Psychological distress from adolescence to early old age: Evidence from the 1946, 1958 and 1970 British birth cohorts

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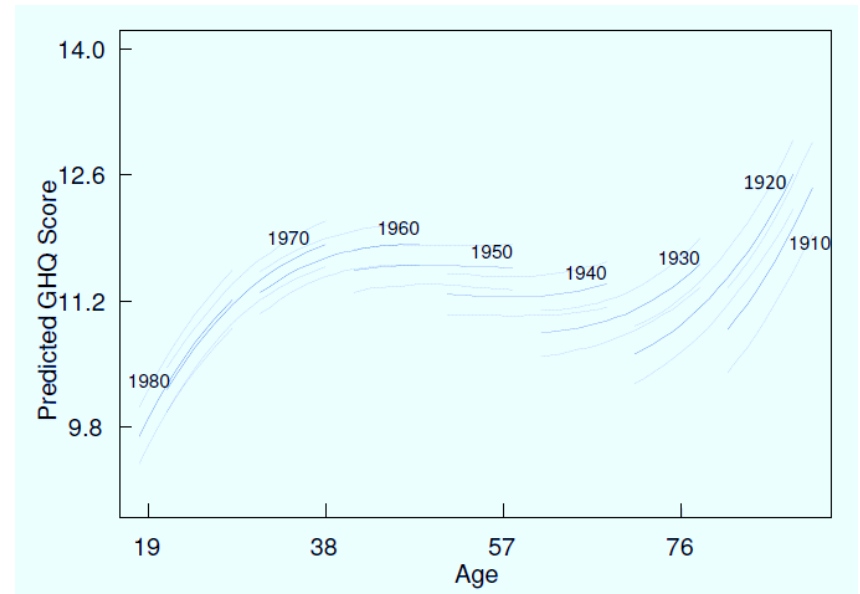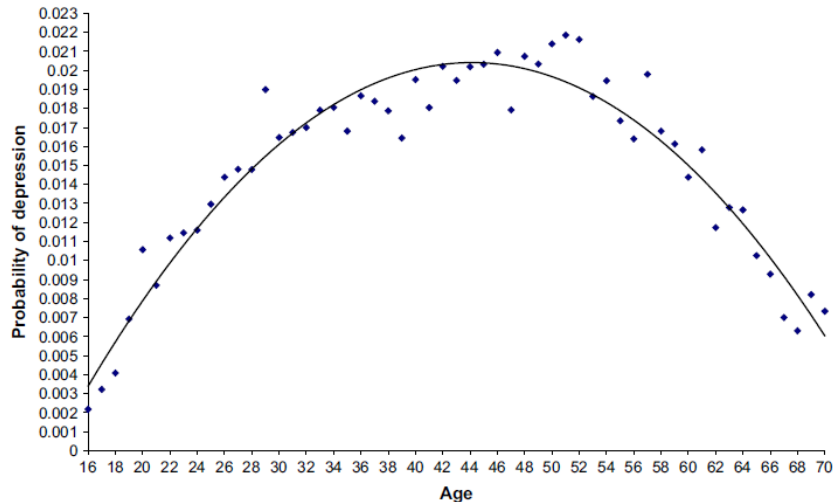
Background

- Mental health disorders are the leading cause of non-fatal disease burden

- Their impact has increased over the last three decades

- Vital to build a high-quality evidence-base to inform the development of interventions and policies

- Longitudinal studies can help us achieve this by identifying high-risk life periods—with modifiable risk factors—and facilitate prevention and early detection of disorder

Life course trajectory of psychological distress

Age vs cohort vs period effects in cross-sectional data or short follow ups
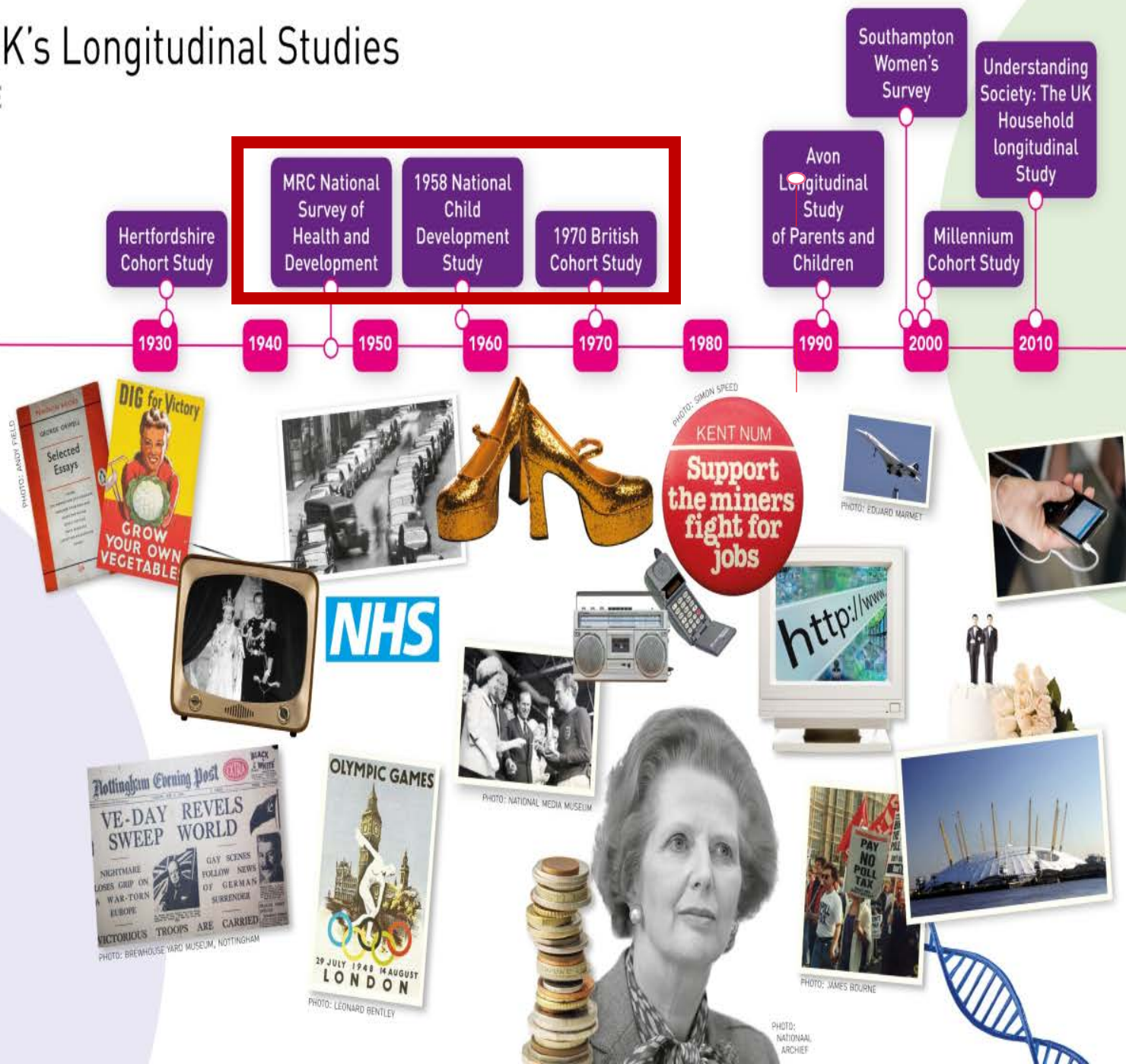
The UK's Longitudinal Studies
TIMELINE

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Timeline entries:
- Hertfordshire Cohort Study
- MRC National Survey of Health and Development
- 1958 National Child Development Study
- 1970 British Cohort Study
- Avon Longitudinal Study of Parents and Children
- Southampton Women's Survey
- Millennium Cohort Study
- Understanding Society: The UK Household longitudinal Study

