environMENTAL Seminar 1

COVIDMENT

Advancing current knowledge of mental morbidity trajectories in the COVID-19 pandemic

NIPH Norwegian Institute of Public Health

UNIVERSITY OF OSLO

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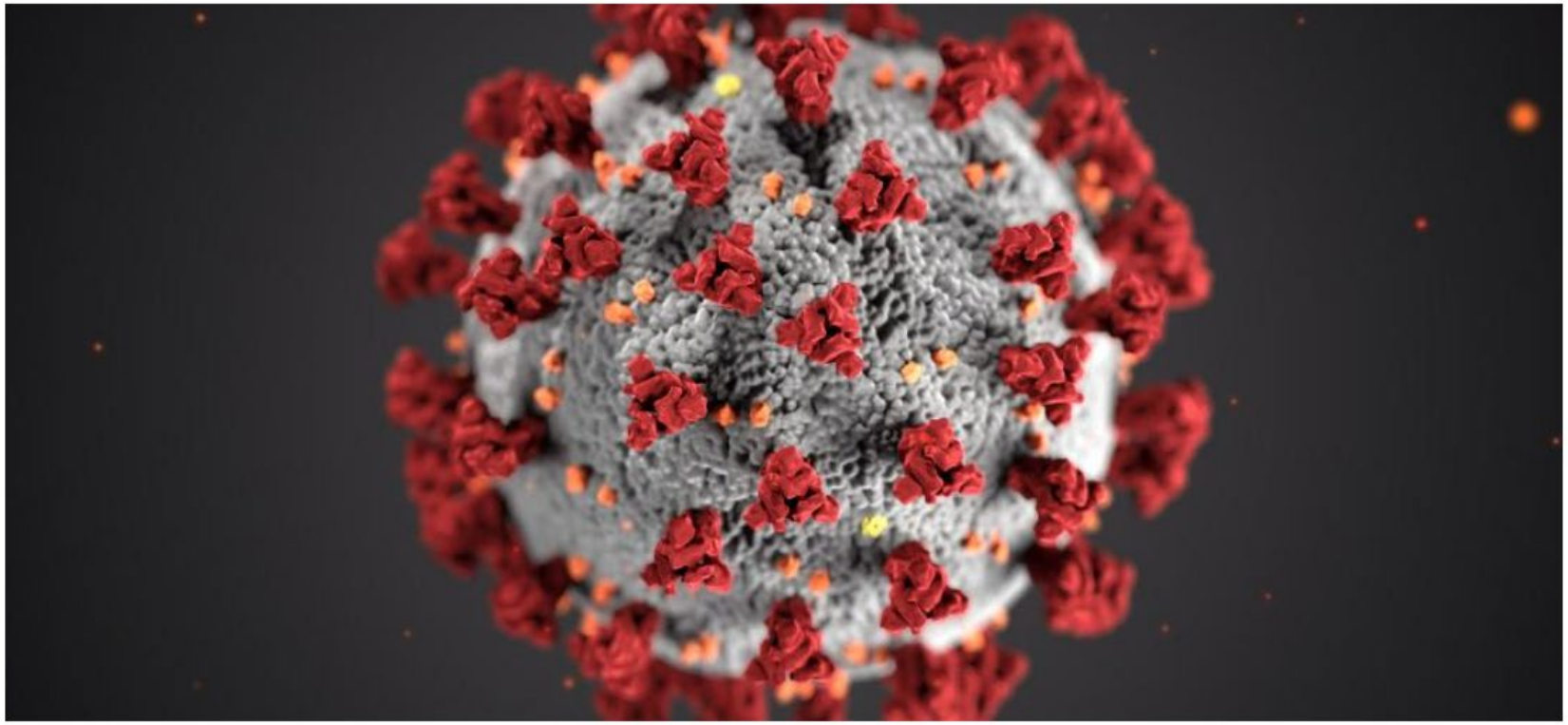
www.covidment.is



UNNUR ANNA VALDIMARSDÓTTIR

Professor in epidemiology at the *Faculty* of Medicine of the *University of Iceland*.

