

# A novel intervention to promote help seeking for hearing loss

Gabrielle Saunders  
NCRAR, Portland, OR



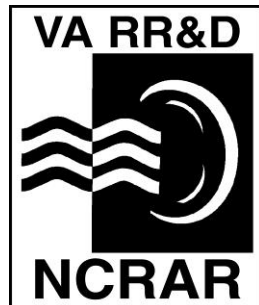
<http://www.ncrar.research.va.gov/>



# Background/History

**Final installment in the NCRAR/Eriksholm collaboration:**

*...to develop an intervention to encourage help seeking for HL that is based on health behavior theory*



# Why were we doing this?

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- **Help-seeking rates for hearing loss are low even when people are aware they can't hear...**

# Data from “Application of Health Behavior Models to Predict Hearing Healthcare Outcomes” (NIH R01DC013761)

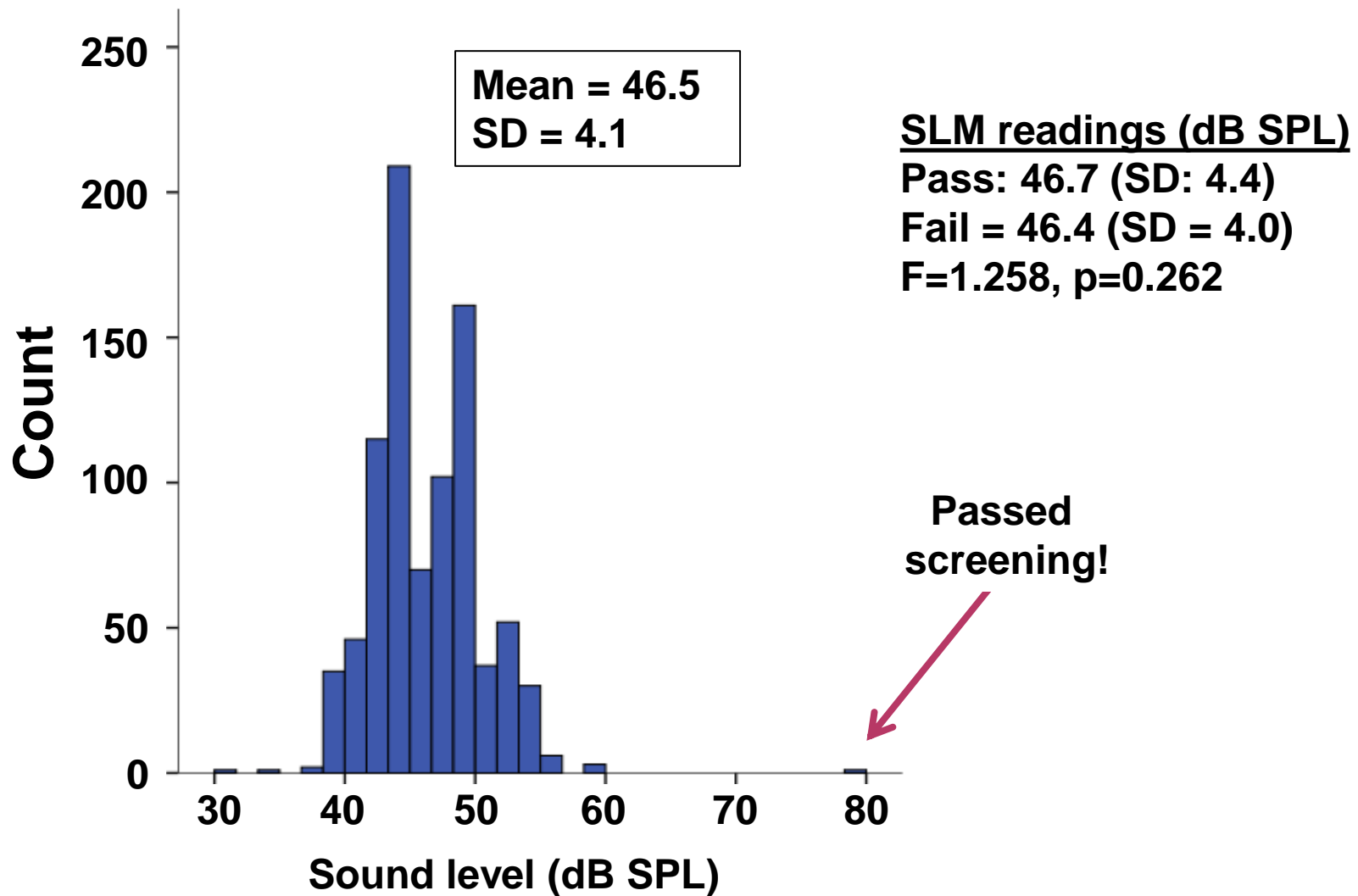
Conducted 1035 hearing screenings over 1 year!

Mean age = 65.1 yr. (SD = 13.5), Range = 18 to 107 yr.