Timeline years: 1930, 1940, 1950, 1960, 1970, 1980, 1990, 2000, 2010
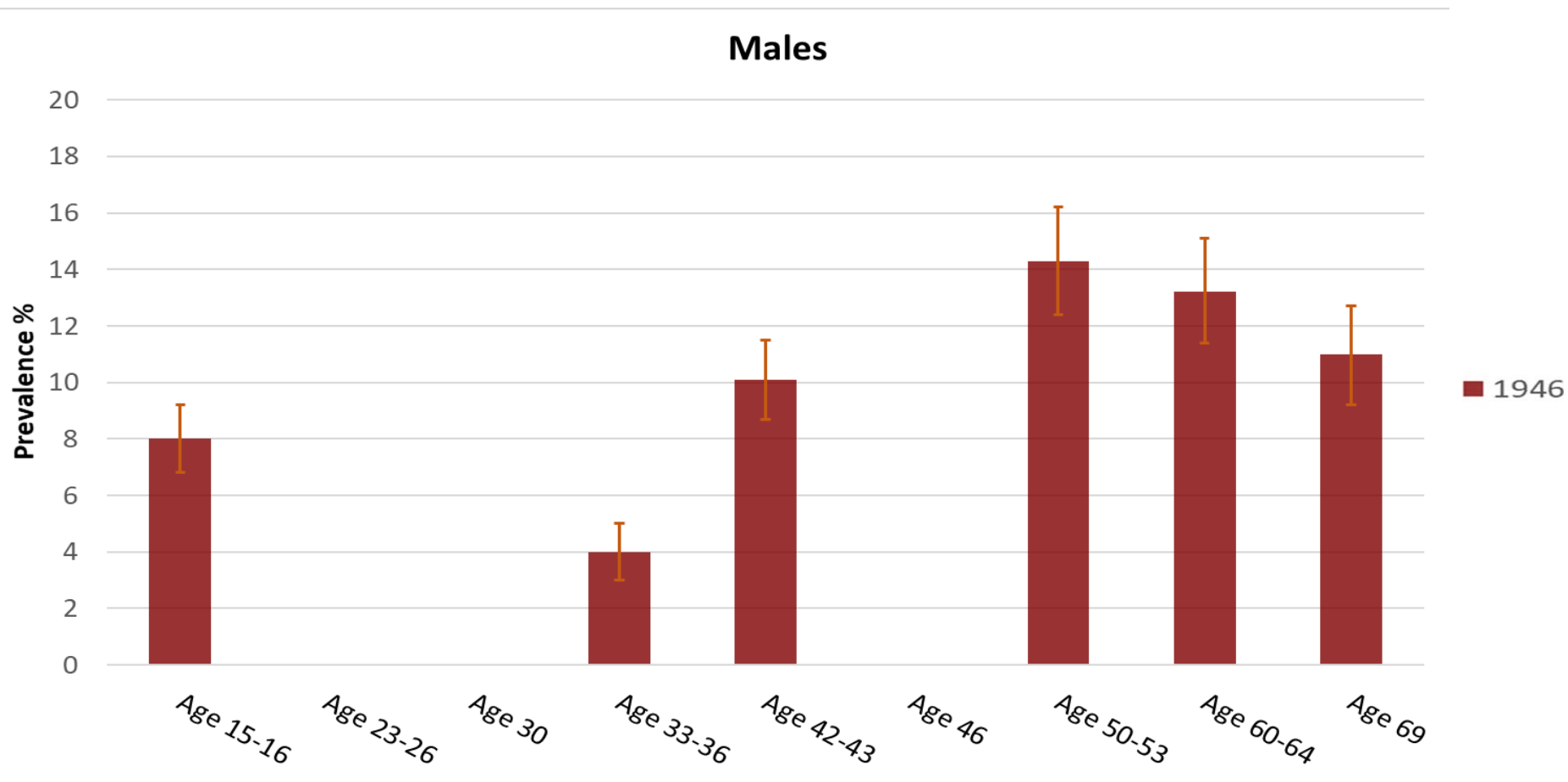
Primary aim: To study the profile of psychological distress across three British birth cohorts spanning adolescence to early old age.

1970 birth cohort (n=12,652)
Age 16 Age 26 Age 30 Age 34 Age 42 Age 46

1958 birth cohort (n=13,491)
Age 16 Age 23 Age 33 Age 42 Age 50

1946 birth cohort (n=3,512)
Age 15 Age 36 Age 43 Age 53 Age 63 Age 69

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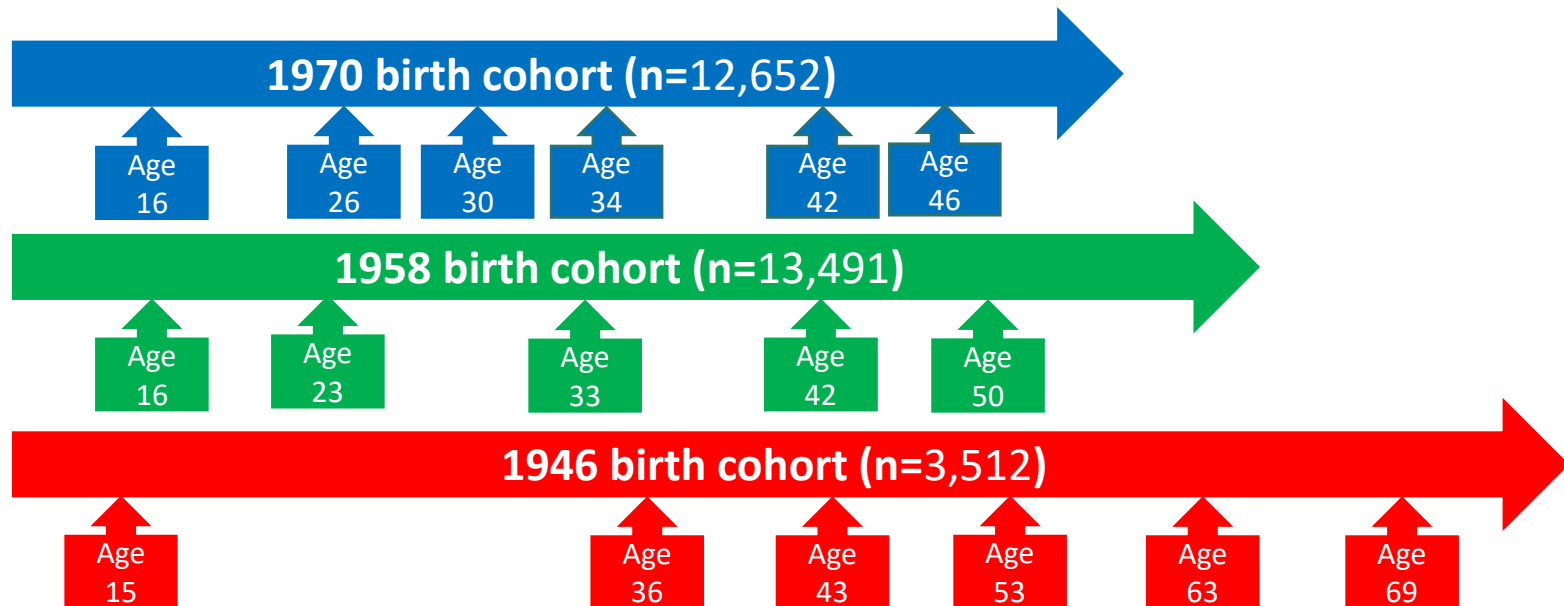
Methods

- Outcome: Binary indicator of 'caseness', based on thresholds derived from measures of psychological distress

- Best estimate of the prevalence of psychological distress at a given timepoint

- Long follow up to age 69 allowed us to capture the empirical distribution of psychological distress from adolescence to early old age

- Missing data (attrition and item non-response) dealt with Multiple Imputation with chained equations, 50 imputations

- 2 parameter IRT models – measurement invariance

- Piecewise multilevel growth model

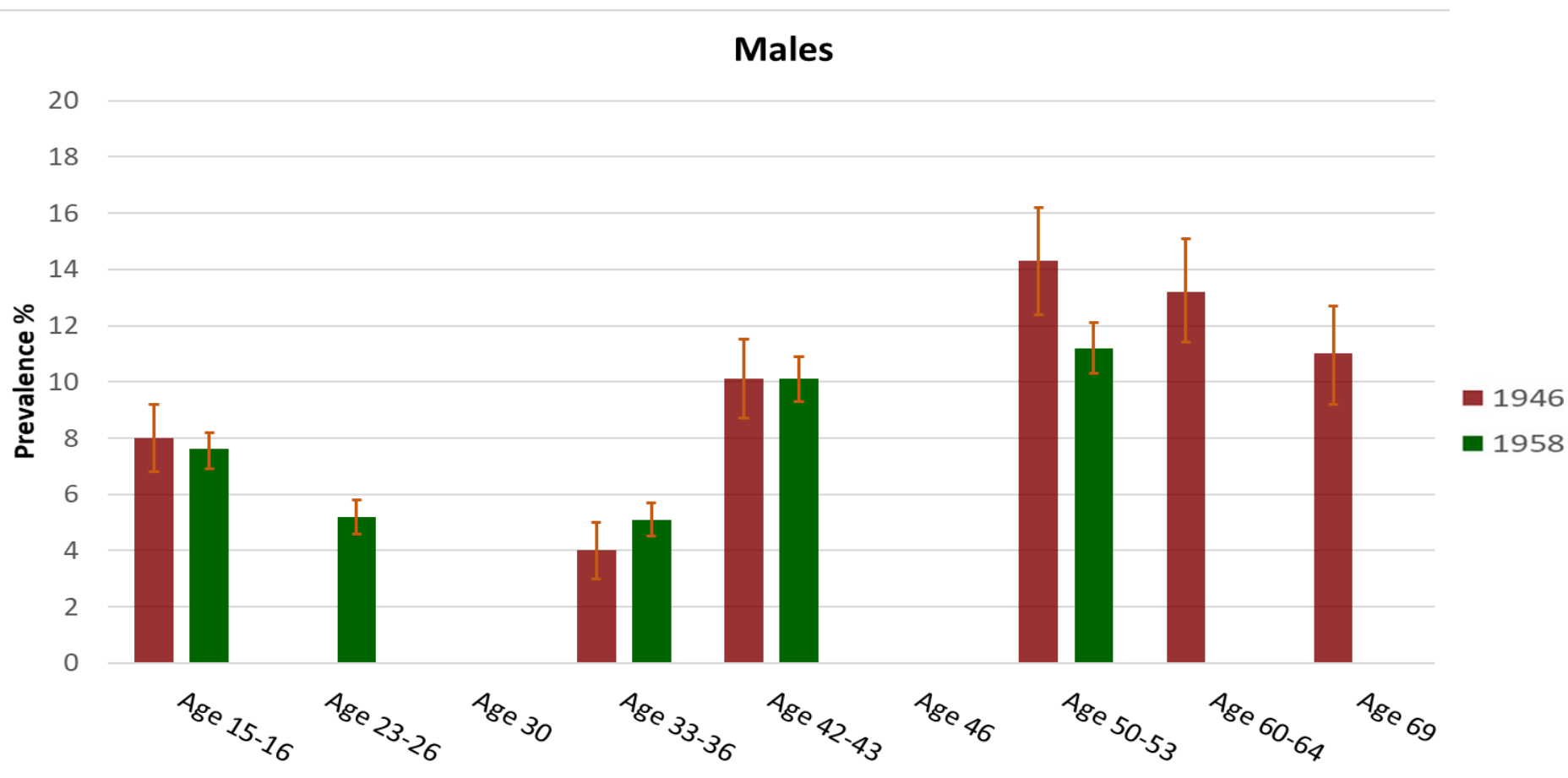# Prevalence (%) of psychological distress – 1946 cohort

