Tinnitus and Hyperacusis Activities Treatment: In-person and remotely-delivered intervention to help our patients

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Agenda

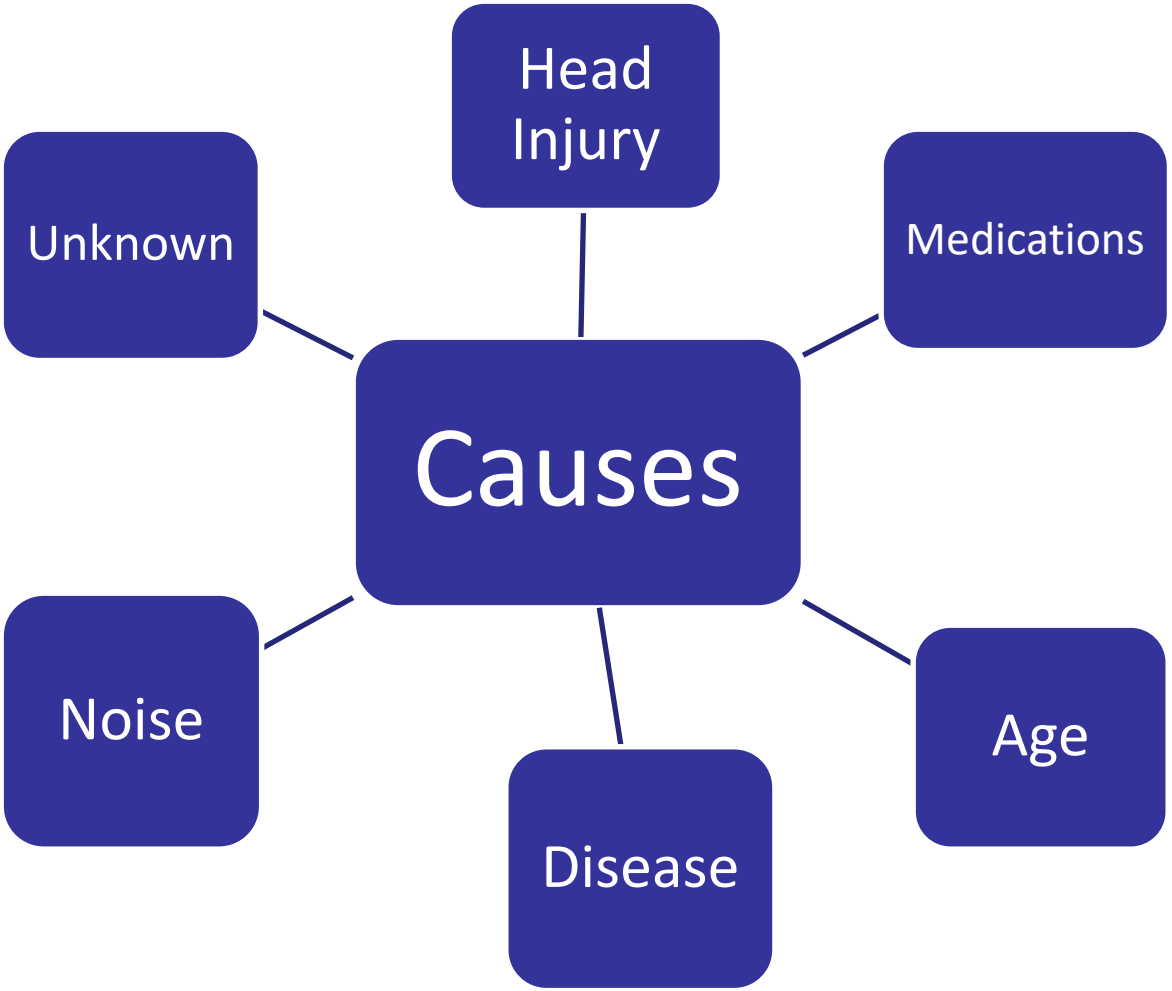
- Introduce Tinnitus Activities Treatment and discuss group educational sessions
- Discuss sound therapy interventions, smartphone Apps, neuromodulation
- Apply Tinnitus Activities Treatment to clinical cases
- Describe results from TAT-Online research study
- Review Hyperacusis Activities Treatment and HAT-Online research study results

Tinnitus is Common

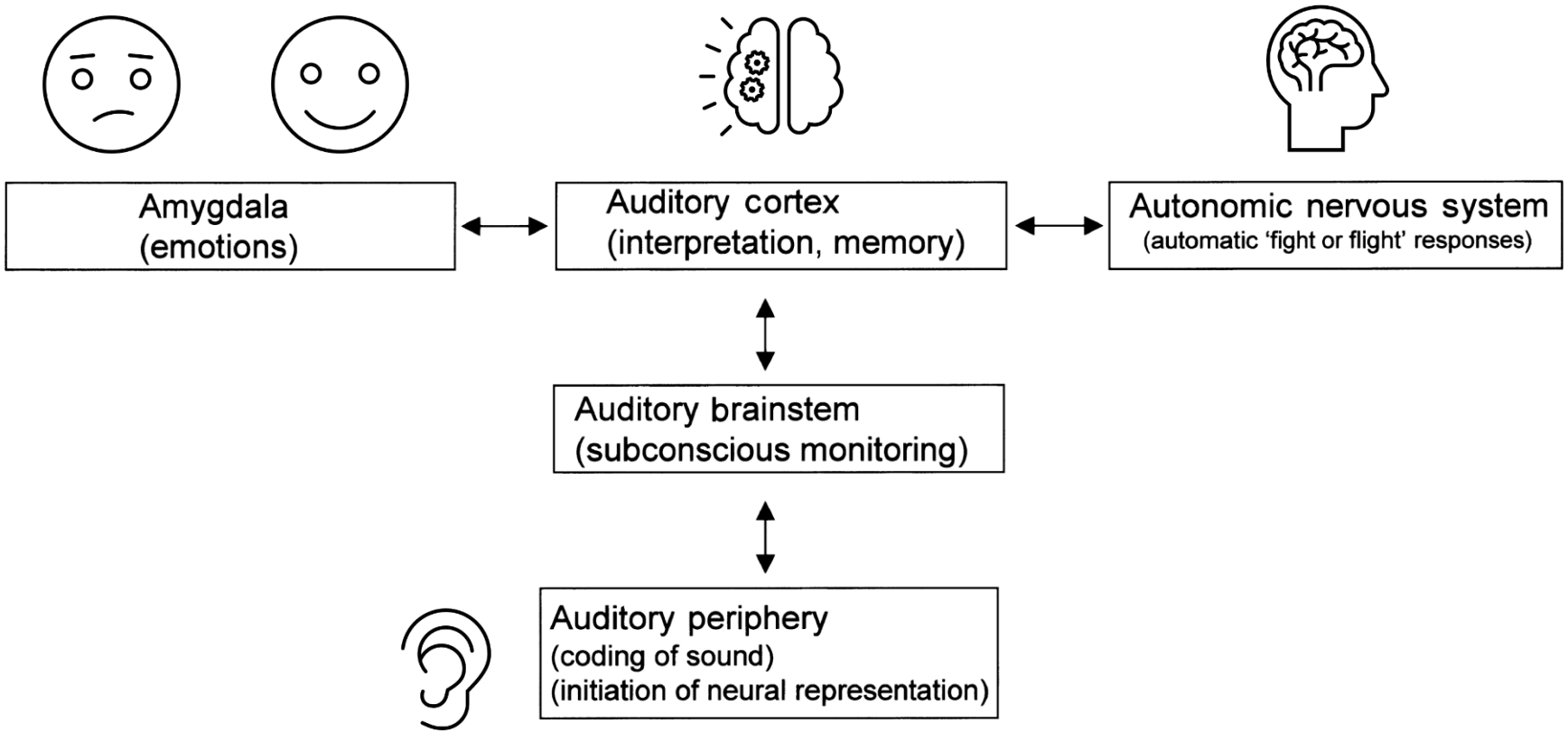
- 14.4% of people worldwide have tinnitus (Jarach et al., 2022)
- 24% of people over 65 years old have tinnitus (Jarach et al., 2022)
- About 20% of people with tinnitus require clinical intervention (Henry et al, 2008)

Multiple Causes of Tinnitus

(Tunkel et al, 2014)



How We Attend and React to Sounds
(Gander & Tyler, 2022)



Problems resulting from tinnitus
(Tyler & Baker, 1983)

1. Depression, Anxiety
2. Difficulty understanding speech/hearing
3. Insomnia
4. Impaired concentration




Tinnitus Activities Treatment

- Developed by Dr. Richard Tyler in 1980s
  - Provide informational counseling on tinnitus and related problems,
  - Suggest coping strategies
  - Recommend partial masking for tinnitus

- Influenced by work of Coles, 1987; Hallam, 1989; Henry & Wilson, 2001, 2002, Sweetow, 1984; among others

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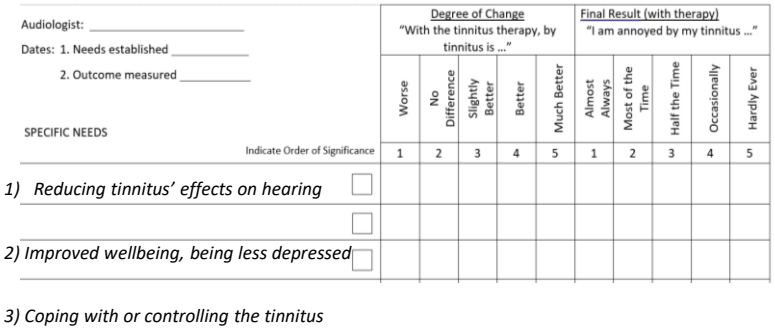
Background on Tinnitus Activities Treatment

- Key principles:
  1. Nurture patient expectations
  2. Provide counseling using pictures (Tyler & Bergan, 2001)
  3. Implement a patient-centered approach to care
- We begin tinnitus counseling by
  1. Identifying three patient-centered goals (e.g., COSIT; Dillon et al., 1997)
  2. Administering the Tinnitus Primary Functions Questionnaire (TPFQ; Tyler, Perreau, & Ji, 2014)
  3. Providing an introductory session to Tinnitus Activities Treatment

Client Oriented Scale of Improvement in Tinnitus - COSIT

- Open-ended questionnaire to assess most important problems experienced by patient
- Identify three patient-centered goals for therapy
- Searchfield, 2019



Audiologist: _____

Dates: 1. Needs established _____

2. Outcome measured _____

SPECIFIC NEEDS	Degree of Change "With the tinnitus therapy, by tinnitus is ..."					Final Result (with therapy) "I am annoyed by my tinnitus ..."				
	Worse	No Difference	Slightly Better	Better	Much Better	Almost Always	Most of the Time	Half the Time	Occasionally	Hardly Ever
Indicate Order of Significance	1	2	3	4	5	1	2	3	4	5
1) *Reducing tinnitus' effects on hearing* ☐										
☐										
2) *Improved wellbeing, being less depressed* ☐										

3) Coping with or controlling the tinnitus

Tinnitus Primary Functions Questionnaire (Tyler et al., 2014)

- 12 item version
- Determine the impact of tinnitus on everyday activities
  - 1) Emotions, 2) Hearing, 3) Sleep, 4) Concentration
- Administer before and after therapy

	0-Completely Disagree to 100-Completely Agree	Subscale
5.	I have difficulty getting to sleep at night because of my tinnitus.	Sleep
7.	I feel like my tinnitus makes it difficult for me to concentrate on some tasks.	Concentration
8.	I am depressed because of my tinnitus.	Emotion
9.	My tinnitus, not my hearing loss, interferes with my appreciation of music and songs.	Hearing

Patient Example: TPFQ results

- Conc = 75
- Thoughts and Emotions = 41.7
- Hearing = 58.3
- Sleep = 0
- Total TPFQ score = 43.75%

Please indicate your agreement with each statement on a scale from 0 (completely disagree) to 100 (completely agree).

Item	Statement	Your Rating (0-100)
1	I feel like my tinnitus makes it difficult for me to concentrate on some tasks.	75
2	I have difficulty focusing my attention on some important tasks because of tinnitus.	75
3	My inability to think about something undisturbed is one of the worst effects of my tinnitus.	75
4	My emotional peace is one of the worst effects of my tinnitus.	50
5	I am depressed because of my tinnitus.	50
6	I am anxious because of my tinnitus.	25
7	My tinnitus masks some speech sounds.	50
8	In addition to my hearing loss, my tinnitus interferes with my understanding of speech.	75
9	One of the worst things about my tinnitus is its effect on my speech understanding, over and above any effect of my hearing loss.	50
10	I am tired during the day because my tinnitus has disrupted my sleep.	0
11	I lie awake at night because of my tinnitus.	0
12	When I wake up in the night, my tinnitus makes it difficult to get back to sleep.	0

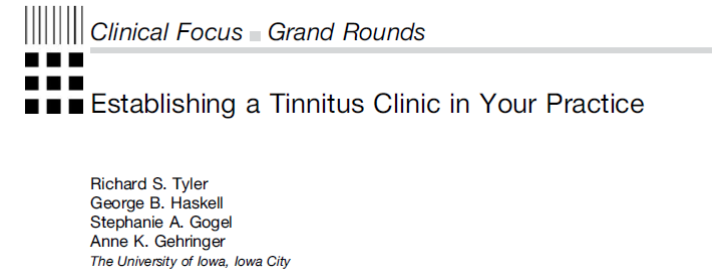
Perreau, Mancini, & Tyler, 2022

Area of Measurement	Method of Measurement	Procedure/Questionnaire
Measuring Reactions to Tinnitus	Established questionnaires	Tinnitus Questionnaire
		Tinnitus Handicap Questionnaire
		Tinnitus Reaction Questionnaire
		Tinnitus Handicap Inventory
		Tinnitus Functional Index
		Tinnitus Primary Functions Questionnaire
	Open-ended	Tinnitus Problems Questionnaire
		Client Oriented Scale of Improvement in Tinnitus (COSIT)
	Other	Patient Diary
		Tinnitus intake questionnaire (U of Iowa)
Measuring Tinnitus	Psychoacoustic Measures	Pitch matching
		Loudness matching
		Minimum masking level (MML)
		Residual inhibition
	Tinnitus Magnitude Estimation	Tinnitus qualities rated using a numerical, categorical, or visual analog scale
Measuring Quality of Life	Generic	EQ-5D
		SF-36
		WHO DAS 2.0
		Meaning of Life
Measuring Related Problems	Specific	Beck Depression Inventory
		State-Trait Anxiety Inventory
		Pittsburgh Quality Sleep Index
		Insomnia Severity Index

Levels of tinnitus patients and proposed treatment (Tyler et al., 2008)

