

Impact of cochlear implantation on quality of life in older adults

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 - American Cochlear Implant Alliance
 - Dorris Duke Foundation
 - National Center for Advancing Translational Sciences
 - MUSC Team Science Award



COCHLEAR IMPLANT QUALITY OF LIFE (CIQOL)

User Manual
Version 1.0



Cochlear Implant Quality of Life Research Program
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- Final validation completed 2019



<https://education.musc.edu/CIQOL>

Cochlear implant safety




- Extremely safe surgery
- Minimal risks from anesthetic exposure



CI outcomes

Speech Recognition Testing

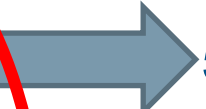




	<u>Pre-op (SD)</u>		<u>12mo post-CI(SD)</u>
Words in quiet	12.8% (± 15.8)		59.5% (± 22.2)
Sentences in quiet	20.2% (± 20.3)		79.6% (± 23.8)
Sentences in noise	21.6% (± 19.2)		57.5% (± 25.1)

CI outcomes

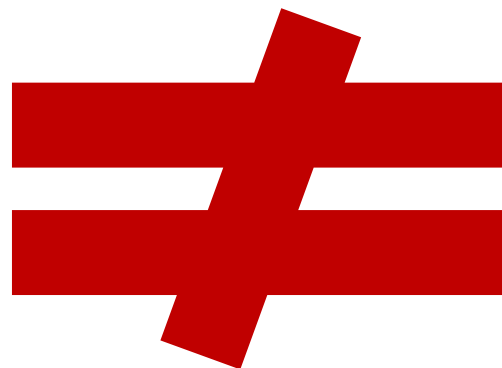
Speech Recognition Testing



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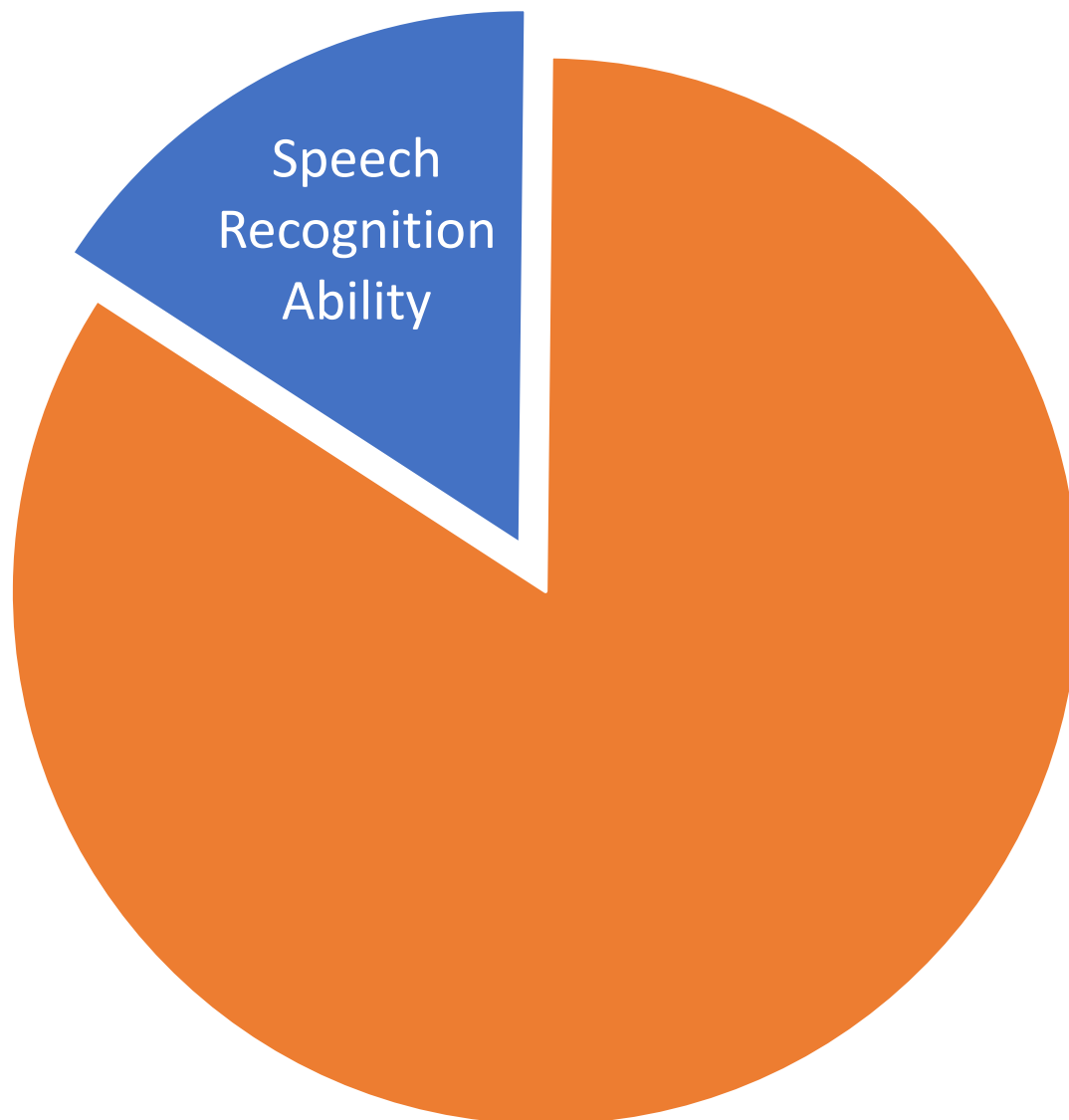
CI outcomes