Males

Bar chart showing Prevalence % on the y-axis (0 to 20) and age groups on the x-axis. Legend: 1946.

Age group	Prevalence %
Age 15-16	8.0
Age 23-26	—
Age 30	—
Age 33-36	4.0
Age 42-43	10.1
Age 46	—
Age 50-53	14.3
Age 60-64	13.2
Age 69	11.0

Prevalence (%) of psychological distress – 1946 & 1958 cohorts

Males

Prevalence % (y-axis): 0 to 20

Age groups (x-axis): Age 15-16, Age 23-26, Age 30, Age 33-36, Age 42-43, Age 46, Age 50-53, Age 60-64, Age 69
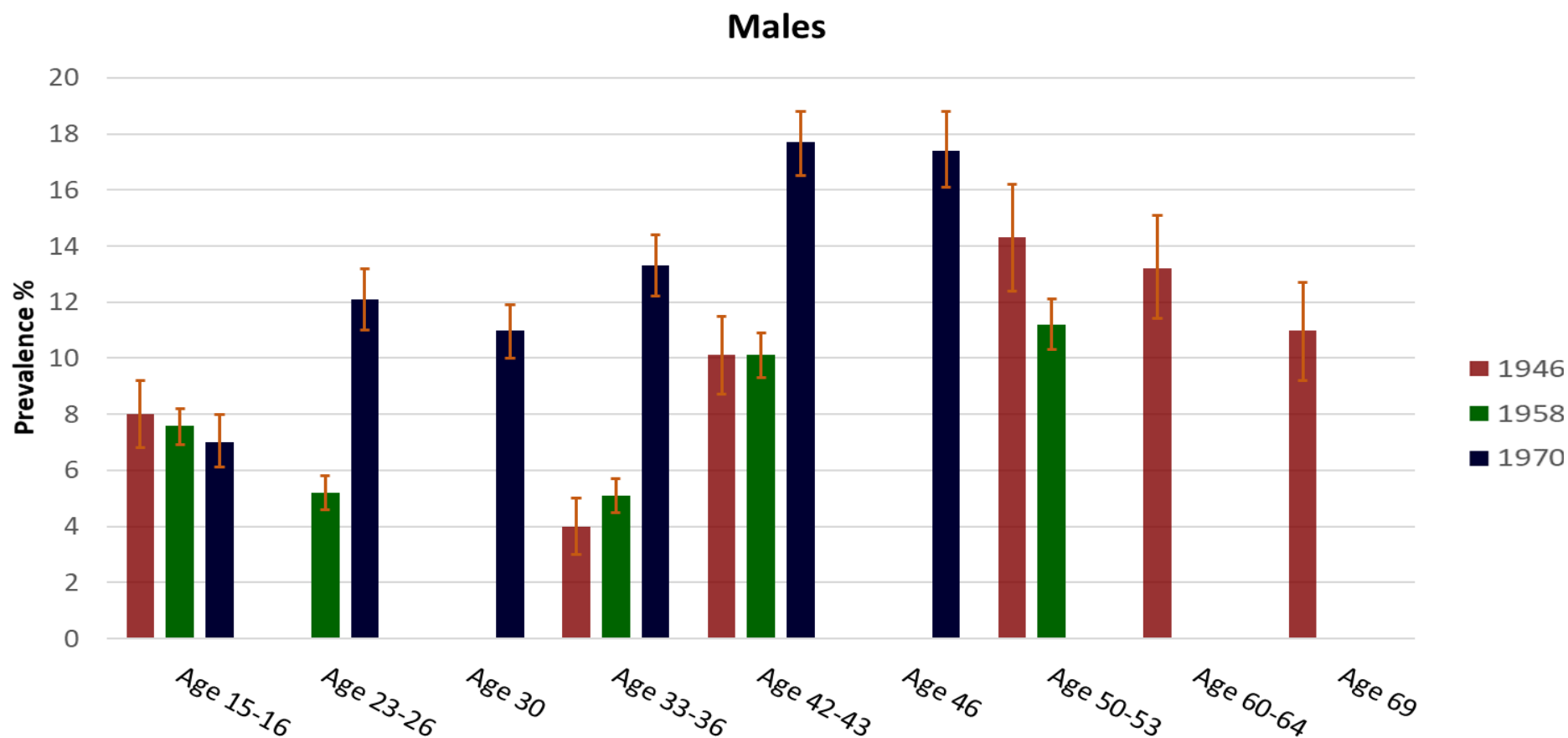
Legend: 1946, 1958

