

# Health profiles among nonagenarians from Mugello district (Tuscany, Italy) and their socio-economic characteristics



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Paper under review

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## Motivation

- The share of nonagenarians is increasing in most of the developed countries, including Italy
- Studying the health conditions of the oldest-old is one of the major public health challenges nowadays
- Capturing the heterogeneity of health could help deciding for the best care needed by the oldest old
- Even among the oldest old, the health conditions vary with indicators of socio-economic positions

## Data: Mugello Study

- The survey comprises nonagenarians coming from 9 out of 11 municipalities of the Mugello area in Tuscany (Italy)
- 504 nonagenarians have been interviewed representing about 65% of the whole Mugello's nonagenarians alive in 2012
- Information at individual level about different *health dimensions*...
- ...and the socio-economic status

## Descriptive results

### Demographic and socio-economic characteristics of the nonagenarians from Mugello, Tuscany (Italy)

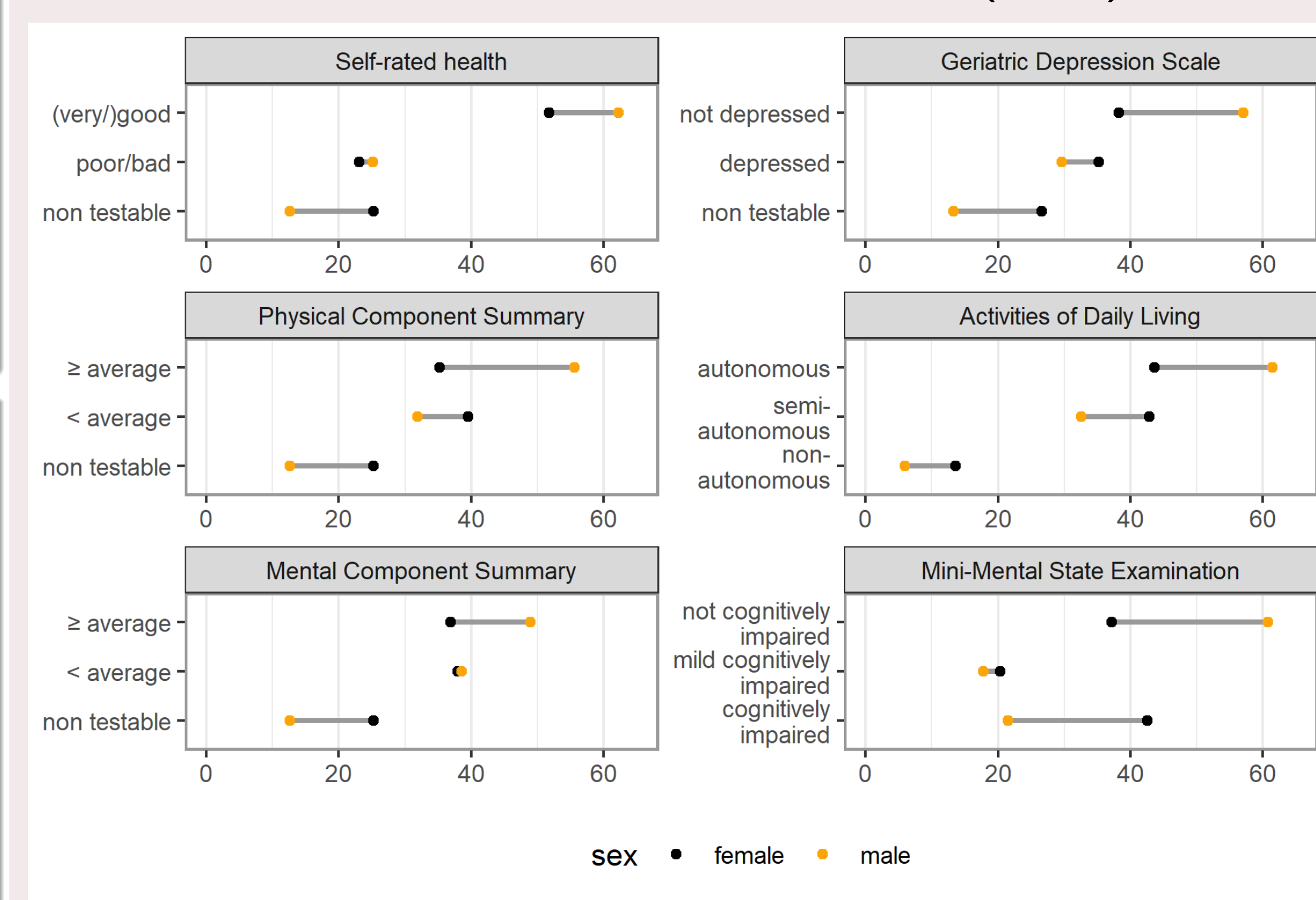
Characteristics	Sex						p*
	M		F		T		
	n	%	n	%	n	%	
Sample	135	26.8	369	73.2	504	100	
Age (m, sd)	92.5	2.8	93.3	3.4	93.1	3.3	<0.001
Education							
0-2	16	11.9	49	13.3	65	12.9	<0.001
3	32	23.7	150	40.7	182	36.1	
4-5	63	46.7	142	38.5	205	40.7	
6+	24	17.8	28	7.6	52	10.3	

