'Association between psychological distress trajectories from adolescence to midlife and mental health during the pandemic: Evidence from two British birth cohort studies'

COVID-19 wave 1-3 webinar
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Economic and Social Research Council

Motivation

- COVID-19 pandemic, and the accompanying policy measures may have potentially affected population mental health.
  - Some studies in the UK have shown poor mental health in the population, particularly in the early stages of the pandemic

- It's possible this disproportionately affected those already struggling with their mental health prior to the pandemic
  - Some emerging evidence suggests worsening mental health for these individuals

- However, few studies have investigated longitudinal trajectories of mental health prior to the COVID-19 outbreak, most employing retrospective measures or prospective measures at one time point / over a short period.

- Psychological distress in general population shown to be heterogenous, vary by age of onset, severity, stability and chronicity

- Distinct life course mental health trajectories across the adult life-span might be related to varying mental health outcomes during the pandemic

Research questions

- We use data from birth to mid-life and 3 waves of COVID-19 survey:
  - National Child Development Study (1958)
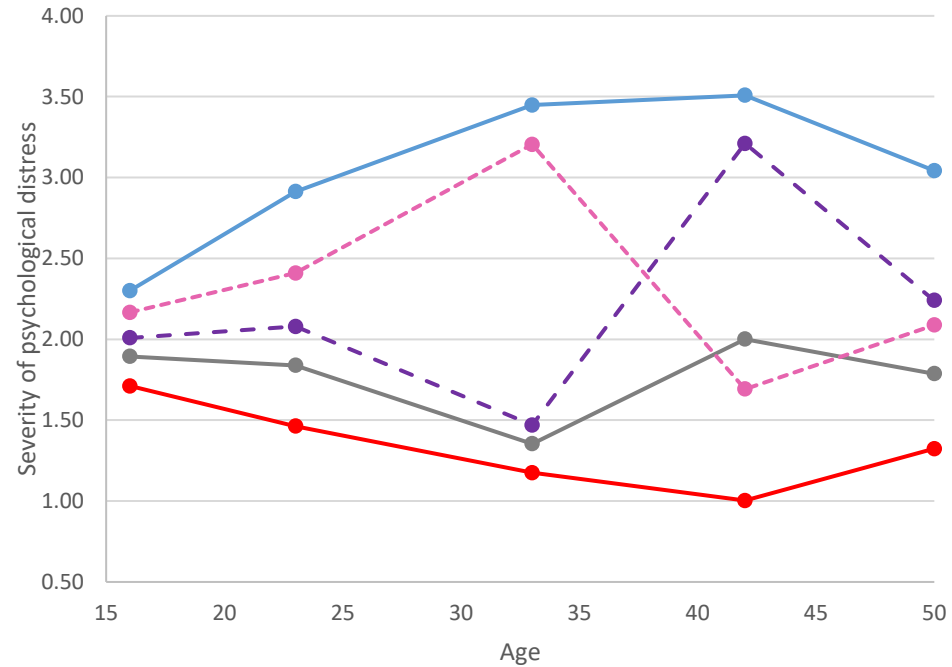 - 1970 British Birth Cohort Study

1. Are differing life-course trajectories of psychological distress more likely to result in symptoms of depression and anxiety, lower life satisfaction and feelings of loneliness during the COVID-19 pandemic?

2. Whether there were differences in mental health outcomes by trajectories of psychological distress as the pandemic developed?
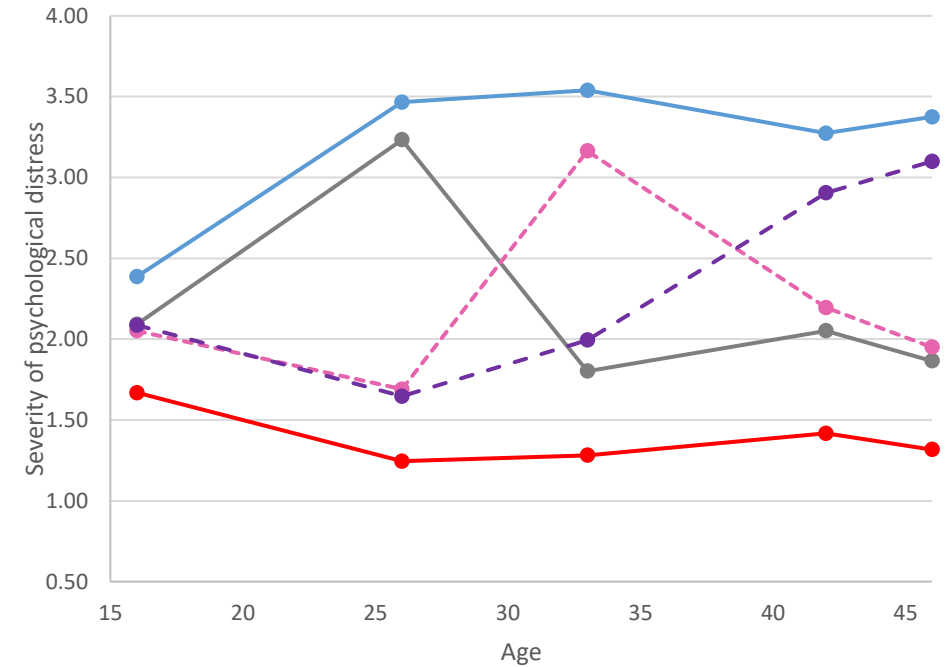
Method