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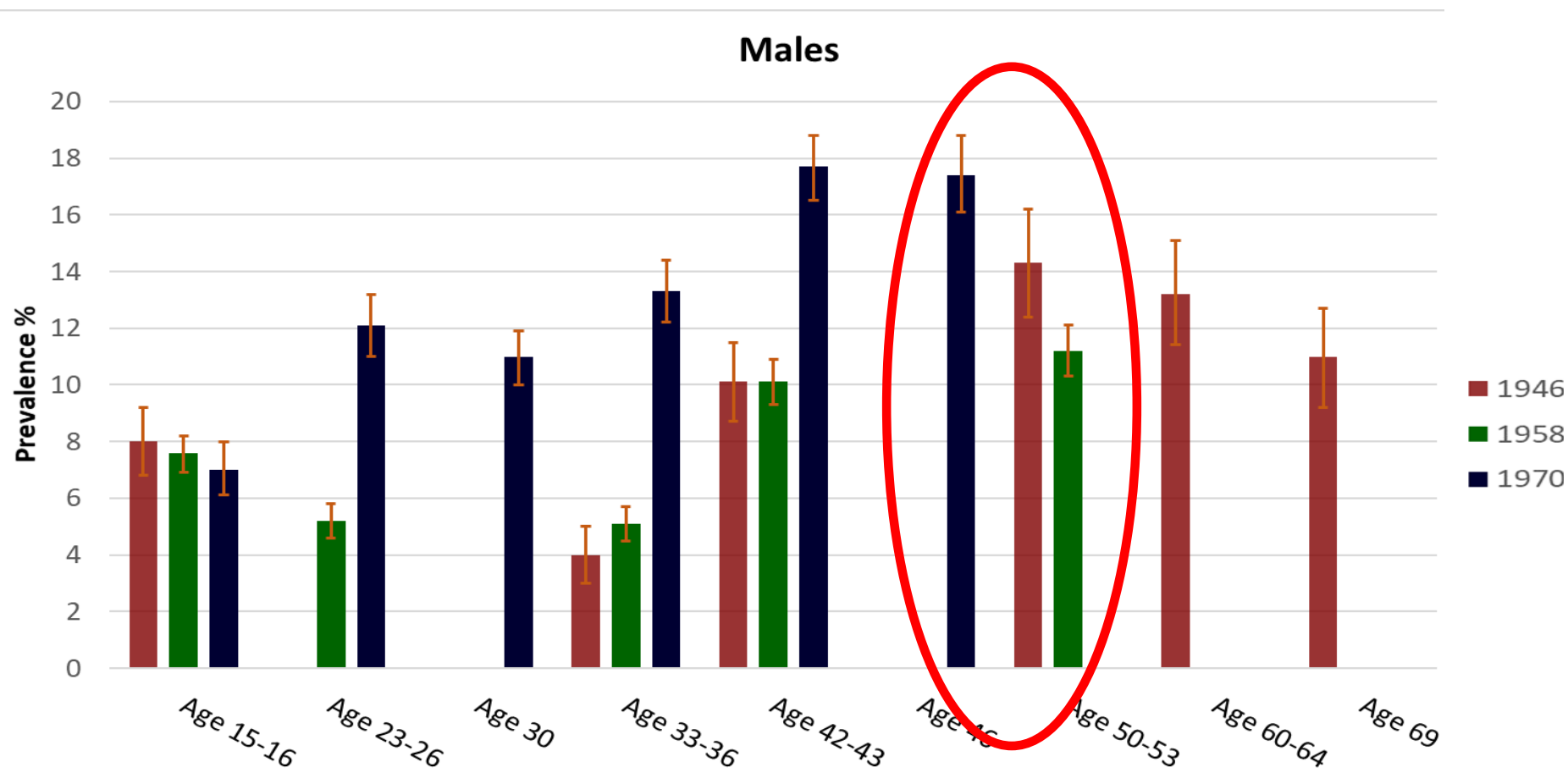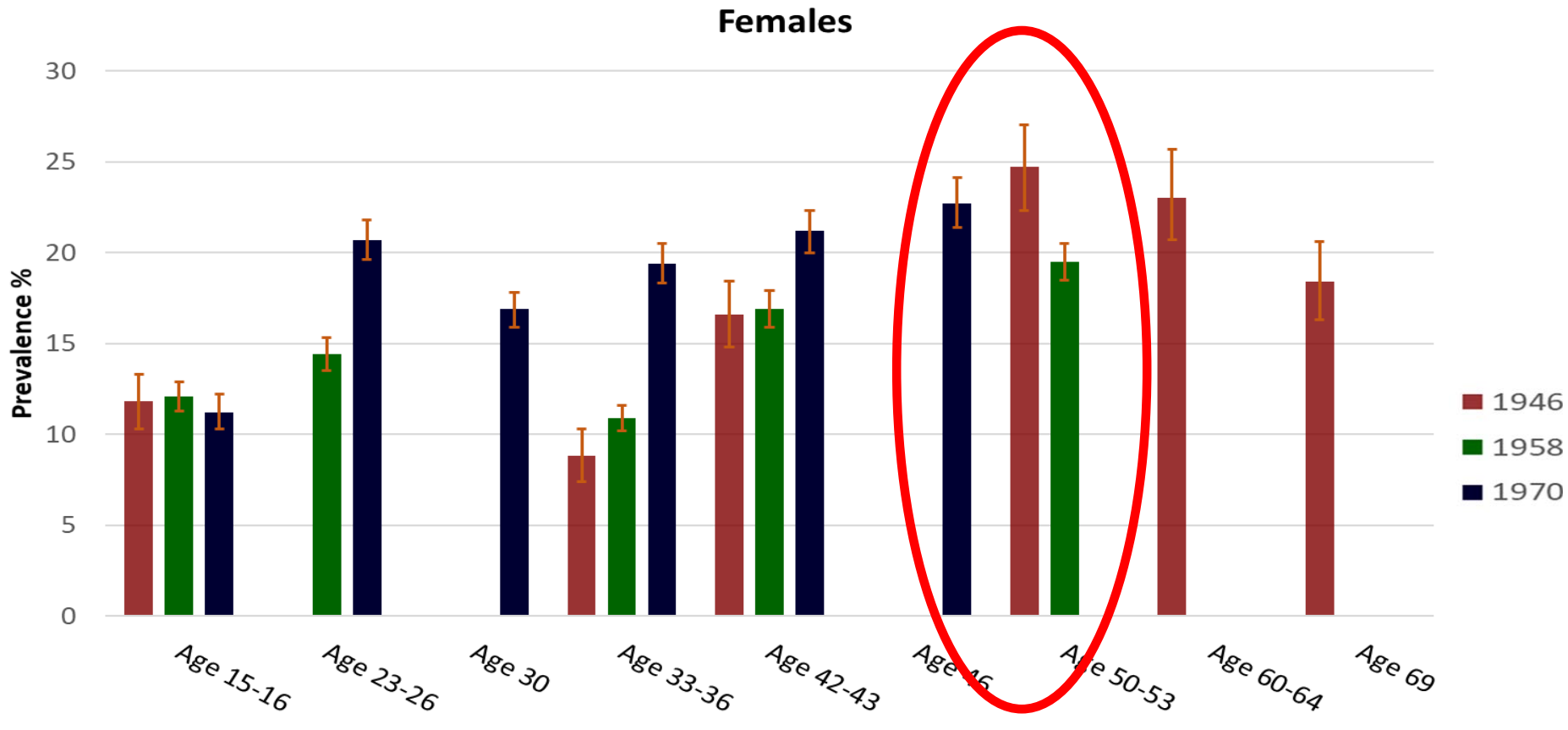
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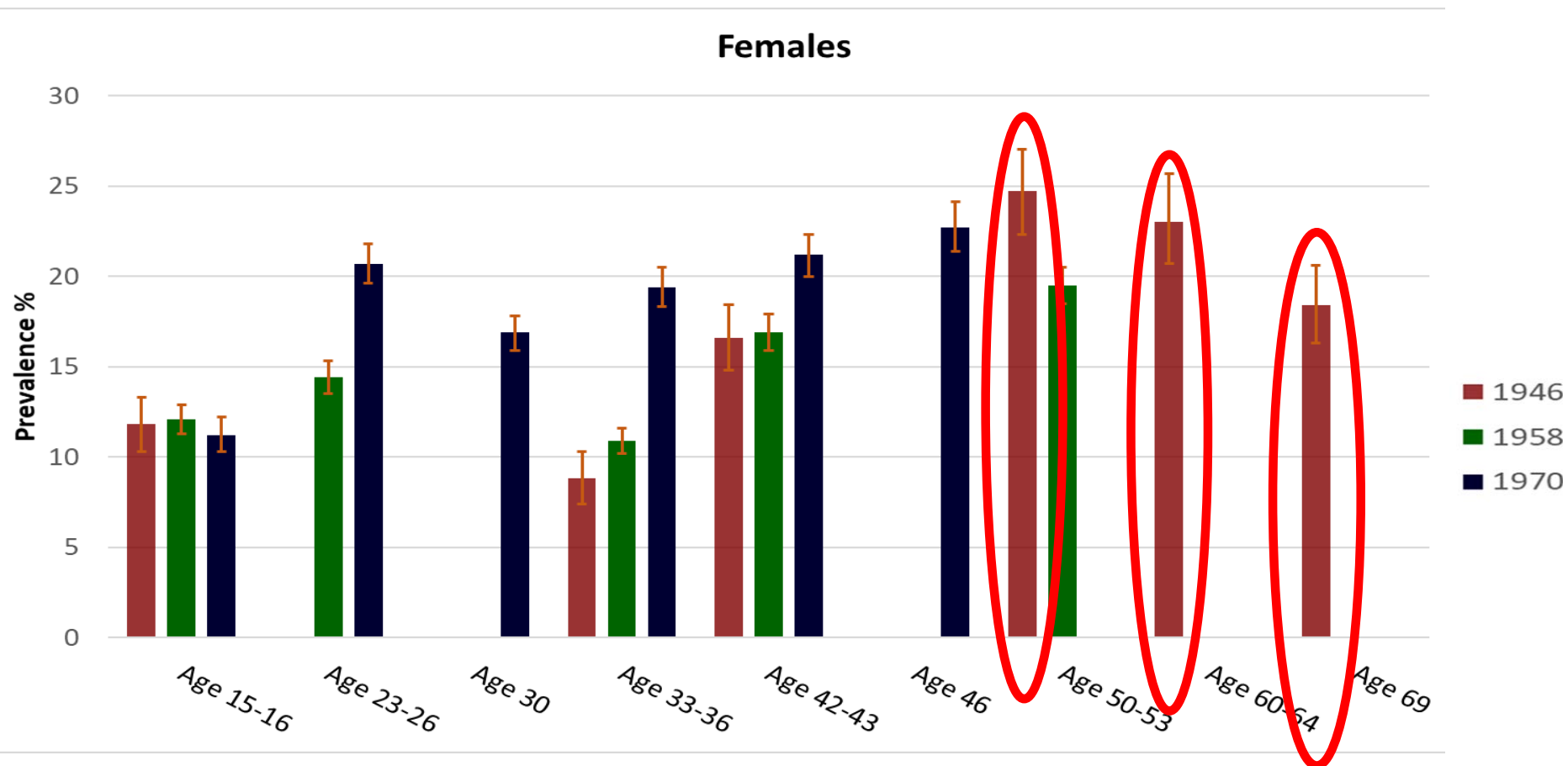# Prevalence (%) of psychological distress – All cohorts