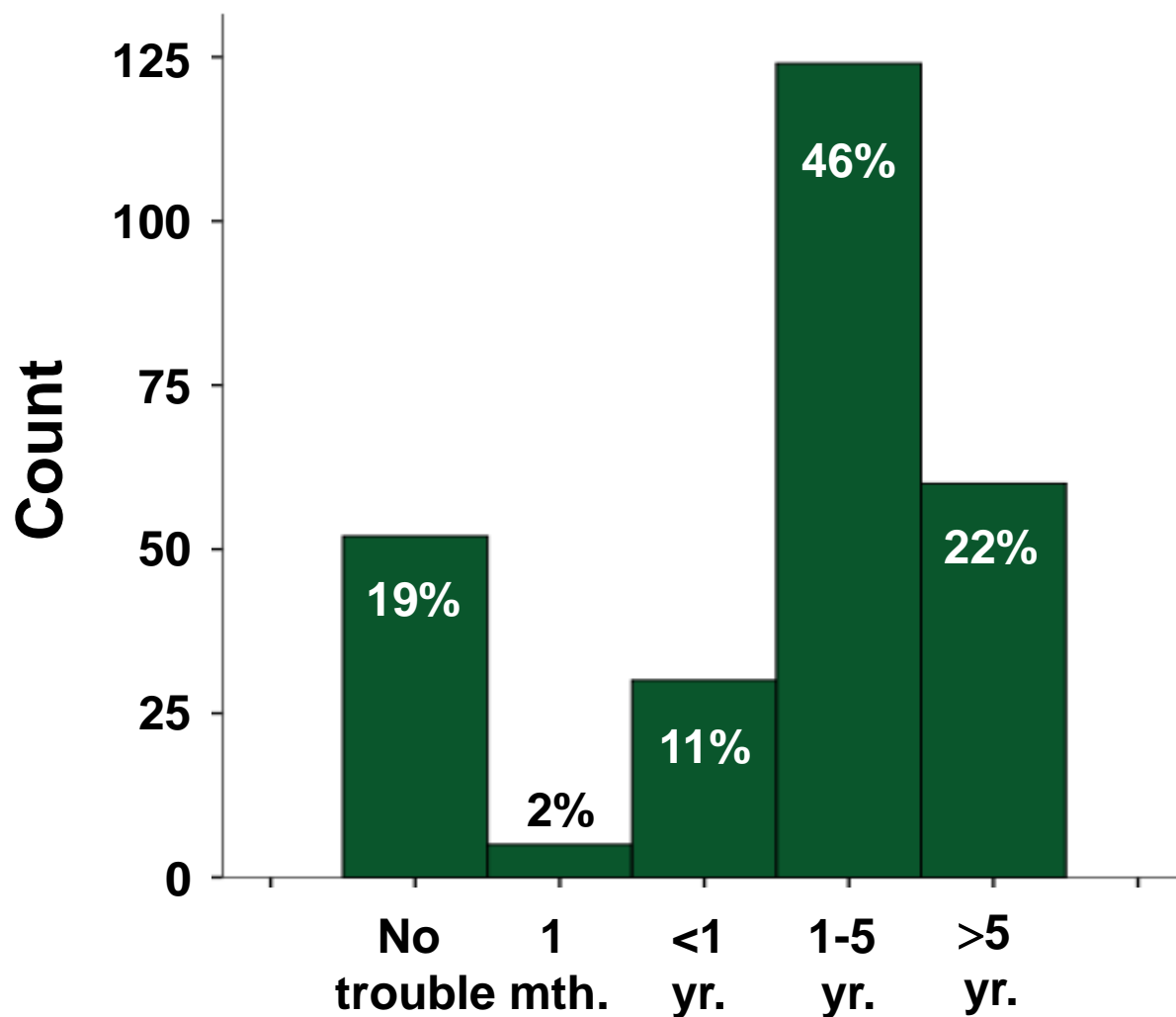
- 62.1% failed the audiometric screening
- 43.6% failed the HHI-S screening
- 33.7% failed both



# Audiometric screen failures were not due to ambient noise



# For how long have you noticed hearing difficulties? (n=271 who failed screening)



- **It is critical that we examine the factors underlying help-seeking for HL**

# Key point



*Many of the reasons for not seeking help for hearing are the same as those given for not taking action for other health conditions*



# Reasons for not seeking help

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- **Symptom severity**
- **Perceived impacts of condition**
- **Passive acceptance of condition**
- **Support from others**
- **Cost**

- **Thus it is logical to apply theory from health psychology to gain a better understanding of hearing health behaviors and to develop interventions to change those behaviors.**