- Sample: all participants in NCDS and BCS70 (excluding dead and emigrated by mid-life):
  - NCDS n=15,291
  - BCS70 n=17,486

- Multiple imputation – 25 imputations at each wave (study and auxiliary variables)

- Pre-pandemic psychological distress: 5 time points
  - Latent variable mixture model to identify longitudinal classes of MH

- Outcomes during the pandemic: 3 waves
  - Psychological distress: Malaise Inventory ≥4 or not
  - Life satisfaction: ≥7 or not
  - Loneliness: Short version of UCLA loneliness scale ≥6 or not

- Potential confounders: Early life, socio-economic, parental, child health and ability

- Modified poisson models with robust standard errors – risk ratios

Five longitudinal classes of psychological distress in NCDS and BCS70 from adolescence to mid-life
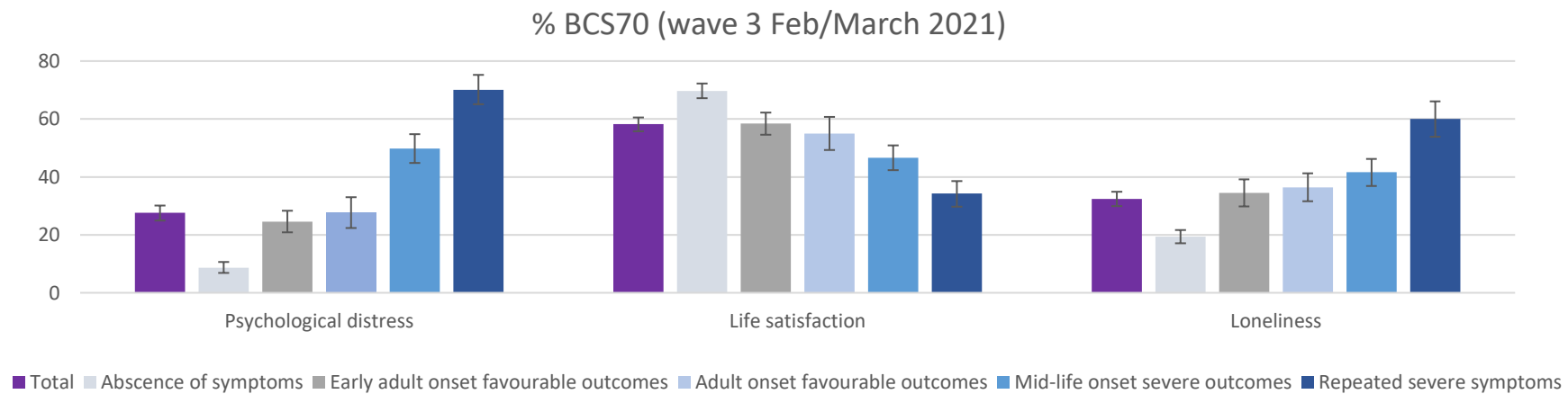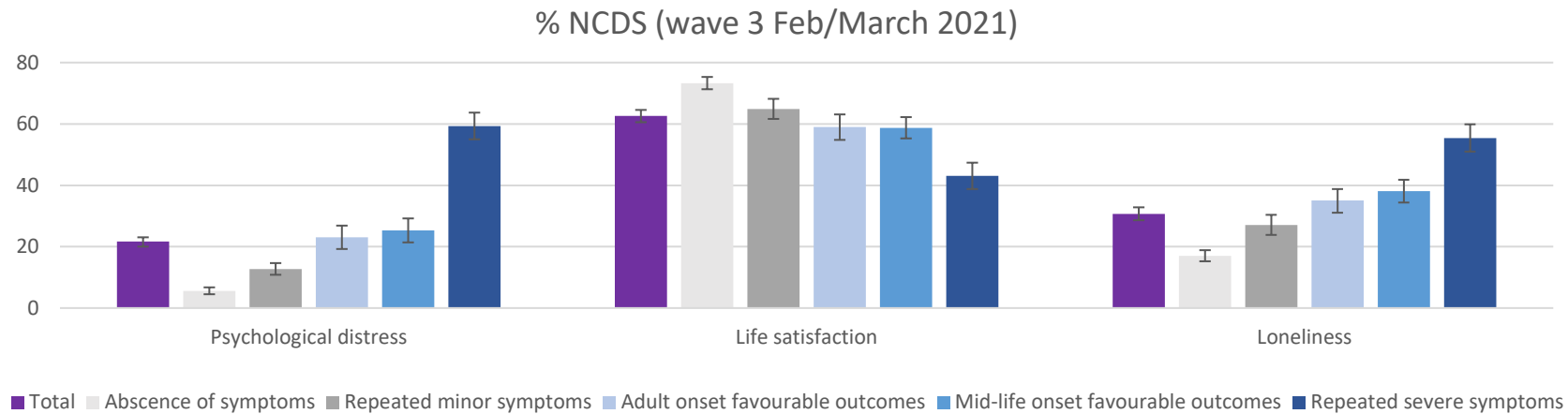
% of CM's with symptoms of psychological distress, life satisfaction, and loneliness by psychological distress trajectories at wave 3