Prevalence (%) of psychological distress – All cohorts

Prevalence (%) of psychological distress
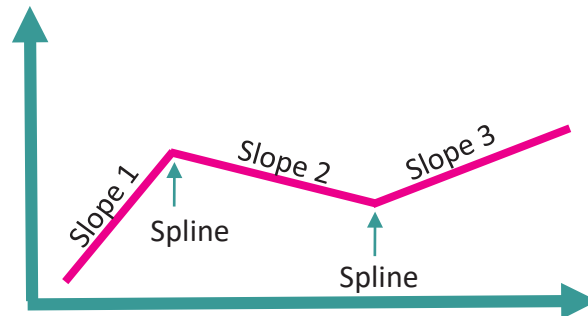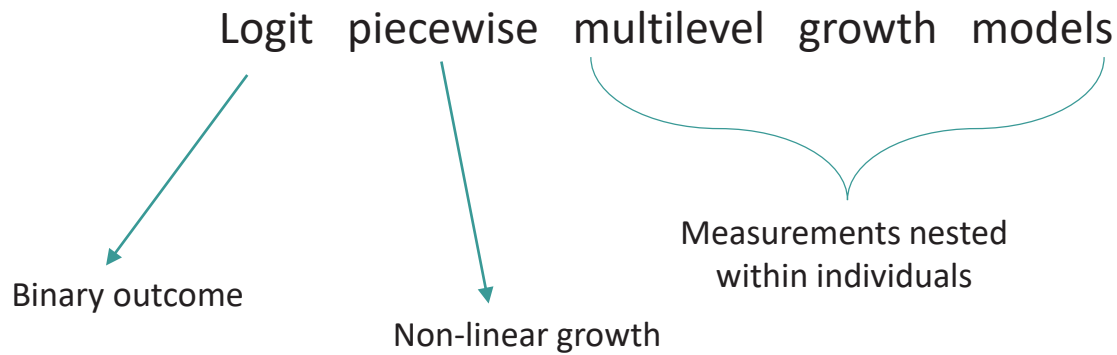
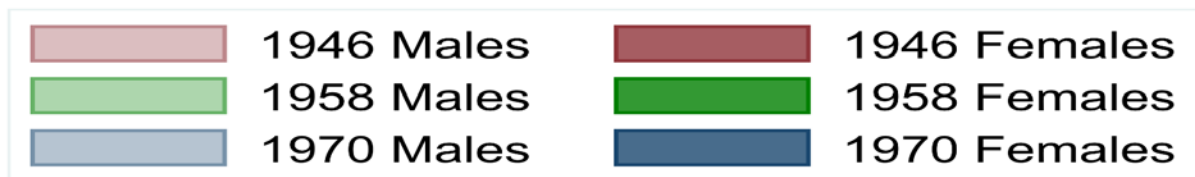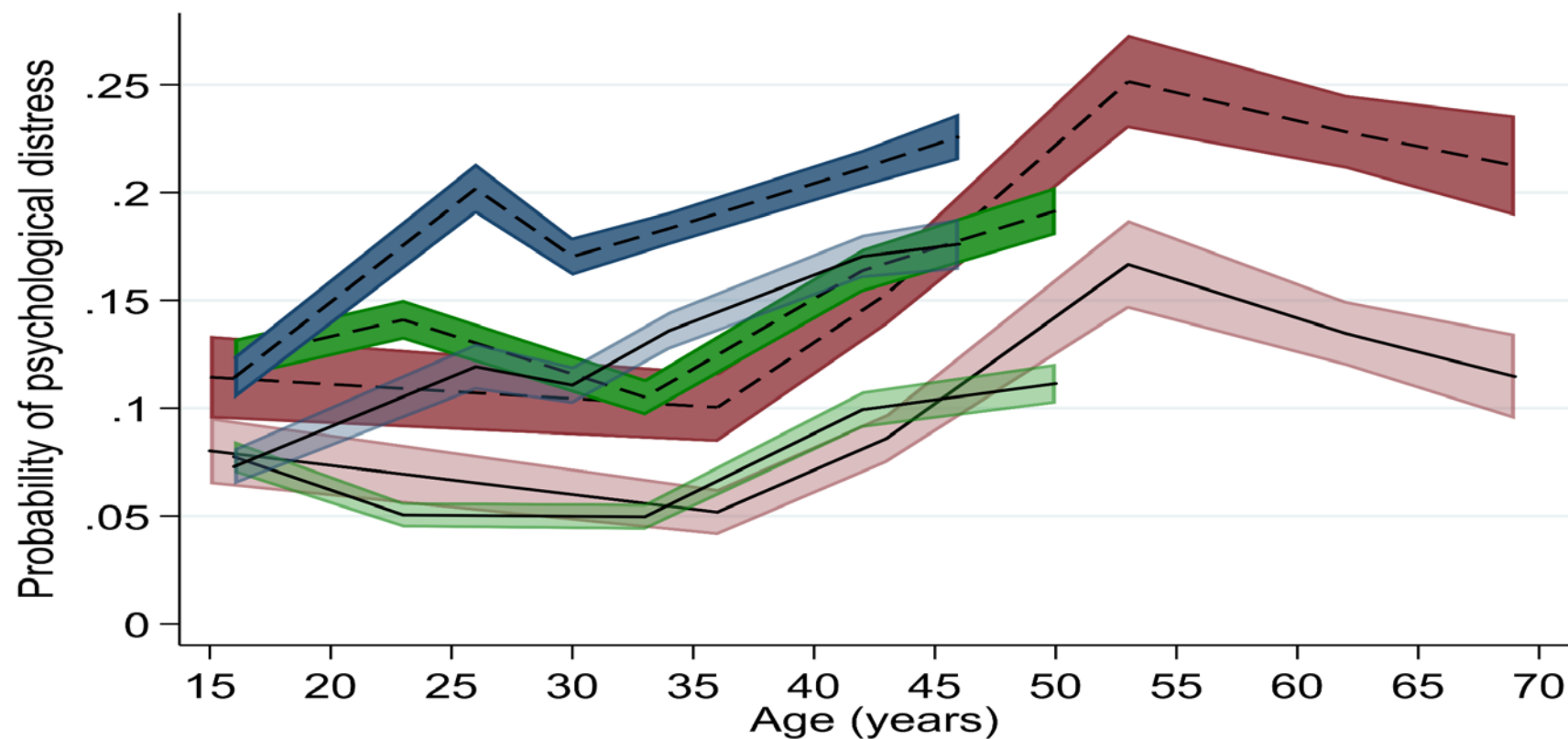# Prevalence (%) of psychological distress

Females

Modelling the trend

Logit   piecewise   multilevel   growth   models

Binary outcome

Non-linear growth

Measurements nested
within individuals

Slope 1   Slope 2   Slope 3

Spline

Spline

Probability of psychological distress vs Age (years)

Legend:
- 1946 Males
- 1946 Females
- 1958 Males
- 1958 Females
- 1970 Males
- 1970 Females

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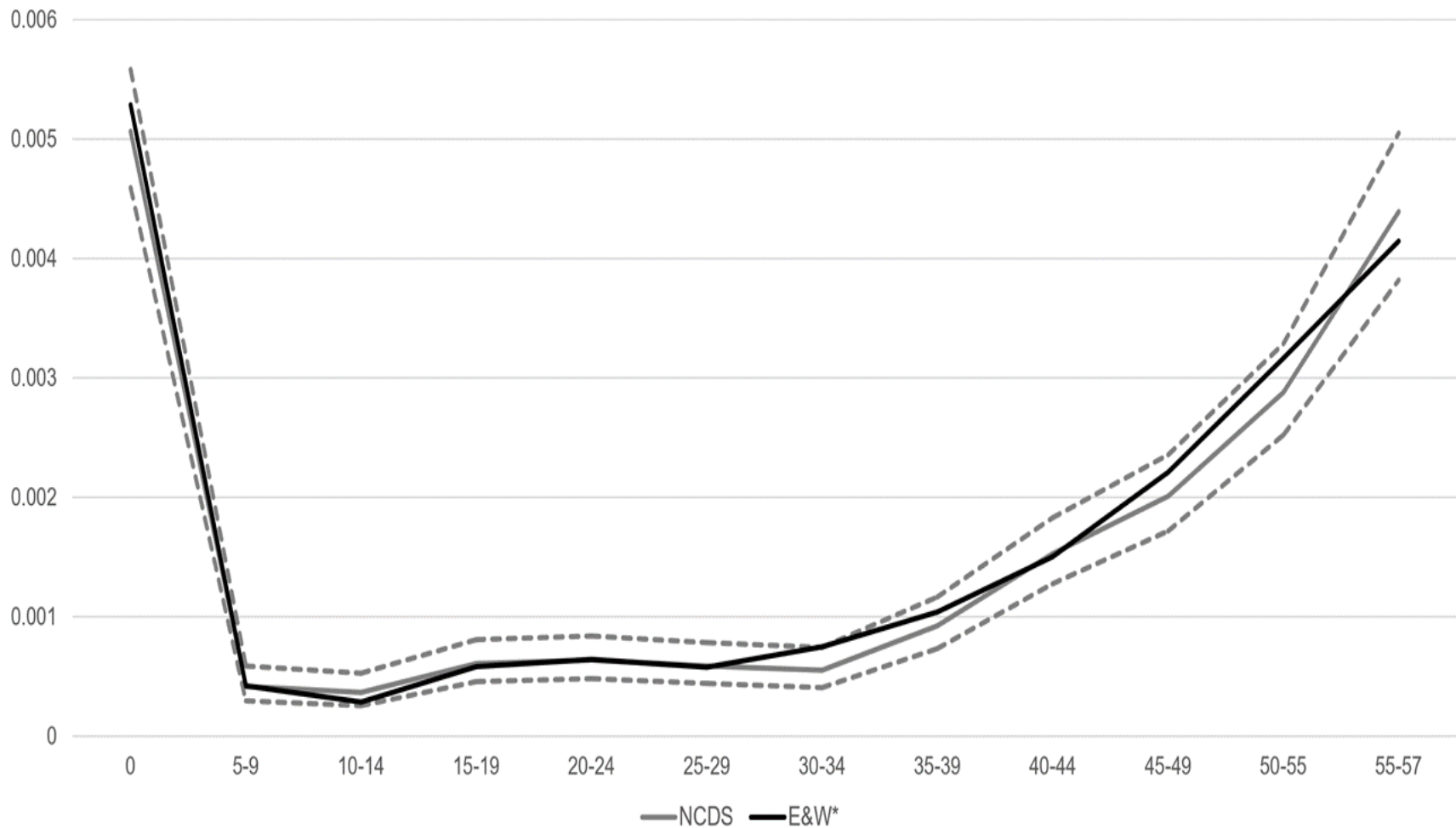
Method artefact?