Patient	Overall goal	Focus areas
Curious	Initial contact	Listen to the patient Provide **hearing aid referral** if necessary Provide **general information** about the background and treatment of tinnitus Determine if further treatment or referral is needed
Concerned	Preliminary counseling	Listen to the patient Provide more detail about **tinnitus models and treatment** Assess individual **needs** Provide plan for **self-treatment** Determine if further treatment or referral is needed
Distressed	Tinnitus assessment and treatment	Listen to the patient Assess **tinnitus severity** using established instruments Measure **psychoacoustic characteristics** of tinnitus Assess **psychological well-being and determine if referral is needed** Provide information about treatments **Assess treatment plan options** and decide on treatment(s)

Step 1	• Medical Consultation • Hearing test
Step 2	• Group Session
Step 3	• Counseling • Sound therapy devices • Counseling and sound therapy devices
Step 4	• Individual tinnitus evaluation

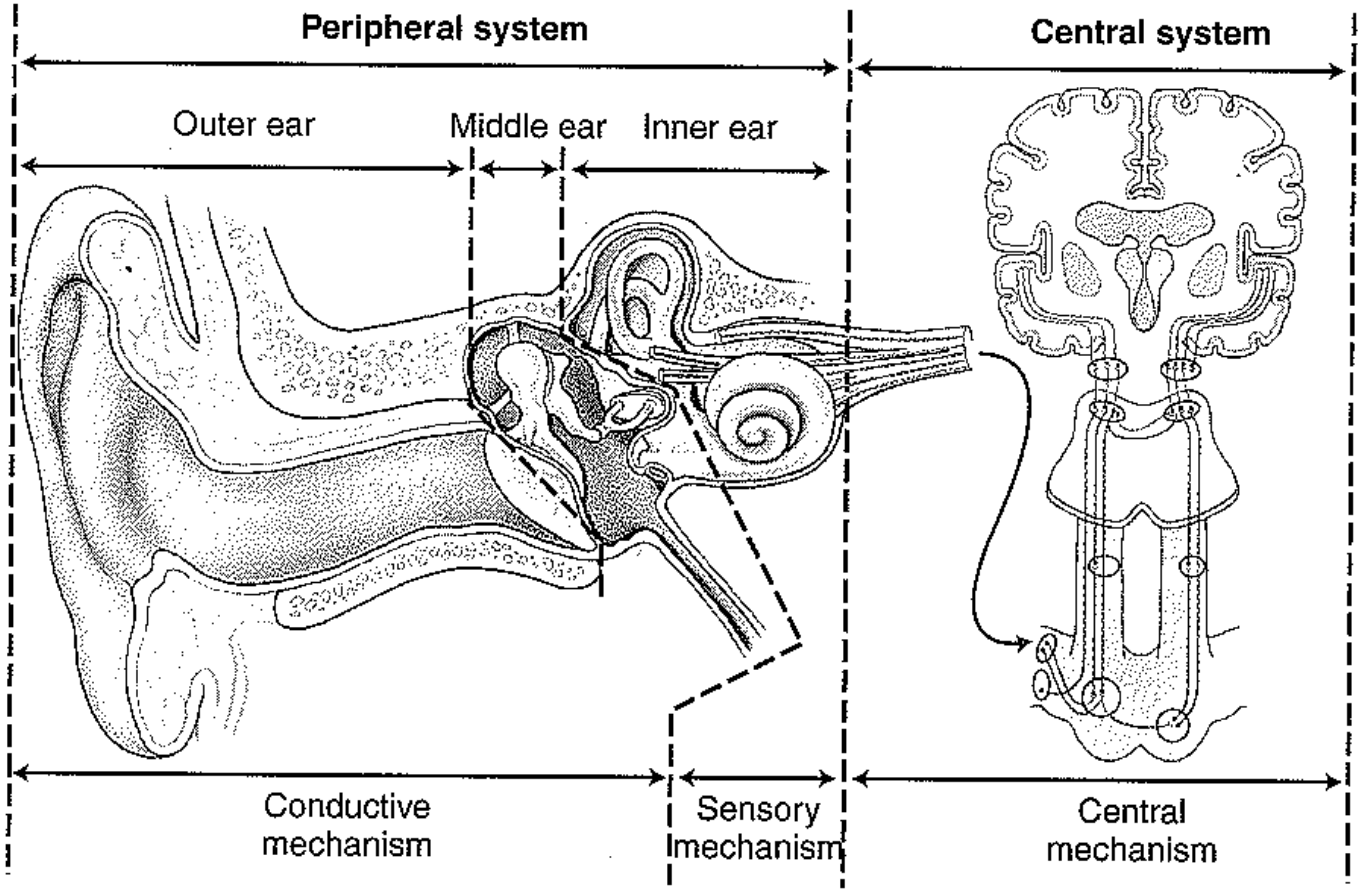


Start with a Group Educational Session

- A single session is led by an audiologist or qualified healthcare provider!
- A great way to promote services
- Facilitate discussion, provide information, and encourage sharing among attendees
- Appropriate for all levels of tinnitus patients, from curious to distressed

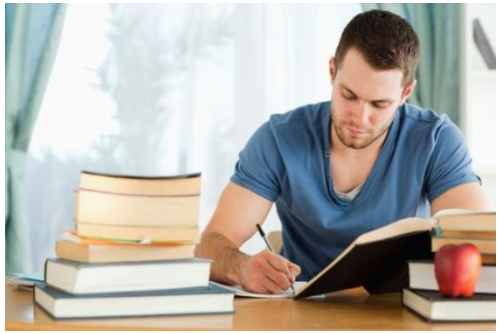
Group session - Hearing mechanism

- The Human Auditory System:



Group session - Reactions to tinnitus

- Thoughts and emotions
- Hearing difficulties
- Sleep
- Concentration



Group discussion - For those with tinnitus

- What is the most difficult thing to explain to others about tinnitus?

- What could others do to help you with your tinnitus?

Group discussion - For partners of someone with tinnitus

- What have you been able to do to help your partner with their tinnitus?

Group discussion - Treatments for tinnitus

- What have you tried?

- What has been successful?

Group session – Expectations for relief

- At this time, there are no widely accepted cures for tinnitus
- There are no studies that have shown a cure for tinnitus
  - None using appropriate research designs and that have been replicated by others

How do you want to manage your tinnitus?

1. Focus on other areas of your life and put tinnitus in the background
2. Use low level sound in your environment (sound machine, CDs, App, television, etc)
3. Seek medical and/or audiological evaluation of tinnitus
4. Use wearable tinnitus devices
5. Use hearing aids with maskers for hearing loss
6. Begin individualized counseling

Step 1	• Medical Consultation • Hearing test
Step 2	• Group Session
Step 3	• Counseling • Sound therapy devices • Counseling and sound therapy devices
Step 4	• Individual tinnitus evaluation

Tinnitus Activities Treatment (TAT) Components (Tyler et al, 2009)

1. Counseling

Thoughts and Emotions

Hearing and Communication

Sleep

Concentration

2. Sound Therapy

Decrease the neural prominence of the tinnitus

Mask the unwanted tinnitus sound

Make tinnitus less noticeable

1. Thoughts and Emotions

- Hearing,
  hearing loss, and tinnitus
- Attention, behavior, and emotions
- Changing your reactions to tinnitus

Connecting our Thoughts and Emotions

Doorbell → Neutral

Doorbell → Fire

Doorbell → Injury

Doorbell → Angry neighbor

Fire / Injury / Angry neighbor → Anxiety

Doorbell → Flowers

Doorbell → Friend

Doorbell → Delivery

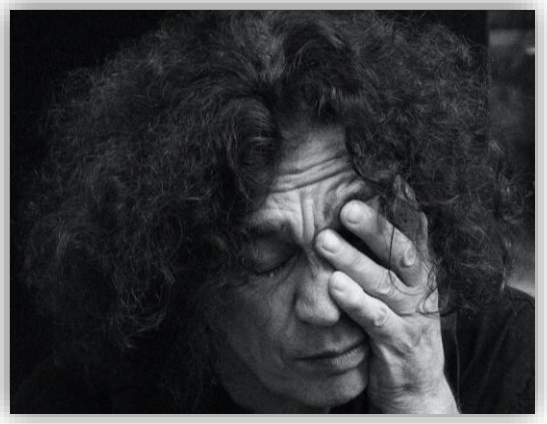
Flowers / Friend / Delivery → Happiness

Things That Capture Our Conscious Attention

- Unexpected
- Unusual
- Scary
- Important

Tinnitus and attention

If brain determines
tinnitus is important,
we will pay attention to it



If brain determines
tinnitus is not important,
the tinnitus can be ignored

How to change reactions to tinnitus

1. Change interpretation of importance

Tinnitus and **YOUR REACTION** to tinnitus are two different things

2. Change emotional reaction

I hate this noise→ I can learn to live with this noise

3. Refocus on other activities

Engage in hobbies, activities to focus away from tinnitus

A Tinnitus Diary

- Neutralize negative thoughts about tinnitus
- Modify your lifestyle to engage in enjoyable activities
- Use low-level background sound to make tinnitus less prominent
- Discontinue use after 2 weeks to focus away from tinnitus

2. Hearing and Communication

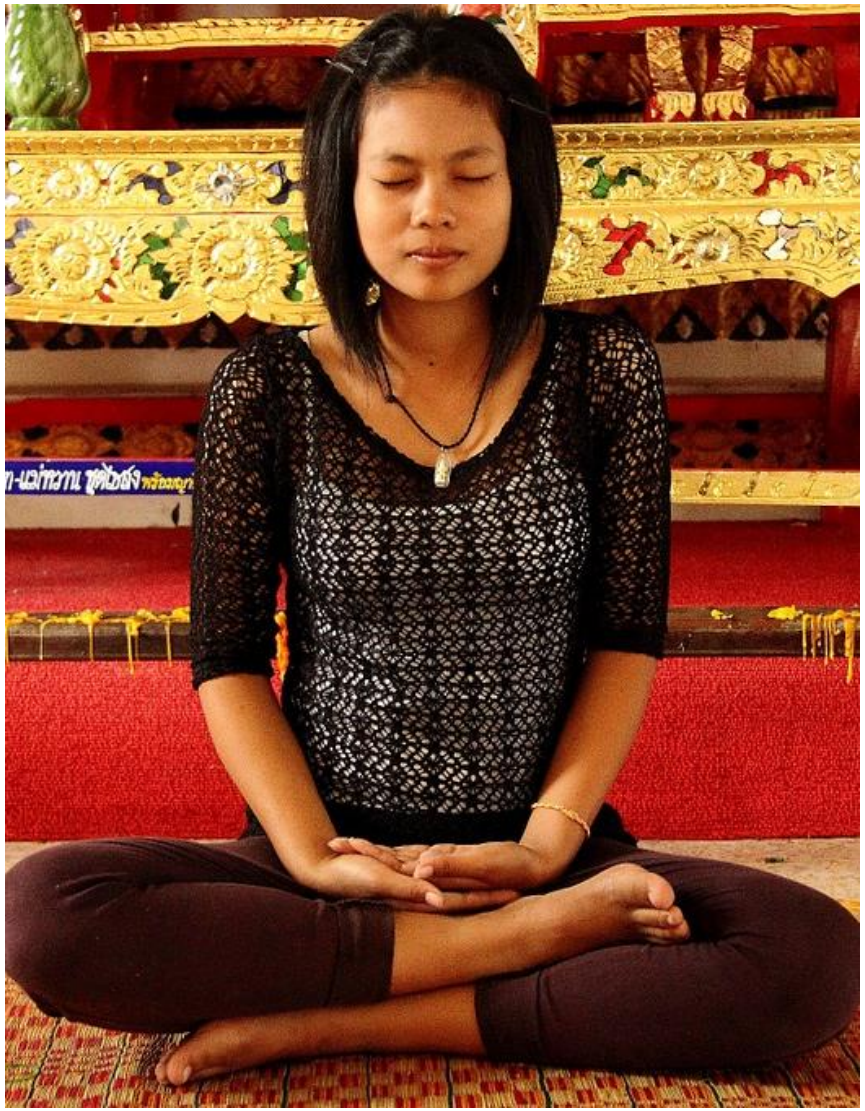
- Hearing and communication difficulties
- How tinnitus can affect hearing
- How to improve your hearing

3. Sleep

- Normal sleep patterns
- Tinnitus and sleep
- Activities to facilitate sleep
- Waking up at night

4. Concentration

- Things that affect concentration
- How tinnitus affects concentration
- Strategies to improve concentration



Tinnitus Activities Treatment Components (Tyler et al, 2009)

1. Counseling

Thoughts and Emotions

Hearing and Communication

Sleep

Concentration

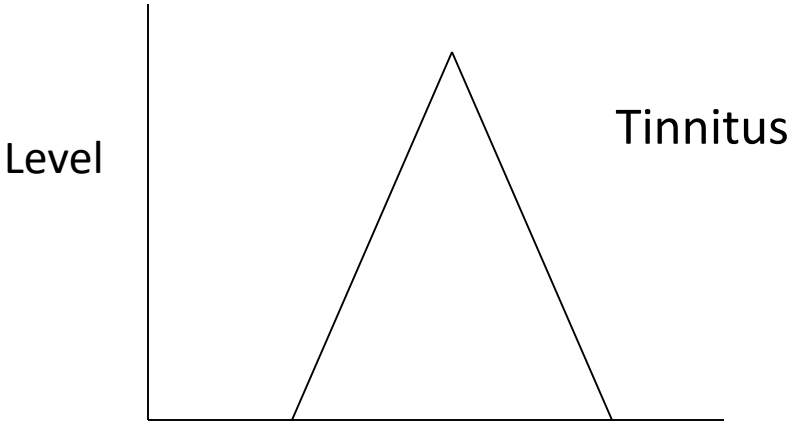
2. Sound Therapy

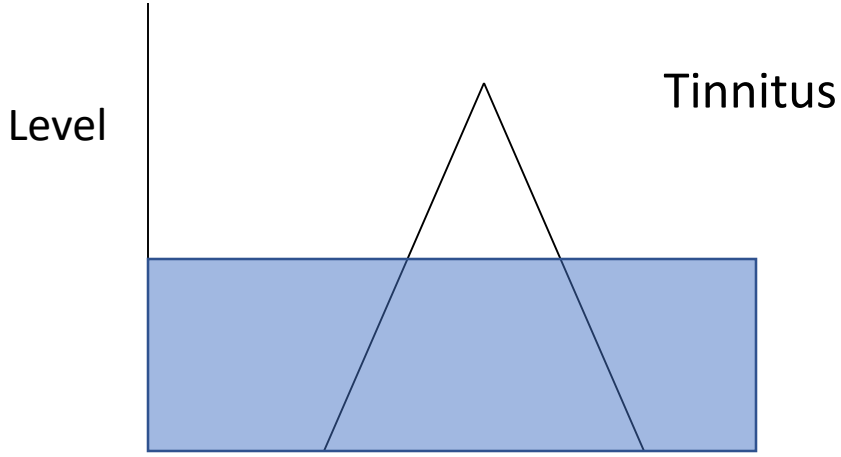
Decrease the neural prominence of the tinnitus