% NCDS (wave 3 Feb/March 2021)

Legend: Total, Abscence of symptoms, Repeated minor symptoms, Adult onset favourable outcomes, Mid-life onset favourable outcomes, Repeated severe symptoms

% BCS70 (wave 3 Feb/March 2021)

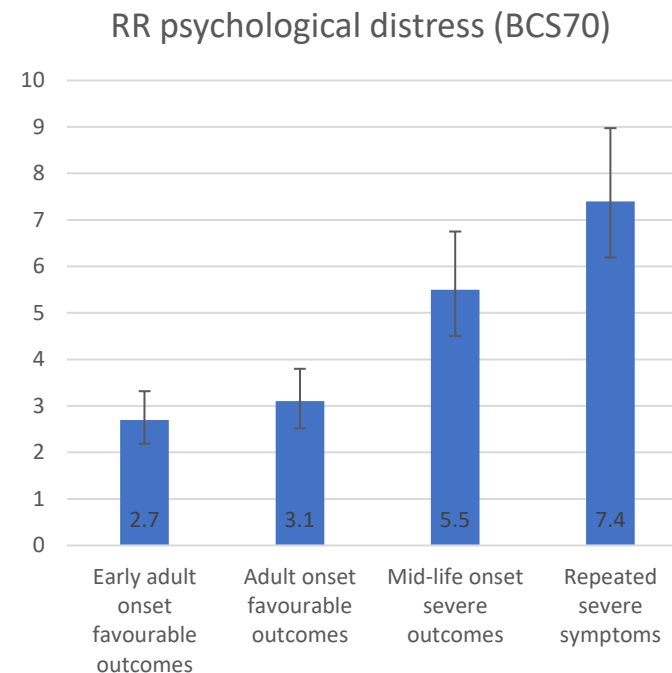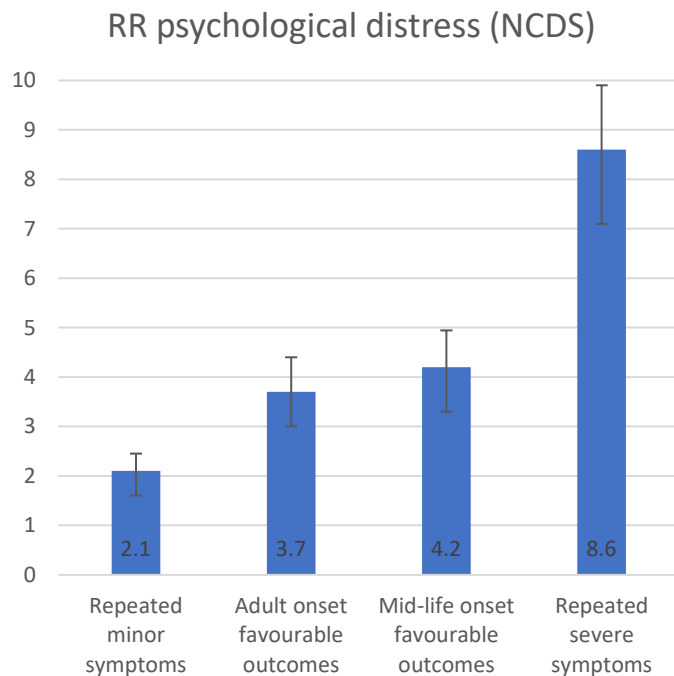Legend: Total, Abscence of symptoms, Early adult onset favourable outcomes, Adult onset favourable outcomes, Mid-life onset severe outcomes, Repeated severe symptoms
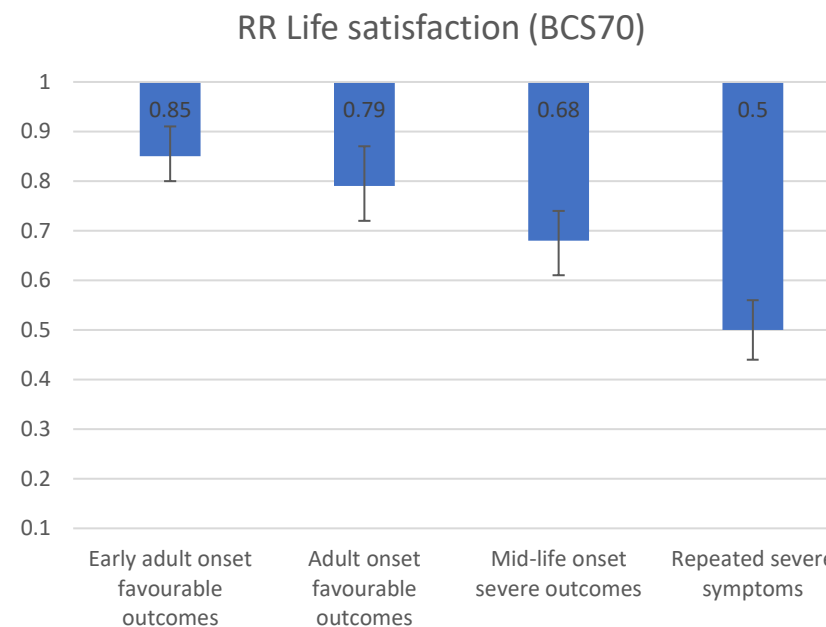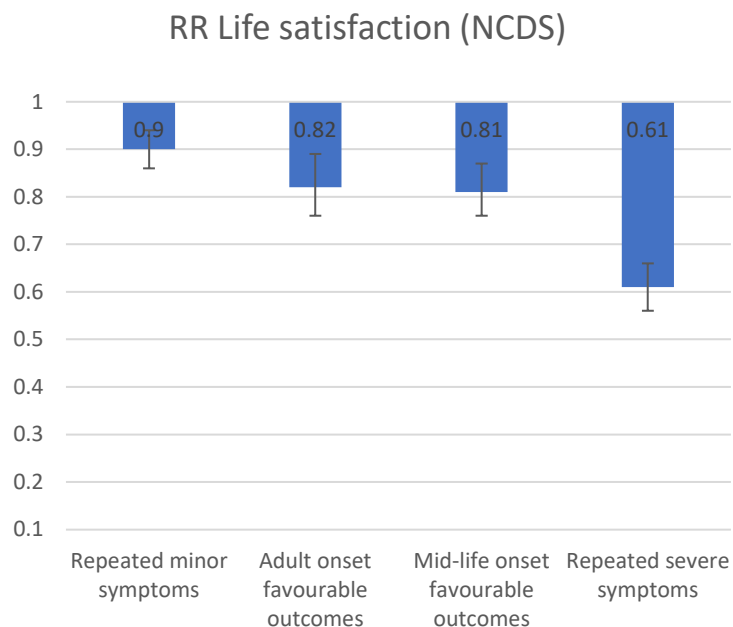
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Influence of psychological distress trajectories on the relative risk (RR) of psychological distress during COVID-19 (wave 3)

RR psychological distress (NCDS)

RR psychological distress (BCS70)

Ref: absence of symptoms
Parameters are adjusted for sex, breastfed, mother smoked during pregnancy, gestation period, birthweight, parental social class at 0, parental education at 0, housing tenure at 7/5, access to house amenities at 7/5, crowding at age 0, 7/5 and 11/10, parents marital status at 0, maternal age at birth, mother worked in first five years, separated from child for more than a month <age 5, read to at 7/5, CM wet the bed at 7/5, had any medical conditions at 7/5, Body Mass Index (BMI) at 11/10, and cognitive ability at 7/5 and 11/10.

