Sequence analysis in life course epidemiology: conceptualization and application

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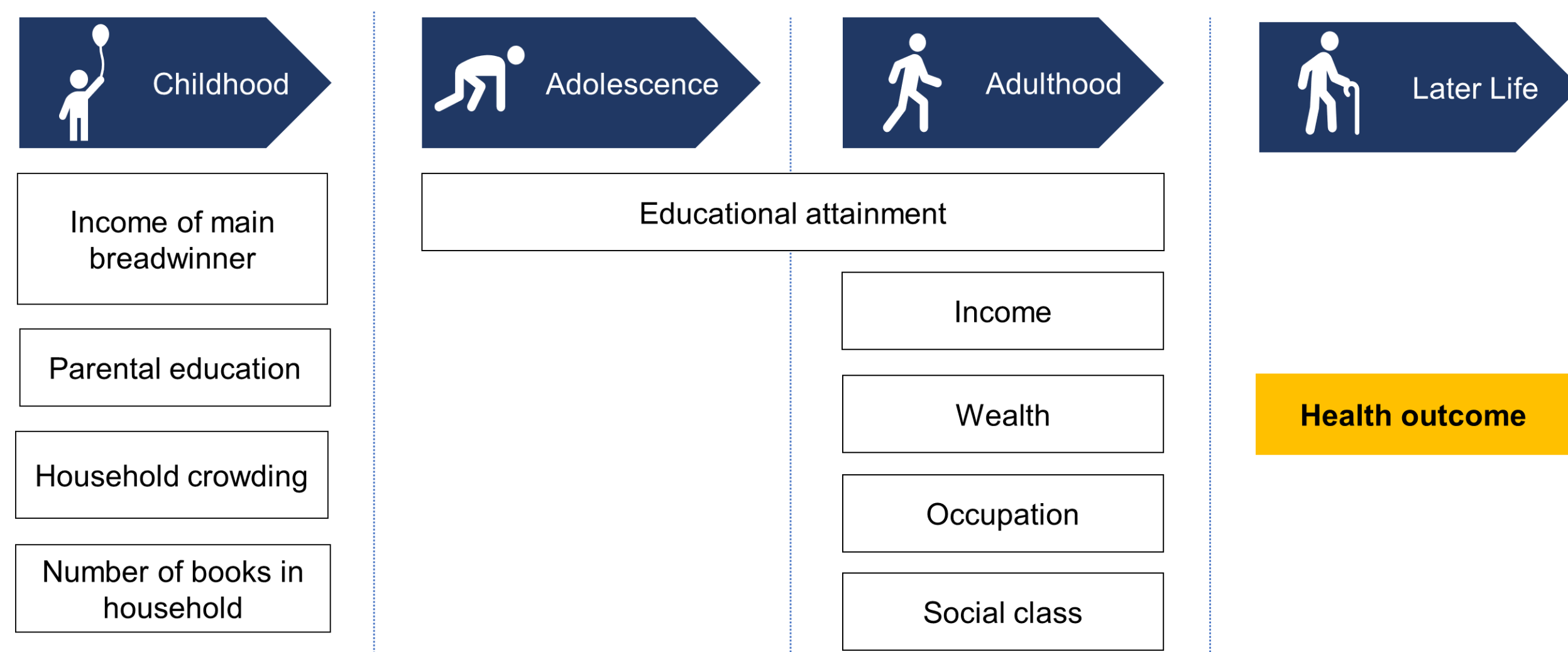
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BACKGROUND

Life course theory and accumulation of dis/advantage: timing, sequence, context of events and experiences over one's life course shape trajectories and influence health (Dannefer, 2003).

Childhood → Adolescence → Adulthood → Later Life

- Income of main breadwinner
- Parental education
- Household crowding
- Number of books in household