Mask the unwanted tinnitus sound

Make tinnitus less noticeable

Decrease Prominence of Tinnitus





Expectations for Tinnitus Relief using Sound Therapy

You hear background sound

Background sound has no emotional importance

You get used to background sound plus tinnitus

Sound Therapy Options

- Non-wearable sound generators
  - Sound Pillow
  - Sound Generators
  - Smartphone Apps
  - CDs, radio, etc

Tinnitus Relief App:
https://www.youtube.com/watch?v=9crPCB7qfBY

Wearable tinnitus devices

- General Hearing Instruments
- Neuromonics
- Desyncra
- Phonak
- Resound
- Signia
- Starkey
- Widex

Neuromod Lenire tinnitus device

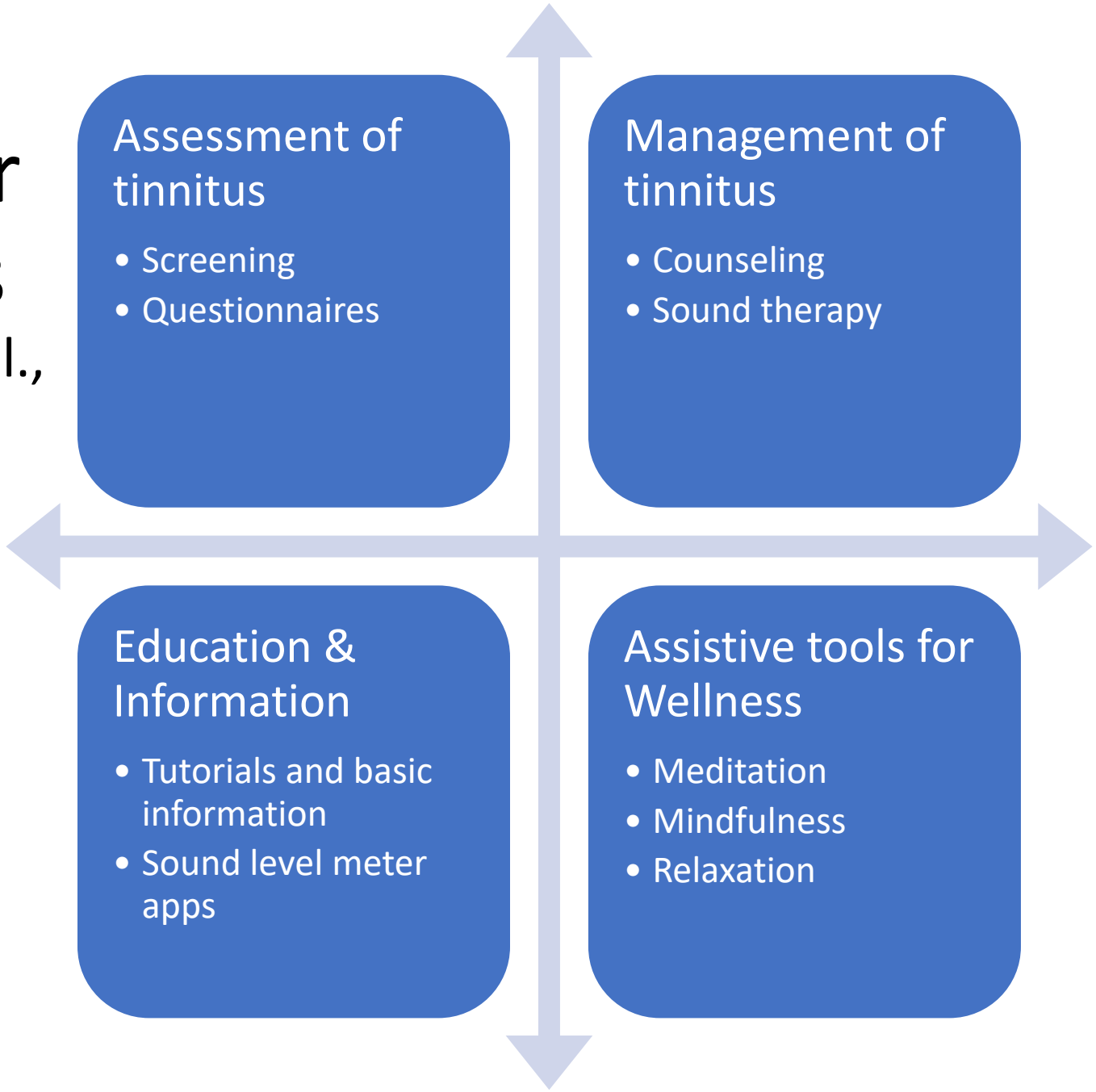
- Offers bimodal tongue and auditory stimulation over 3 months of use

Hearing Aids

- Improve hearing and communication
- Reduce stress of effortful listening
- Facilitate positive reactions to tinnitus
- Mask the tinnitus sound
- Often based implemented with sound generator capabilities

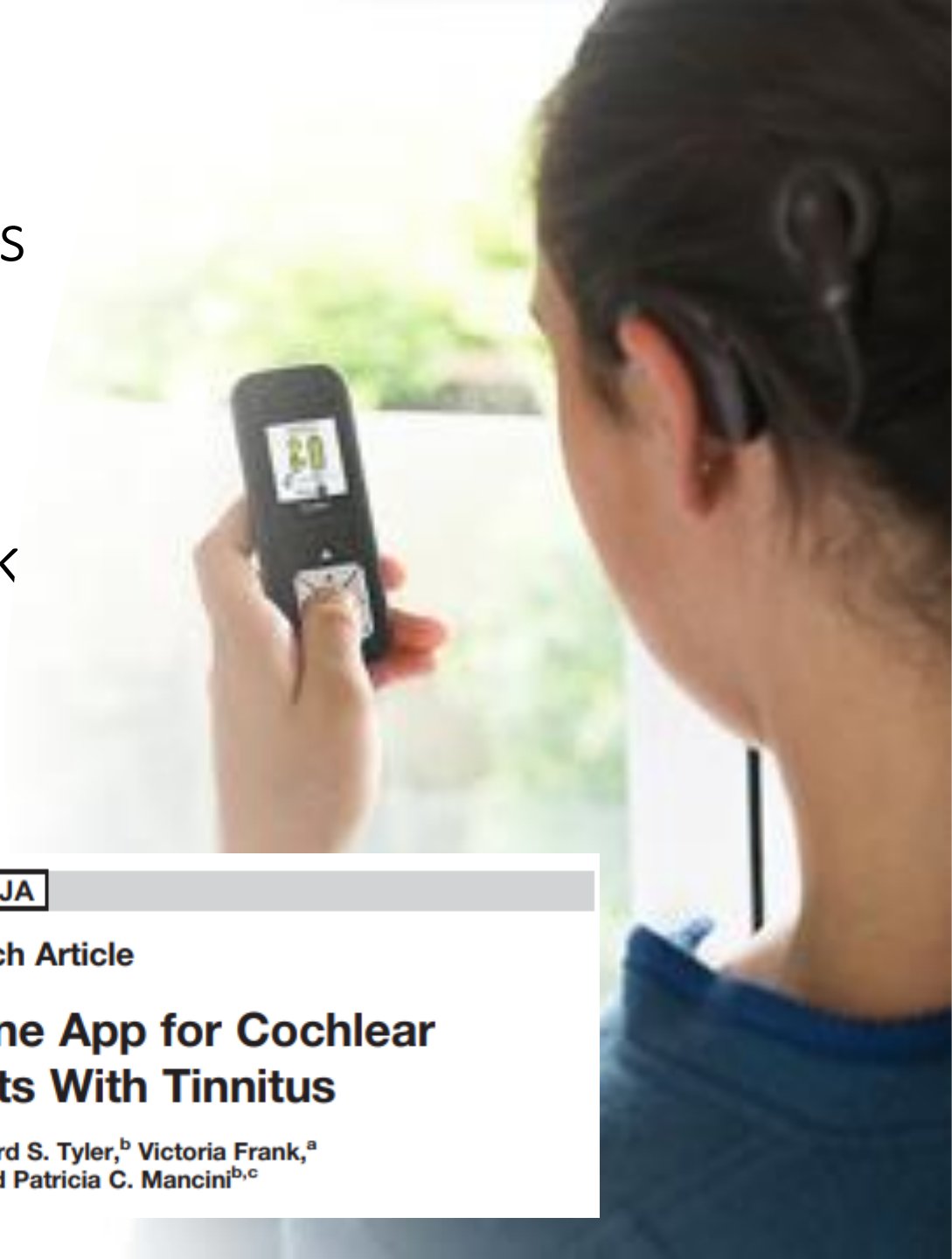
Apps for Tinnitus

(Perreau et al., 2022)



Sound Therapy Apps for CI Patients with Tinnitus

Perreau, Tyler, Frank Watts, & Mancini (2021)



AJA

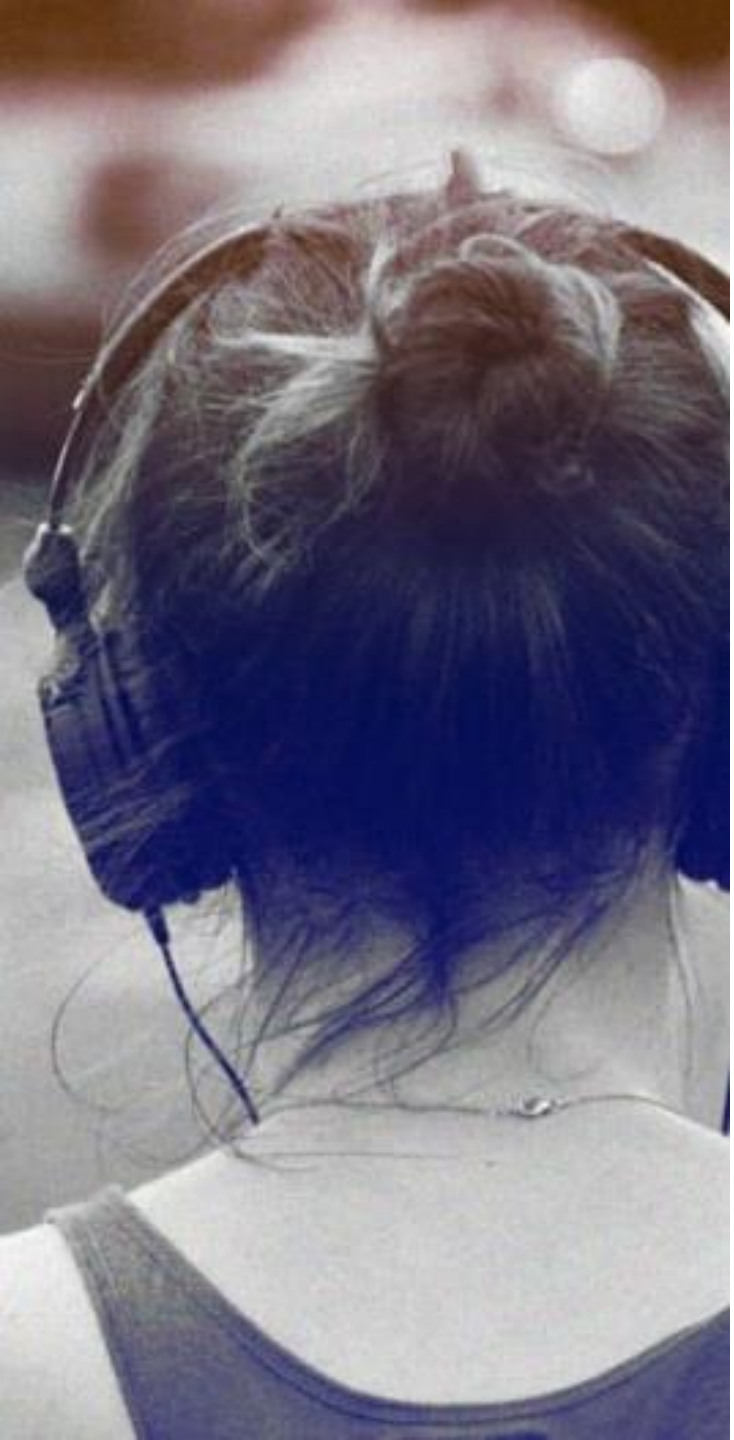
Research Article

Use of a Smartphone App for Cochlear Implant Patients With Tinnitus

Ann E. Perreau,[a,b] Richard S. Tyler,[b] Victoria Frank,[a] Alexandra Watts,[b] and Patricia C. Mancini[b,c]

Results - Sound Therapy Apps for CI Patients (Perreau et al., 2021)

- Sound therapy from the Resound Relief App is acceptable, though the effective sound will vary across CI users
- Sound therapy is effective in reducing tinnitus loudness, even with a short-term exposure
- Speech recognition abilities are not significantly different before and after sound therapy
- Large individual differences are observed among participants, and not all CI users will benefit from sound therapy via an App



Sound Therapy Recommendations

- Background sound should be neutral and reduce the prominence of tinnitus
- Does not completely cover up tinnitus
- Can use a variety of different sources
- Recommend 2-3 hours of use

Effectiveness of Tinnitus Activities Treatment from a Clinical Case

Case study: 55-year-old female with bilateral tinnitus

History of brain injury following MVA that affected occipital lobe. After 2nd brain surgery, she noticed tinnitus

Saw ENT → Completed a hearing test, recommended hearing protection and masking

Referred for tinnitus counseling

Tinnitus plan

1. Completed a hearing and tinnitus intake questionnaire, and the TPFQ to determine reactions to tinnitus
2. Attended our group educational session
3. Determined goals of therapy using COSIT:
   - *Confusing tinnitus sound with hearing environmental sounds (alarms)*
   - *Difficulty focusing while doing tasks*
   - *Frustration that the tinnitus is always there*