Speech
Recognition
Testing



Real-world
communication
abilities

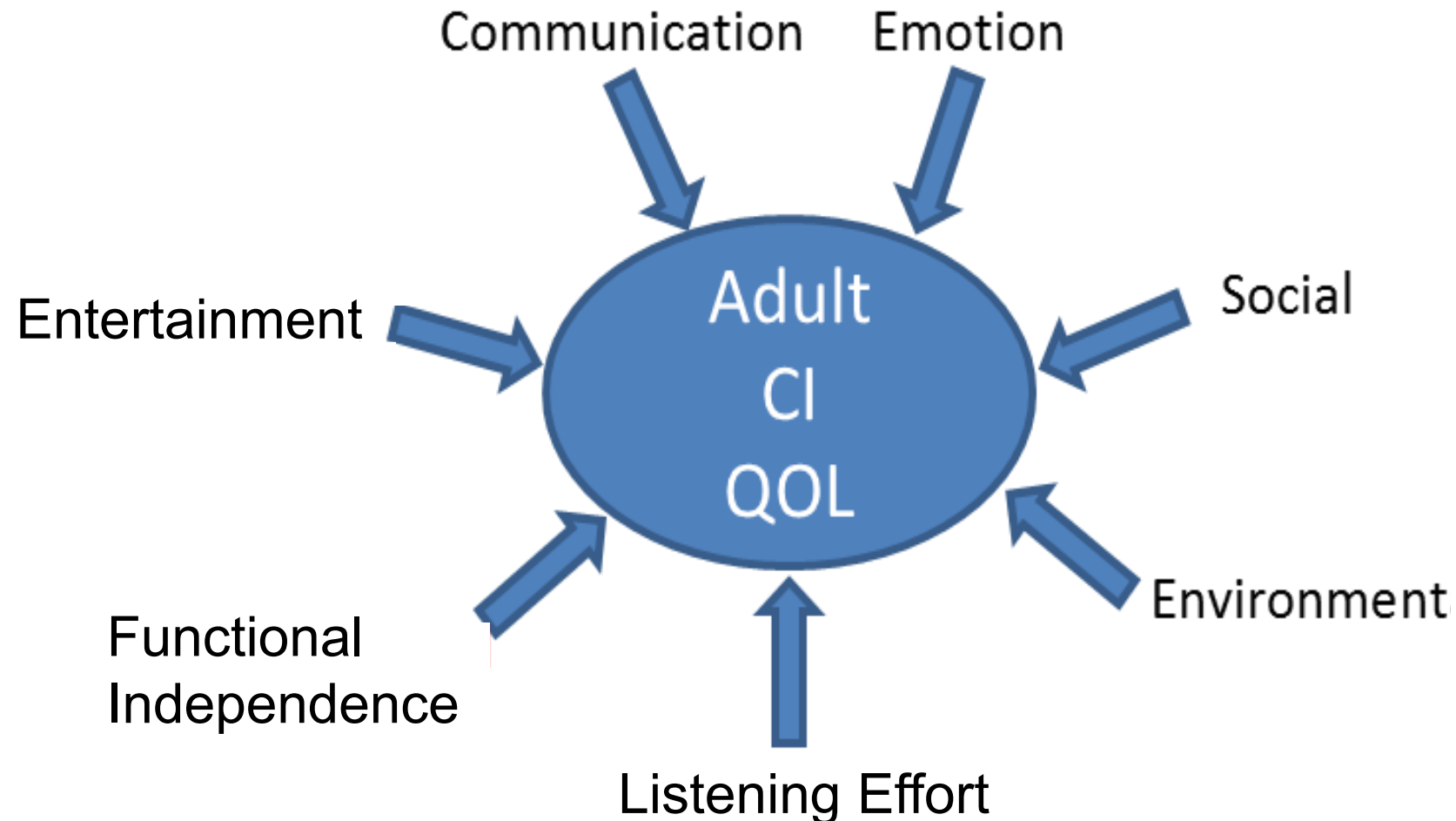




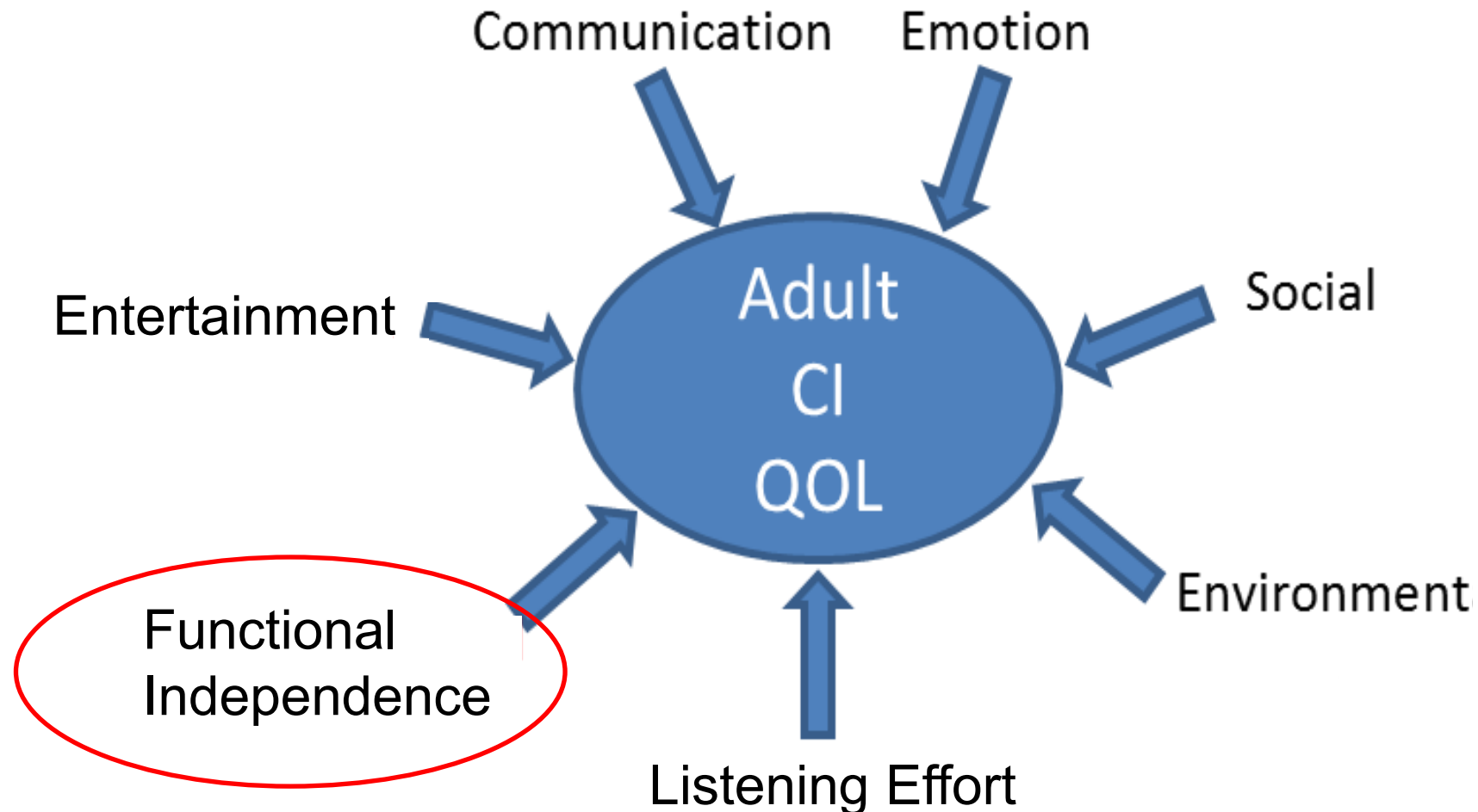
- Speech recognition ability only accounts for **4-16%** of variance in patient self-reported communication ability

