

# Healthy Brain Ageing

## Subjective Cognitive Complaints in Participants of the Healthy Brain Ageing Study (HeBA)

Sonja R. Jónsdóttir<sup>1,2,4</sup>, Claire Pauly<sup>1,2,4</sup>, Olena Tsurkalenko<sup>1,4</sup>, Elodie Thiry<sup>2</sup>, Anne-Marie Hanff<sup>1</sup>, Tainá M. Marques<sup>1</sup>, Corinne GC Horlings<sup>3</sup>, Alicia Garrido<sup>6</sup>, Carlos Vega<sup>4</sup>, Sebastian Schade<sup>5</sup>, Philipp Mahlknecht<sup>3</sup>, Clarissa PC Gomes<sup>4</sup>, Soumybrata Ghosh<sup>4</sup>, Kavita Rege<sup>4</sup>, Rajesh Rawal<sup>4</sup>, Deborah McIntyre<sup>1</sup>, Klaus Seppi<sup>3</sup>, Maria Jose Marti<sup>6</sup>, Claudia Trenkwalder<sup>5</sup>, Eduardo Tolosa<sup>6</sup>, Werner Poewe<sup>3</sup>, Venkata Satagopam<sup>4</sup>, Brit Mollenhauer<sup>5</sup>, and Rejko Krüger<sup>1,2,4</sup> on behalf of the HeBA consortium

<sup>1</sup>Luxembourg Institute of Health, <sup>2</sup>Centre Hospitalier de Luxembourg, <sup>3</sup>Medical University Innsbruck, <sup>4</sup>Luxembourg Centre For Systems Biomedicine (LCSB), University of Luxembourg, <sup>5</sup>Paracelsus-Elena-Klinik Kassel, <sup>6</sup>Hospital Clinic de Barcelona,

sonja.jonsdottir@lih.lu

### INTRODUCTION

• Subjective cognitive complaints (SCC) have gained a growing interest due to its potential for earlier detection of mild cognitive impairment and dementia due to Alzheimer's disease (AD) or Parkinson's disease (PD).<sup>1,2</sup>

• SCC is characterized by persistent, self-reported deterioration in cognitive performance without worsening neuropsychological outcomes compared to age, sex, and education-adjusted normative data.<sup>1,2</sup>

• Concerns of developing neurodegenerative diseases and depression could lead to SCC<sup>3</sup>. We expect individuals with affected relatives to be more at risk for SCC than individuals without affected relatives.

### OBJECTIVES

Investigate the prevalence of SCC from Healthy Brain Ageing Study (HeBA) participants in Luxembourg

Explore the prevalence of risk factors which can influence the development of SCC

### METHODS

- As part of the HeBA initiative (Abstract 1957), residents aged between 50 and 80, living in Luxembourg and the Greater Region were invited to participate in the population-based online survey
- The online survey includes self-reporting questionnaires:
  - whether they have/had or not a blood relative with PD or AD
  - Geriatric Depression Scale Short Form (GDS-SF)<sup>4</sup>
- SCC measured as a composite score (/3)

	Description	Max. score
Item on memory	whether they consider their memory as poor or even very poor compared to their peers	/1
Non-Motor Symptoms Scale <sup>5</sup>	Item 12: <i>Problems remembering things that have happened recently or forgetting to do things</i> Item 15: <i>Difficulty concentrating or staying focussed</i>	/2
	<b>Sum Score, cut-off score <math>\geq 2</math> for SCC</b>	<b>/3</b>