# Health behavior models

- **Social Learning Theory**

- **Self-Determination Theory**

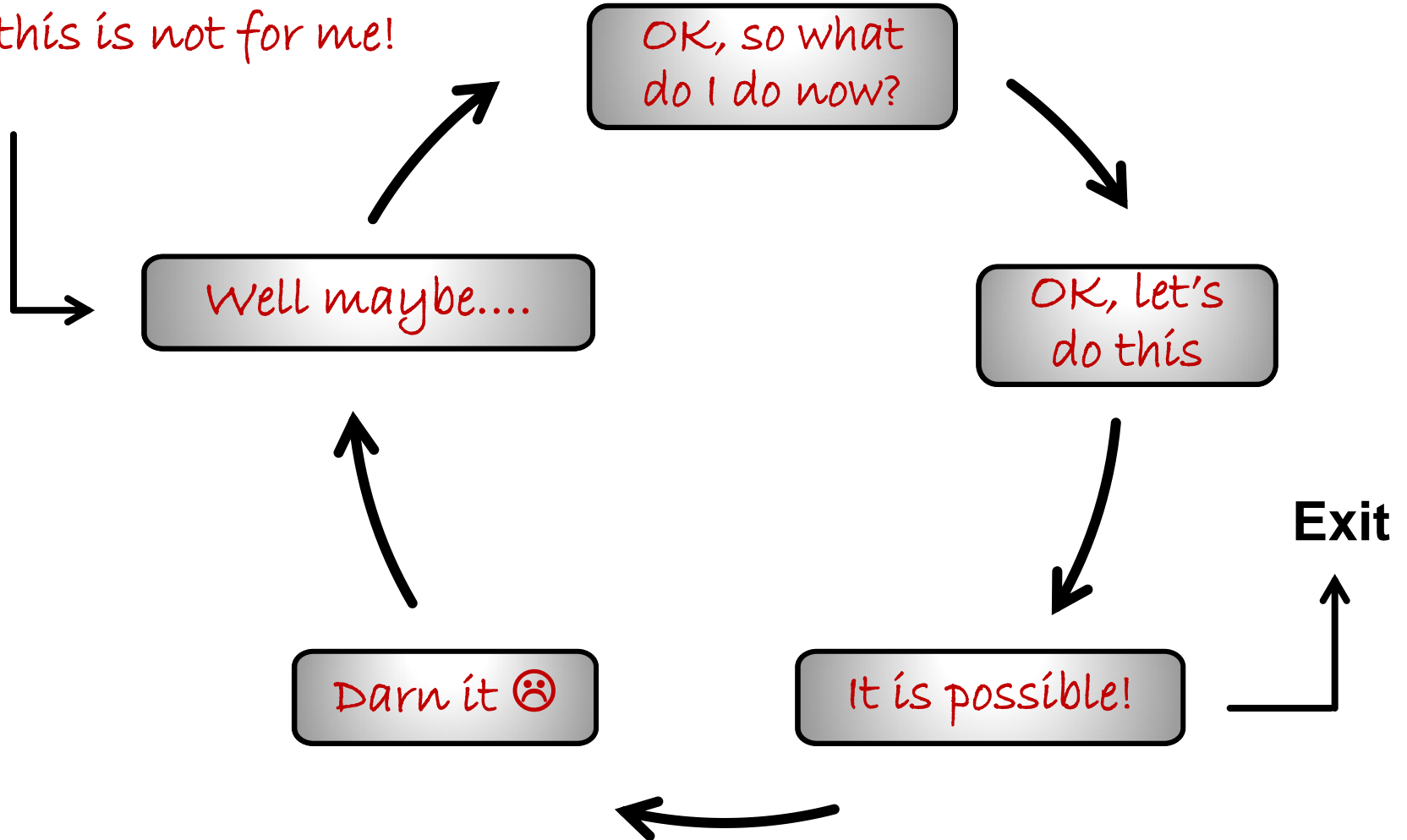
- **Theory of Planned Behavior**

- **Transtheoretical Model - Stages of Change**

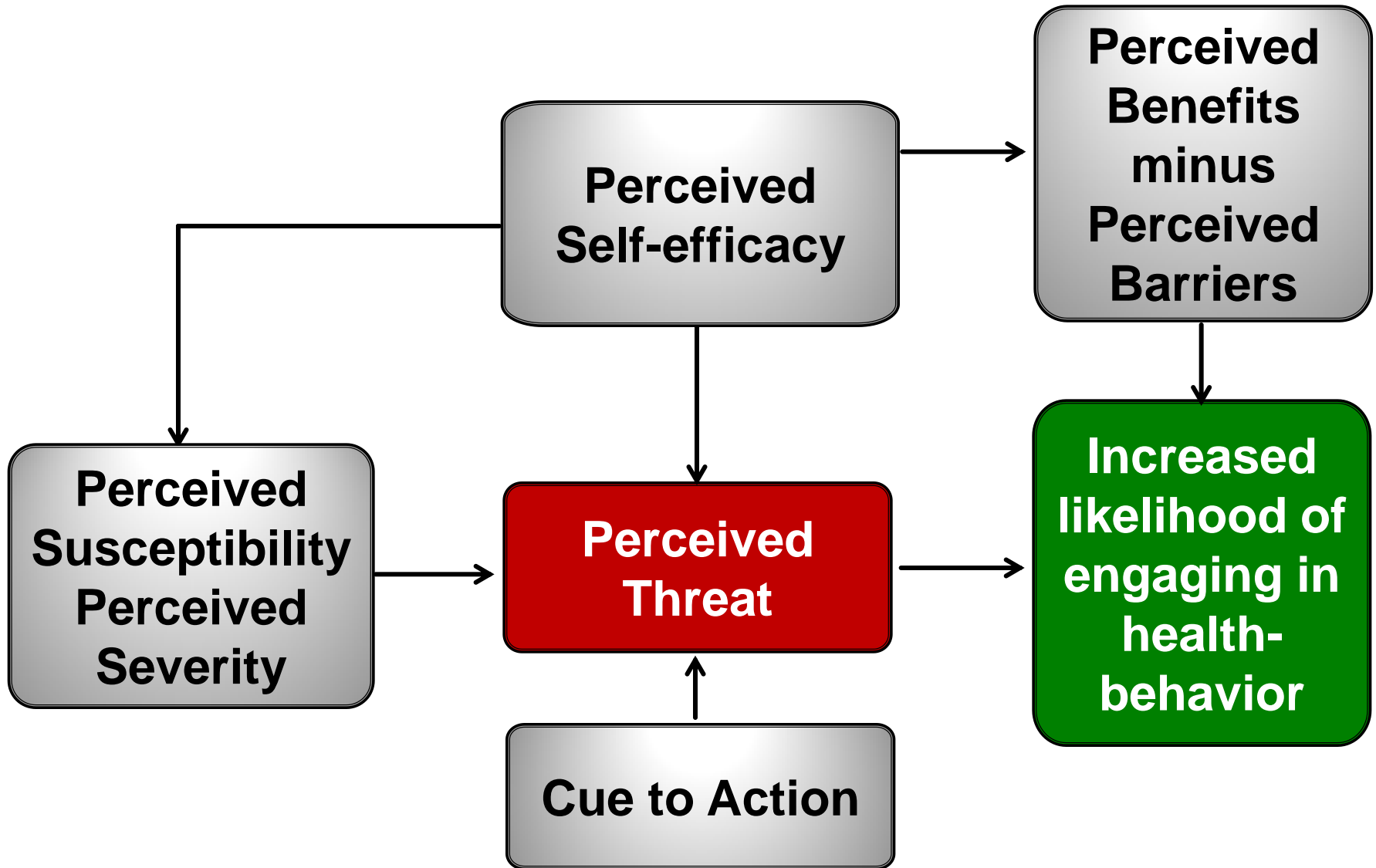
- **Health Belief Model**

# Transtheoretical Model (TTM) - Stages of Change

No, this is not for me!



# The Health Belief Model



# Self-Determination Theory (SDT; Deci & Ryan, 1985)

**There are different types of motivation.**

**Relevant here is the continuum of**

**Intrinsic/Autonomous/  
Internalized**

**vs.**

**Extrinsic/Introjected/  
External**

*Looking forward to getting hearing help so can hear better and achieve personal goals*

*Getting hearing help to avoid family nagging, or to assuage guilt (doing it for others)*

**Various factors regulate each of these and thus ultimately impact behaviors.**



# Note:

**These models each have many critics but also those who consider them valuable.**



**They are a good starting place**



# How might they be related?

## **The TTM....**

**..... provides insight about an individual's readiness for change**

## **The HBM....**

**..... can provide explanations for why an individual is or is not ready to make a behavioral change.**

## **The SDT....**

**.... can be applied when developing an intervention to optimize the likelihood of behavior change**

# The problem

**A major issue for audiology is getting the 60-80% of individuals who might benefit from hearing rehabilitation to seek help**



# Study goal

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*'to develop an intervention to encourage help seeking for HL that is based on health behavior theory'*

# Considerations

- **Target population?** **People with hearing problems who have not sought help**
- **Who will provide the intervention?** **Non-audiologist respected for health expertise (PCP/GP)**
- **When will it be provided?**  
**At check-up visit:**
  - ✓ **Must be quick**
  - ✓ **Cannot involve testing**
  - ✓ **Not require hearing expertise**



# Goal in context of TTM

No, this is not for me!