Olze H, et al. Laryngoscope. 2012
Calvino M, et al. Eur Arch Oto. 2016
Capretta NR, Moberly AC*. Laryngoscope. 2016
McRackan TR, et al. Ear and Hearing. 2021
McRackan TR, et al. Laryngoscope. 2018
McRackan TR, et al. Otol Neurotol. 2018

Quality of life outcomes in older adults: Qualitative research via focus groups



Quality of life outcomes in older adults: Qualitative research via focus groups



Quality of life outcomes in older adults:

Functional independence

- **I am able to drive when necessary**
- **I am able to drive without assistance**

Quality of life outcomes in older adults:

Functional independence

- I am able to drive when necessary
- I am able to drive without assistance
- **I am able to go shopping without assistance**

Quality of life outcomes in older adults:

Functional independence

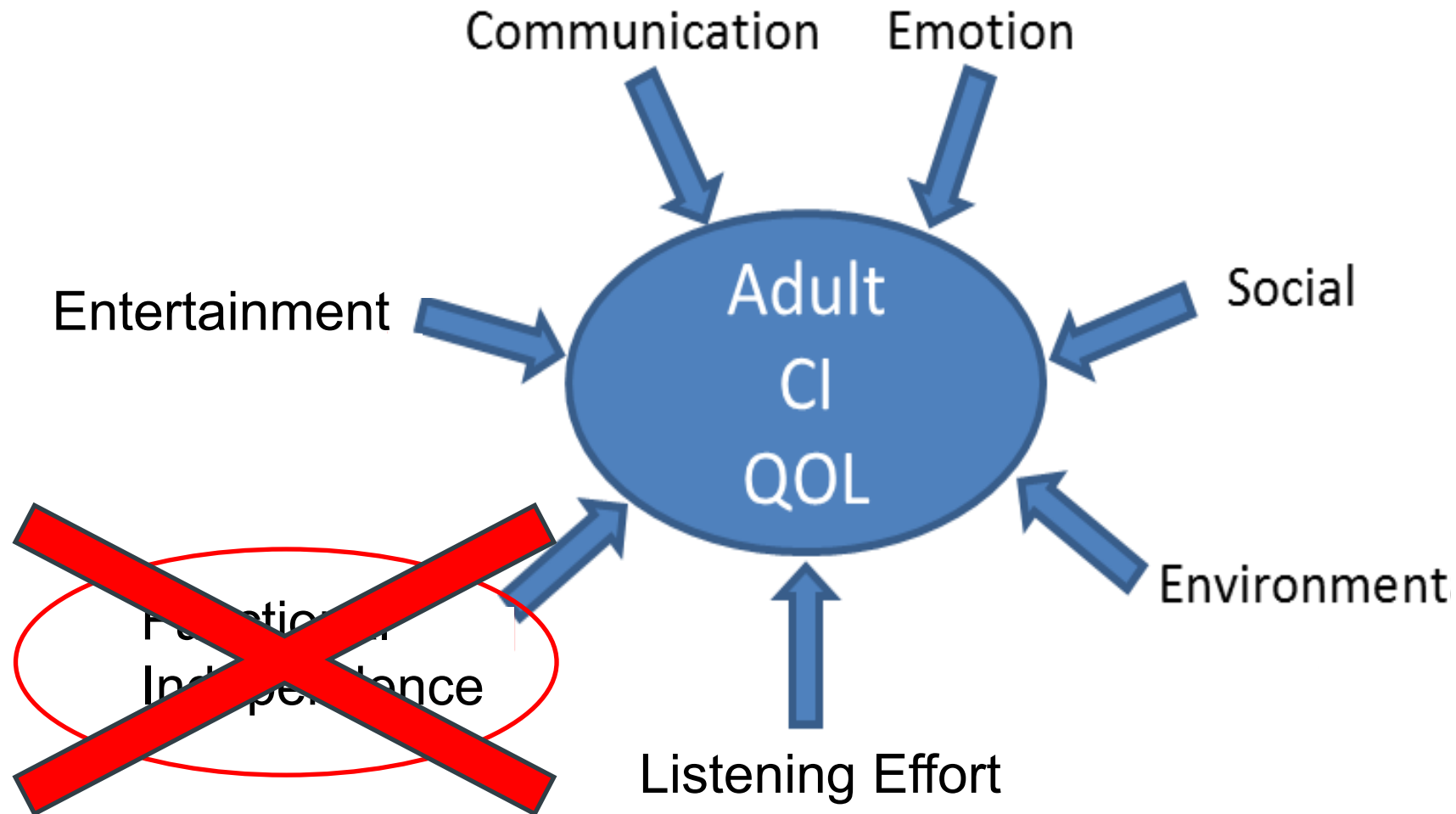
- I am able to drive when necessary
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- I am able to go shopping without assistance
- **Improvement in feeling handicapped by my hearing loss**

