

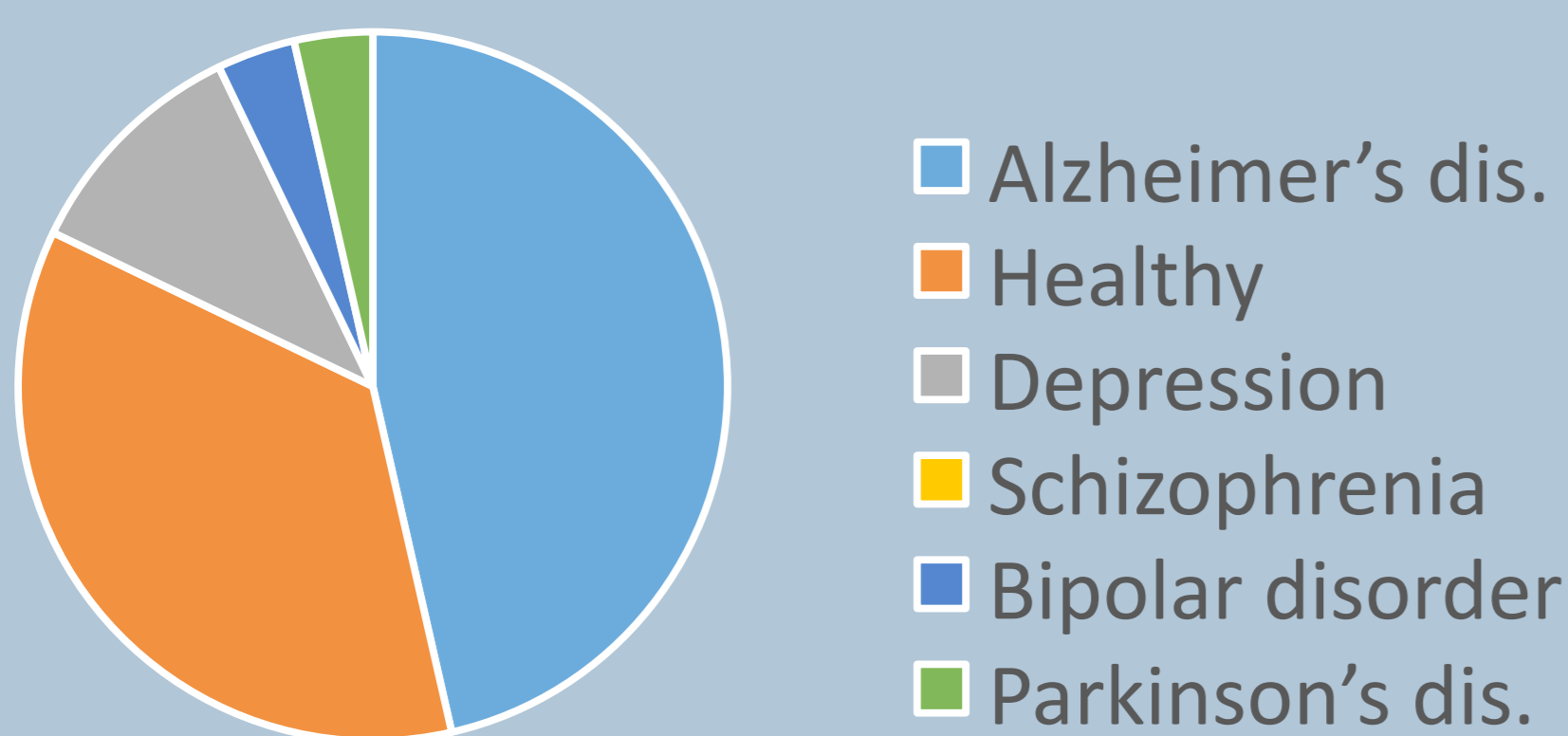
Cécilia Project: An international multidisciplinary collaboration on the study of language in later life

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1 Background

- ❖ Carolinas Conversations Collection¹ (CCC) are video recordings of **free natural conversations** with the elderly.
- ❖ CCC is **available online for research** purposes.
- ❖ Initially had English-only recollections.
- ❖ It holds over 600 conversations with American speakers.
- ❖ In 2015, we started to **incorporate Latin-American Spanish** with participants from Ecuador and Mexico.