OK, so what do I do now?

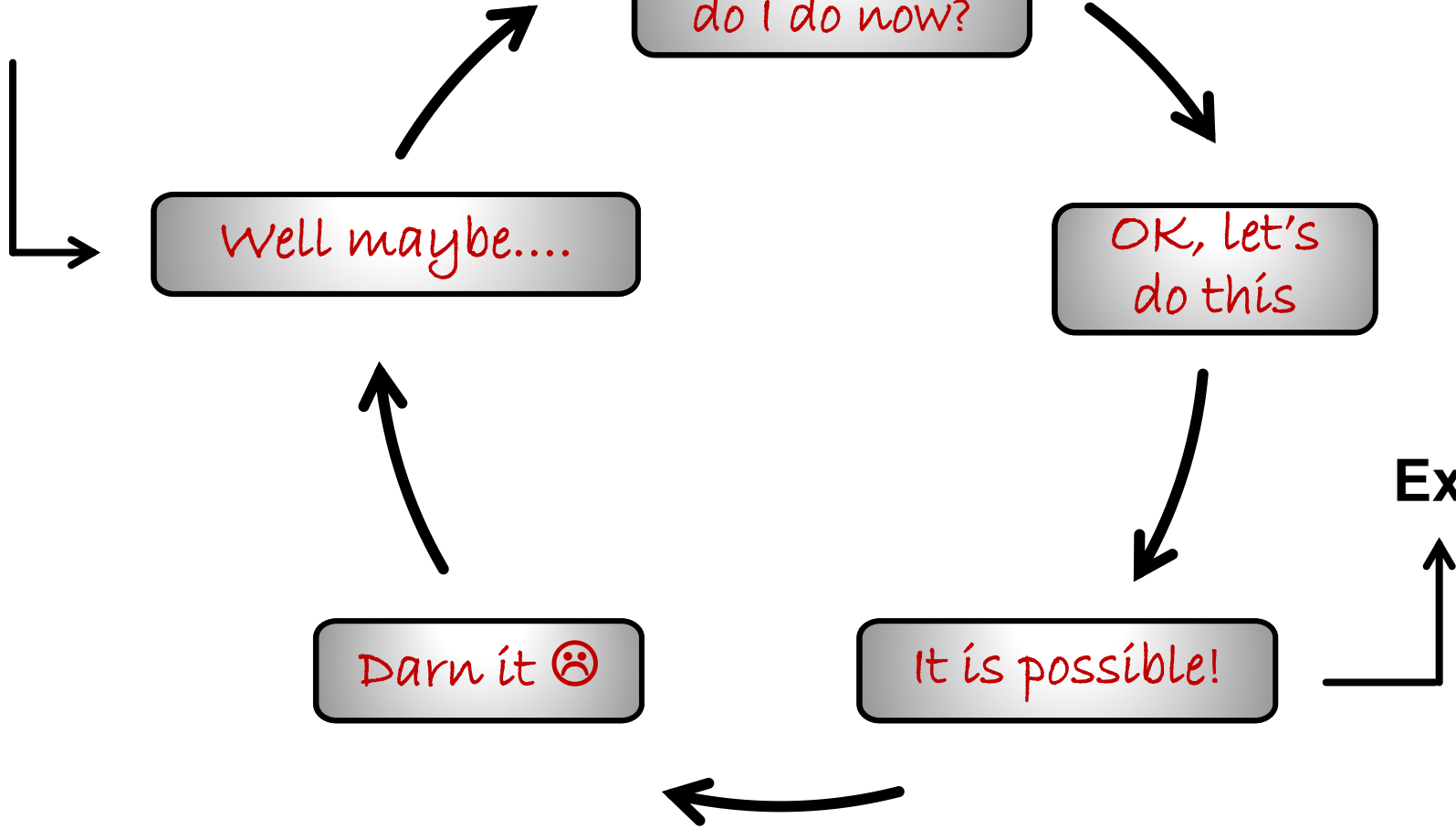
well maybe....

OK, let's do this

Darn it ☹️

It is possible!

Exit



# Predictors of precontemplation scores

Predictor (p<.05)	$\beta$ -value	% variance
<b>Precontemplation</b>		
HHI	-.306	31.6
Duration of difficulties	.298	7.3
Self-efficacy	-.284	8.6
Benefits	-.206	4.8
Cues to Action	-.132	2.1
4F-BEA	-.129	1.3
Total variance explained:		55.7%

- A high **Precontemplation** score is associated with
- **Fewer perceived hearing difficulties**
  - **Having noticed hearing difficulties for less time**
  - **Better hearing**
  - **Lower self-efficacy**
  - **Fewer perceived benefits**
  - **Fewer Cues to Action**

# Parameters for intervention

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- ✓ **Increase perceived benefits**
- ✓ **Increase self-efficacy**
- ✓ **Increase cues to action**

# Considerations

**Use emotions: Intent to change health behaviors is greater when emotional consequences are considered relative to when behavioral consequences are considered**

**Provide intrinsic motivators: More effective at behavior change than extrinsic motivators**

**Engage recipient: Greater patient engagement and involvement in healthcare decisions leads to better adherence to clinical recommendations**



# Patient engagement

**Goal: RCT to examine whether watching a video about depression, using an interactive computer program about depression or no intervention in the PCP waiting room altered outcomes of depressed individuals.**

**Outcomes = Percentage of patients who requested info about depression during the PCP visit.**

**Video and computer groups differed from controls**

# The intervention.....

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## **Instructions**

**For the next few minutes I would like you to spend some time thinking about the effects of your hearing.**

**Look at the pictures on the next page. Think about whether you can relate to any of them with your hearing in mind. Check or circle as many as apply. If anything else comes to mind, make note of it.**