Quality of life outcomes in older adults:

Functional independence

- I am able to drive when necessary
- I am able to drive without assistance
- I am able to go shopping without assistance
- Improvement in feeling handicapped by my hearing loss
- **I could live by myself without assistance**
- **I am able to function independently**

Quality of life outcomes in older adults: Qualitative research via focus groups



CIQOL outcomes in older adults:



N=371

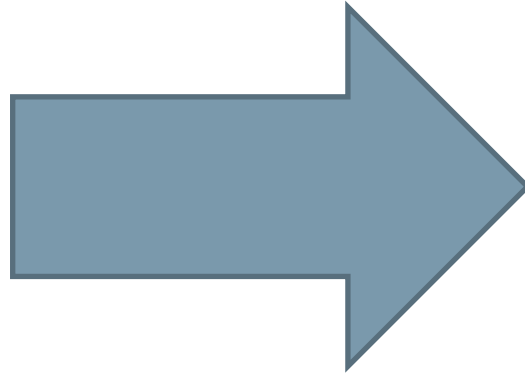
Mean age 60
(± 15) years

CIQOL outcomes in older adults:

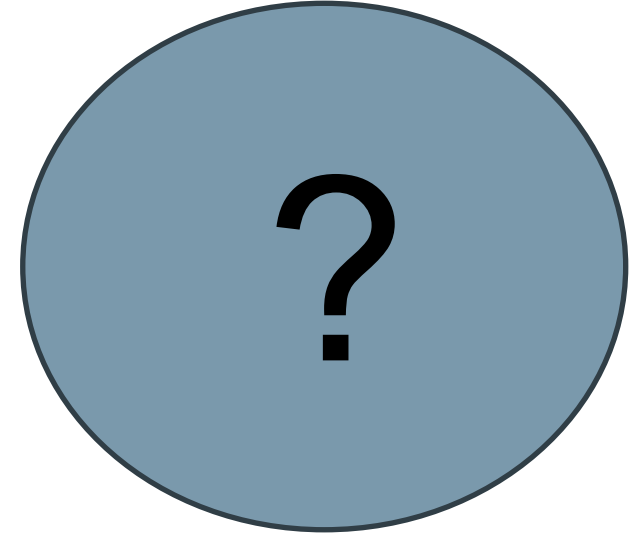


N=371

Mean age 60
(± 15) years



- Demographic factors
- Hearing factors

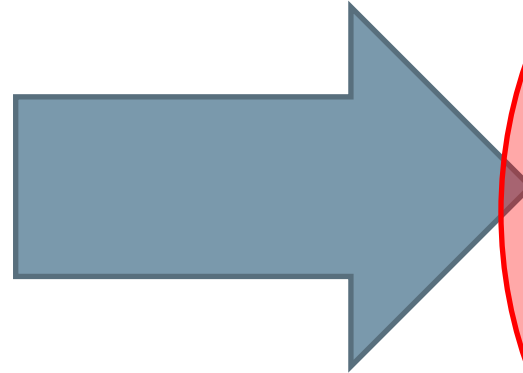


CIQOL outcomes in older adults:



N=371

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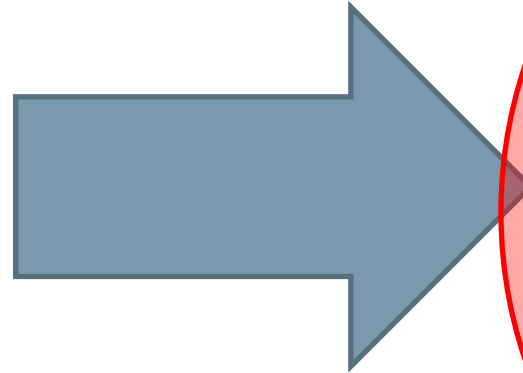
Communication
Emotional
Environment
Listening Effort
Social

CIQOL outcomes in older adults:



N=371

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Communication
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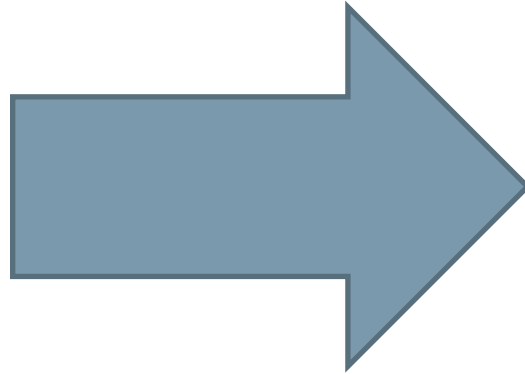
Entertainment