04 Feb Nordic Region And Estonia Join Together On Major Grant For COVID-19 Research

Posted at 15:15h in Uncategorized by stefaniasig · 0 Comments · 0 Likes

This news article was published on 21. oktober 2020 at Nordforsk website

Five Nordic Research Projects On COVID-19 Are Now Being Launched. The Projects Will Take Advantage Of The Nordic Countries' Unique Health Data To Advance The Knowledge Base About COVID-19 For The Benefit Of The Nordic Region And The Entire World.

NordForsk
project number
105668

CoMorMent

Investigating comorbid mental ill-health & cardiovascular disease

The CoMorMent project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant agreement 847776

COVIDMENT

This Program Will Address The Following Specific Aims:

Pre-Pandemic

The role of preexisting psychiatric disorders in subsequent risk and progression of a COVID-19 infection.

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The impact of COVID-19 on short and long-term psychiatric sequel among COVID-19 patients, their families, and frontline workers.

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The role of preexisting psychiatric disorders in subsequent risk and progression of a COVID-19 infection.

Pandemic

The impact of COVID-19 on short and long-term psychiatric sequel among COVID-19 patients, their families, and frontline workers.

Post-Pandemic

The impact of the COVID-19 pandemic on population mental health by the varying national mitigating responses and corresponding COVID-19 related mortality rates across 4 Nordic countries and Estonia.

International Journal of Epidemiology, 2021, 1–15
https://doi.org/10.1093/ije/dyab234
Cohort Profile

Cohort Profile

Cohort Profile: COVIDMENT: COVID-19 cohorts on mental health across six nations

Anna Bára Unnarsdóttir [1†], Anikó Lovik,[2†] Chloe Fawns-Ritchie,[3,4†] Helga Ask,[5†] Kadri Kõiv,[6†] Kristen Hagen,[7†] Maria Didriksen [8†], Lea Arregui Nordahl Christoffersen,[9†] Alexander Berg Garðarsson,[1] Andrew McIntosh,[10] Anna K. Kähler,[11] Archie Campbell [4,12], Arna Hauksdóttir,[1] Christian Erikstrup [13], Dorte Helenius Mikkelsen,[9] Drew Altschul [3], Edda Bjork Thordardottir,[1] Emma Maria Frans,[11] Gerd Kvale,[14,15] Gunnar Tómasson,[1,16] Hanna Maria Kariis,[6] Harpa Lind Jónsdóttir,[1,17] Harpa Rúnarsdóttir,[1] Ingibjörg Magnúsdóttir,[1] Jarle Eid,[18] Jóhanna Jakobsdóttir,[1] Kaspar René Nielsen,[19] Kathrine Agergård Kaspersen,[13,20] Lili Milani,[6] Lill-Iren Schou Trogstad,[21] Lu Yi,[11] Mie Topholm Bruun,[22] Patrick F. Sullivan,[11,23] Per Minor Magnus,[24] Qing Shen [11], Ragnar Nesvåg,[5] Ragnhild E. Brandlistuen [25,26], Reedik Mägi,[6] Sisse Rye Ostrowski,[8,27] Solveig Løkhammer,[28] Stian Solem,[14,29] Ted Reichborn-Kjennerud,[5,30] Thomas Folkmann Hansen,[31,32] Thomas Werge,[9] Thor Aspelund [1,33], David J. Porteous,[4,12†] Fang Fang [2†], Kelli Lehto,[6†] Ole A. Andreassen,[34,35†] Ole Birger Vesterager Pedersen,[36†] Stephanie Le Hellard[14,28†] Unnur A. Valdimarsdóttir[1,11,37*†]

[†]Equal contributions.