*Hmmm, I was  
embarrassed  
not hearing the  
jokes in the pub  
last night*



**Patient:  
Shares impacts  
of hearing  
difficulties**

**Severity/  
Benefits**



**PCP/GP:  
Encourages  
patient to seek  
help**

**Cue to  
action**

**PCP/GP:  
Provides  
information on  
help seeking**

**Self-  
efficacy**

**Autonomous  
motivation**

**Patient realizes  
he/she may  
benefit from a  
hearing  
assessment**



# Attributes

- **Theoretically-based**
  - **Data from prior study/ literature review of help seeking factors/ use of *International Affective Picture System (IAPS)* photos**
- **Clinically practical**
- **Focuses on emotional/social impact of hearing loss NOT on listening situations**
- **Hopefully motivates patient to act i.e. intrinsic/autonomous motivation**

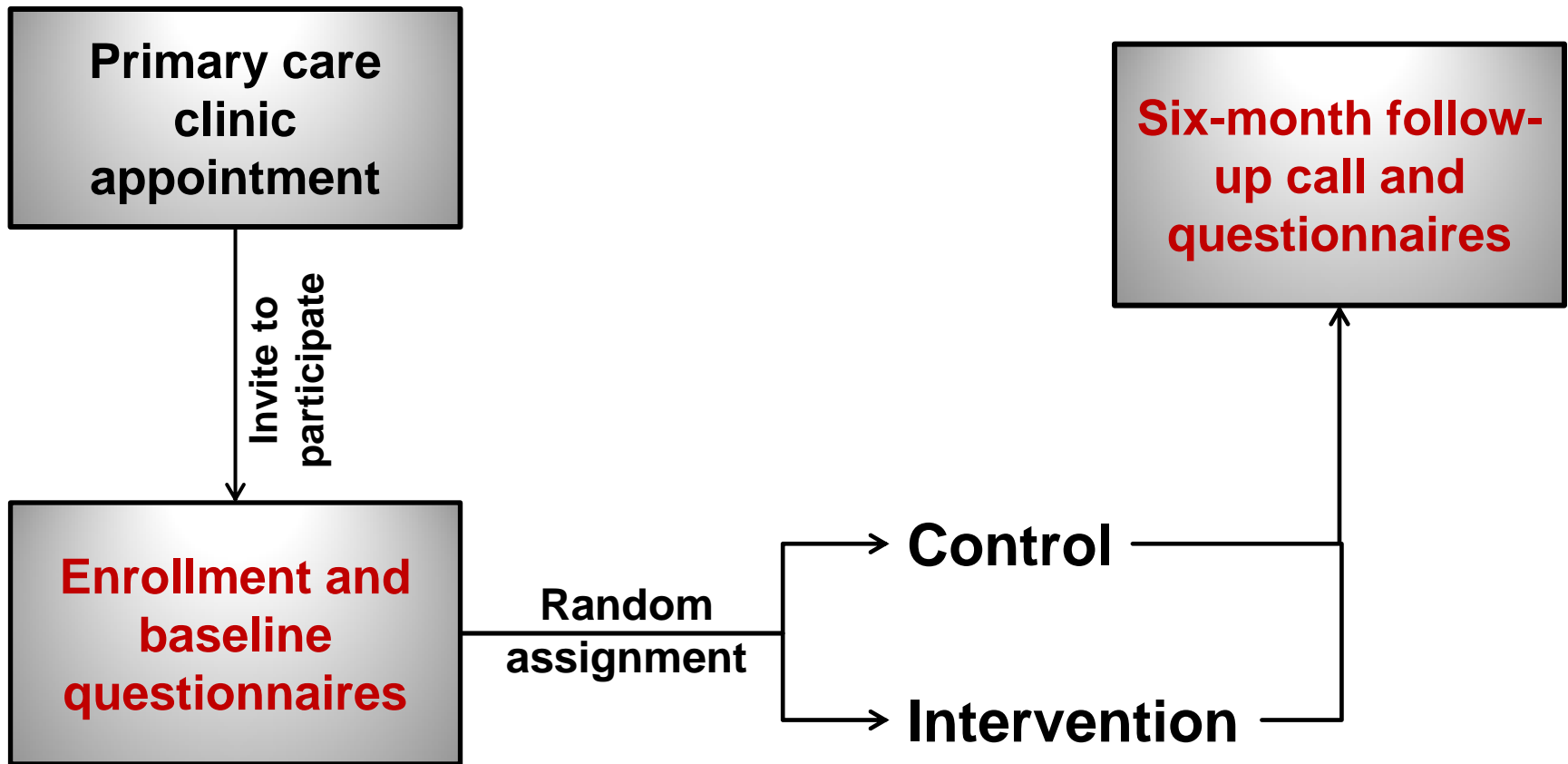


# Does it work?





# Study 2



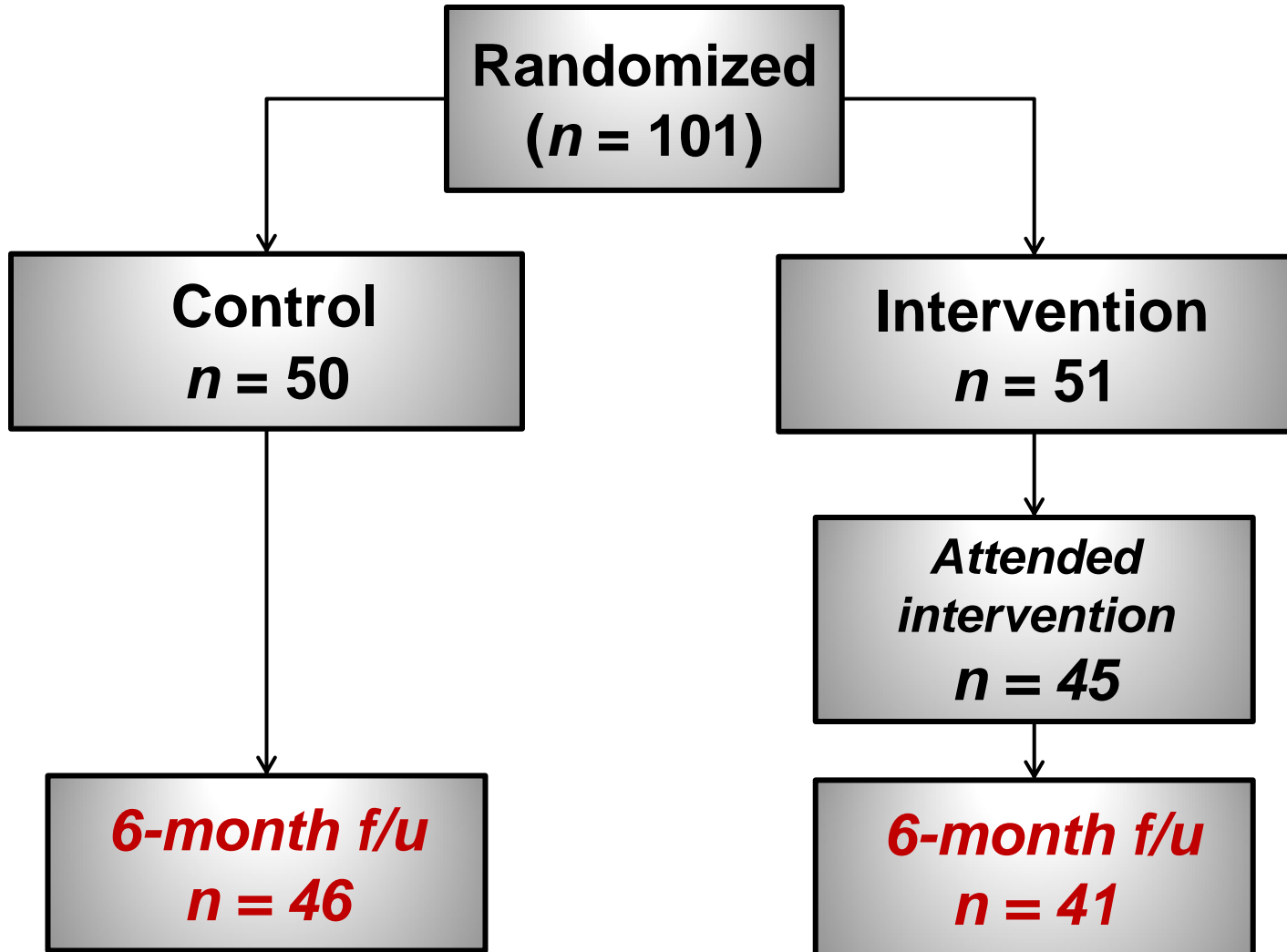
# Primary outcome measure

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**Response to the question:**