\*Men vs Women from Pearson  $\chi^2$  test

## Research Questions

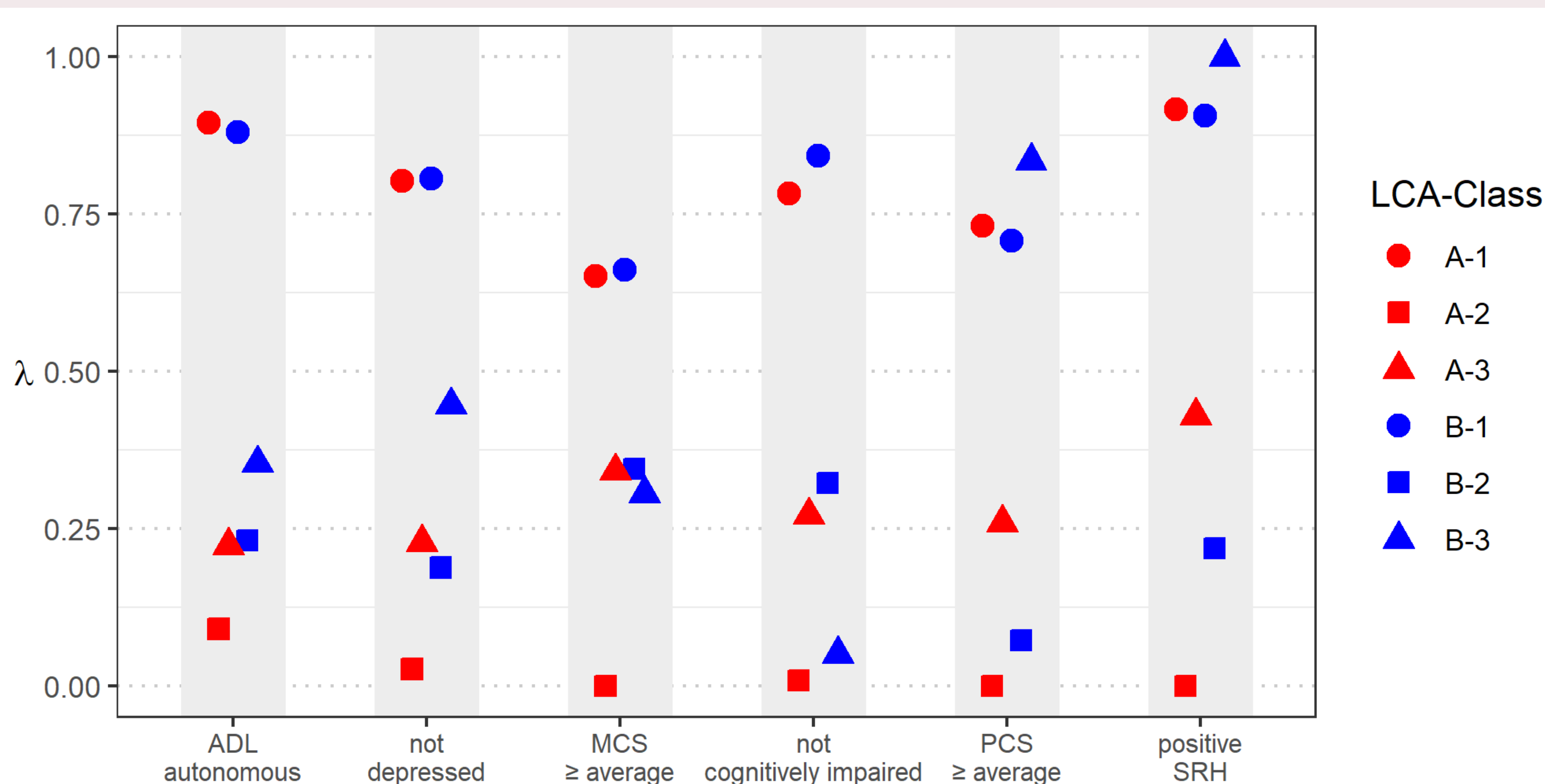
- Is it possible to identify health profiles, taking into account physical, emotional and psychological information about health, among the oldest old?
- Which health characteristics do different groups have? Are there socio-economic differences among the health profiles?

