

15-year trajectories of loneliness and life satisfaction predicting old-age cognition in a population-based cohort, and moderating effects of personality



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BACKGROUND

Evidence on longitudinal trajectories of loneliness and life satisfaction and their associations with late-life cognition is limited, and the moderating role of personality traits is yet to be examined.

We estimated 15-year trajectories of loneliness and life satisfaction across midlife and examined associations with old-age cognition, accounting for extraversion and neuroticism.

METHODS

Participants: 1813 individuals from the population based older Finnish Twin Cohort (FTC), which includes same-sex twin pairs who completed questionnaires in 1975, 1981, and 1990 [1] (nearly 90% response rate at baseline) (Figure 1).

Cognitive measure: Collected in 2013–2017, aged 68–79, assessed with the Telephone Interview for Cognitive Status–modified (TICS-m) [2].

Loneliness: Measured in 1975, 1981, and 1990 questionnaires with the following item: “Do you feel that you are as of right now very lonely, somewhat lonely or not at all lonely?”

Life satisfaction: Measured with three questions (loneliness question excluded) in 1975, 1981, and 1990 questionnaires. Participants were asked to rate their interest in life, happiness, and ease of living, on a five-point scale. The score ranges from 3-15.

Personality: Neuroticism and extraversion calculated as mean scores from 9- and 10-item Eysenck’s Personality Inventory in 1975 and 1981.

Analysis:

- Latent class trajectory modeling was performed using the lcmm package in R
- Associations of latent classes with cognition were examined with posterior class probability weighted regressions, **adjusting for age, sex, follow-up, education, cardiovascular risk score, alcohol, smoking, living status, social contact, depressive symptoms, and APOE ε4 carriership**
- Cluster-robust standard errors accounted for twin data