Influence of psychological distress trajectories on the relative risk (RR) of life satisfaction during COVID-19 (Wave 3)

RR Life satisfaction (NCDS)

RR Life satisfaction (BCS70)

Ref: absence of symptoms
Parameters are adjusted for sex, breastfed, mother smoked during pregnancy, gestation period, birthweight, parental social class at 0, parental education at 0, housing tenure at 7/5, access to house amenities at 7/5, crowding at age 0, 7/5 and 11/10, parents marital status at 0, maternal age at birth, mother worked in first five years, separated from child for more than a month <age 5, read to at 7/5, CM wet the bed at 7/5, had any medical conditions at 7/5, Body Mass Index (BMI) at 11/10, and cognitive ability at 7/5 and 11/10.
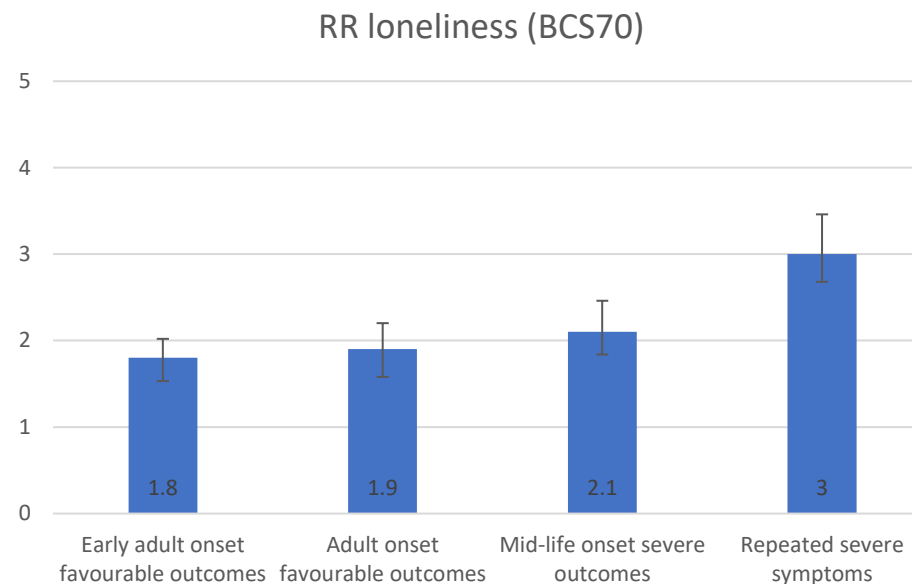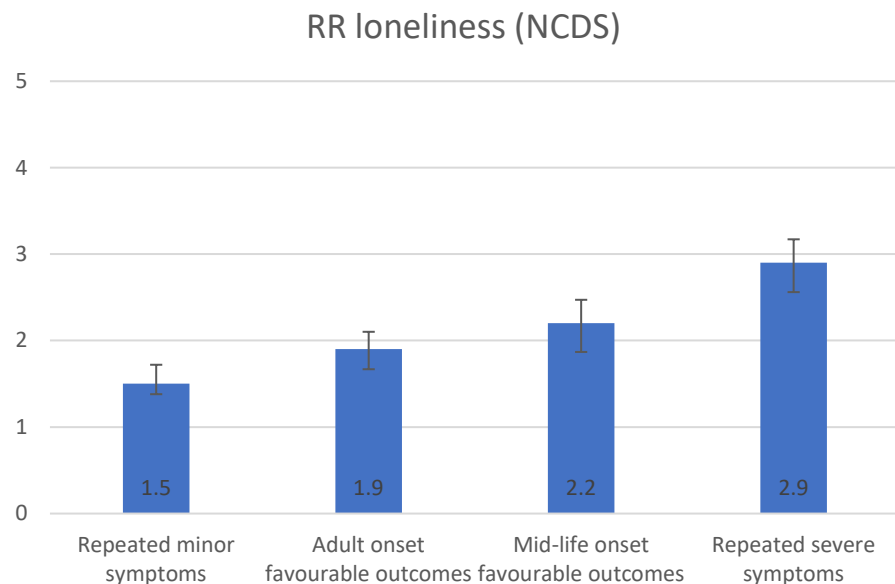
Influence of psychological distress trajectories on the relative risk (RR) of loneliness during COVID-19 (Wave 3)
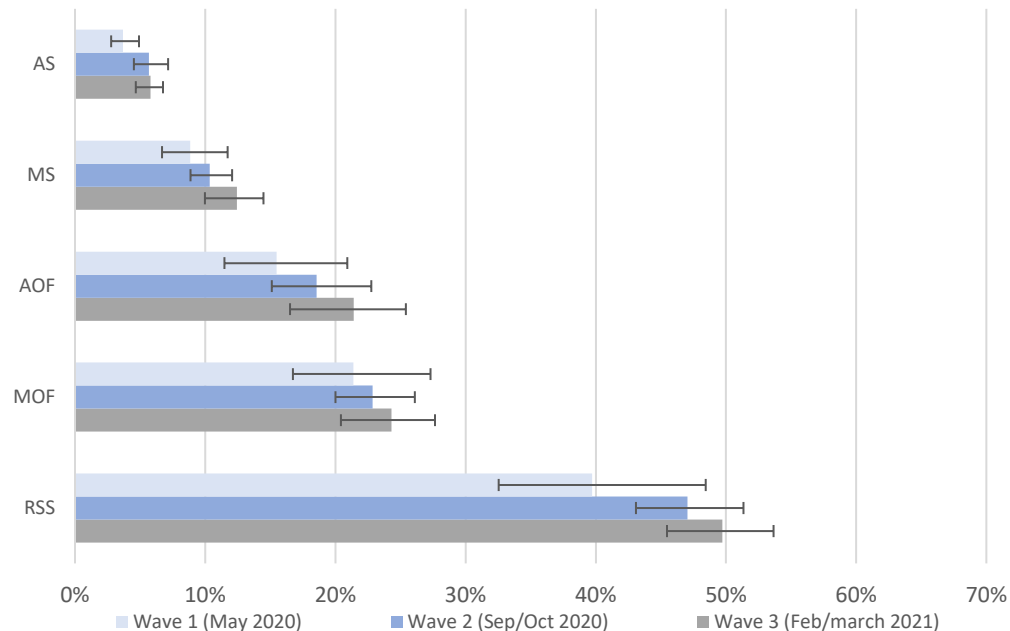