Topics covered in TAT sessions

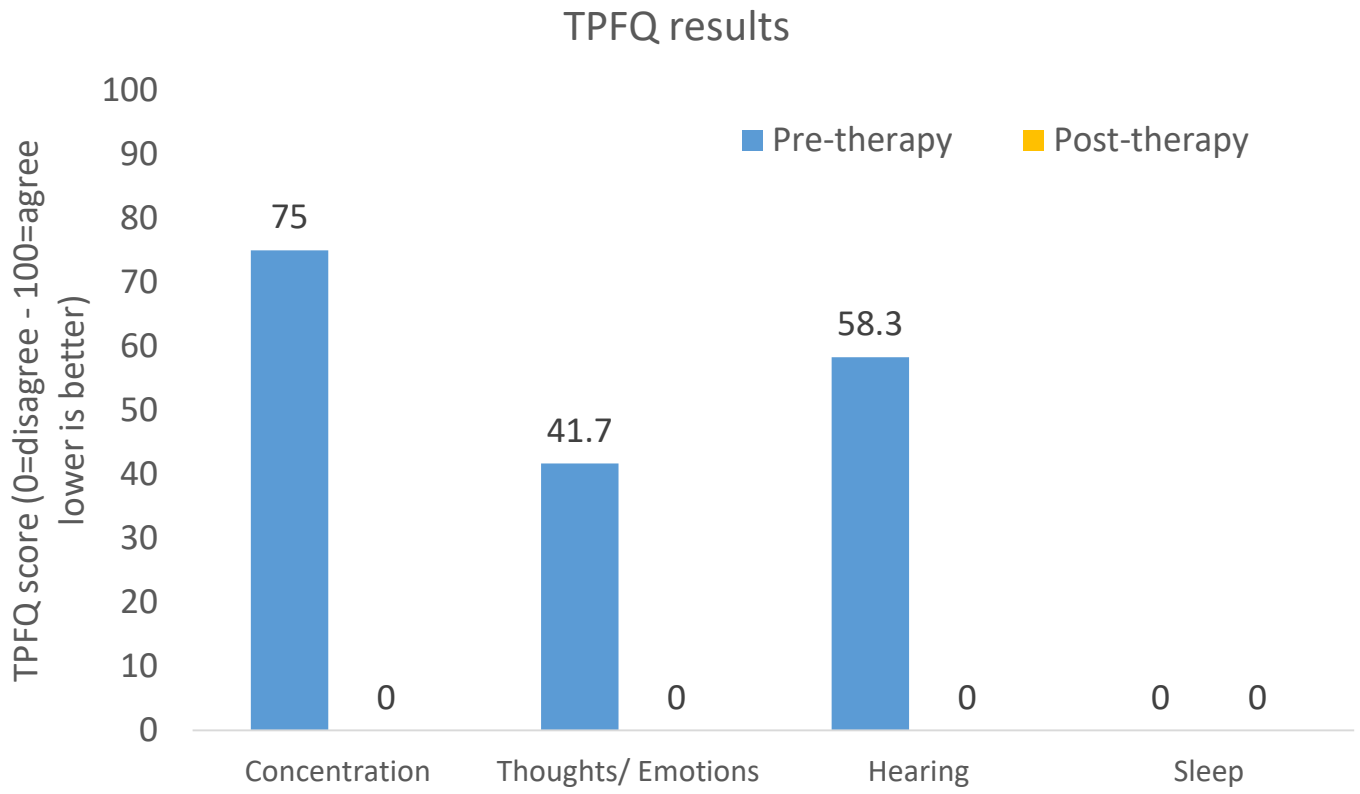
Thoughts and emotions

- Reports that tinnitus is annoying and bothersome when tired or stressed.
- Her thoughts about tinnitus were negative: I can’t live with this noise!
- Completed a tinnitus diary over 2 weeks to identify thoughts about tinnitus and activities that are helpful in relieving tinnitus.

Sound therapy

- Listened to radio. Used a white noise machine and smartphone app for tinnitus relief.
- Fit bilateral open-fit RIC hearing aids with Brownian noise and provided counseling on sound generator use.

Case study: Outcome after therapy

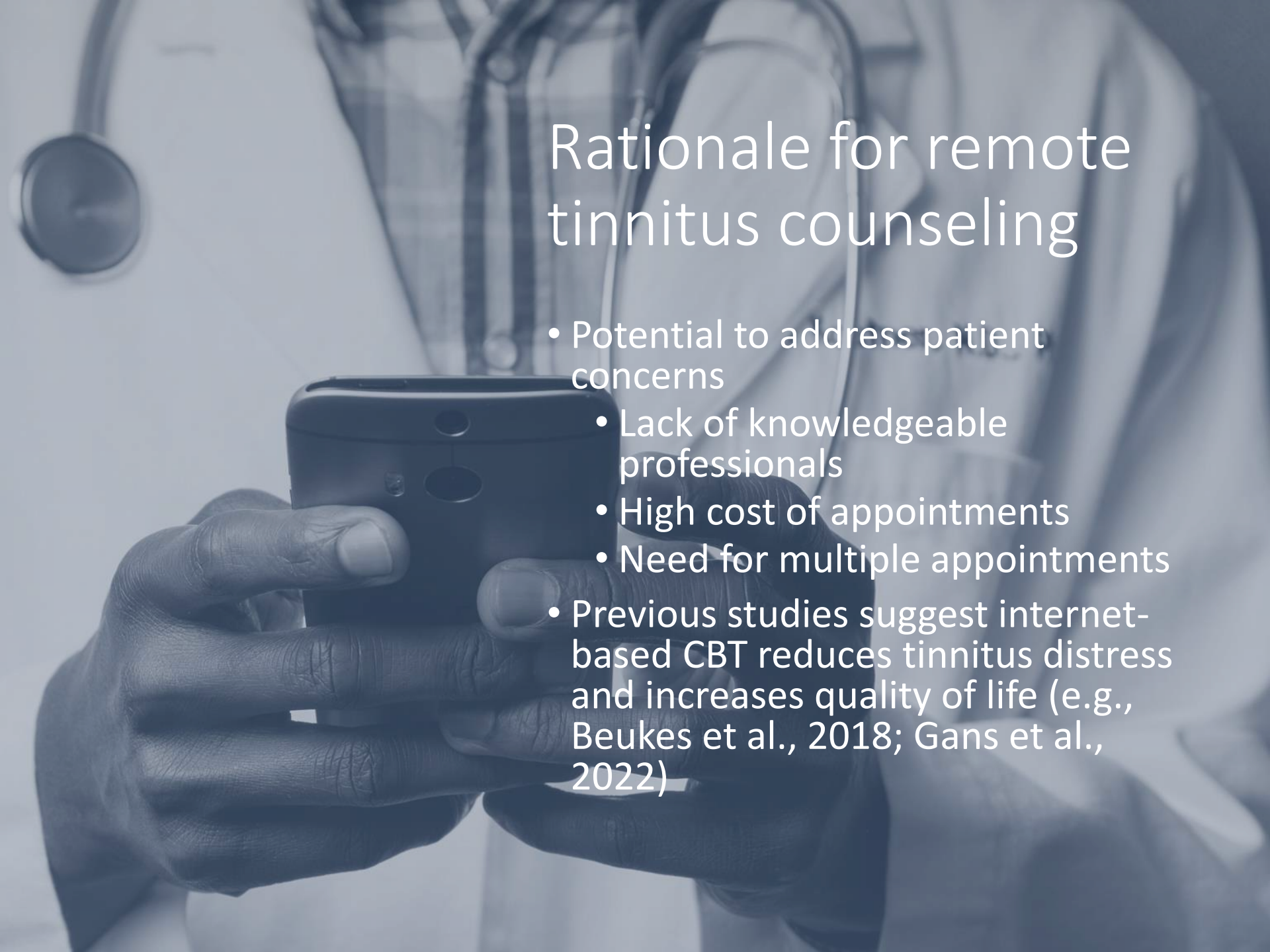


- TPFQ: Significant reduction in scores for conc, thoughts + emotions, and hearing
- COSIT: After therapy, all problems were much better: hearing environmental sounds, focus, and tinnitus awareness
- Overall, she was very pleased with the sound therapy trial

Summary

- A brief overview of tinnitus, reactions to tinnitus and helpful treatments is sufficient for many curious/concerned patients.
- For patients who are distressed by tinnitus, counseling will be needed to address their concerns. TAT sessions can be modified to fit their needs and questionnaires should be used to track progress
- Most patients can complete TAT counseling in 3-4 sessions, each lasting about 1 hour and separated by ~2 weeks

A Study of the Acceptability and Effectiveness of Remote Counseling for Tinnitus

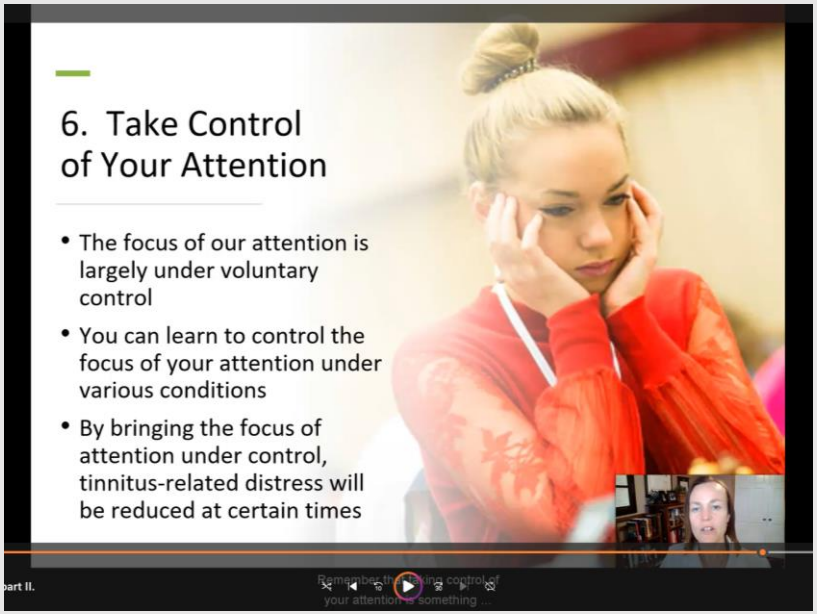


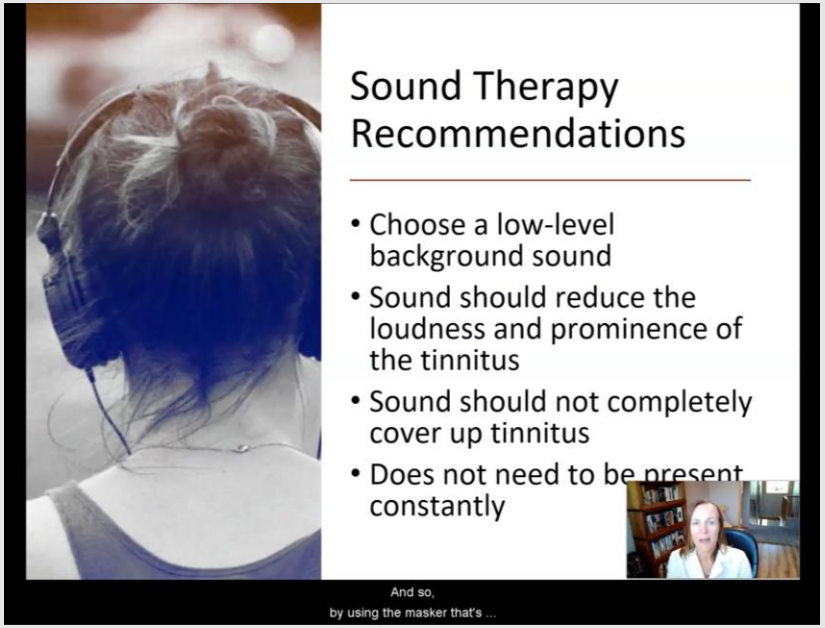
Rationale for remote tinnitus counseling

- Potential to address patient concerns
  - Lack of knowledgeable professionals
  - High cost of appointments
  - Need for multiple appointments
- Previous studies suggest internet-based CBT reduces tinnitus distress and increases quality of life (e.g., Beukes et al., 2018; Gans et al., 2022)

TAT-Online Weekly Topics

Week 1: Introduction to Tinnitus	Week 2: Thoughts and Emotions	Week 3: Sleep
Week 4: Hearing	Week 5: Concentration	Week 6: Relaxation Techniques and Sound Therapy



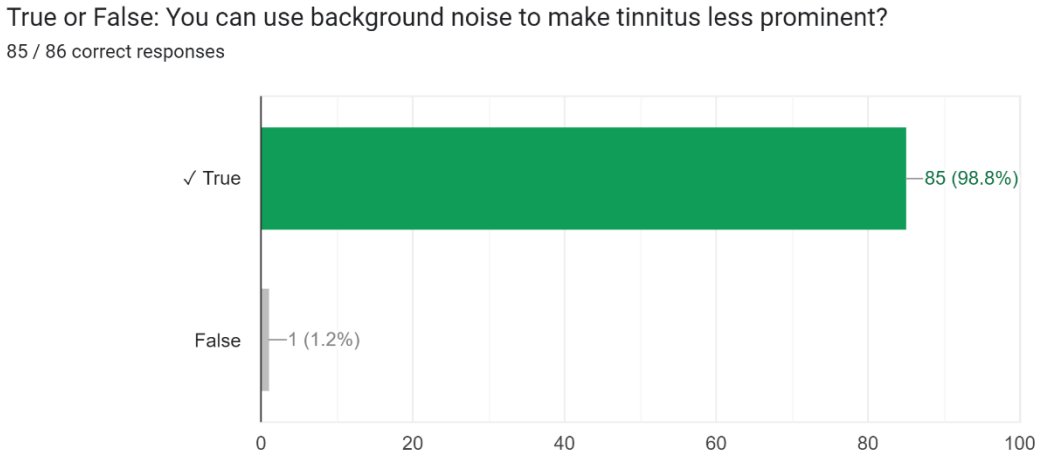


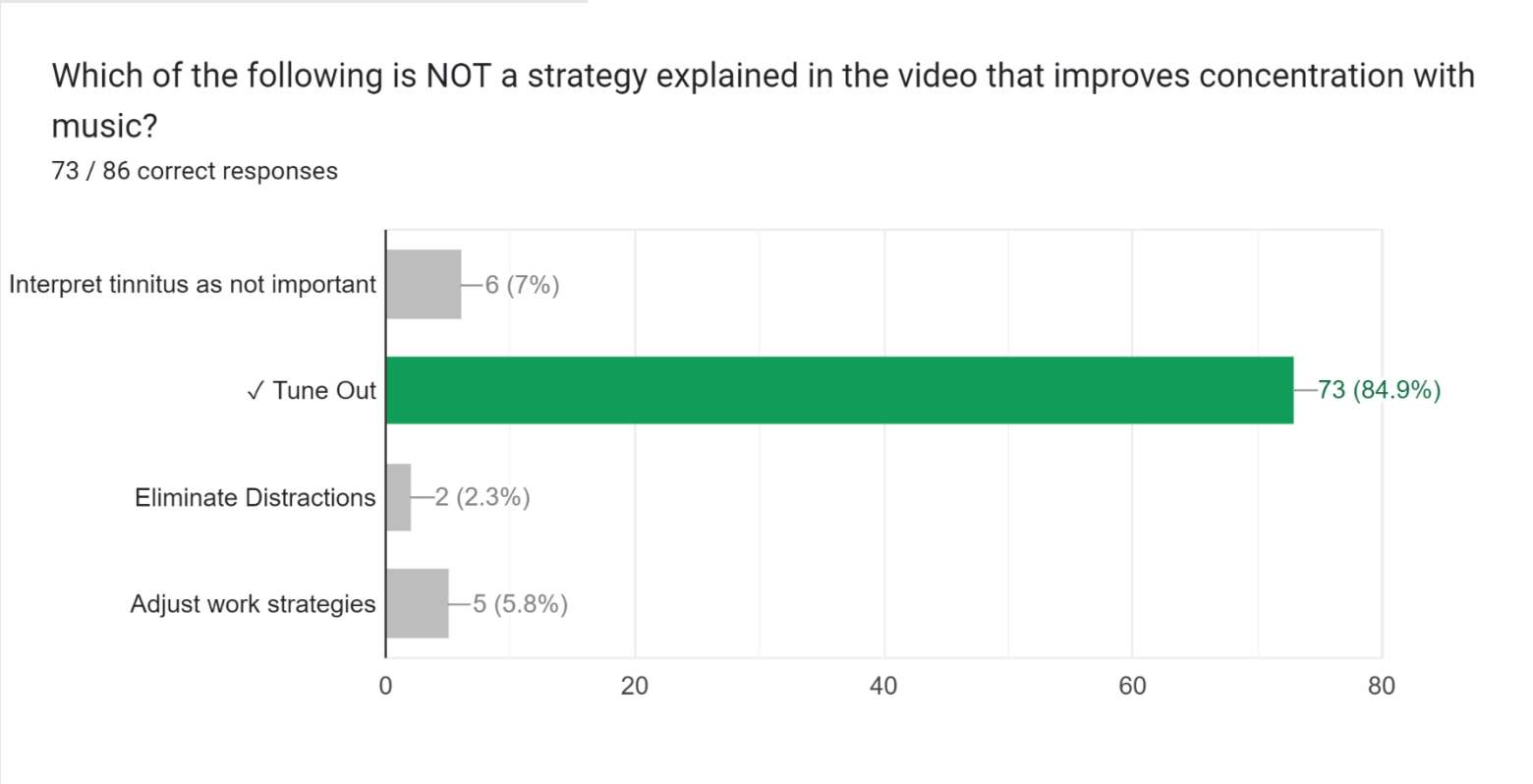
Examples of TAT-Online Educational Videos

Homework - Reflect on your concentration abilities…

- Do you experience problems with concentration?
- Which situations cause you the biggest problems with your concentration?
- How do you feel about not being able to concentrate or focus well?