COVIDMENT data sources:

- **Harmonized data collections**
  - with registry linkages
- **National registry linkages**
  - Patient registries
  - Drug prescription registries
  - Medical birth registries
  - Social, demographic and academic

(Linkages are possible by Personal Identification Numbers assigned at birth or immigration)

Generation Scotland /CovidLife

the Estonian Biobank COVID-19 and Mental Health Data Collection

the COVID-19 National Resilience Cohort

BRY.DEG2020

the Norwegian Mother, Father and Child Cohort Study

moba

Omtanke2020

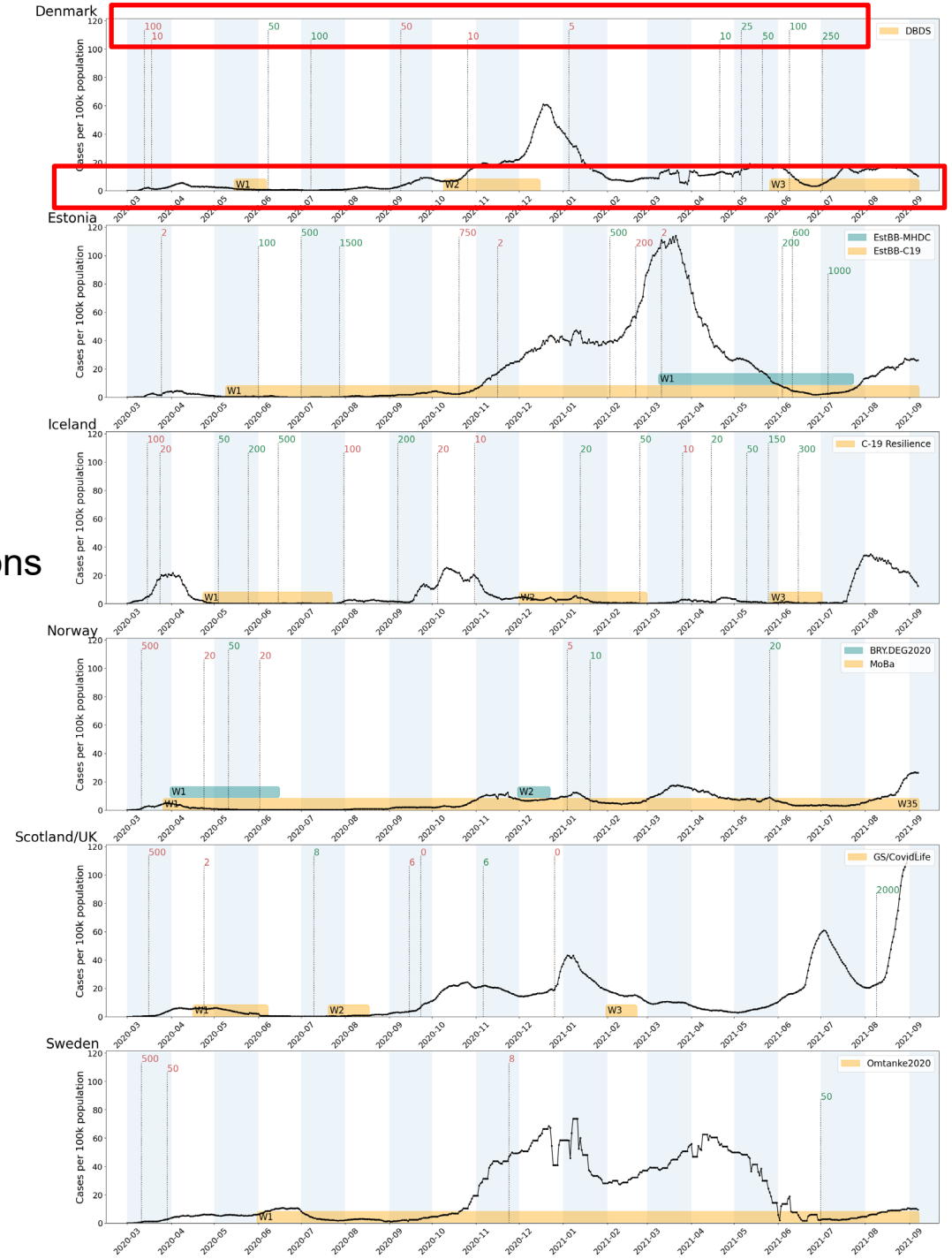
the Danish Blood Donor Study

Cohort size: Total of 402.878 individuals

Varying COVID-19 patterns across countries

→ population mental health?