Ref: absence of symptoms
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Predicted probability of poor mental health associated with psychological distress trajectories in the NCDS and BCS70 at different time-points during the pandemic

NCDS: psychological distress during the pandemic

BCS70: psychological distress during the pandemic

Wave 1 (May 2020)   Wave 2 (Sep/Oct 2020)   Wave 3 (Feb/march 2021)

Wave 1 (May 2020)   Wave 2 (Sep/Oct 2020)   Wave 3 (Feb/March 2021)

AS (Absence of symptoms), MS (Minor symptoms), EAF (Early adult-onset with favourable outcomes), AOF (Adult-onset with favourable outcomes), MOF (Mid-life onset with favourable outcomes), MOS (Mid-life onset with severe outcomes), RSS (Repeated severe symptoms).
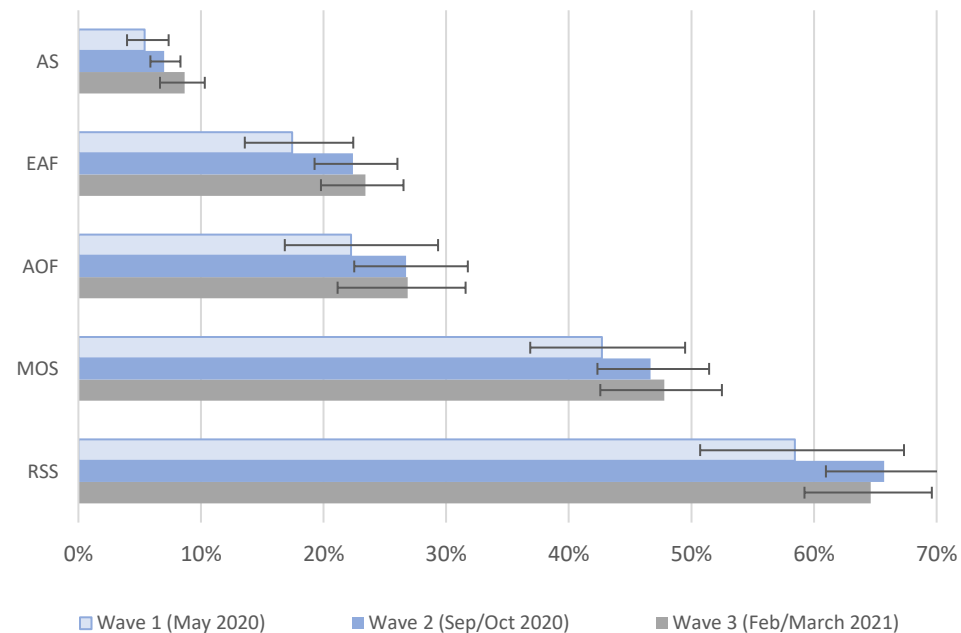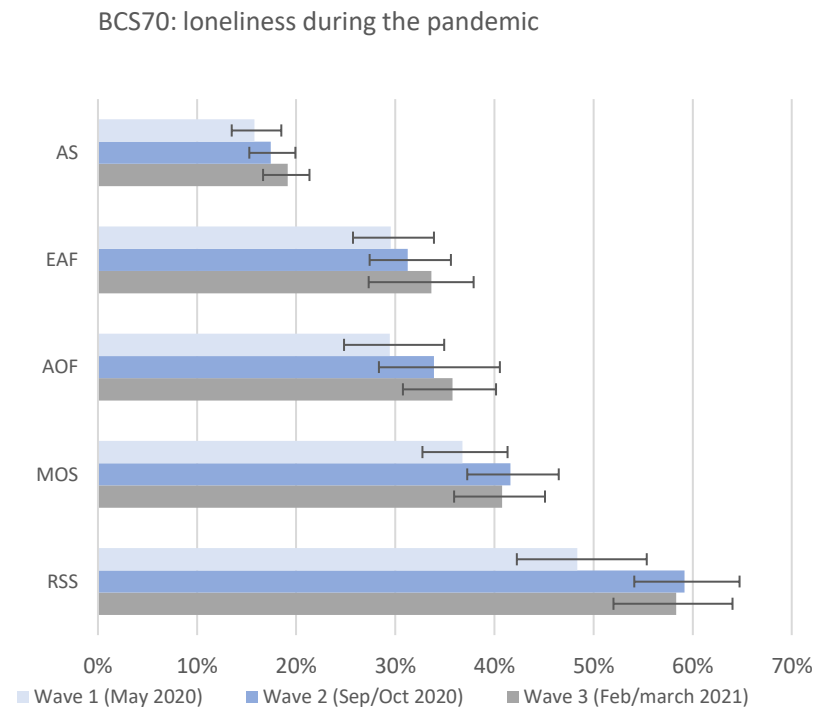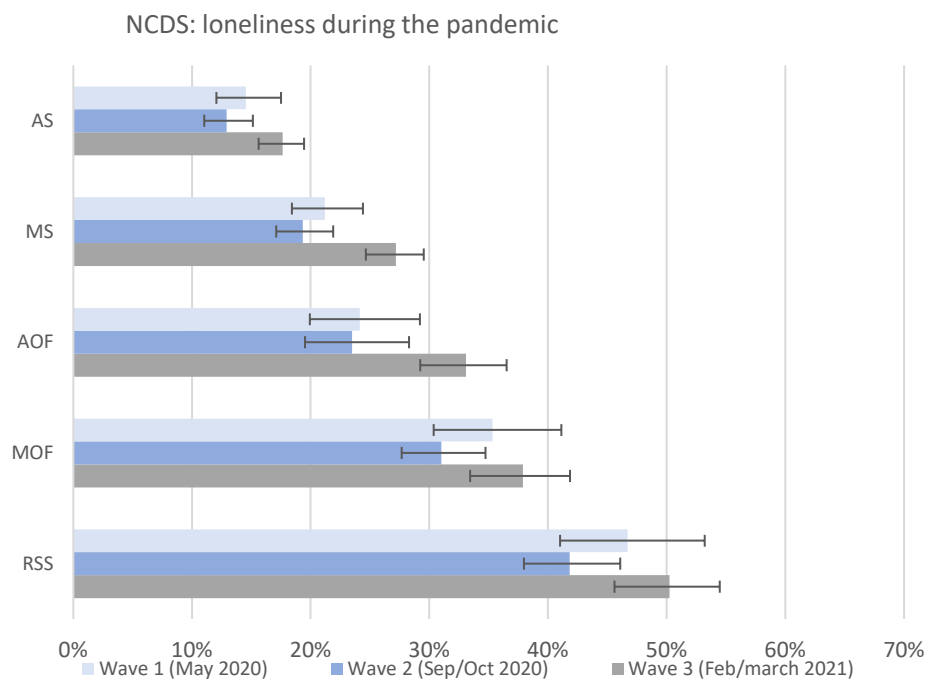
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Predicted probability of loneliness associated with psychological distress trajectories in the NCDS and BCS70 at different time-points during the pandemic

NCDS: loneliness during the pandemic

BCS70: loneliness during the pandemic

AS (Absence of symptoms), MS (Minor symptoms), EAF (Early adult-onset with favourable outcomes), AOF (Adult-onset with favourable outcomes), MOF (Mid-life onset with favourable outcomes), MOS (Mid-life onset with severe outcomes), RSS (Repeated severe symptoms).

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Conclusions

- Data from two British birth cohorts suggest that the risk of poor mental health outcomes during the pandemic was greater for those with any prior symptoms of psychological distress, regardless of age of onset, severity and chronicity.
    - Particularly for those with pre-pandemic severe symptoms

- For most trajectory comparisons there were distinct relative risks associated with mental health outcomes during the pandemic

- The probability of psychological distress, and lower life satisfaction associated with pre-pandemic trajectories remained fairly stable at the three time-points, while in the NCDS for most trajectories feelings of loneliness increased during enforcement of the third lockdown.