Example quiz responses - Concentration





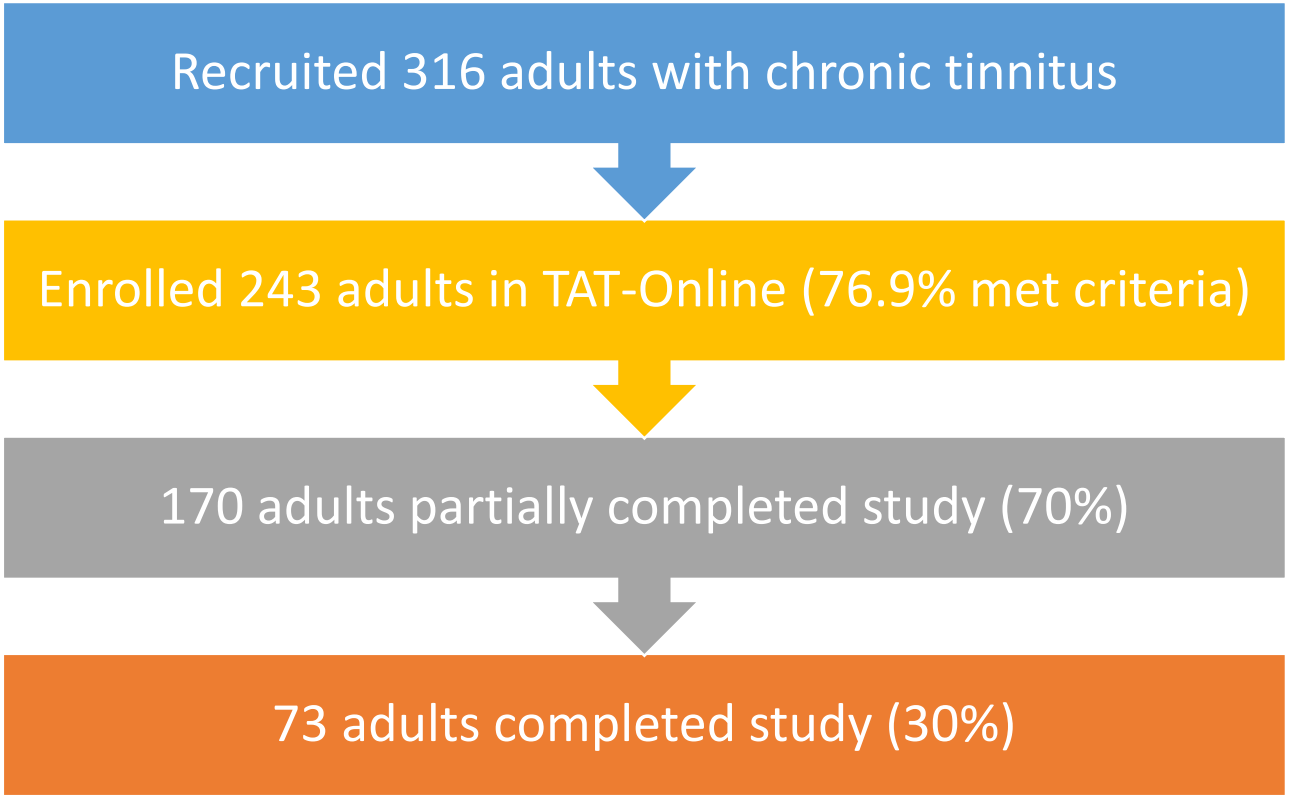
Study Aims

To develop a remote counseling program for tinnitus that is accessible and user friendly

To demonstrate effectiveness of remote counseling in reducing tinnitus severity and related problems

Methods

Participant recruitment



QUAD CITIES

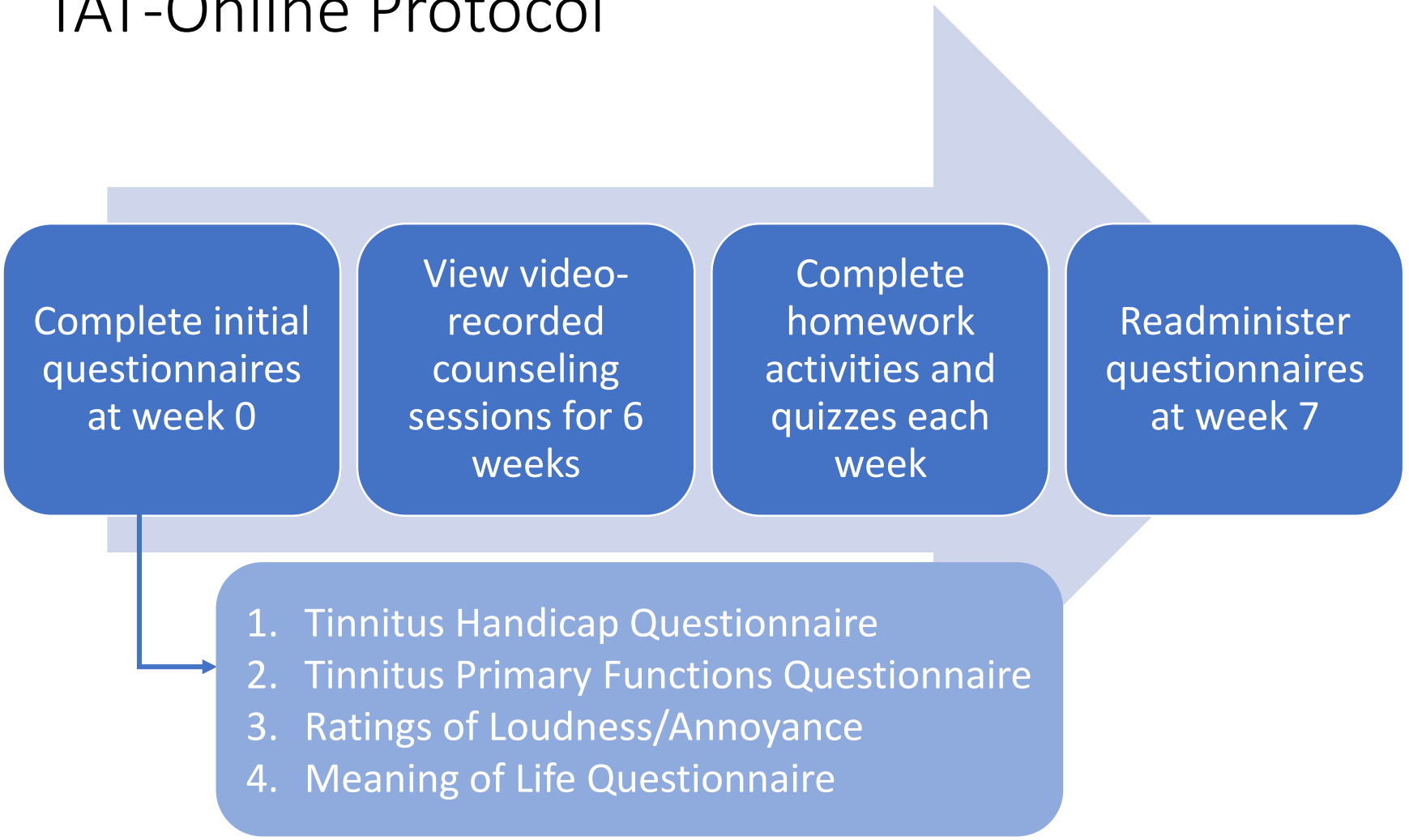
AMERICAN TINNITUS ASSOCIATION

Tinnitus Characteristic	Mean (Range)
Tinnitus duration	14.8 yrs (.33-50)
Tinnitus pitch (100 = very high)	76.62 (1-100)
Tinnitus loudness (100 = very loud)	70.5 (25-100)
Tinnitus annoyance (100=extremely annoying)	67.3 (0-100)

Participant Demographics (n=73)

- Mean age = 62.1 yrs (19-77 yrs); 40 females
- All English speakers, Ethnicity = Caucasian for 37, 1 Multiracial
- Occupations: 39=retired, 5 = teacher, 3 = engineering

TAT-Online Protocol



1. Tinnitus Handicap Questionnaire (Kuk, Tyler, et al., 1990)

- Assesses physical, emotional, and social consequences of tinnitus, and hearing changes
- Includes 27-items that can be completed quickly
- Has high reliability (0.94)

	0 if you strongly disagree (up to) 100 if you strongly agree
1.	I do not enjoy life because of tinnitus.
2.	My tinnitus has gotten worse over the years.
4.	I am unable to follow the conversation during meetings because of tinnitus.
5.	Tinnitus causes me to avoid noisy situations.

2. Tinnitus Primary Functions Questionnaire (Tyler, Perreau, Ji, 2014)

- 12 item version
- Determine the impact of tinnitus on everyday activities
  - 1) Emotions, 2) Hearing, 3) Sleep, 4) Concentration
  - High correlations with similar scales: Sleep, Depression, Trait anxiety, and THQ

	0-Completely Disagree to 100-Completely Agree	Subscale
5.	I have difficulty getting to sleep at night because of my tinnitus.	Sleep
7.	I feel like my tinnitus makes it difficult for me to concentrate on some tasks.	Concentration
8.	I am depressed because of my tinnitus.	Emotion
9.	My tinnitus, not my hearing loss, interferes with my appreciation of music and songs.	Hearing

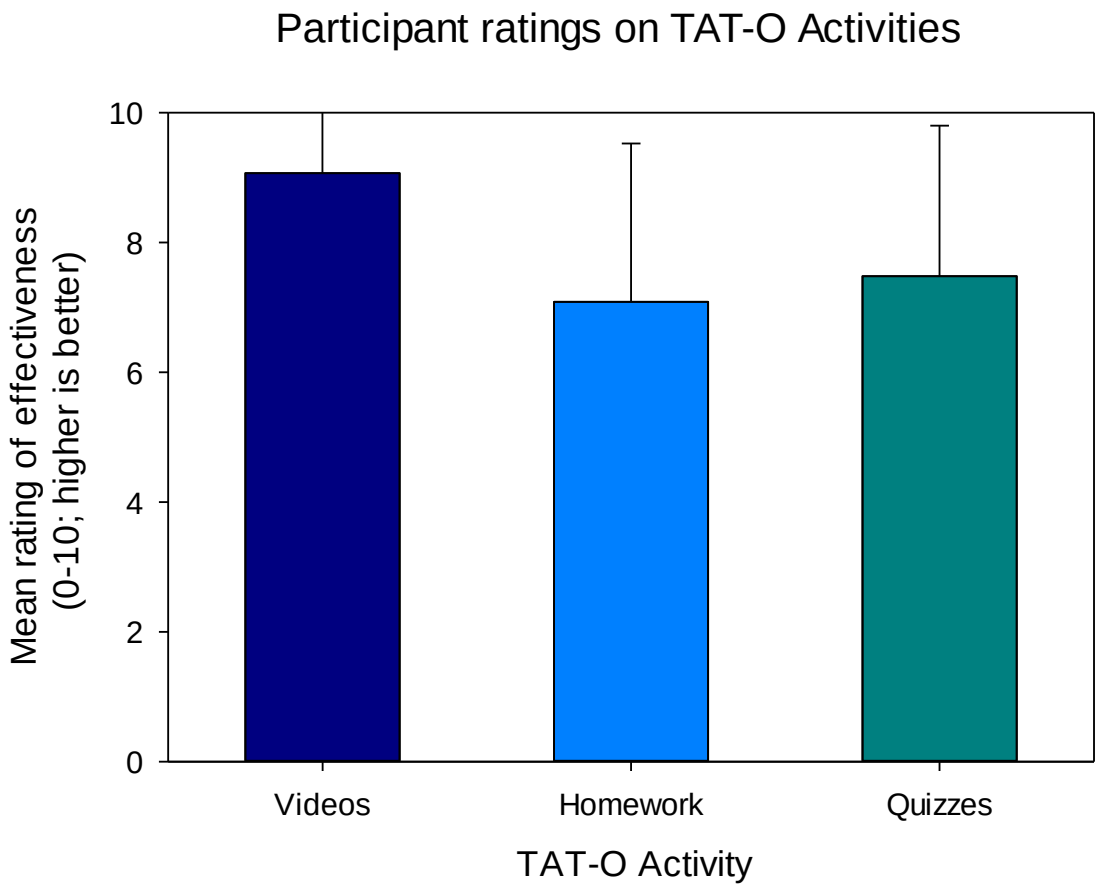
3. Tinnitus magnitude estimations (Tyler et al, 2006)

- Assessed tinnitus loudness and annoyance using single-item ratings or magnitude estimations:

Describe the *LOUDNESS* of your tinnitus using a scale from 0-100. (0 = *VERY FAINT;* 100 = *VERY LOUD)*	_____ (0-100)
Describe the typical *ANNOYANCE* of your tinnitus using a scale from 0-100. (0 = *NOT ANNOYING AT ALL;* 100 = *EXTREMLY ANNOYING)*	_____ (0-100)