*“Have you had a hearing test in the last six months?”*

# Participant numbers



# Participants

**Age: mean = 64.9 (SD=6.3), range 50-79 years**

**Male: 76%**

**Female: 23%**

**Other: 1%**

**High school: 27%**

**Some college: 27%**

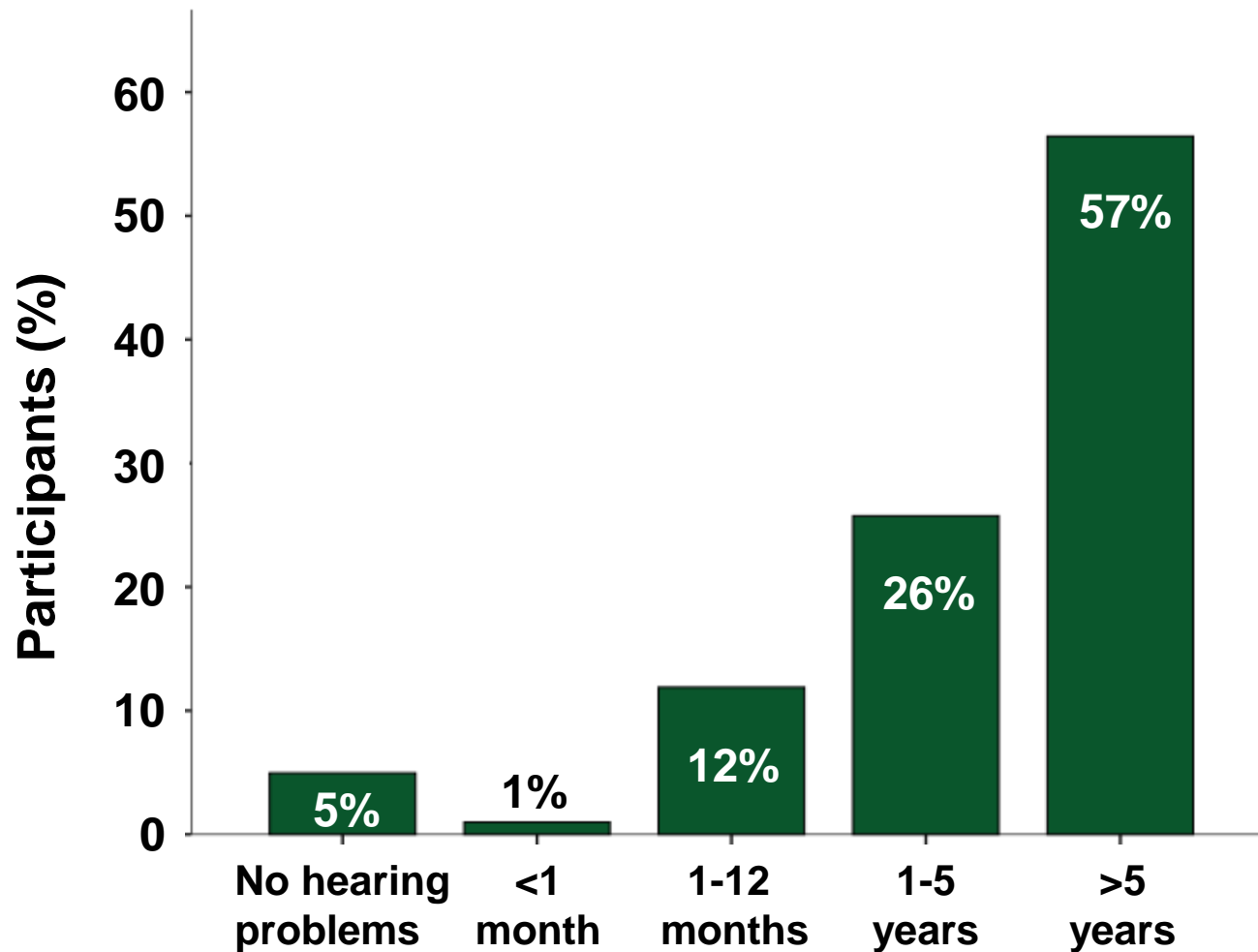
**College degree: 46%**

**Caucasian: 78%**

**Native American/Alaskan Native: 7%**

**All other races/not stated: 15%**

# Time since 1<sup>st</sup> noticing hearing difficulties



# Feasibility

## Intervention duration

Mean = 7.8 min (SD 3.6)

Range: 2-19 minutes

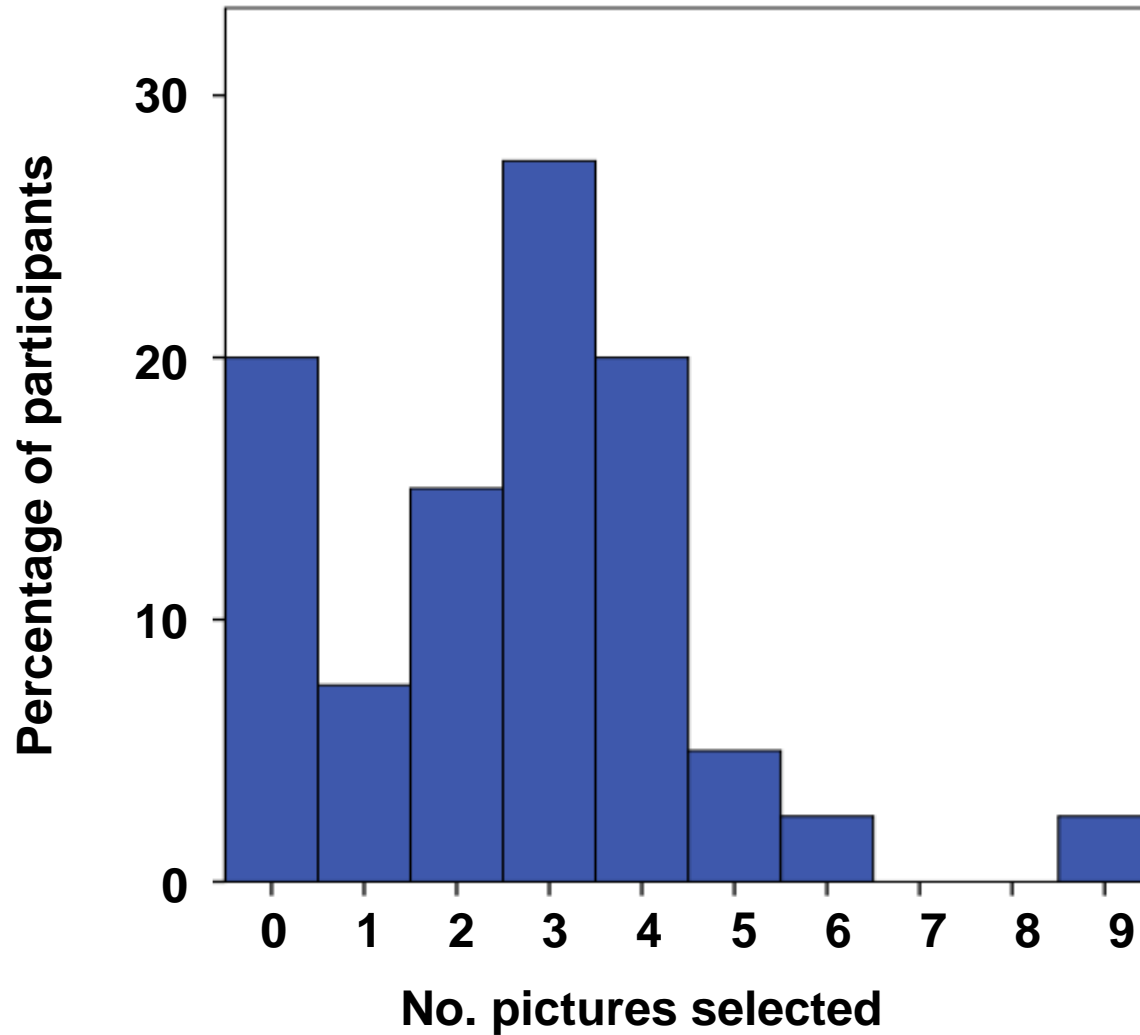
- **This includes the time that would be spent looking at pictures in waiting room**
- **Some participants wanted to chat in addition to conducting the protocol.**

# Feasibility

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**Comprehension of intervention**

# Number of pictures selected





## **Five said they simply didn't get the pictures**

- **Couldn't relate to anything**
- **No pictures were notable**
- **Pictures aren't hearing related**
- **I don't get the pictures**
- **I can't relate to the pictures**

## Hearing-related comments

- **People laughing at something I didn't catch**
- **Can't hear when someone is behind me**
- **I'm uncomfortable in some settings. Can't determine who said what**
- **If I have trouble hearing it's when 2-3 other people are talking**
- **Following instructions can be hard**
- **It's when you can't hear that well when you're with a group of people**



## Other comments

- **The man doesn't know what's going on, may or may not have trouble hearing**
- **I've never liked people pointing**

## Hearing-related comments

- I think about not hearing my grand kids
- **This is happy but I do have trouble understanding high pitches**
- My main problem is background noise, especially when kids are making noise
- I enjoy being around my grand kids, but one speaks softly
- **My grand kids are soft spoken, my hearing isn't great, has to do with background noise**



## Other comments

- My great grand daughter likes it when she gets attention, but she cries a lot
- **When people rattle I don't pay attention – it's easy to tune it out**