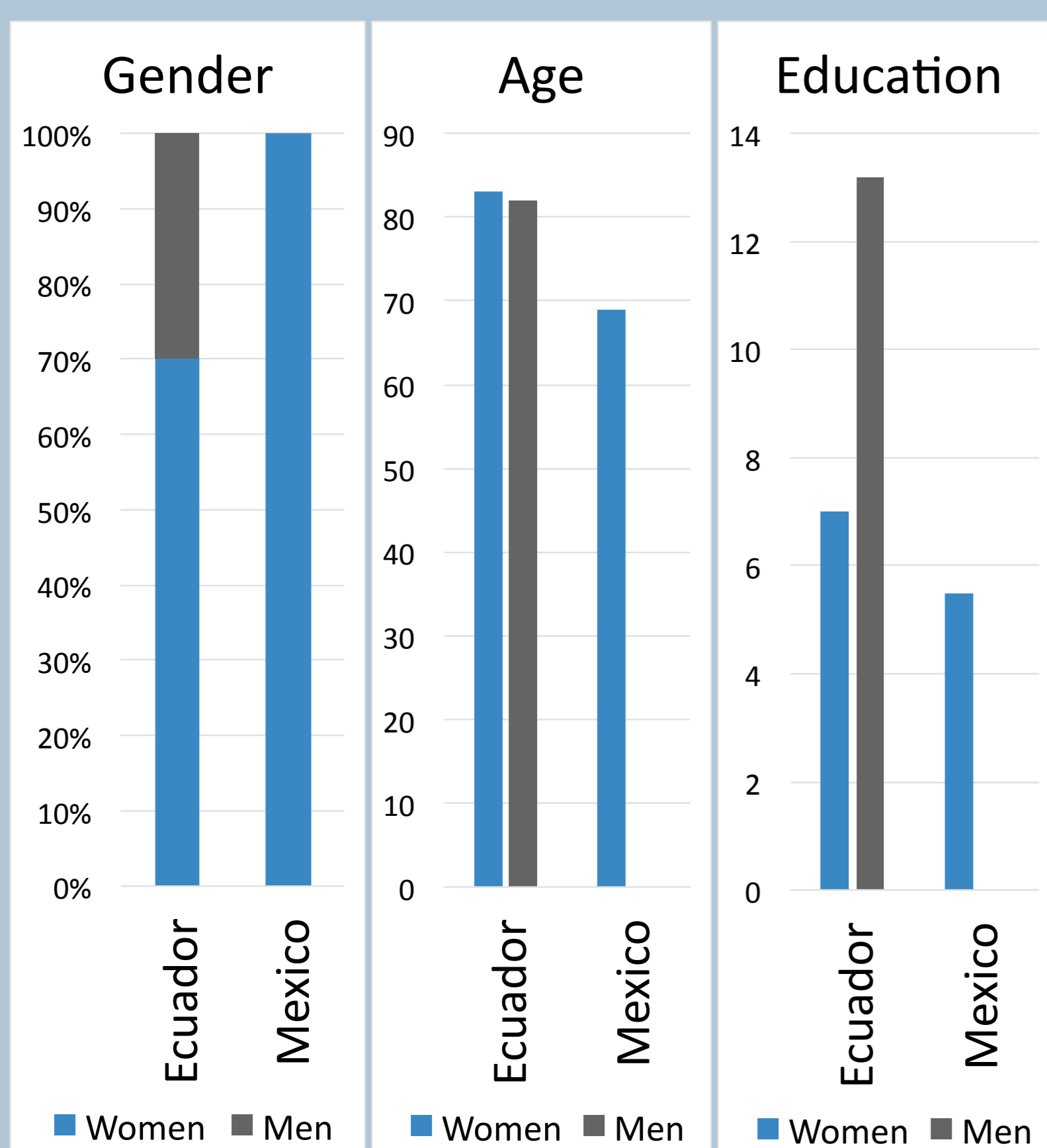
2 The collection

Multimodal collection: time-aligned **transcripts**, **video** and **audio** of the interviews.

We are starting to recollect old letters and messages authored by the participants.

Participants' information recollected:

- Medical conditions
- Treatments and medications
- Educational level
- Previous occupation
- Ethnicity
- Gender
- Age



¹<http://carolinaconversations.musc.edu/>

3 Methods

A combined efforts of **research nurses** and **psychogeriatricians, linguists, computer scientists** and **geriatric care-givers** from six institutions (USA, Canada, Mexico and Ecuador).

Three independent Institutional Review Boards (IRB) examined and approved the protocols for the recollections:

- ❖ Participants interviewed at least 2t / year.
- ❖ Manual transcription and time-alignment are made by the Linguistic Engineering Group at the National University of Mexico.
- ❖ Transcripts are marked with pauses, noises, intonation and pronunciation.
- ❖ All research team members are certified on ethical practices for projects involving human participants.



Fig. 1. An elderly participant with his caregiver after an interview

Interviewing process

There is **no specific theme** to talk about. The most common topics are the early lives of the participants, their hobbies, their health and their views on life in general.