- Selection to mortality?

- Are the cohorts more selected – compared to their target populations - on mental health?

- Is mental health more strongly associated with mortality in the birth cohorts compared to the population?

- No – mortality rates in the three cohorts are representative of those observed in their target populations

- Any effects of selective mortality due to mental health reflect a population selection process and not sample specific bias
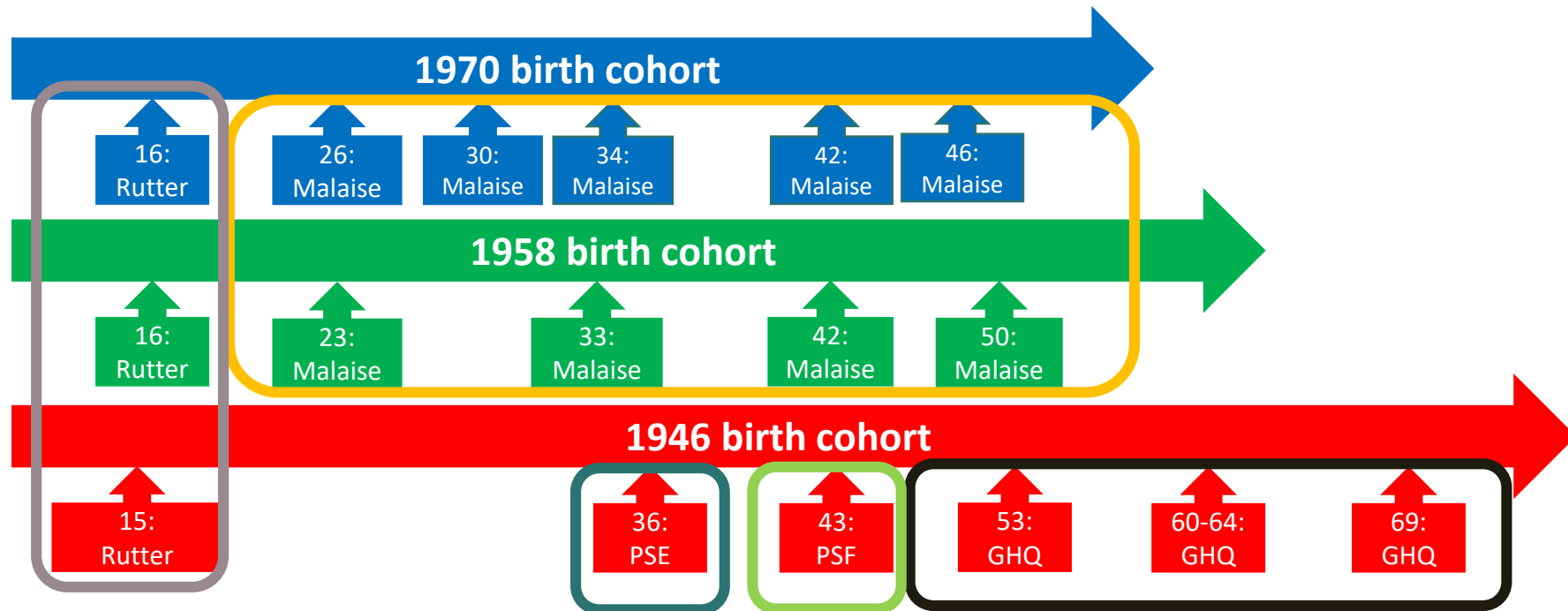
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- **Method artefact?** Different measures of psychological distress
- Harmonisation of psychological distress questions across and within cohorts
- Old School – 2 + 1 psychologists assessed which items tap into the same symptom

1970 birth cohort

| 16: Rutter | 26: Malaise | 30: Malaise | 34: Malaise | 42: Malaise | 46: Malaise |

1958 birth cohort

| 16: Rutter | 23: Malaise | 33: Malaise | 42: Malaise | 50: Malaise |

1946 birth cohort

| 15: Rutter | 36: PSE | 43: PSF | 53: GHQ | 60-64: GHQ | 69: GHQ |

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Sensitivity analysis within cohorts: 1946 cohort, 10 harmonised and invariant items
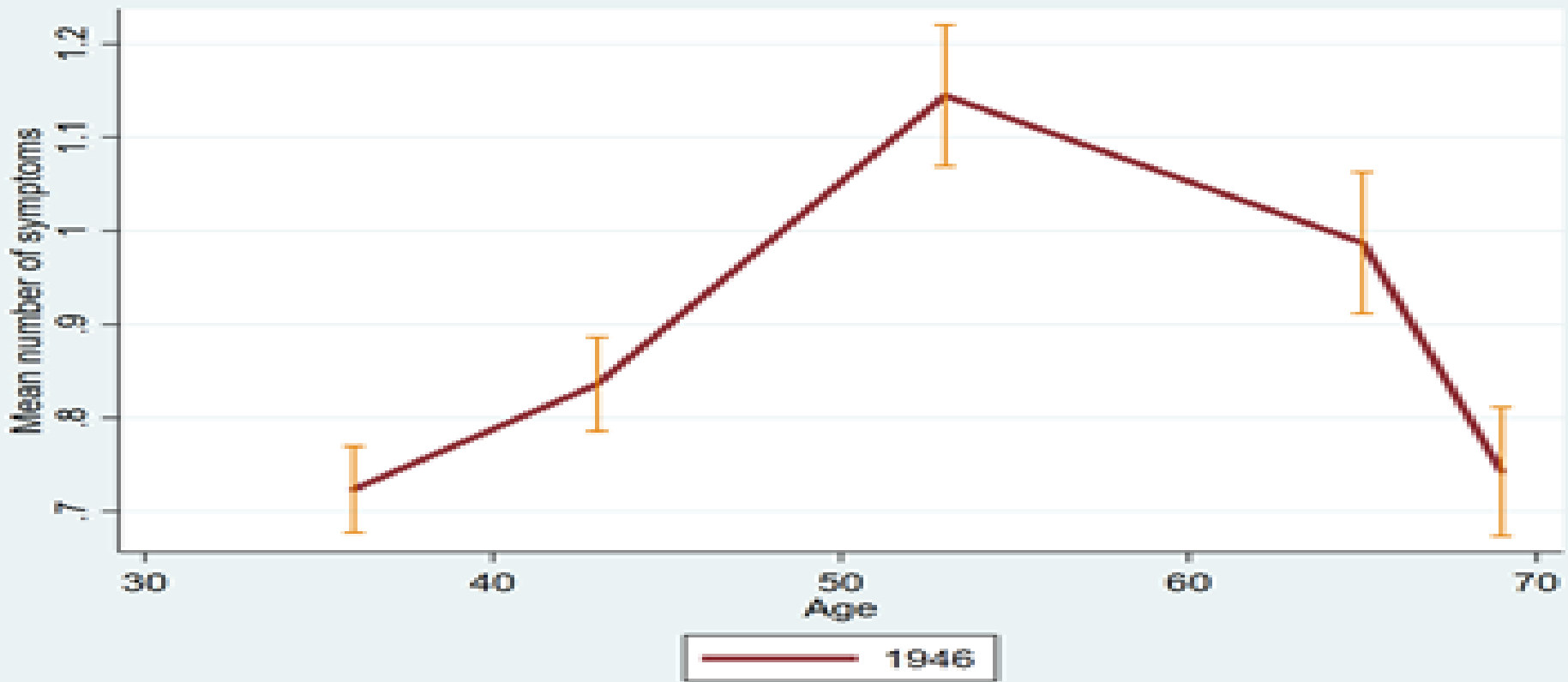
Sensitivity analysis within cohorts: 1958 cohort, Malaise Inventory, invariant within cohort