References

- Jessen, F., Amariglio, R. E., van Boxtel, M., Breteler, M., Ceccaldi, M., Chételat, G., ... Wagner, M. (2014). A conceptual framework for research on subjective cognitive decline in preclinical Alzheimer's disease. *Alzheimers Dement*, 10(6), 844-852. <https://doi.org/10.1016/j.jalz.2014.01.001>
- Oebelkoven, C., Egerl, L., Jessen, F., Wagner, M., & Dodel, R. (2022). Subjective cognitive decline in idiopathic Parkinson's disease: A systematic review. *Ageing Res Rev*, 74, 101508. <https://doi.org/10.1016/j.arr.2021.101508>
- Tiberti, Cassidy and Demerjian, Sophia (2022) "Determinants of Subjective Memory in First-Degree Relatives and Care Providers of Individuals with Dementia," *Butler Journal of Undergraduate Research*: Vol. 8, Article 12. Retrieved from: <https://digitalcommons.butler.edu/bjur/vol8/iss1/12>
- Yesavage, J. A., & Sheikh, J. I. (1986). 9/16 Geriatric Depression Scale (GDS). *Clinical Gerontologist*, 5(1-2), 165-173. [https://doi.org/10.1300/J018v05n01\\_09](https://doi.org/10.1300/J018v05n01_09)
- Chaudhuri, K. R., Martinez-Martin, P., Schapira, A. H. V., Stocchi, F., Sethi, K., Odin, P., ... Olanow, C. W. (2006). International multicenter pilot study of the first comprehensive self-completed nonmotor symptoms questionnaire for Parkinson's disease: The NMSQuest study. *Movement Disorders*, 21(7), 916-923. <https://doi.org/10.1002/mds.20844>
- Santangelo, G., Vitale, C., Trojano, L., Angrisano, M. G., Picillo, M., Errico, D., ... Barone, P. (2014). Subthreshold depression and subjective cognitive complaints in Parkinson's disease. *European Journal of Neurology*, 21(3), 541-544. <https://doi.org/10.1111/ene.12219>
- Zlatar, Z. Z., Moore, R. C., Palmer, B. W., Thompson, W. K., & Jeste, D. V. (2014). Cognitive Complaints Correlate With Depression Rather Than Concurrent Objective Cognitive Impairment in the Successful Aging Evaluation Baseline Sample. *Journal of Geriatric Psychiatry and Neurology*, 27(3), 181-187. <https://doi.org/10.1177/0891988714524628>