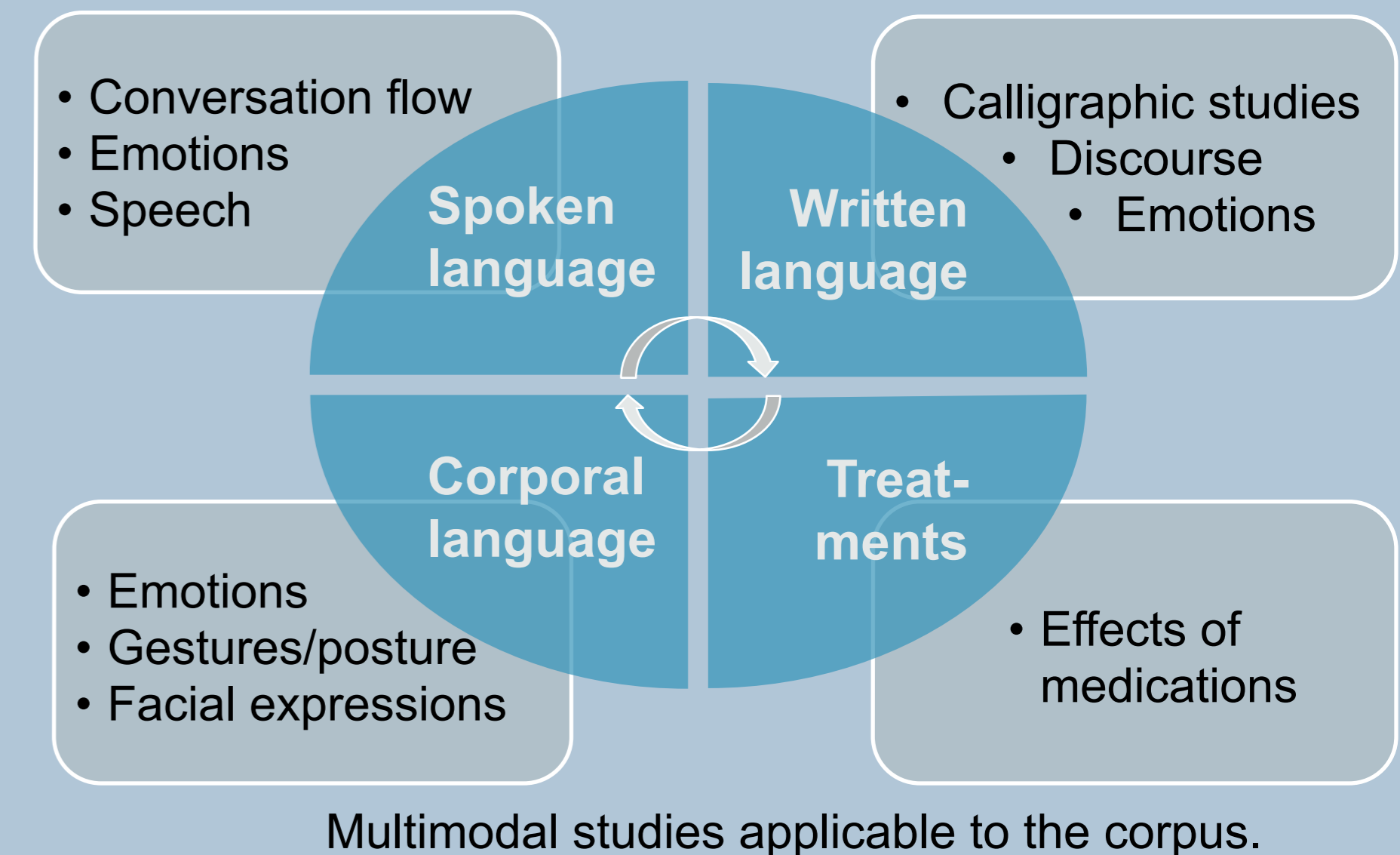
- **Who are the participants?**
 - Ecuador: residents of a senior home.
 - Mexico: geriatric patients of a psychiatric hospital
- **Who are the interviewers?**
 - Ecuador: caregivers.
 - Mexico: psychiatric care providers.

Interviewers are trained (**Fig. 2**) with techniques to motivate the participants to talk, even if they are afflicted by some type of cognitive impairment.



Fig. 2. Animated video for training interviewers: goo.gl/E7xeOO

4 Research possibilities



Multimodal longitudinal research studies can be made on **improving communication** by studying facial expressions to detect successful interactions, analyzing exchanges and finding the best strategies to promote conversation, and developing specific strategies for talking to patients with dementia.

Ungoing research at the LiNCS

Non-invasive **medical applications**.

- pattern recognition techniques to track (articulators) for facial expression and corporal gestures
- automatic marking of video and audio (according to annotation standards)
- automatic multimodal analysis, prediction and detection of Mild Cognitive Impairment, Alzheimer's and Parkinson's diseases, depression and various age-related mental disorders to further our understanding on the effects and progression of these diseases, and effects of medications.

5 Future work

- Continue the recollections for the following 2 to 5 years
- Incorporate:
 - Canadian French-speakers
 - Canadian English-speakers
 - (in progress) Ecuadorian Quechua-speakers

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