- Different levels of Covid-19 infections
- Different national restrictions
- Different recruitment strategies
- Different recruitment periods



Oxford COVID-19 Government Response Tracker
https://github.com/OxCGRT/covid-policy-tracker

What has been measured?

- Depressive symptoms (PHQ-9)
- Anxiety symptoms (GAD-7)
- Symptoms of posttraumatic stress disorder (PC-PTSD-5)
- Symptoms of stress (PSS-10)
- Loneliness
- Sleep
- Fatigue
- Cognitive function

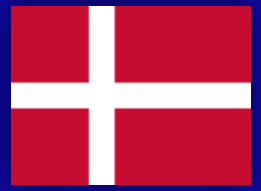
- General health
- Working and life conditions during COVID-19
- SARS-CoV-2 infection status
- COVID-19 symptoms
- Hospitalization

Pre-COVID mental health data are available for all cohorts through self-reports or record linkage to population registers. Most cohorts are linked to national health registries and several cohorts also include biobanks that will be used to study genetic and biological risk factors.

Cohort profile: Key findings

Prevalence of depressive symptoms*
(>=10 on PHQ-9 / >11 on EST-Q2)

16.6%
(95% CI 16.0-17.2%)



7.6%
(95% CI 7.4-7.9%)

15.0%
(95% CI 14.2-15.8%)

4.2%
(95% CI 4.0-4.3%)

17.1%
(95% CI 16.1-18.1%)

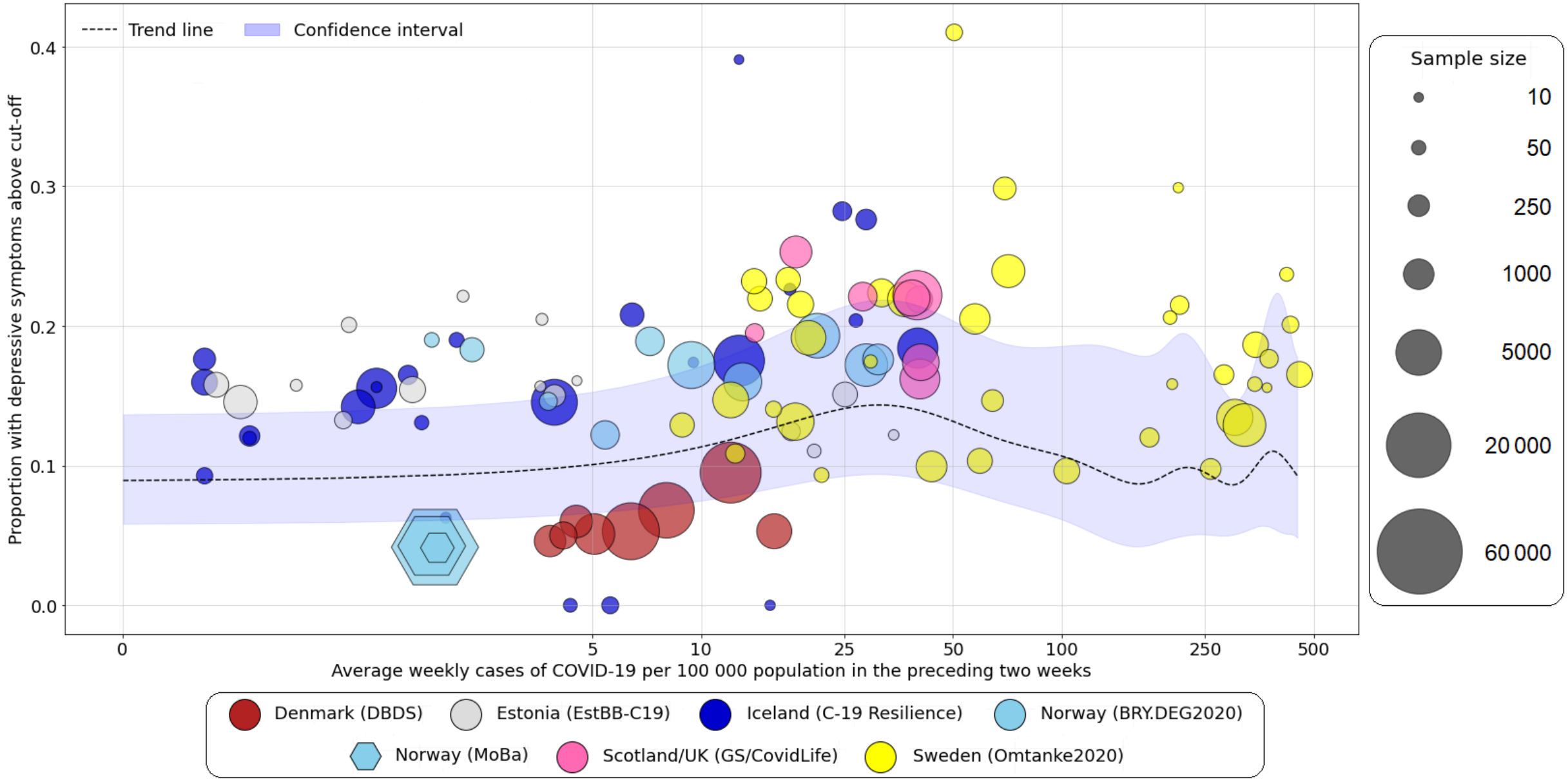
17.1%
(95% CI 16.5-17.7%)