- Educational attainment
- Income
- Wealth
- Occupation
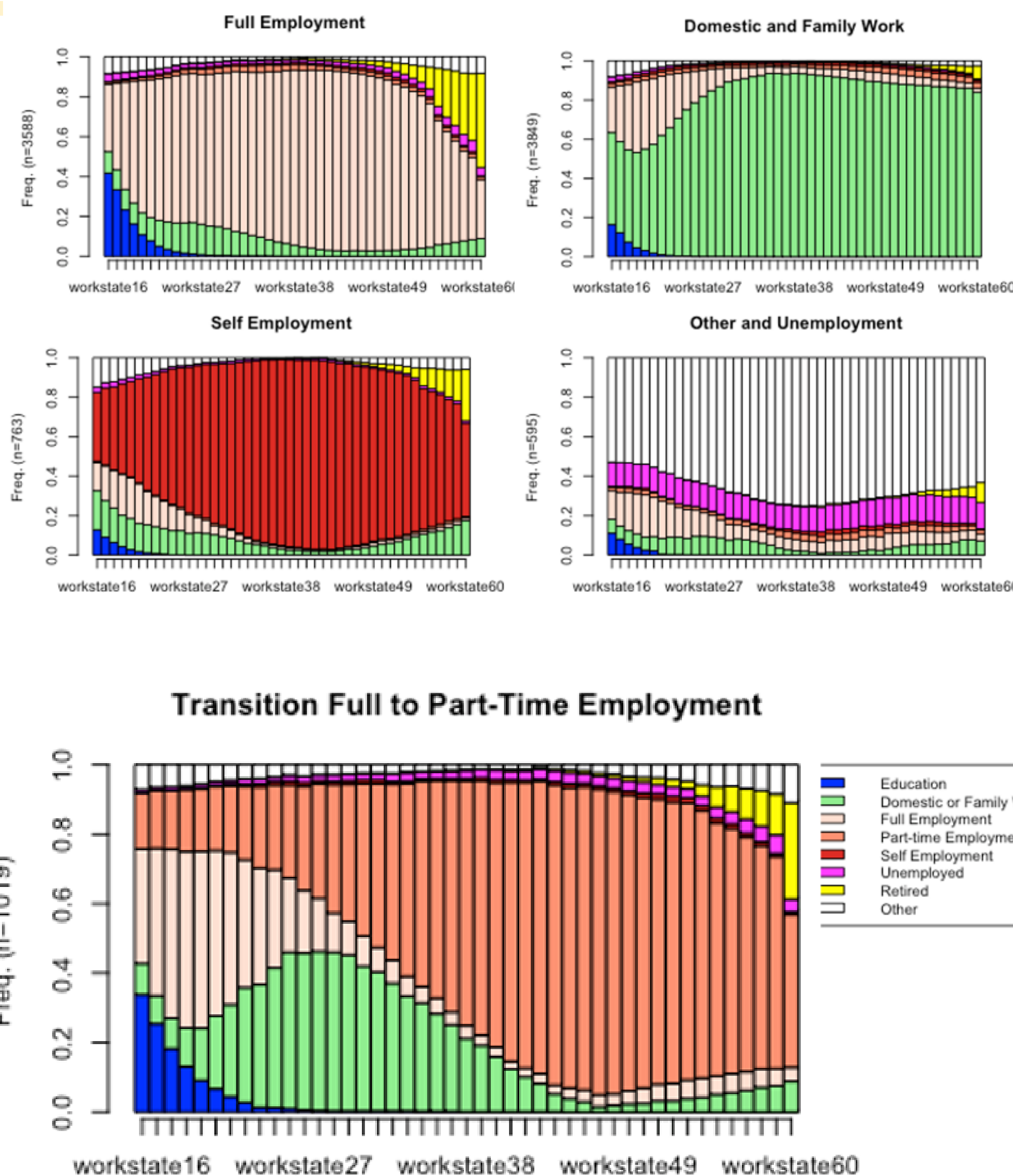- Social class

- Health outcome

METHODS

- Survey of Health, Ageing and Retirement in Europe (**SHARE**), 2004-2020: **9543 women,** mean age 67 years (55-99), from 14 European countries.
- **Life calendar** on past employment life (16-60 years) → **sequence analysis.**
- **Cancer**: self-reported overall, breast, cervix, colorectal, lung, skin.

Full Employment

Domestic and Family Work

Self Employment

Other and Unemployment

Transition Full to Part-Time Employment

Legend:
- Education
- Domestic or Family Work
- Full Employment
- Part-time Employment
- Self Employment
- Unemployed
- Retired
- Other

5 trajectories:
- C1: mainly fulltime (n=3588, 37%)
- C2: mainly domestic and family work (n=3849, 39%)
- C3: mainly self-employed (n=763, 8%)
- C4: mainly unemployed/other (n=595, 6%)
- C5: fulltime to part-time (n=1019, 10%)

RESULTS

- **Risk** of all types of cancer (N=1112) was **lower** for women in the C2 and C3 trajectories compared to women in the C1 trajectory (hazard ratio (HR) = 0.75; HR = 0.54, respectively).
- For **breast** (N=509) cancer, results were similar.
- For **colorectal** cancer (N=133), women in the C2 trajectory had a lower risk.
- For **skin** (N=125), **cervix** (N=83) and **lung** cancer (N=39), no differences between the trajectories were found.

KEY MESSAGES
- Women's **employment trajectories** associated with **cancer risk** in later life.
- The **domestic and family work** and mainly **self-employed** trajectories associated with the lowest risk.
- **Mainly fulltime** associated with highest risk.

References
Dannefer D, *J Gerontol B Psychol Sci Soc Sci* 2003;58(6):S327-37.