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N=371

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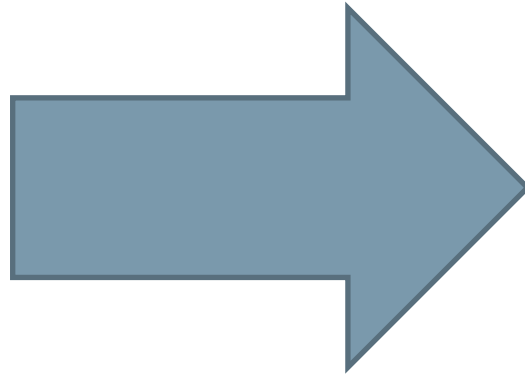
Entertainment
 $\beta = -0.3$ (-1.5 to -0.4)

CIQOL outcomes in older adults:



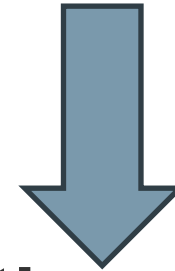
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Mean age 60
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- Demographic factors
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Entertainment
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Interpretation:

45-year age difference
needed to have meaningful
difference in CIQOL-
Entertainment score

CIQOL outcomes in older adults:

- Minimal quality of life differences between older and younger CI users
 - Potential, small differences in speech recognition scores
- Impacts on daily life are widespread and cover all CIQOL domains



Dr. Barbara A. Schreiner

- Katie Sterba

- Bryant Seamon

- Carrie Kelly

- Isabelle Chau



- Kara Leyzac
- Rob Labadie
- Paul Lambert
- Ted Meyer
- Habib Rizk
- Peter Dixon
- Liz Camposeo
- Kaylene King
- Amy Noxon
- Meghan Carter
- Hannah Brown
- Elise Wilson
- Sarah Haslett
- Nevitte Morris
- Claire Keiser