Results

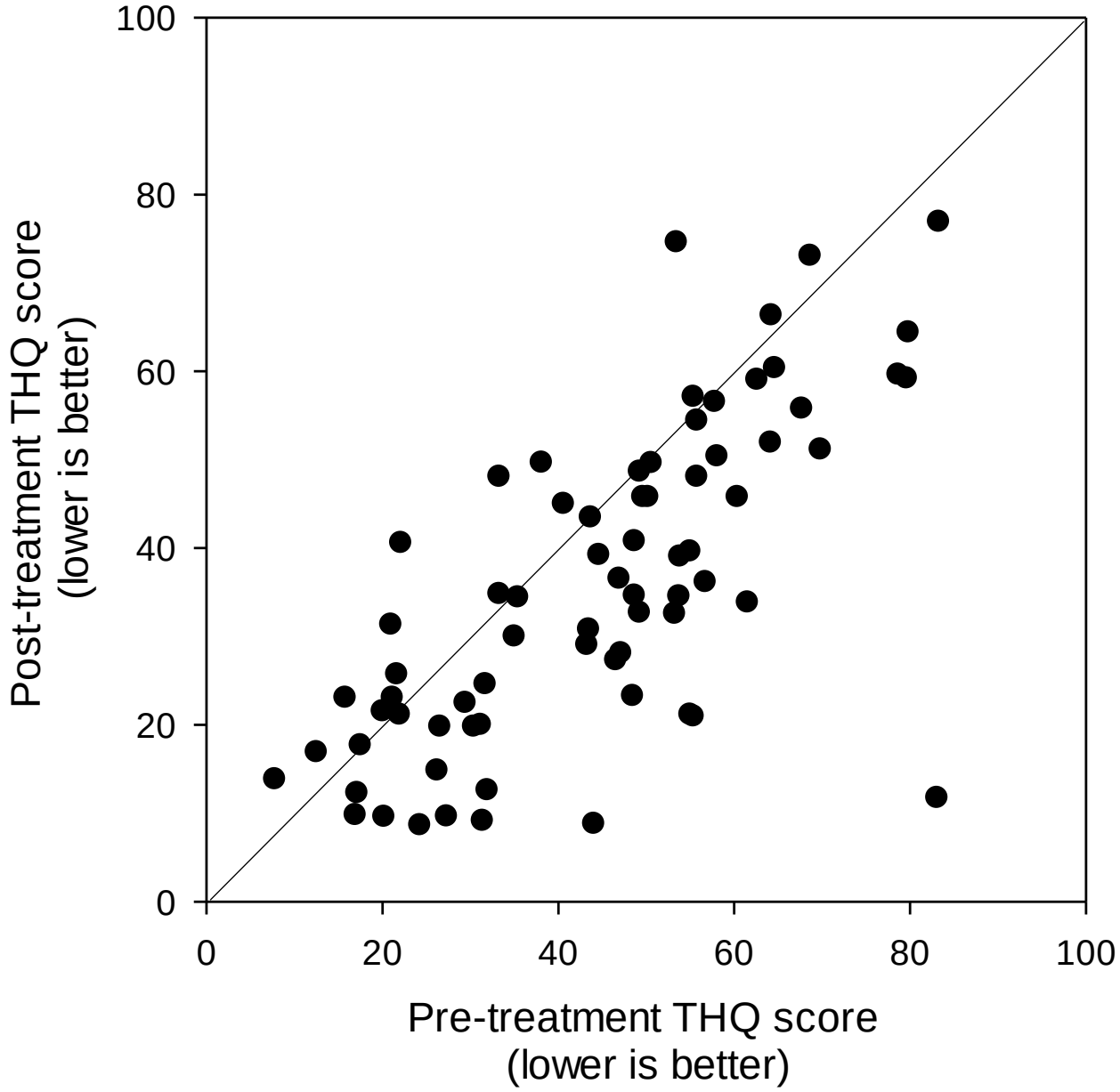
Acceptability of TAT-Online program



- Self-rating effectiveness averaged 70%
- 96% (56/58) of participants reported the 6-week duration and videos were adequate length
- 98% (57/58) of participants would recommend study to others
- Great suggestions: more on habituation, more on relaxation and mindfulness, book recommendations, add a group forum or meeting, info on hearing aids

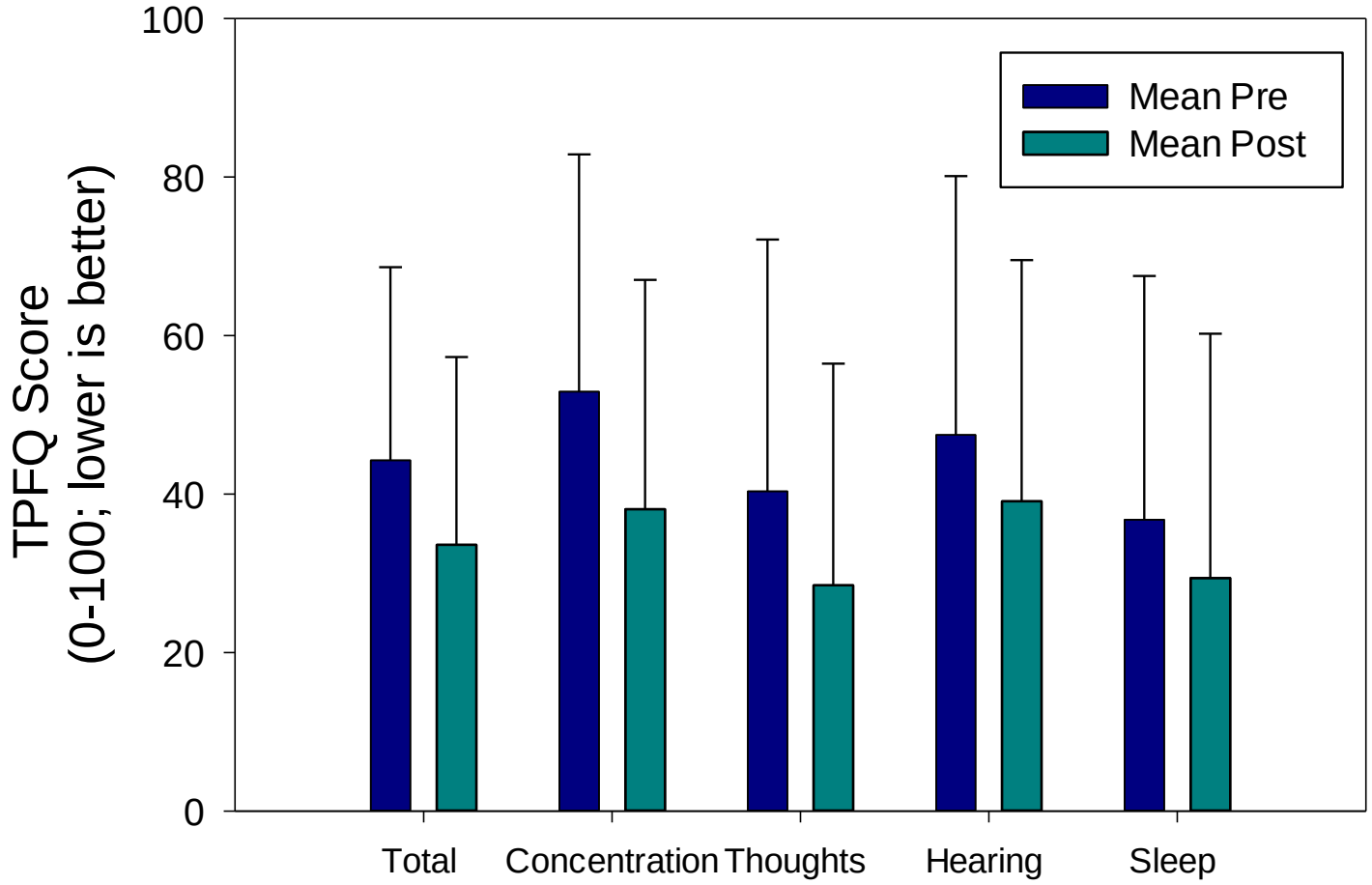
1. Tinnitus Handicap Questionnaire

- Tinnitus severity improved from 44.5 to 36.1 which was significant for the group and of moderate effect size ($p<.001$, $d = .620$)
- High variability in scores, normally distributed (SD=18.5)



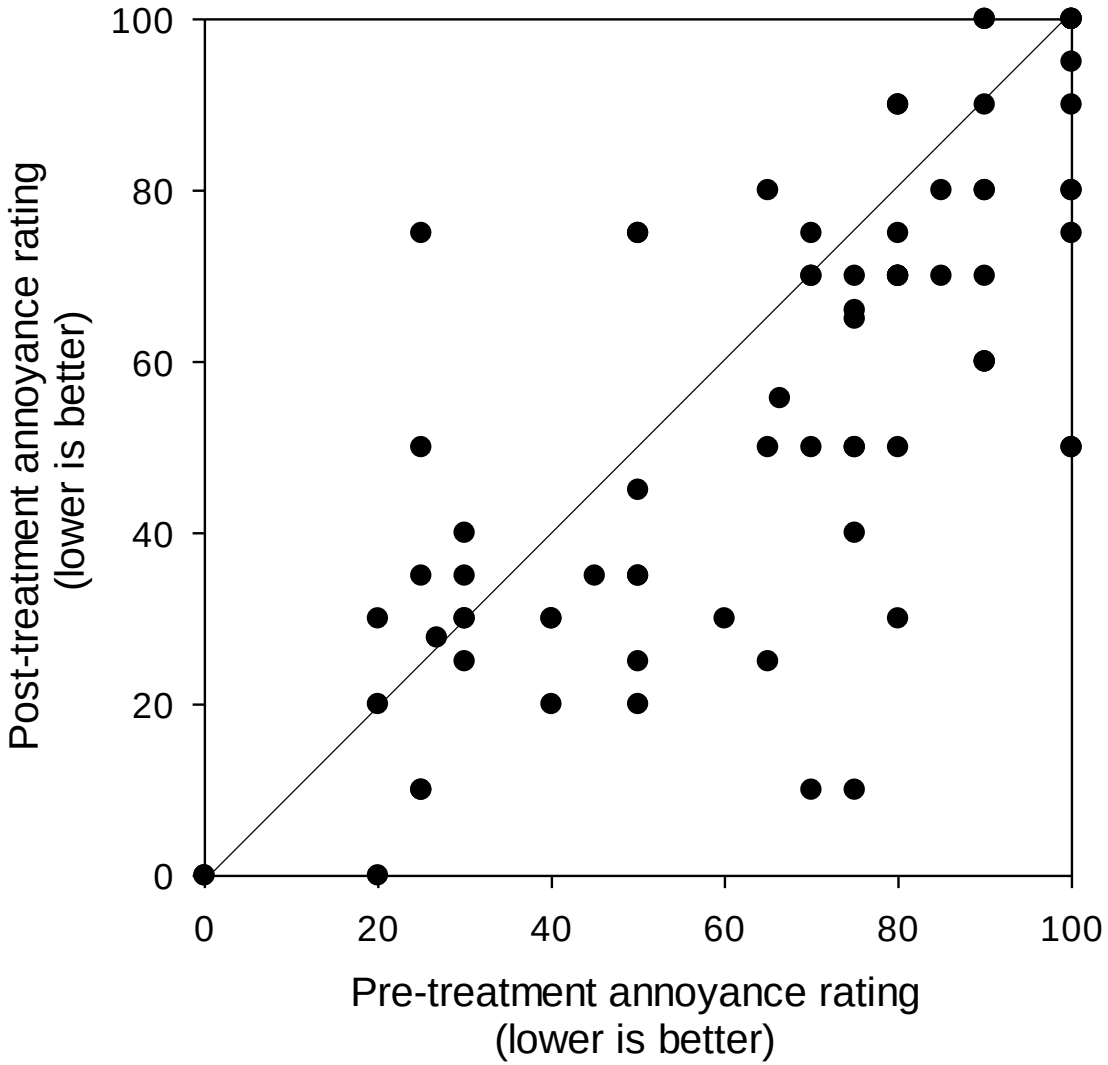
2. Tinnitus Primary Functions Questionnaire

- Significant improvement in Concentration and Thoughts by 12-14% ($p<.001$, $d = .596$ for conc, $d = 5.10$ for thoughts)
- 41/71 showed a significant improvement in Concentration



3. Tinnitus annoyance ratings (n=71)

- Ratings significantly improved by 11% to 55.7/100 after treatment with moderate effect size ($p<.001$, $d = .514$)
- Loudness rating significantly improved by 6% to 61.2/100 ($p=.007$)



Conclusions from TAT-Online study

Remote, self-paced tinnitus counseling provides a general basis for education about tinnitus and how to cope with it

Visual and auditory teaching is beneficial to the user's experience and learning

TAT-Online is effective in reducing reactions to tinnitus for many patients

Research should continue to investigate use of remote counseling for tinnitus including long-term effectiveness with sound therapy

Hyperacusis Activities Treatment

What is hyperacusis?

