

Burden of dementia due to Alzheimer's disease and mild cognitive impairment (MCI) due to Alzheimer's disease in Colombia

Pieralejandro Lasalvia¹, Yaneth Gil-Rojas¹

¹Neuroeconomix, Bogotá, CUN, Colombia. This study received funding from BIIB Colombia.

Alzheimer's disease (AD) is the most common cause of dementia. Mild cognitive impairment (MCI) usually precedes AD. AD causes significant impairment in patients and caretakers and produces significant burden of disease.

Objective

To estimate the disability-adjusted life years (DALY) due to Mild dementia due to Alzheimer's disease and mild cognitive impairment (MCI) due to Alzheimer's disease in Colombia.

Methods

Figure 1. Model structure

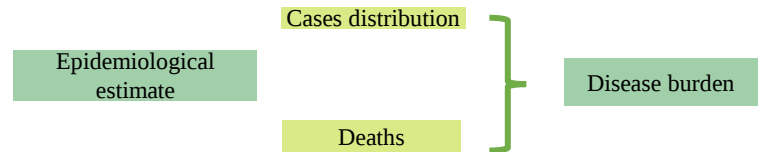


Table 1. Prevalence of interest condition in Colombia

Diagnostic	Population			Type of study	Bibliography	%	CI min	CI max
	Age	Gender	Region					
Mild cognitive impairment	>=50 general population	Total	Colombia, Bogotá	Cross-sectional study	Pedraza OL, Maria A, Montes S, Sierra FA, Montalvo MC, Muñoz Y, et al. Mild cognitive impairment (MCI) and dementia in a sample of adults in the city of Bogotá. 2017;11(3):262-9. Nota: 73.4% de tipo amnésico	32.4	30.4	34.4
Amnesic-type mild cognitive impairment	>=50 General population	Total	Colombia, Medellín	Cross-sectional study	Henao-Arboleda, E; Aguirre-Acevedo, DC; Muñoz, C; Pineda, DA; Lopera, F. Prevalencia de deterioro cognitivo leve de tipo amnésico en una población colombiana / Prevalence of mild cognitive impairment, amnesic-type, in a colombian population. Rev. neurol. (Ed. impr.) ; 46(12): 709-713, 16 jun., 2008.	9.7	7.6	11.2

Methods

- We estimated the total quantity of prevalent cases and expected deaths related to AD and MCI. We used information from local databases and available literature (Table 1)
- We estimated a base (considering all potential patients) and a sub diagnosis scenario (considering that only a fraction of patients is identified).
- For direct medical costs, we estimated healthcare resource utilization using local clinical experts. Costs were calculated using local tariff manuals.
- We estimated productivity losses for patients due to morbidity and premature mortality and for caretakers. We obtained local data related to employment and income from official sources. We also estimated out-of-pocket expenses considering local costs, literature and expert opinion

Table 2. Mortality of interest condition in Colombia

Diagnostic	Type of study			Bibliography	Deaths x 100.000
	Age	Gender	Region		
Alzheimer	50 - 54	Total	Colombia	Vital statistics: F000: Early-onset dementia in Alzheimer's disease - F001: Dementia in late-onset Alzheimer's disease - F002: Dementia in Alzheimer's disease, atypical or of mixed type, F009: Dementia in Alzheimer's disease, not specified - F02.81: Dementia in other diseases classified elsewhere with behavioral disturbance - G30: Alzheimer's disease - G300: Early-onset Alzheimer's disease - G3001: Late-onset Alzheimer's disease - G308: Other types of Alzheimer's disease - G309: Alzheimer's disease, unspecified - F067: Mild cognitive disorder	0.17
	55-59				0.42
	60-64				1.21
	65-69				3.47
	70-74				8.63
	75-79				25.16
	80 or more				122.76
	≥ 50				13.35

Results

Figure 2. YDLs results in the overall population. Left: base population, right: subdiagnosis population

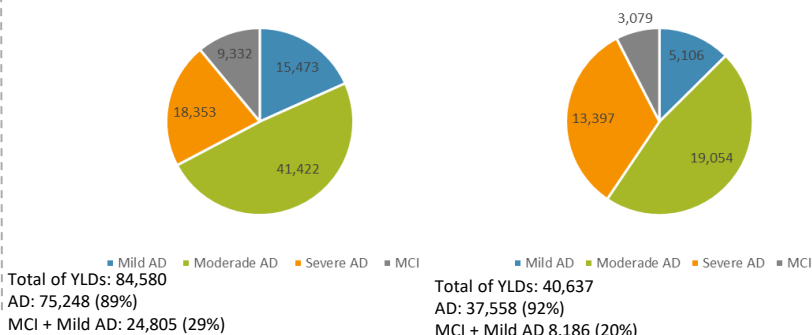


Figure 3. YLLs results in the overall population. Left: base population, right: subdiagnosis population

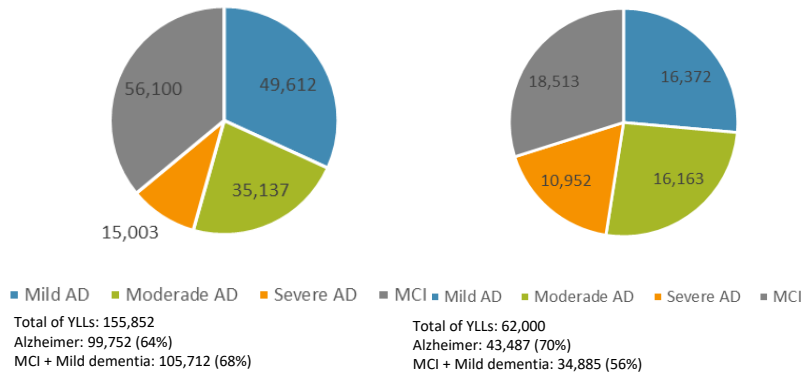
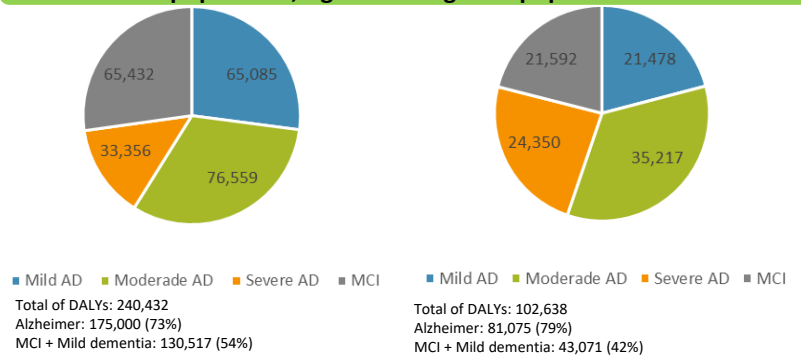


Figure 4. DALYs results in the overall population. Left: base population, right: subdiagnosis population



Conclusion

- This study estimates the burden of AD and MCI in Colombia. Depending on the scenario, between 102,648 and 240,432 total DALYs are estimated.
- The baseline scenario, which considers the entire potential population, shows a greater prevalence of mild AD and MCI. The scenario with underdiagnosis has more presence of severe AD. DALY and cost estimates show that the EA and DLC have a significant potential impact

References

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