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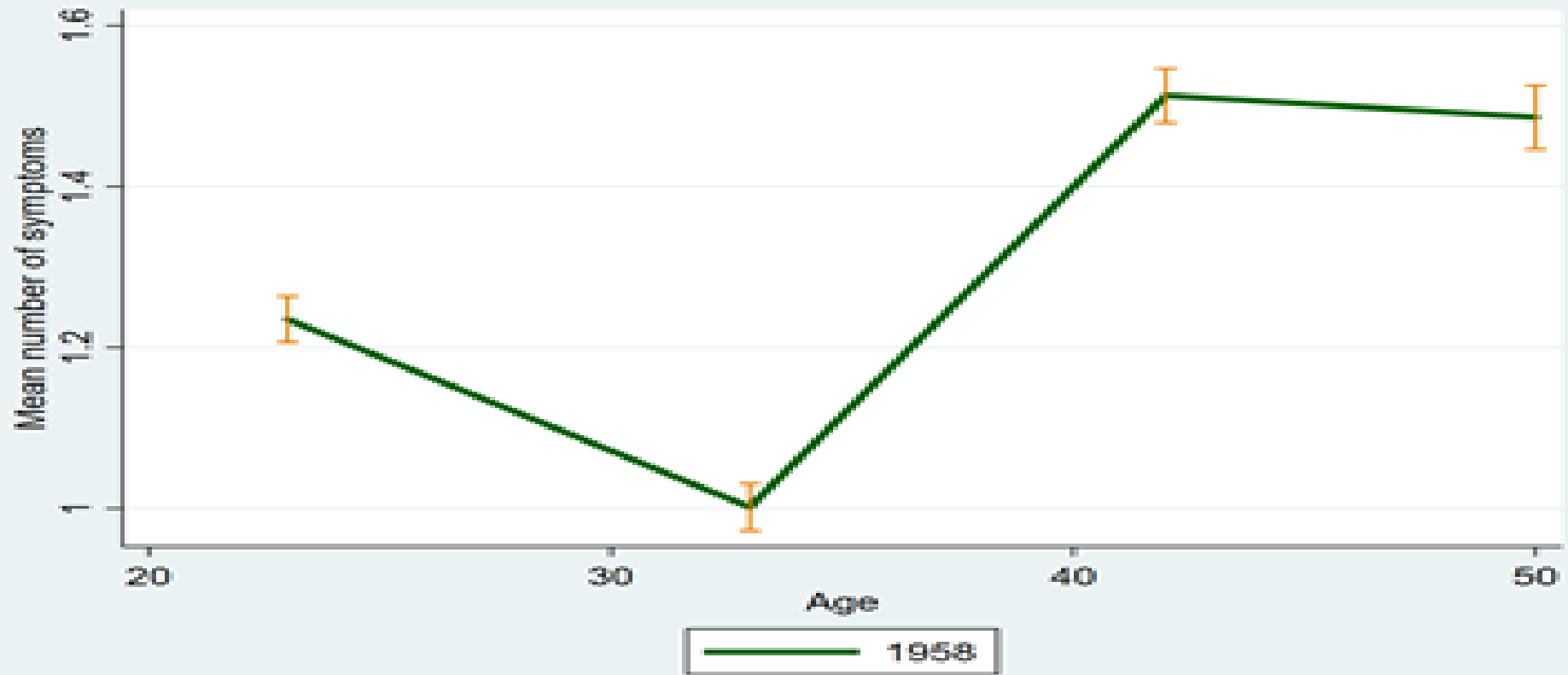
Sensitivity analysis within cohorts: 1970 cohort, Malaise Inventory, invariant within cohort
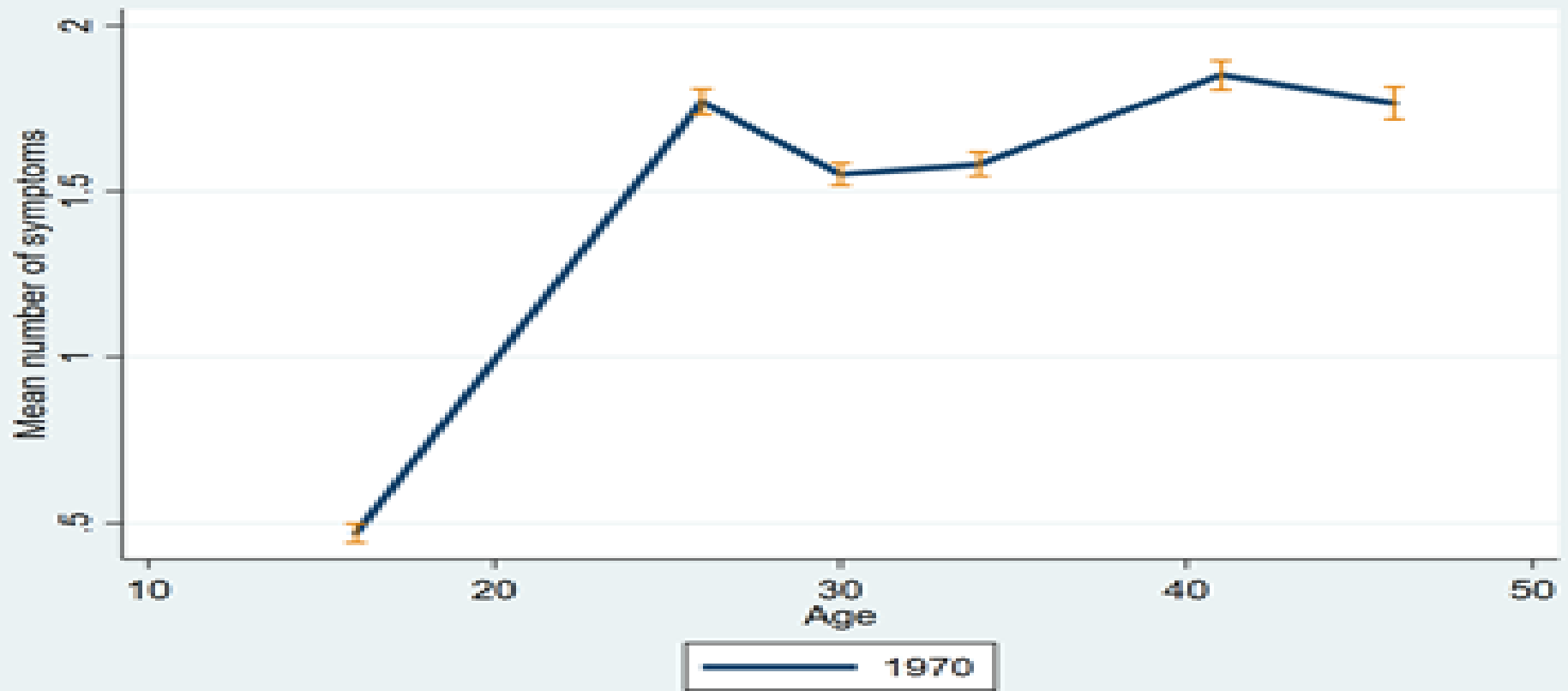
Harmonisation: Sensitivity analysis based on 4 comparable items within and across cohorts

Present State Examination	Psychiatric Symptom Frequency Questionnaire	General Health Questionnaire	Malaise Inventory
Do you often feel on edge, keyed up, mentally tense or strained?	Over the last year have you felt on edge, keyed up or mentally tense?	Have you recently felt constantly under strain?	Are you constantly keyed up and jittery?

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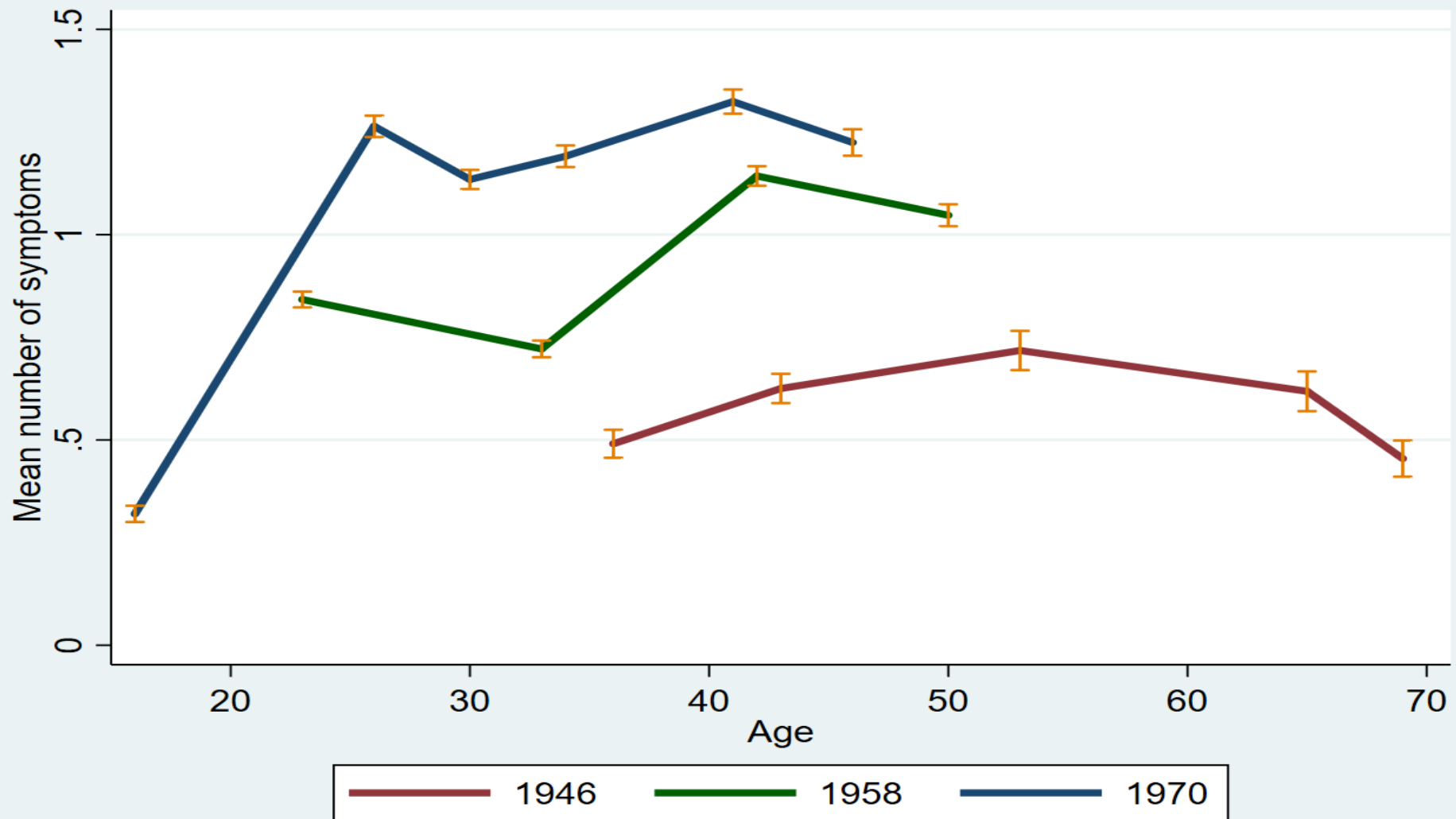
Method artefact?