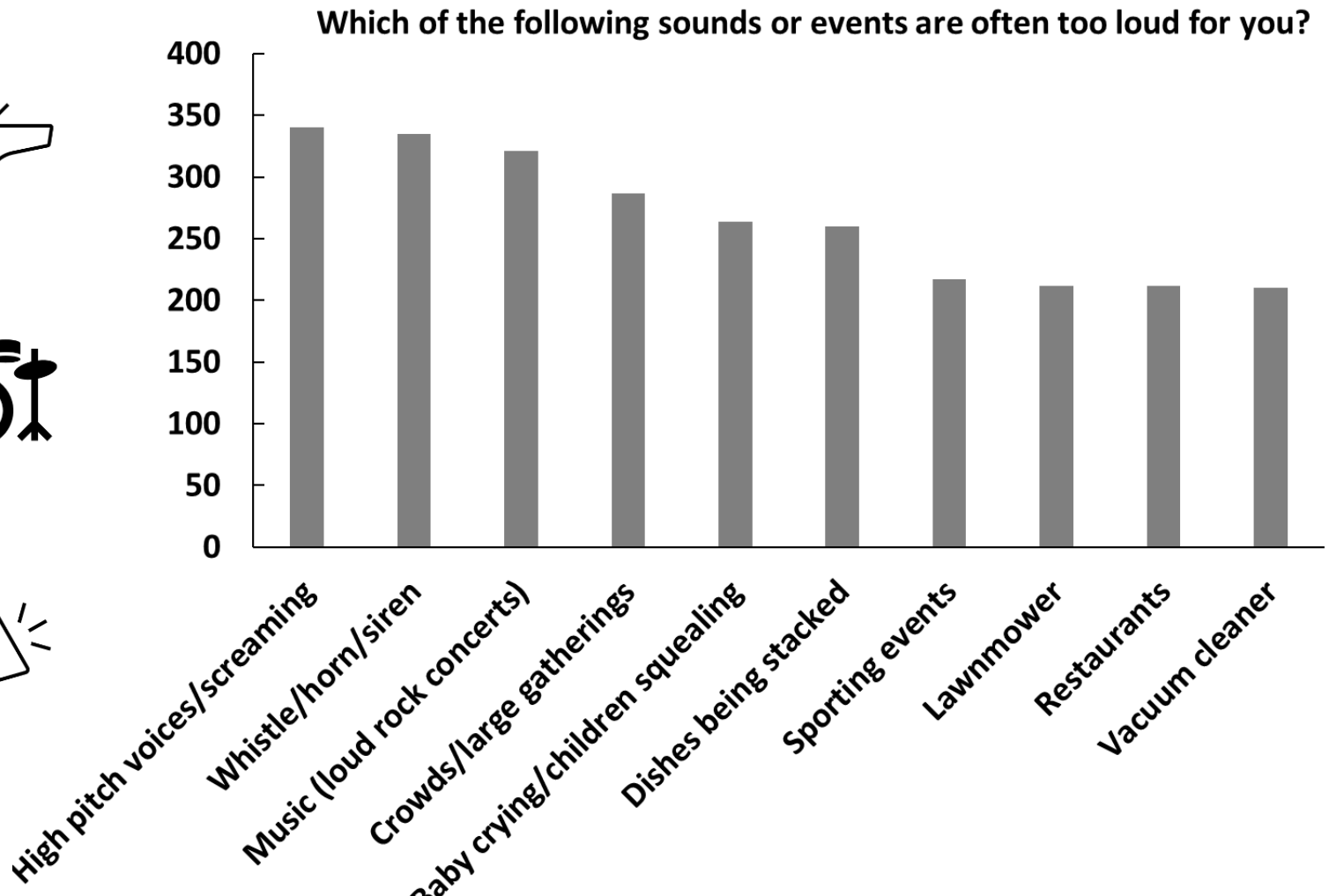
- Reactions to moderately-loud sounds are too loud, annoying, fearful, and/or painful (Tyler et al., 2014)
- Affects 6-17% of general population (Andersson, 2002)
- Other terms that are used:
  - Misophonia
  - Select Sound Sensitivity
  - Decreased Sound Tolerance

Types of hyperacusis

- Loudness hyperacusis
- Annoyance hyperacusis
- Fear hyperacusis
- Pain hyperacusis

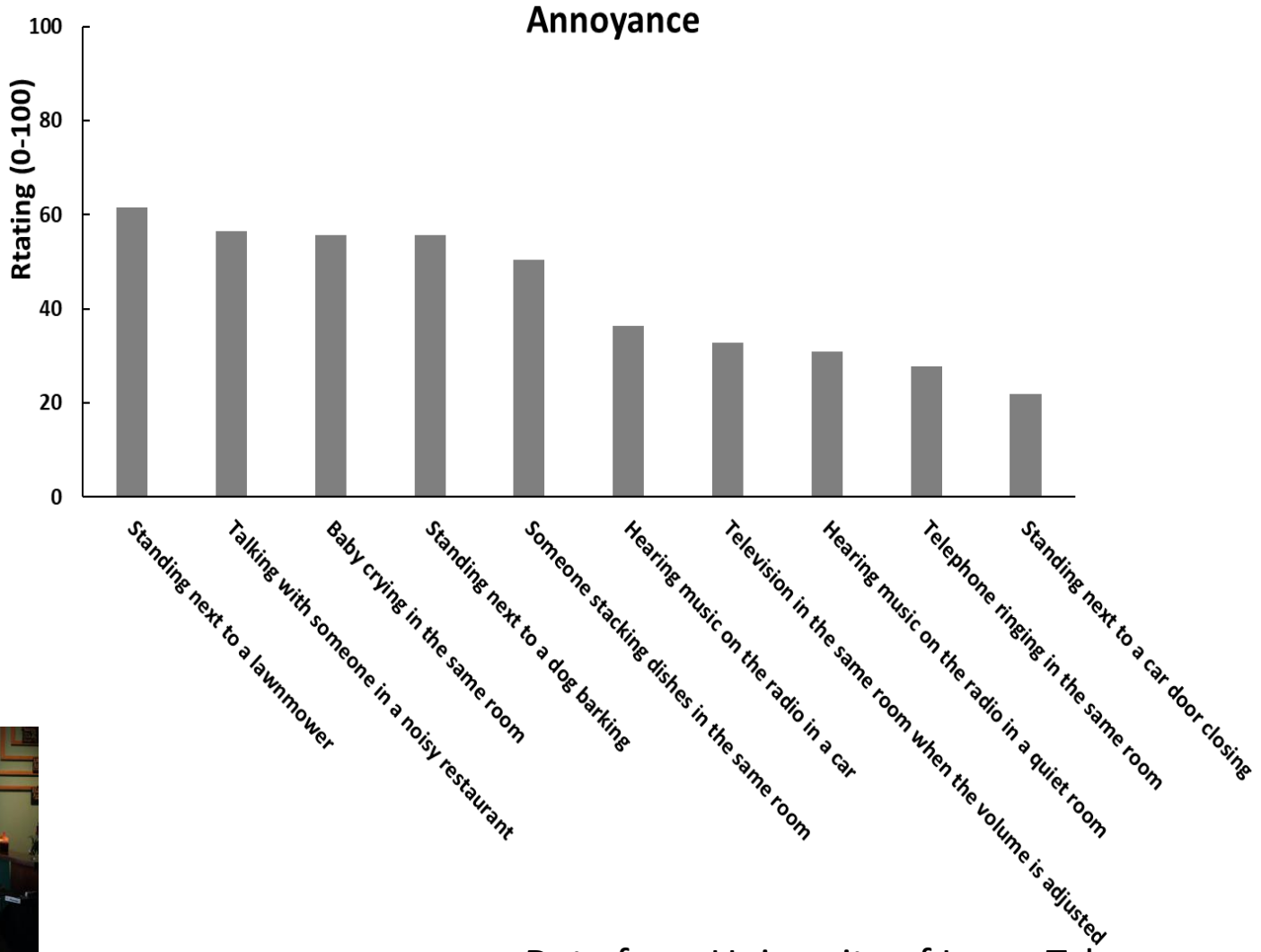
Common reactions to hyperacusis: Loudness, annoyance, fear, and pain

Sounds that are too loud



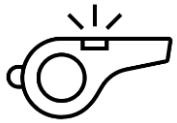
Data from University of Iowa, Tyler

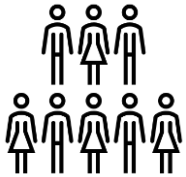
Sounds that are annoying

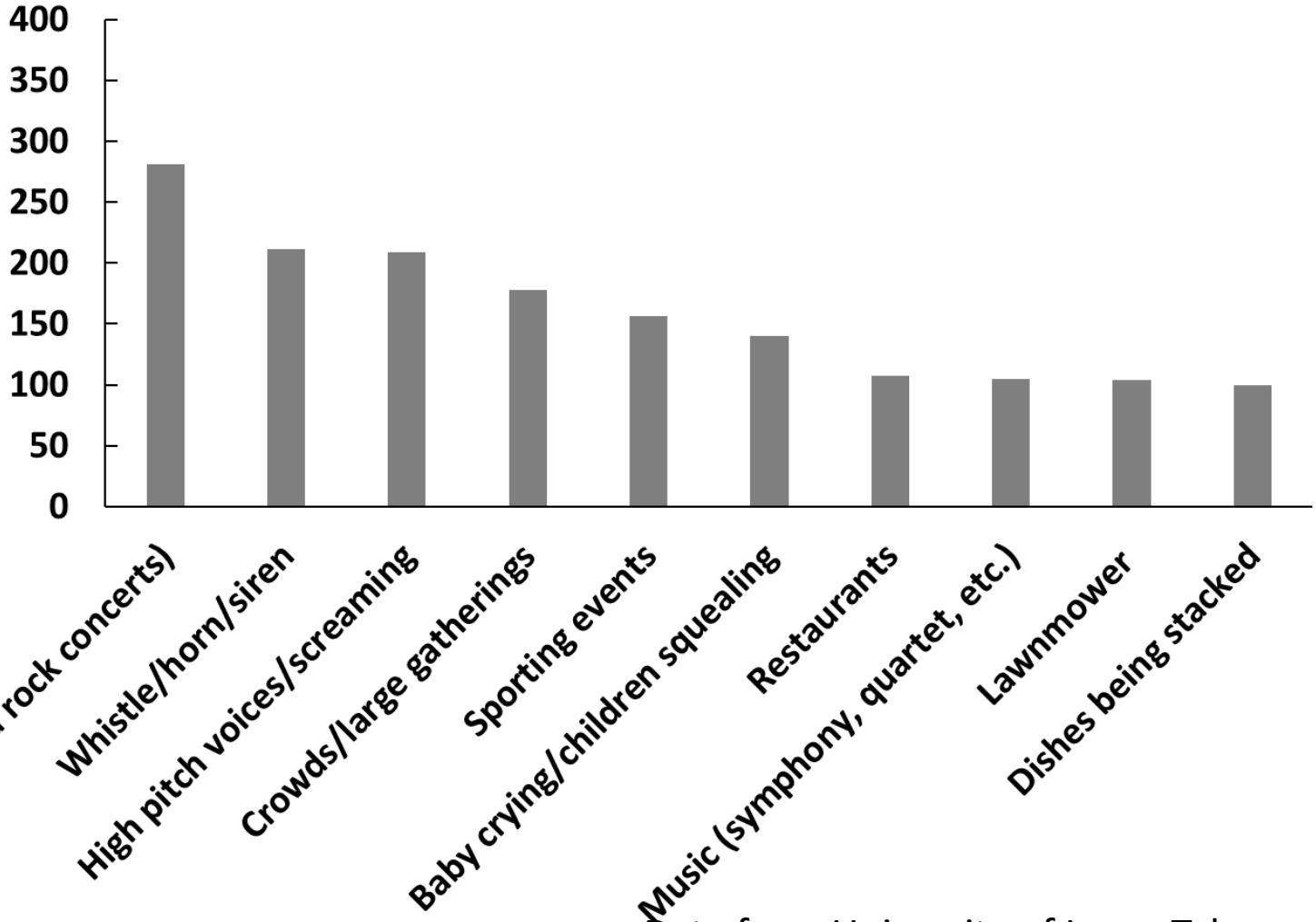


Data from University of Iowa, Tyler

Sounds that are fearful

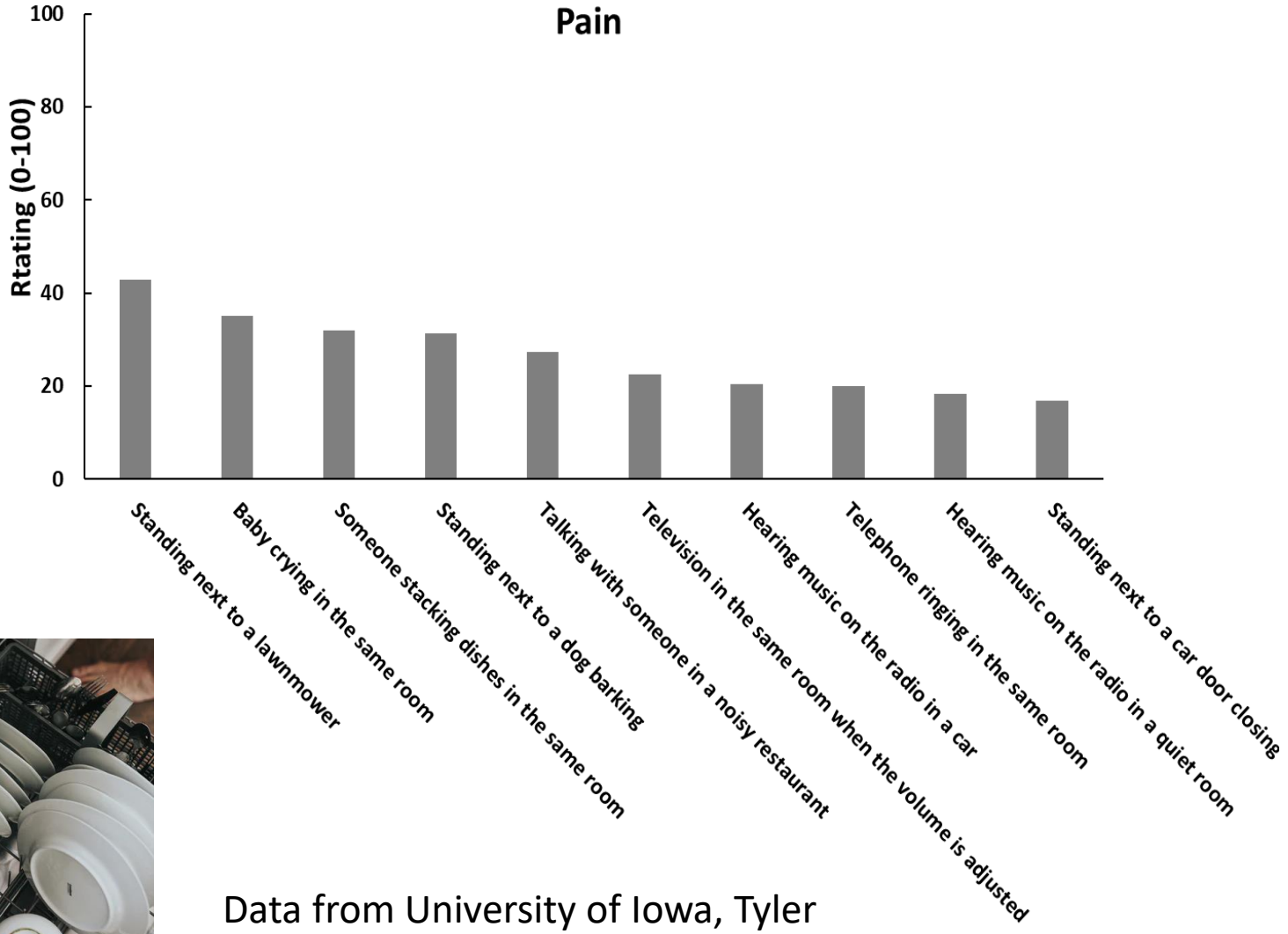






Data from University of Iowa, Tyler

Sounds that cause pain



Data from University of Iowa, Tyler

Hyperacusis and related symptoms

(Aazh, & Moore, 2018; Greenberg, & Carlos, 2018; Ke et al, 2020)

- Headaches
- Light sensitivity
- Smell disturbances
- Taste disturbances
- Anxiety
- Depression
- Psychosocial impairments
- Functional impairments