### RESULTS

**Table 1**  
Overview of Data

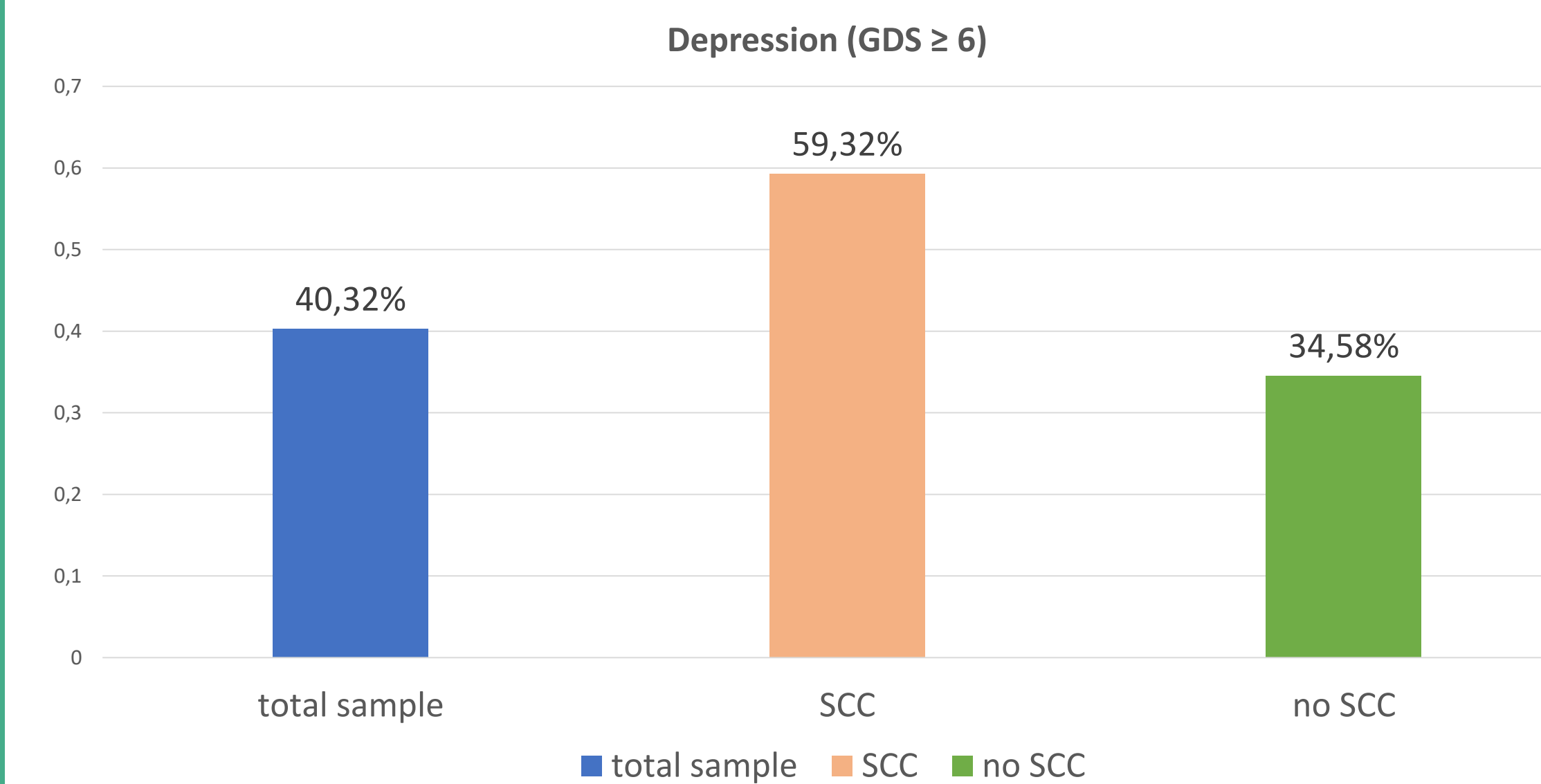
#### Data from HeBA Study

Data collection period	September 2022-June 2023
N (fully completed surveys)	2656
n (SCC)	617
n (no SCC)	2039