## Hearing-related comments

- **Looks like isolation – it's hard to be in a crowd if you can't hear**
- **Reminds me of sitting not knowing what is going on because I can't hear**
- **Being by myself, I don't always hear my wife**
- **It's feeling alone, can't hear anything**
- **I can't hear at the table**

## Other comments

Eating alone, no one around  
Feeling of being alone  
I feel isolated,



## Hearing-related comments

- **It shows feeling exasperation, covering up, trying to separate between noise and sound**
- **People get ticked off when they have to repeat**
- **I can hear better with my eyes closed**
- **I shut my eyes to shut out hearing.**  
**On way here today I asked my wife a few times what she had said**

## Other comments

- **Sometimes don't want to look at something**
- **He doesn't want to be looked at**



## Hearing-related comments

- **I get angry sometimes not hearing**
- I get peeved at movies, with the new generation they are 1/2 whisper, 1/2 with background noise. Voices drop off at the end of sentences
- I feel anger when can't hear
- I get angry when can't hear
- **I get accused of shouting**

## Other comments

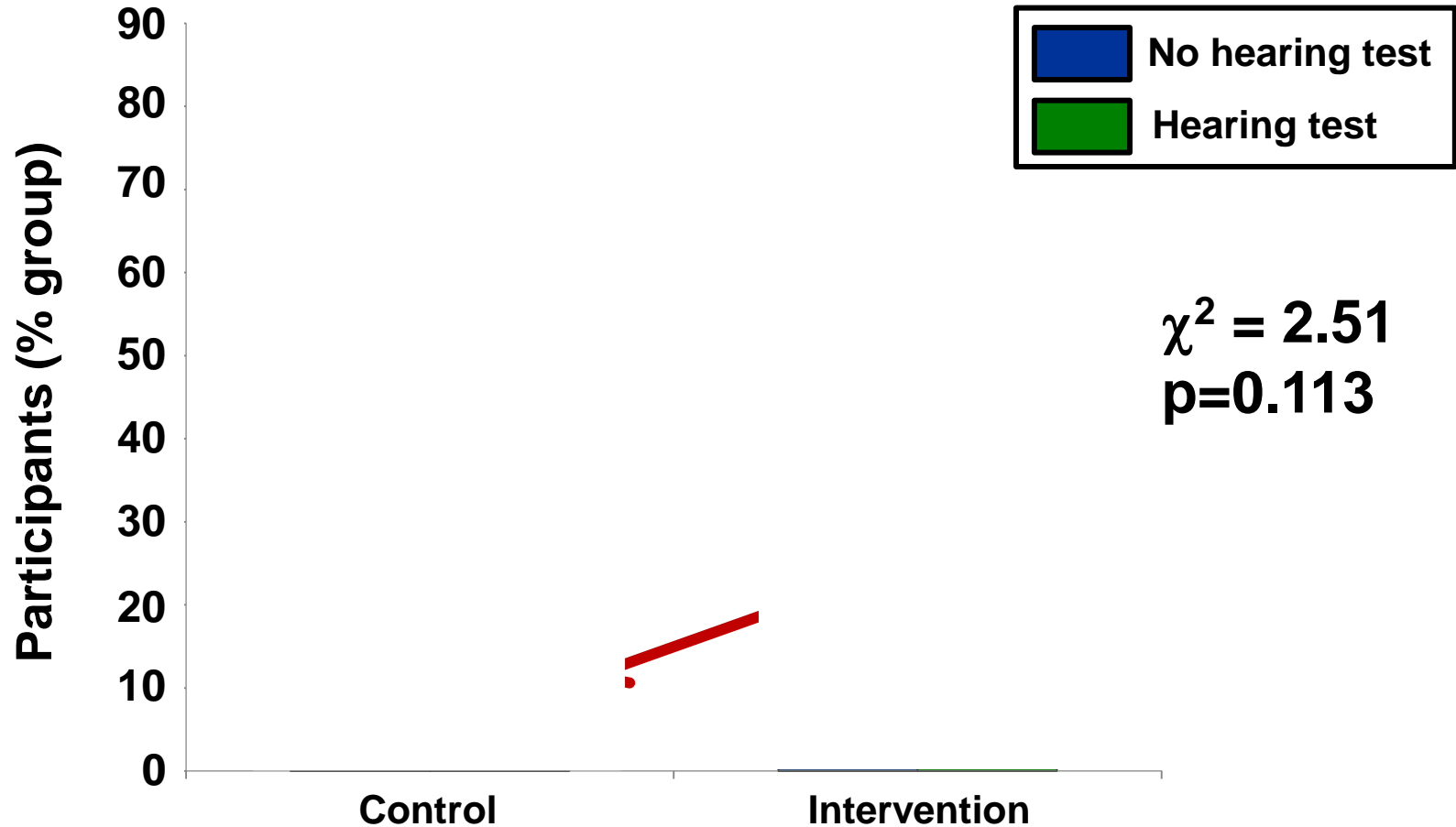
- I'm not sure I want to hear what this guy is saying!
- I am angry about the
- It looks like frustration

# Intervention outcome

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**25% of the total participant population  
obtained hearing aids**

# Intervention outcome





# Logistic regression to examine predictors of help seeking.

<b>Variable</b>
<b>Intervention (yes/no)</b>
<b>HHI total</b>
<b>URICA</b> <b>Precontemplation</b> <b>Contemplation</b> <b>Action</b>
<b>HBQ</b> <b>Susceptibility</b> <b>Severity</b> <b>Benefits</b> <b>Barriers</b> <b>Self-efficacy</b> <b>Cues to action</b> <b>Constant</b>

# Some caveats

- **Small sample size**
- **f/u period short relative to help-seeking**
- **Not done in Primary care:**
  - **A special intervention visit was required (dropouts)**
  - **People may be more likely to take advice from a PCP/GP than a research audiologist**
  - **Buy-in from PCPs/GP may be a problem**

# Moving forward

**Work with Primary Care facility to further evaluate the intervention in a more 'realistic' setting**



# Acknowledgements

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# Thank you for listening



**Contact info: [Gabrielle.saunders@va.gov](mailto:Gabrielle.saunders@va.gov)**

**NCRAR website: <http://www.ncrar.research.va.gov>**