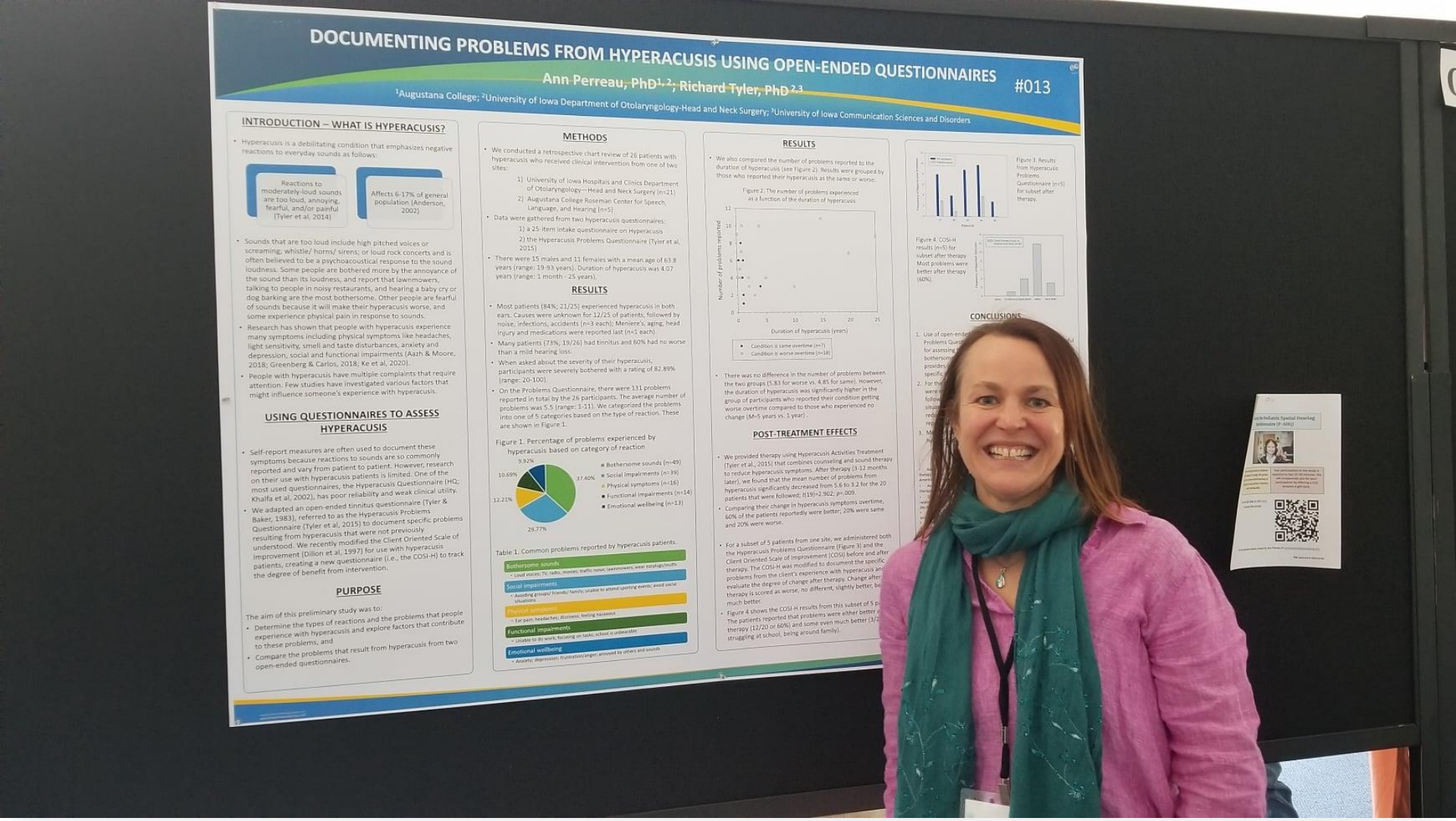
Management of Hyperacusis

1. Ear plugs to reduce sound exposure (Pienkowski et al, 2014)

2. Counseling that includes Cognitive Behavioral Therapy (Juris et al., 2014) and mindfulness

3. Sound therapy to improve loudness perception (Formby & Gold, 2002)

4. Medications such as serotonin receptor inhibitors (Gopal et al., 2000) and for anxiety



Documenting Problems from Hyperacusis using Open-ended Questionnaires

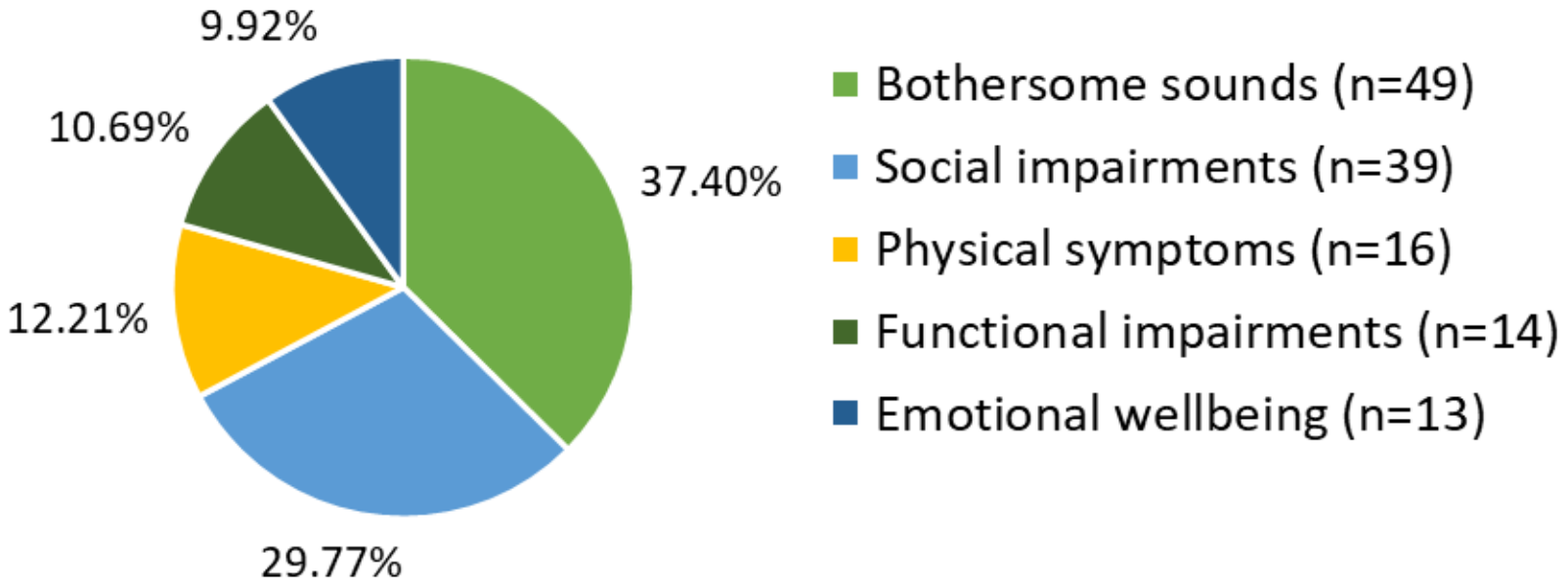
Methods – Participants n=26

Demographic variables	Average (range)
Gender	15 M; 11 F
Age in years	63.8 (19-93)
Duration in years	4.1 (.1-25)
Location of hyperacusis	84% in both ears
Causes of hyperacusis	Unknown (n=12); noise exposure (n=3), infections (n=3), accidents (n=3), Meniere's (n=1), age (n=1), head injury (n=1) and medications (n=1)
Presence of hearing loss	60% had mild HL or better
Presence of tinnitus	73%
Severity of hyperacusis (0-100 rating)	82.9% (20-100)

Hyperacusis Problems Questionnaire

- 131 problems reported in total with an average of 5.5 per patient

Figure 1. Percentage of problems experienced by hyperacusis based on category of reaction



Common problems reported by Hyperacusis patients

Bothersome sounds

- Loud voices; TV, radio, movies; traffic noise; lawnmowers; wear earplugs/muffs

Social impairments

- Avoiding groups/ friends/ family; unable to attend sporting events; avoid social situations

Physical symptoms

- Ear pain; headaches; dizziness; feeling nauseous

Functional impairments

- Unable to do work; focusing on tasks; school is unbearable

Emotional wellbeing

- Anxiety; depression; frustration/anger; annoyed by others and sounds

Results after using Hyperacusis Activities Treatment

Counseling

Thoughts and Emotions

Hearing and Communication

Sleep

Concentration

Sound Therapy

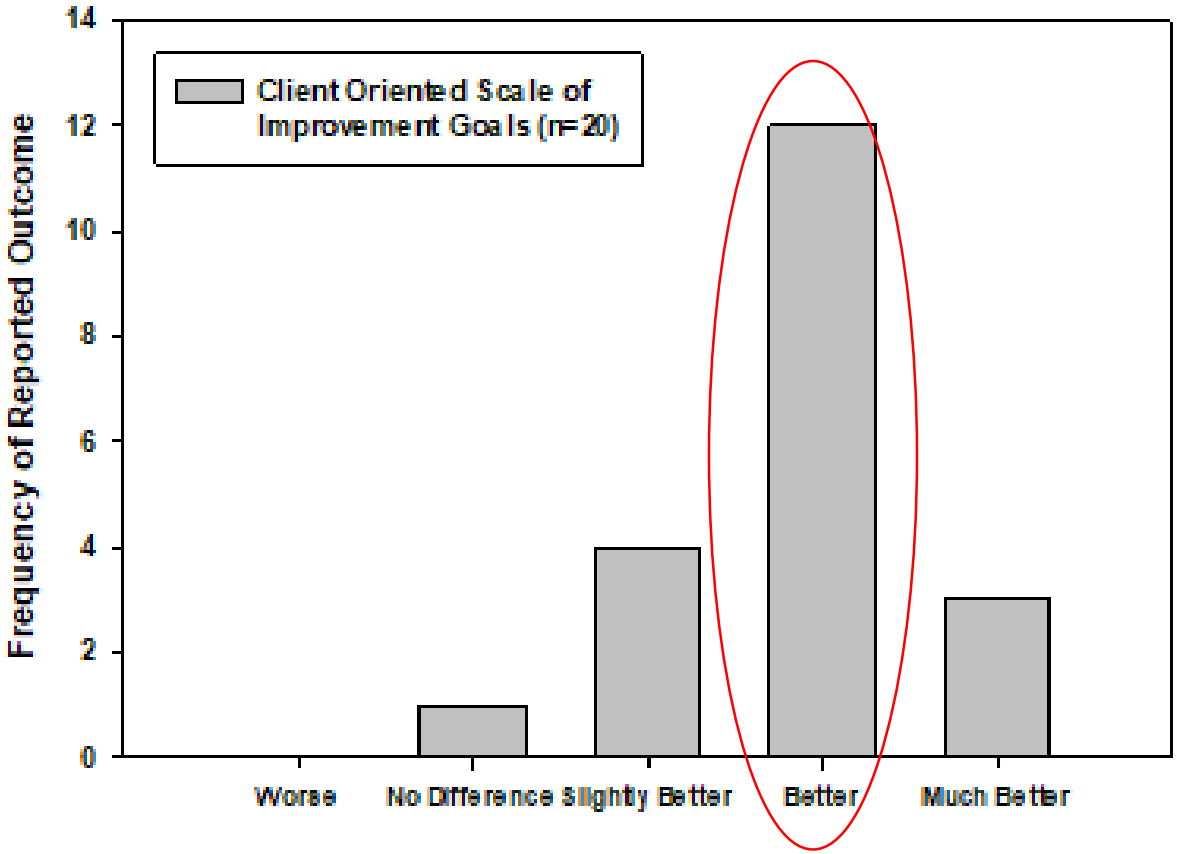
Improve sound tolerance or loudness perception

Mask bothersome sounds

- Number of problems from hyperacusis significantly decreased from **5.6 to 3.2** ($t(19)=2.902$; $p=.009$)
- Comparing the change in hyperacusis symptoms overtime, 60% of the patients reportedly were better; 20% were same and 20% were worse.

Results after using Hyperacusis Activities Treatment

- Most problems were reportedly better after therapy on COSI-H



Conclusions - hyperacusis

1. The most common problems were related to the bothersome sounds that patients are exposed to, followed by social impairments or avoidance of social situations
2. Hyperacusis Activities Treatment reduced the number of problems experienced by patients and improved their overall functioning
3. More research is needed to evaluate outcome measures for hyperacusis with a larger patient population

Introducing Hyperacusis Activities Treatment - Online!

Do you qualify?

We are recruiting adults with hyperacusis to complete a remote counseling and sound therapy program. It is a clinical trial sponsored by the National Institutes of Health.

What will I do in the study?

Participation in the clinical trial is expected to last 12 weeks. You will be asked to complete activities each week.

Activities include:

- Watching short, instructional videos
- Completing homework and logs
- Answering short quizzes
- Listening to sounds with provided headphones and tablets or sound generators.

What are the goals of Hyperacusis Activities Treatment-Online?

- To review the causes, prevalence, mechanisms of hyperacusis, and reactions to hyperacusis
- To provide education and review strategies for concentration, sleep, thoughts and emotions, and communication
- To use a sound therapy device to help reduce your hyperacusis

How do I enroll?

To enroll, please use the QR code shown to the right. You will complete the informed consent and screening forms online at our HEAR-T (Hearing +Tinnitus) lab website.

For any questions, please contact Dr. Ann Perreau at annperreau@augustana.edu.

IRB Approval #: 1043205468

Introducing Hyperacusis Activities Treatment-Online!

HAT-Online Counseling Plan

You will participate over 4 weeks using this schedule:

Week 1

Introduction to HAT-Online!

Education about the causes and mechanisms of hyperacusis, hearing and hearing loss.

Week 2

Reactions to hyperacusis

Discuss common reactions to hyperacusis and taking volitional control of one's attention.

Week 3

Thought analysis and restructuring

Learn about unhelpful thoughts and how to change these into healthy thoughts.

Week 4

Sound therapy and relaxation

Describe sound therapy options to help hyperacusis and demonstrate relaxation exercises.

HAT-Online Weekly Activities

Videos	Watch 2-3 videos on topic for that week
Hands-on	Complete hands-on activities and reflection of your experiences with hyperacusis
Forum	Attend a weekly discussion forum facilitated by Drs. Perreau and Williamson
Resources	Review 1-2 handouts that review topics and provide additional resources
Quiz	Complete a 10-item quiz that assesses knowledge gained from the week

HAT-Online Sound Therapy Treatment Protocol

- Compare Effectiveness of 2 Different Sound Therapy Approaches

Group 1	Group 2
Listen to Bothersome Sounds	Use White Noise Sound Generators
Sounds are selected individually	Fit devices remotely
Tyler et al., 2015	Formby et al., 2007, 2015

- Participants listen to sounds daily using a customized protocol
- Participants track their progress using a diary

Wrap up and Assessment

1. True or False: Tinnitus is rare and observed in less than 1% of adults.

2. "I can't live with this noise in my head!" is an example of what kind of thought?

- Neutral
- Negative
- Positive

3. True or False: You should use a high-level background sound when trying to make your tinnitus less noticeable.

4. Which of the following can make your tinnitus less noticeable?

- Rain
- Static noises
- Music
- All of the above

5. Which of the following is a NOT subtype of hyperacusis?

- Fear
- Annoyance
- Tinnitus
- Loudness

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HEAR-T Research Lab Website

Questions?

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