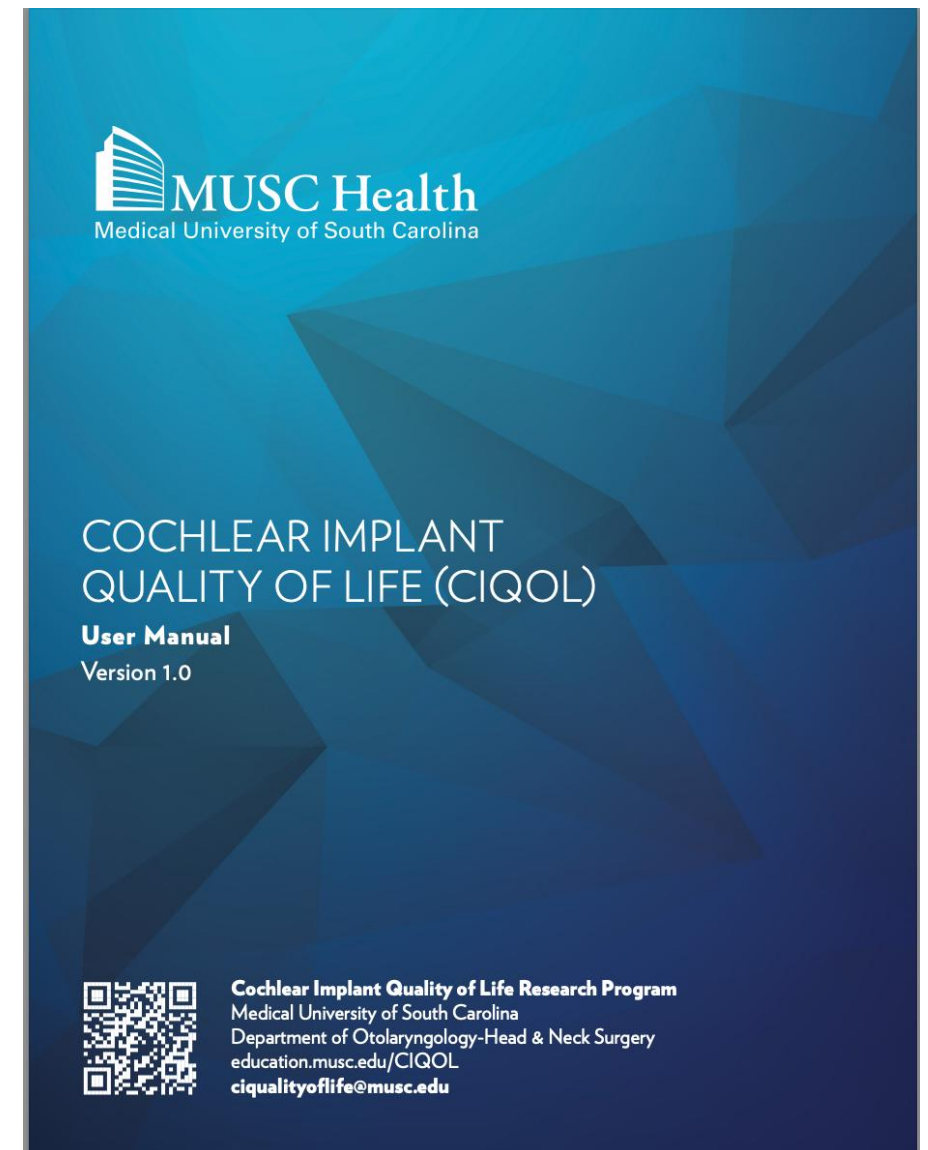
- Columbia University
- Duke University
- Eastern Virginia Medical School
- Georgetown
- House Ear Clinic
- Johns Hopkins University
- Kaiser Health Los Angeles
- Kaiser Health San Diego
- Loyola University
- Mass Eye and Ear Infirmary
- Mayo Clinic Rochester
- MUSC
- New York Eye and Ear Infirmary
- Ohio State University
- Oregon Health Sciences University
- Rush Medical Center
- Stanford University

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- University of South Carolina
- University of Texas Southwestern
- Vanderbilt University
- Virginia Mason Seattle
- University of Miami
- Washington University
- Advanced Bionics
- Cochlear Corporation
- MED-EL



Questions?

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