Figure 1. Data collection from the older Finnish Twin Cohort

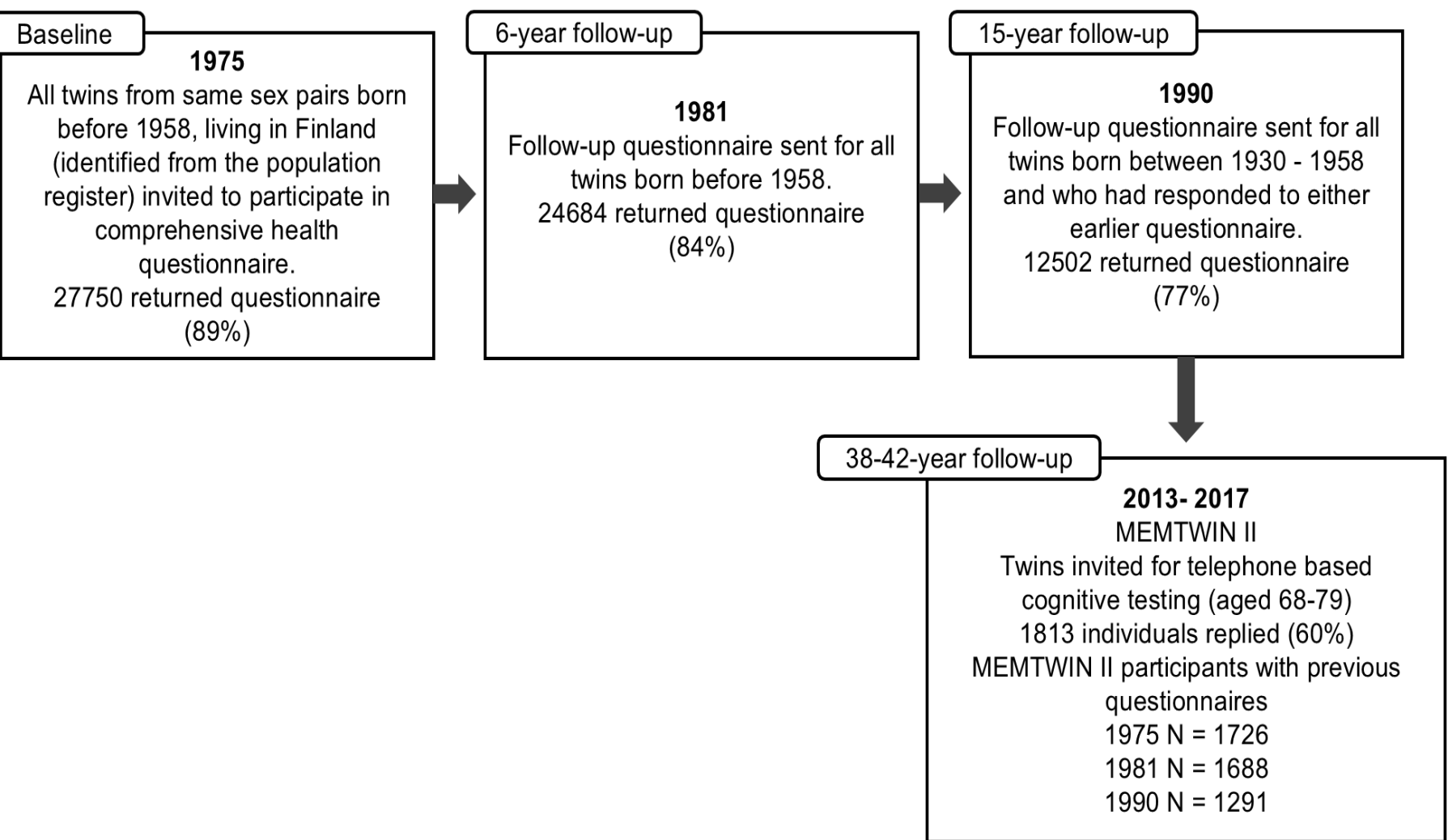
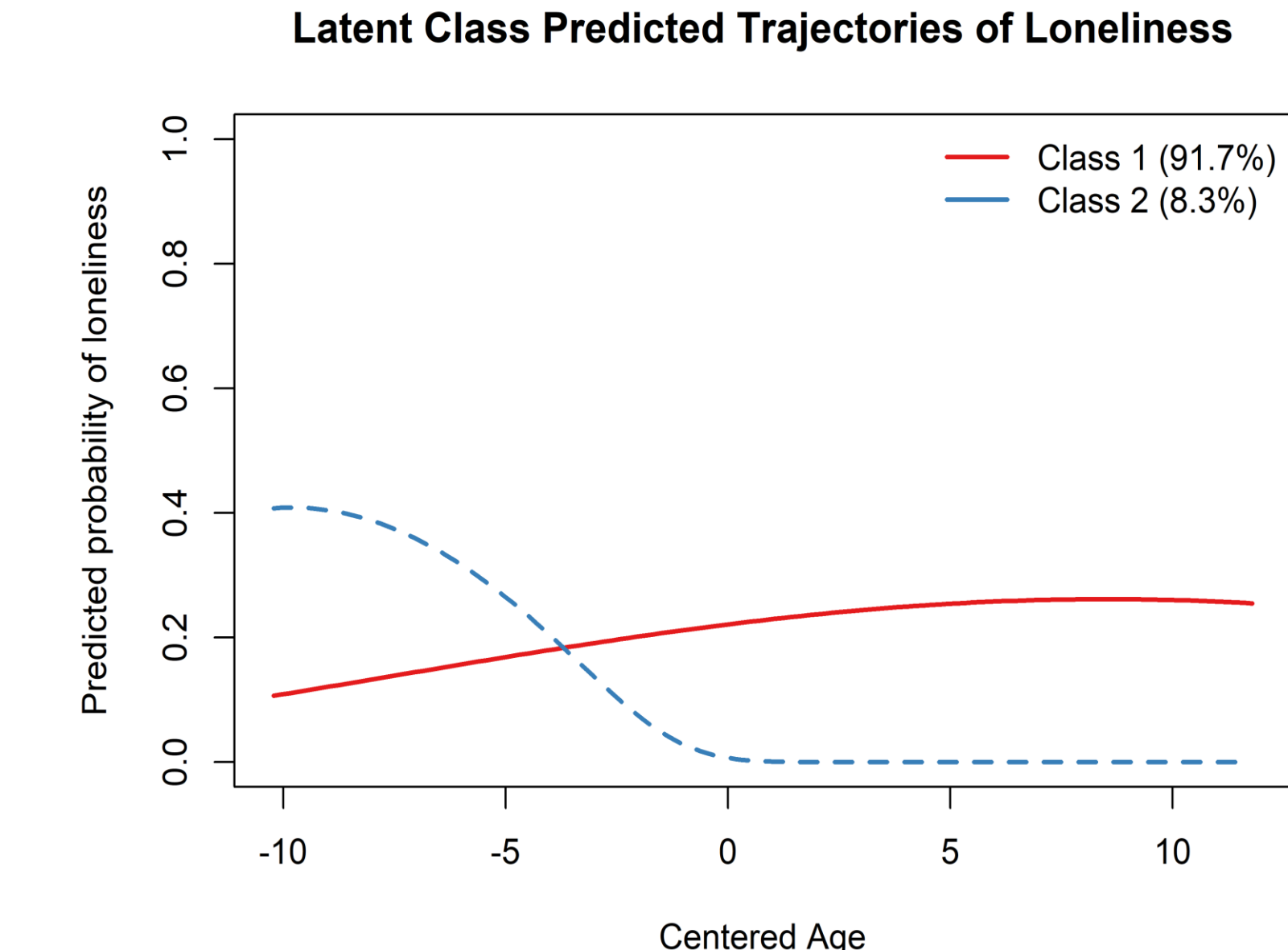


Figure 2.



Figure 3.



RESULTS

- Trajectory analyses identified three distinct life satisfaction classes (Figure 2) and two loneliness classes (Figure 3)
- Neither loneliness nor life satisfaction trajectories were associated with cognition in old age, and personality traits were not independent predictors of cognition
- Baseline life satisfaction or baseline loneliness were not associated with old age cognition
- Declining life satisfaction was associated with poorer cognitive performance among individuals with higher levels of neuroticism**
- Higher extraversion was associated with worse cognitive performance in the increasing life satisfaction group**

DISCUSSION & CONCLUSION

- Midlife trajectories of loneliness and life satisfaction may not emerge as independent predictors of old age cognition after comprehensive adjustment for known dementia risk factors
- Psychosocial distress may need to persist in later life or interact with other health factors to meaningfully influence cognition in old age
- In this longitudinal cohort study, midlife psychosocial trajectories were not independent predictors of late-life cognition, but personality may condition vulnerability to changes in well-being**

References:

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- Lindgren, N., et al. (2019). Prevalence and correlates of dementia and mild cognitive impairment classified with different versions of the modified Telephone Interview for Cognitive Status (TICS-m). Int. J. Geriatr. Psychiatry, 34(12), 1883–1891.

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