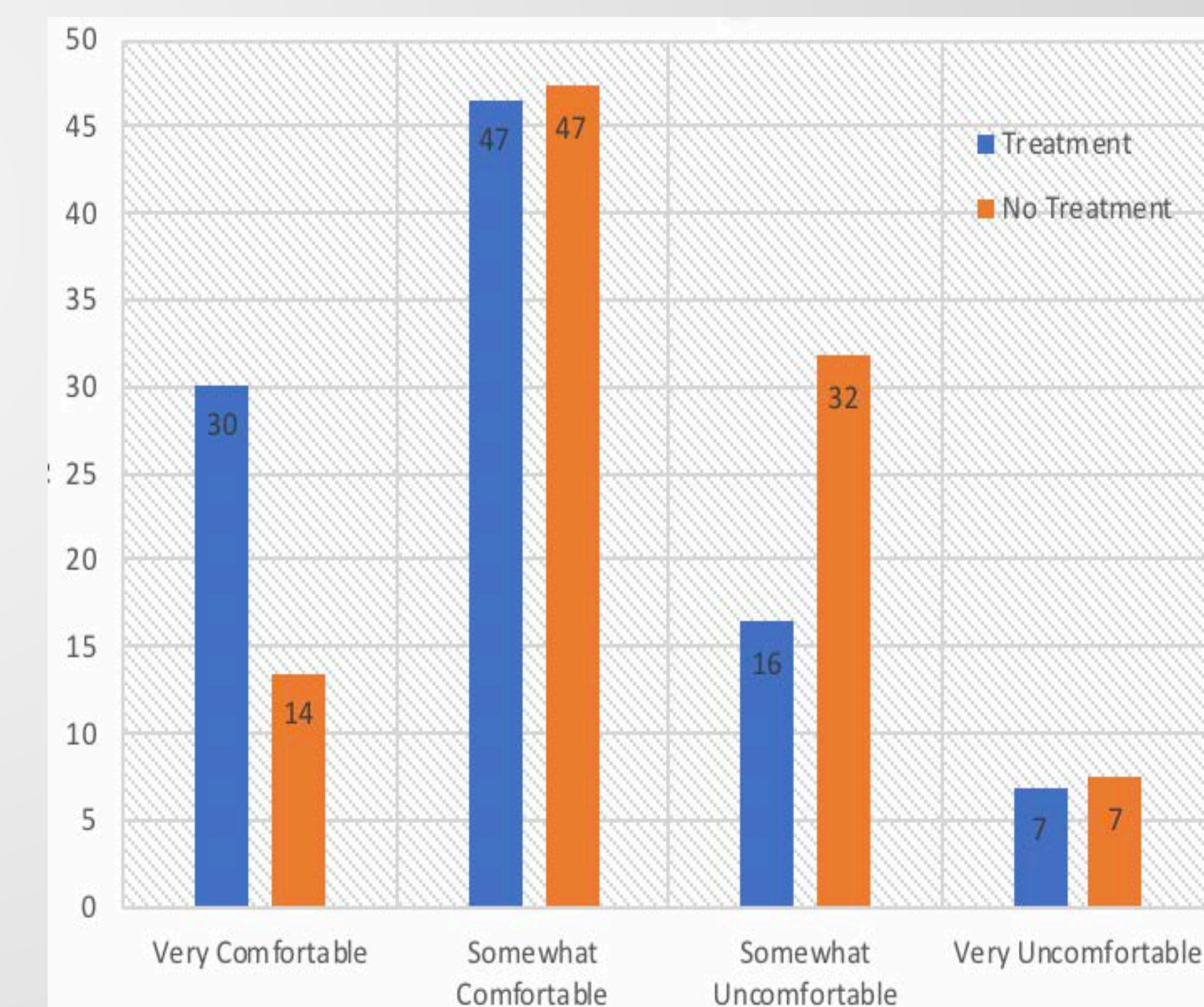


Fig 4: Level of Comfortability with MeTree

## Results 2: Attitudes and Perceptions

Table 1: Key Preliminary Findings from Survey Responses

Characteristic	Finding	Pvalue
Age	- Young adults less likely to have familial experience with cancer, heart disease	0.01
	- Young adults less likely to hold strongly positive attitudes toward FHx collection or sharing with PCPs	0.33
Education	- Education level did not predict attitudes toward FHx	0.03
	- Pre-medical undergraduate students had greater background knowledge of FHx terms	
	- Pre-med students did not have more strongly positive attitudes than non-pre-med	
Gender	- Women were more likely than men to have collected FHx prior to survey	0.03
	- Men were more likely than women to cite privacy or mistrust of MeTree as barrier to FHH collection	0.01
Experience	- Experience with heritable disease predicted previous FHx engagement behaviors	0.01
	- Adults with 1st degree relatives or personal experience with cancer, heart disease more likely to know about their personal FHx and share their FHx with PCP	$\cong 0$ ; 0.01

## Discussion

1. Results suggest that video intervention was more effective at increasing comfortability, attitudes and perceived utility of FHx and MeTree as a risk assessment/prevention tool
2. Many of the top cited barriers to FHx collection in open-ended responses are all addressable & actionable
  - Family dynamics/structure
  - Privacy Concerns; Mistrust
  - Low appraisal of older generations health knowledge/literacy

### Framework for Future Interventions:

- Patients may need more advice on navigating different family structures/dynamics; future interventions should work to:
  1. Directly address stigma, denial, and embarrassment;
  2. Identify and provide solutions for different communication styles within families;
  3. Aim to reassure confidentiality and privacy more directly where privacy concerns remain; and,
  4. Target self efficacy within the young adult population.

Future studies should also aim to expand to more diverse demographics, especially in regard to age and education level

## References

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