- Caseness? Binary vs continuous variables

- Conventional wisdom: Continuous variables contain more information

- Assumption: Reliability/measurement error constant across the whole range of the measure of interest

- Reasonable for height, weight, blood pressure

- Mental health?

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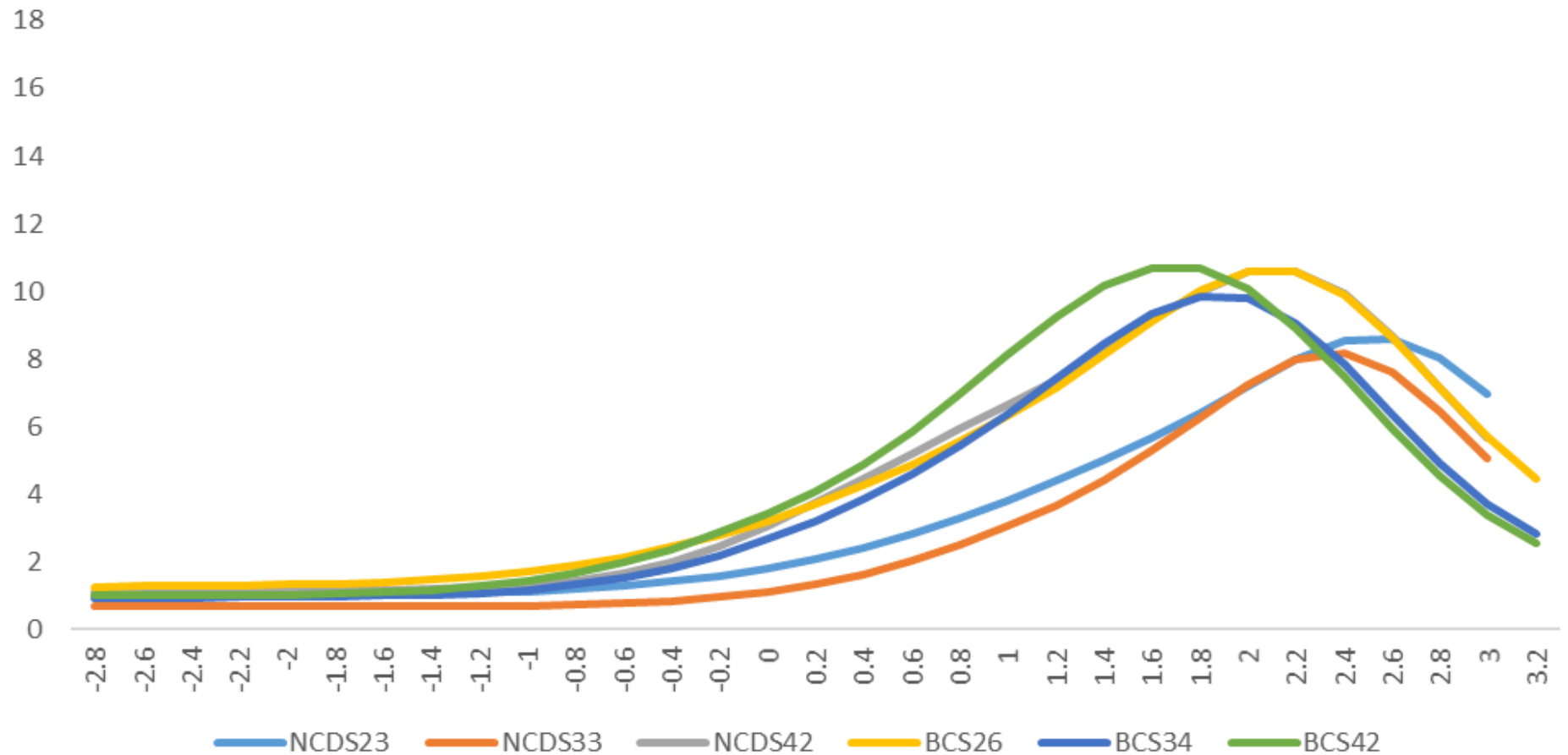
Malaise Inventory SIFs

Key findings

- Elevated psychological distress in middle-adulthood

- Highest psychological distress in the 1970 born cohort

- Possibly higher psychological distress in 1958 vs 1946

Reasons for 'midlife mental health crisis'?

- Not known - We can only speculate

- Most probably not a period effect

- Age effects – Social aspects of ageing

- Midlife tends to involve a ''peak'' in career, with midlife adults acquiring increasing responsibility as the ''decision makers'' in society

- Elevated job-related stress in midlife & declining quality of leisure time as well as time with friends and family may translate into higher psychological distress in midlife

- More research is needed to empirically test these hypotheses

Reasons for improvement in early old age?

- Declining psychological distress due to a relief from major midlife stressors?

- Shift from attainment-related goals, such as status or skills, towards those that help them maintain emotional stability — socioemotional selectivity

- Perhaps mental health problems more specific to old age are not well-captured by conventional symptom scales, hence underestimating frequency of distress

- Nonetheless, the evidence on differential association between risk factors and psychological distress across different life course stages is currently lacking
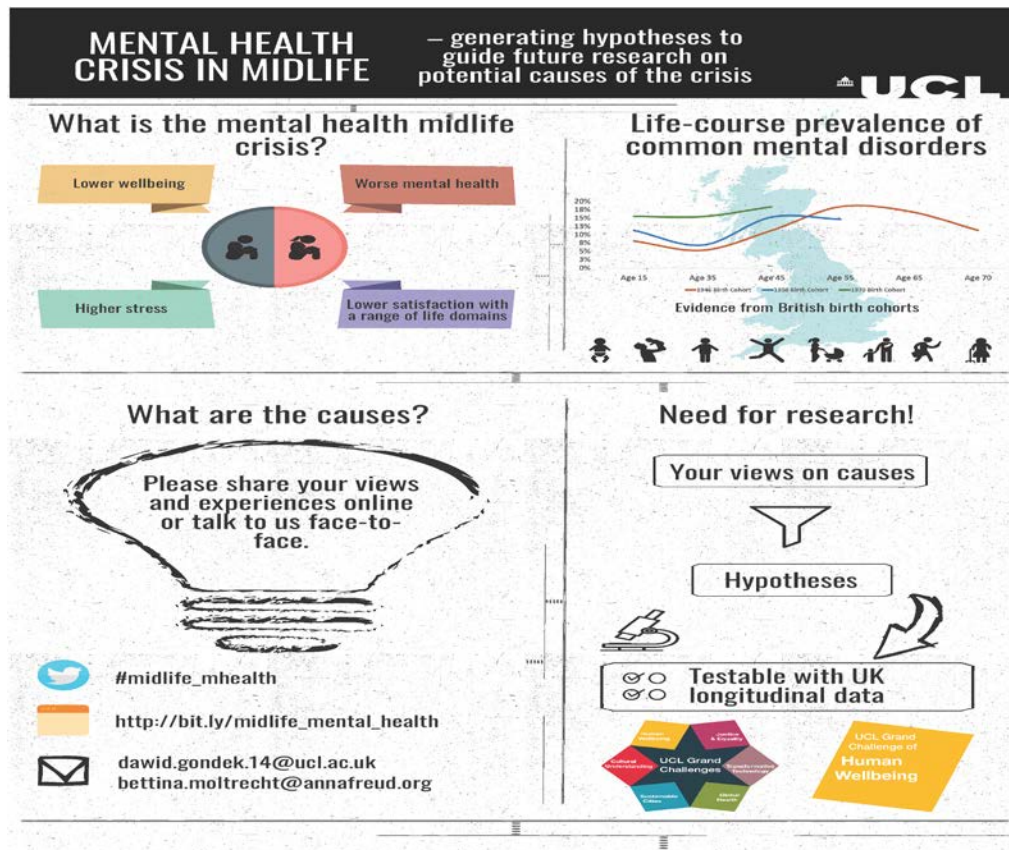
Thank you for your attention!
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