### Health characteristics included in the models (share) by sex



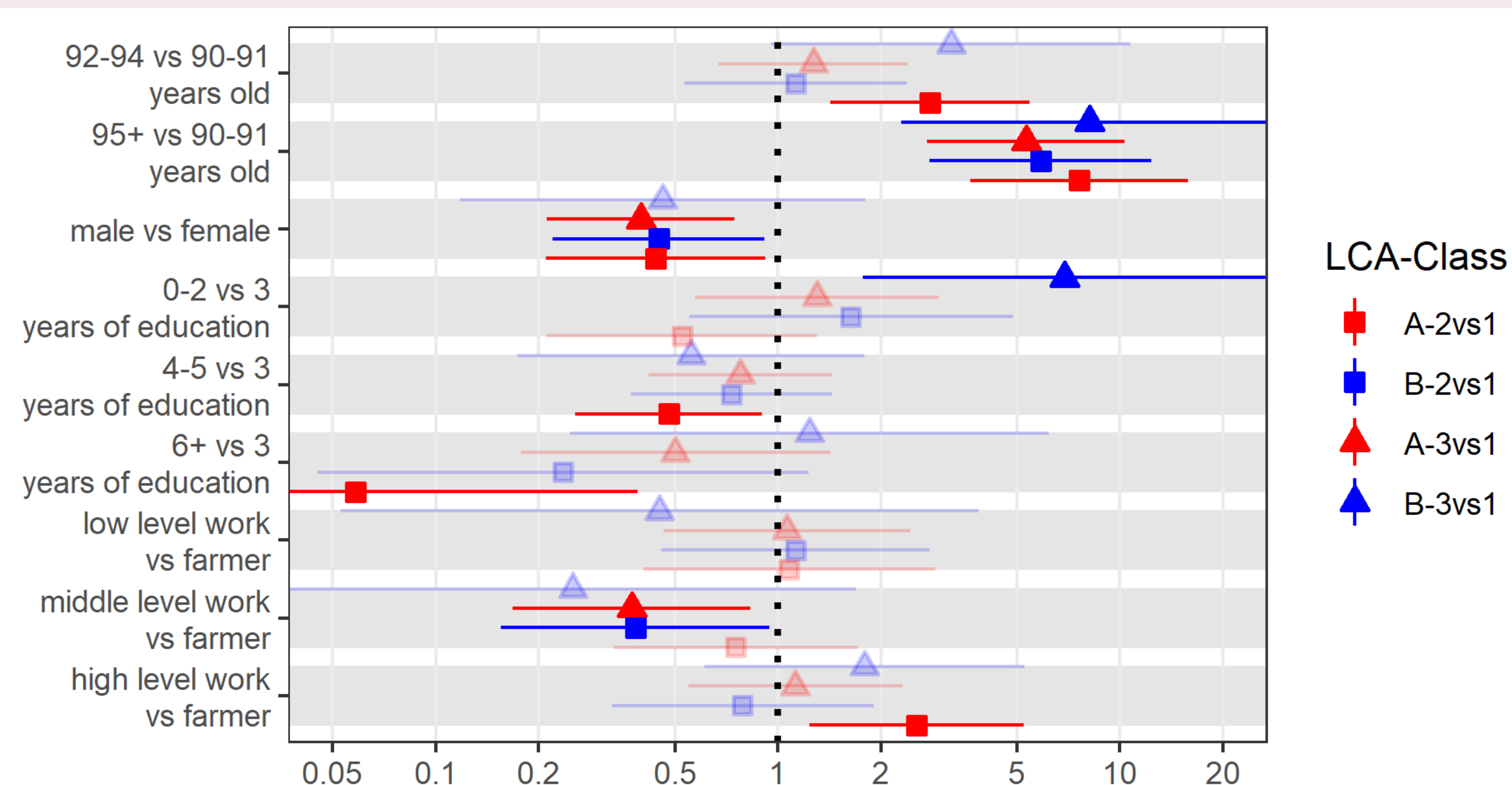
## Model results

(Good) health status item probabilities ( $\lambda$ ) resulting from the two Latent Class Analysis (LCA A: whole sample and LCA B: testable subsample)



Note: Class 1: "Healthy group"; 2: "Unhealthy group", for both first (A) and second (B) LCAs; Class 3 for LCA-A: "Unhealthy optimistic group", for LCA-B: "Semi-autonomous senile group"

OR of demo-socioeconomic characteristics of belonging to the health profiles resulting from the two LCAs (A: whole sample; B: testable subsample)



## Methods: Latent Class Analysis

- Latent Class Analysis (LCA) was used to identify different health profiles according to various health measures
- LCA with covariates allows the inclusion of covariates to predict individual's latent class membership
- The model was applied on the whole sample and on the subsample of testable individuals resulting in posterior probabilities of belonging to health groups

## Conclusions

- Four different latent classes have been identified among Mugello's nonagenarians within the two LCAs:
  - Healthy
  - Unhealthy
  - Non-testable
  - Semi-autonomous senile
- Demographic and socioeconomic characteristics were found to be associated with belonging to the health profiles: age, sex, education and work
- Finding health profiles among the oldest-old could help to choose for the right care needed by the oldest-old