- Our findings show the importance of considering heterogenous mental health trajectories across the life-course in the general population in addition to mental health average population trajectories.
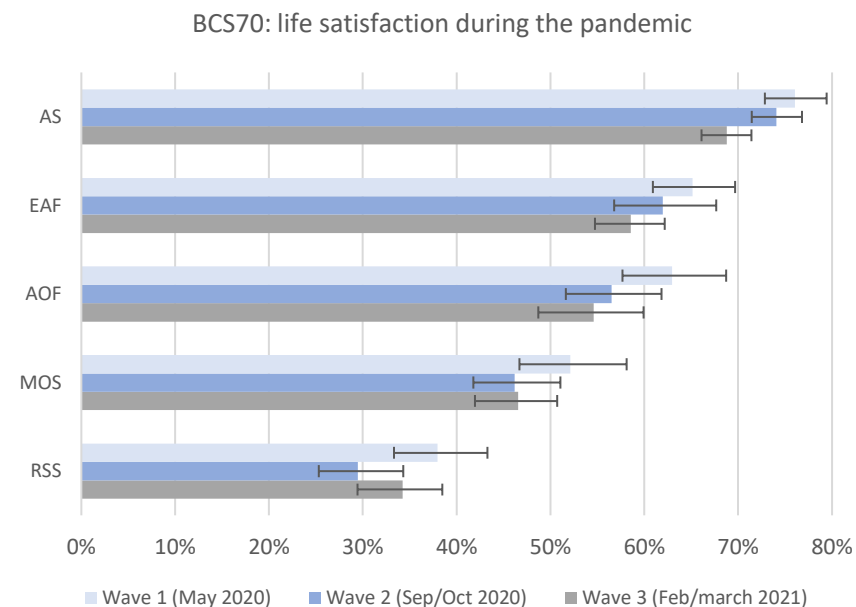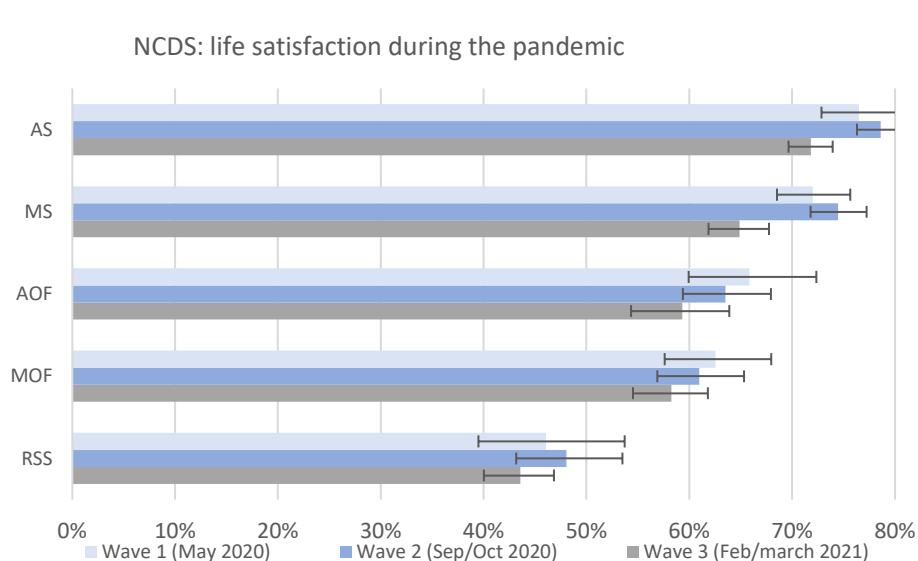
Thank you

Any questions?

Predicted probability of good life satisfaction associated with psychological distress trajectories in the NCDS and BCS70 at different time-points during the pandemic

NCDS: life satisfaction during the pandemic

Wave 1 (May 2020) | Wave 2 (Sep/Oct 2020) | Wave 3 (Feb/march 2021)

BCS70: life satisfaction during the pandemic

Wave 1 (May 2020) | Wave 2 (Sep/Oct 2020) | Wave 3 (Feb/march 2021)

AS (Absence of symptoms), MS (Minor symptoms), EAF (Early adult-onset with favourable outcomes), AOF (Adult-onset with favourable outcomes), MOF (Mid-life onset with favourable outcomes), MOS (Mid-life onset with severe outcomes), RSS (Repeated severe symptoms).

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% in each trajectory of psychological distress

	NCDS %	BCS70 %
Low symptoms	40.9	52.4
Minor symptoms /Early adult-onset favourable outcomes	16.4	8.8
Adult-onset favourable outcomes	10.8	10.9
Midlife-onset favourable /severe symptoms	11.9	7.6
Repeated severe symptoms	19.9	20.4