

# Socio-demographic factors associated with mild, moderate and severe dementia in the Swiss psychiatric inpatient setting

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"From insight to impact"

## INTRODUCTION & BACKGROUND

- Rising life expectancy of the Swiss population<sup>1</sup>
  - Dementia is a mental disorder for which age is the main risk factor
    - The prevalence of dementia in the population rises sharply after the age of 65<sup>2</sup>
  - Dementia is a source of relevant health and economic burden on the Swiss economy and society<sup>3</sup>
    - The National Platform Dementia and the National Dementia Strategy in Switzerland indicate that dementia is getting increasing policy attention in the Swiss context
- There is a need to better understand the disease and its association with different demographic groups, as well as its prevalence in the mild, moderate, and severe form.

## RESEARCH QUESTION

What are the socio-demographic factors associated with the different severity forms of dementia in Switzerland?

## DATA & METHODS

Federal Statistical Office data on patient level from 2017 to 2019:  
• n = 4218

- Methods:
- Descriptive analysis
  - Regression analysis (ordered logit regression).

Patient group was identified through the following criteria:

- Patients treated in Swiss psychiatric hospitals
- Main diagnoses: ICD-10-GM codes F00 - F03, G30- G31
- Procedures: CHOP codes of the Health of the Nation Outcome Scales (HoNOS) score → Item 4 "cognitive impairment" 94.A1.40 – 94.A1.44
- Severity of dementia scaled by HoNOS values: mild (HoNOS values 0-2), moderate (HoNOS value 3), severe (HoNOS value 4)

## RESULTS

### Descriptives:

	Alzheimer's disease	Other neurodegenerative diseases	Dementia in Alzheimer's disease	Vascular dementia	Dementia in diseases classified elsewhere	Unspecified dementia
2017	26.75%	24.78%	100.00%	34.70%	100%	42.05%
2018	35.68%	33.63%	0.00%	30.75%	0.00%	32.33%
2019	37.57%	41.59%	0.00%	34.56%	0.00%	25.62%

### Regression analysis:

- Ordered logit regression of dementia severity on socio-demographic explanatory variables
- Dependent variable: Dementia severity (mild, moderate, severe)
- Independent variables: Age, Education, Marriage status
- Control variables: Cantons, hospital types

	Dependent variable:			
	Dementia Severity			
	(1)	(2)	(3)	(4)
Age	0.013*** (0.007, 0.019)	0.013*** (0.007, 0.020)	0.020*** (0.012, 0.027)	-0.022*** (-0.033, -0.010)
Male	0.039 (-0.064, 0.141)	0.042 (-0.062, 0.146)	0.110 (-0.025, 0.245)	0.123 (-0.012, 0.257)
Swiss	-0.187* (-0.351, -0.024)	-0.112 (-0.281, 0.056)	-0.066 (-0.284, 0.152)	-0.074 (-0.293, 0.144)
Elementary school			-0.003 (-0.343, 0.337)	-4.009*** (-5.319, -2.698)
Vocational training			0.080 (-0.258, 0.419)	-3.456*** (-4.580, -2.333)
A-levels			-0.023 (-0.520, 0.474)	-2.484 (-5.331, 0.363)
Technical school			-0.115 (-0.492, 0.261)	-2.471** (-4.228, -0.713)
University			0.005 (-0.403, 0.413)	-3.934*** (-6.037, -1.830)
Elementary school X Age				0.049*** (0.033, 0.066)
Vocational training X Age				0.043*** (0.029, 0.058)
A-levels X Age				0.030 (-0.004, 0.065)
Technical school X Age				0.029** (0.007, 0.051)
University X Age				0.048*** (0.022, 0.074)
Single	0.132 (-0.053, 0.316)	0.142 (-0.047, 0.330)	0.240* (0.004, 0.475)	0.233 (-0.003, 0.469)
Married, separate	-0.055 (-0.366, 0.255)	0.043 (-0.275, 0.361)	0.147 (-0.243, 0.537)	0.144 (-0.246, 0.534)
Married, together	0.432*** (0.291, 0.573)	0.467*** (0.322, 0.611)	0.435*** (0.256, 0.614)	0.419*** (0.239, 0.599)
Widowed	0.239** (0.086, 0.393)	0.230** (0.073, 0.388)	0.291** (0.088, 0.494)	0.273** (0.069, 0.477)
In training	0.253 (-0.823, 1.330)	0.232 (-0.839, 1.302)	0.206 (-1.355, 1.766)	0.219 (-1.330, 1.767)
Protective framework	-0.338 (-1.280, 0.603)	-0.138 (-1.102, 0.826)	0.082 (-0.949, 1.113)	0.158 (-0.870, 1.186)
Pension	-0.172** (-0.296, -0.048)	-0.284*** (-0.427, -0.141)	-0.413*** (-0.600, -0.226)	-0.424*** (-0.612, -0.237)
Rehabilitation	-0.495 (-1.612, 0.621)	-0.386 (-1.526, 0.753)	-0.651 (-1.867, 0.565)	-0.675 (-1.895, 0.546)
Housework	-0.752*** (-0.975, -0.529)	-0.477*** (-0.717, -0.238)	-0.304* (-0.589, -0.018)	-0.317* (-0.604, -0.030)
Part-time job	0.502 (-0.442, 1.446)	0.547 (-0.413, 1.507)	0.257 (-0.817, 1.331)	0.283 (-0.798, 1.364)
Full-time job	0.161 (-0.307, 0.629)	0.009 (-0.478, 0.495)	-0.021 (-0.568, 0.527)	-0.001 (-0.550, 0.548)
Cantonal controls	No	Yes	Yes	Yes
Hospital type controls	No	Yes	Yes	Yes
Observations	4,218	4,218	2,632	2,632

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

## CONCLUSIONS & DISCUSSION

### Conclusions

- Majority of hospitalized dementia cases treated in Switzerland present severe form of dementia, followed by moderate, and mild forms
- **Age:** Significant association with the severity of dementia
- **Gender:** Uneven distribution of women and men among the different forms of dementia. More men in the severe forms and more women in the moderate and mild forms
- **Education:** Association with the risk of dementia
- Increased precision of medical coding: more specific coded dementia cases in 2018 and 2019

### Discussion & further research

- Inclusion of further potential risk factors (e.g., quality of institutions, the level of urbanization, population density, air pollution in the region<sup>3</sup>, number of nursery homes, memory clinics, psychiatric hospitals) to get insights into the prevention and integrated care of dementia forms
- Inclusion of other clinical characteristics
- Improvement of data quality
- Possibility of combining acute and ambulant datasets on the patient level to conduct analyses holistically, towards more integrated care provision

## REFERENCES

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