SCC = subjective cognitive complaints

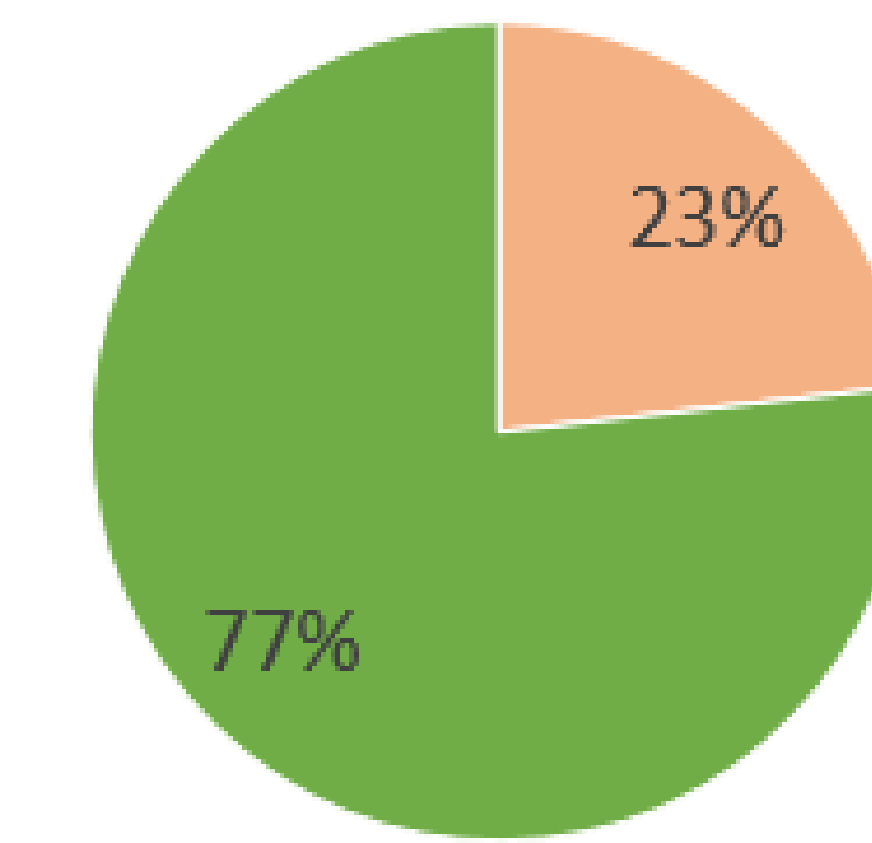
**Figure 3**

Percentages of depression scores



**Figure 1**

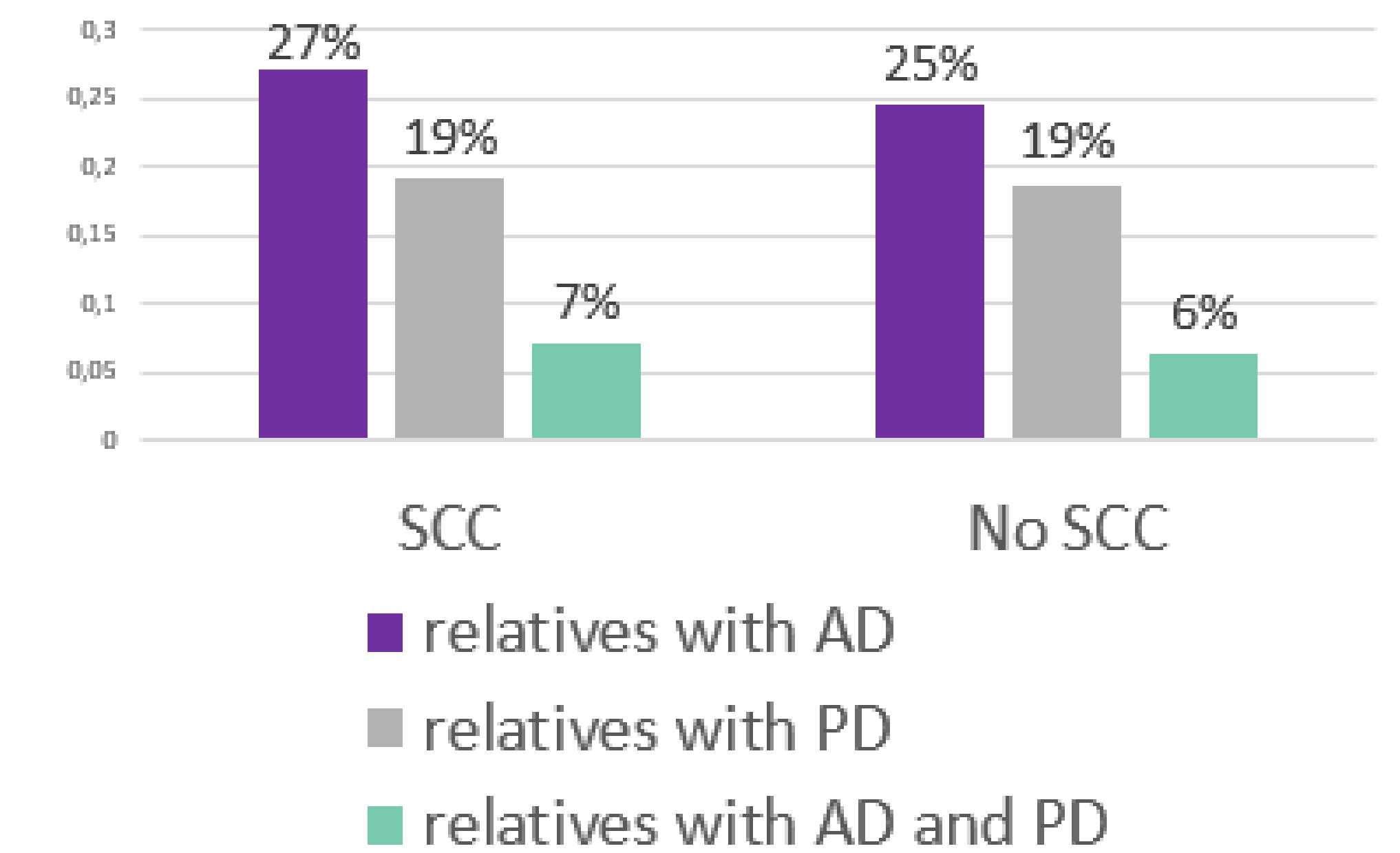
Visualisation of the proportion of subjective cognitive complaints



■ SCC ( $\geq 2/3$ ) ■ No SCC ( $\leq 1/3$ )

**Figure 2**

Percentages of participants who have relatives with neurodegenerative diseases



As seen in the figures, 23% of the total sample report having subjective cognitive complaints. Both groups appear to have relatively similar percentages of relatives who have or had neurodegenerative diseases.

The SCC group have a higher percentage of depression scores than the other group.

### CONCLUSIONS & OUTLOOK

Our data showed that 23% of the total sample reported having SCC according to the composite score. The percentage of depression was high in the total sample, with the SCC group having a higher percentage of depression scores. Interestingly, other studies revealed that depressed individuals are more likely to report cognitive complaints than non-depressed individuals<sup>6</sup>, as well as that SCC may relate more to depressive symptoms rather than objective cognitive impairment<sup>7</sup>. We seek to complete a deeper analysis and build a multi regression model for SCC and psychological well-being in participants of the HeBA study, as well as to assess objective cognitive impairments during in-person visits.



Link to the survey and further information about the HeBA study