20.8%
(95% CI 20.0-21.6%)

*Adjusted for age and gender

COVID-19 Incidence and prevalence of depression

61% change in population depressive symptoms from 0 to 30 weekly C19 cases per 100 000 population



National COVID-19 incidence and depressive symptoms across cohorts. The COVID-19 incidence is defined as the average number of confirmed cases per week per 100k persons in the two weeks prior to participants' response to the PHQ-9/EST-Q2 (COVID-19 cases excluded). Dotted black line represents trend with 95% confidence interval (blue area).

Strengths

- Large-scale multinational collaboration
- Ongoing semi-harmonized batteries of valid mental health assessments with longitudinal follow-up
- Data-rich record linkages to the national registry resources

Weaknesses

- Differences recruitment
  - Selection bias
- Self-reported questionnaire data
  - Measurement errors

THE LANCET
Public Health
Available online 14 March 2022
In Press, Corrected Proof

Articles

Acute COVID-19 severity and mental health morbidity trajectories in patient populations of six nations: an observational study

Ingibjörg Magnúsdóttir MSc [a*], Anikó Lovik PhD [b*], Anna Bára Unnarsdóttir MPH [a*], Daniel McCartney PhD [c*], Helga Ask PhD [d*], Kadri Kõiv PhD [e*], Lea Arregui Nordahl Christoffersen PhD [f*], Sverre Urnes Johnson PhD [h, i*], Prof Arna Hauksdóttir PhD [a], Chloe Fawns-Ritchie PhD [c, k], Dorte Helenius PhD [f], Juan González-Hijón MSc [b], Li Lu PhD [d, g], Omid V Ebrahimi Cand.Psych [h, i], Prof Asle Hoffart PhD [h, i†], Prof David J Porteous PhD [c†], Prof Fang Fang PhD [b†], Jóhanna Jakobsdóttir PhD [a†] ... Unnur Anna Valdimarsdóttir

Unnur Anna Valdimarsdottir and Ingibjorg Magnúsdóttir

Background: Associations between Covid-19 and mental health (symptoms and disorders) have been well documented for **short-term follow-up** (>6 months)

Aim: Determine 1-year mental health symptoms in individuals with Covid-19 by illness severity and time since Covid-19 illness

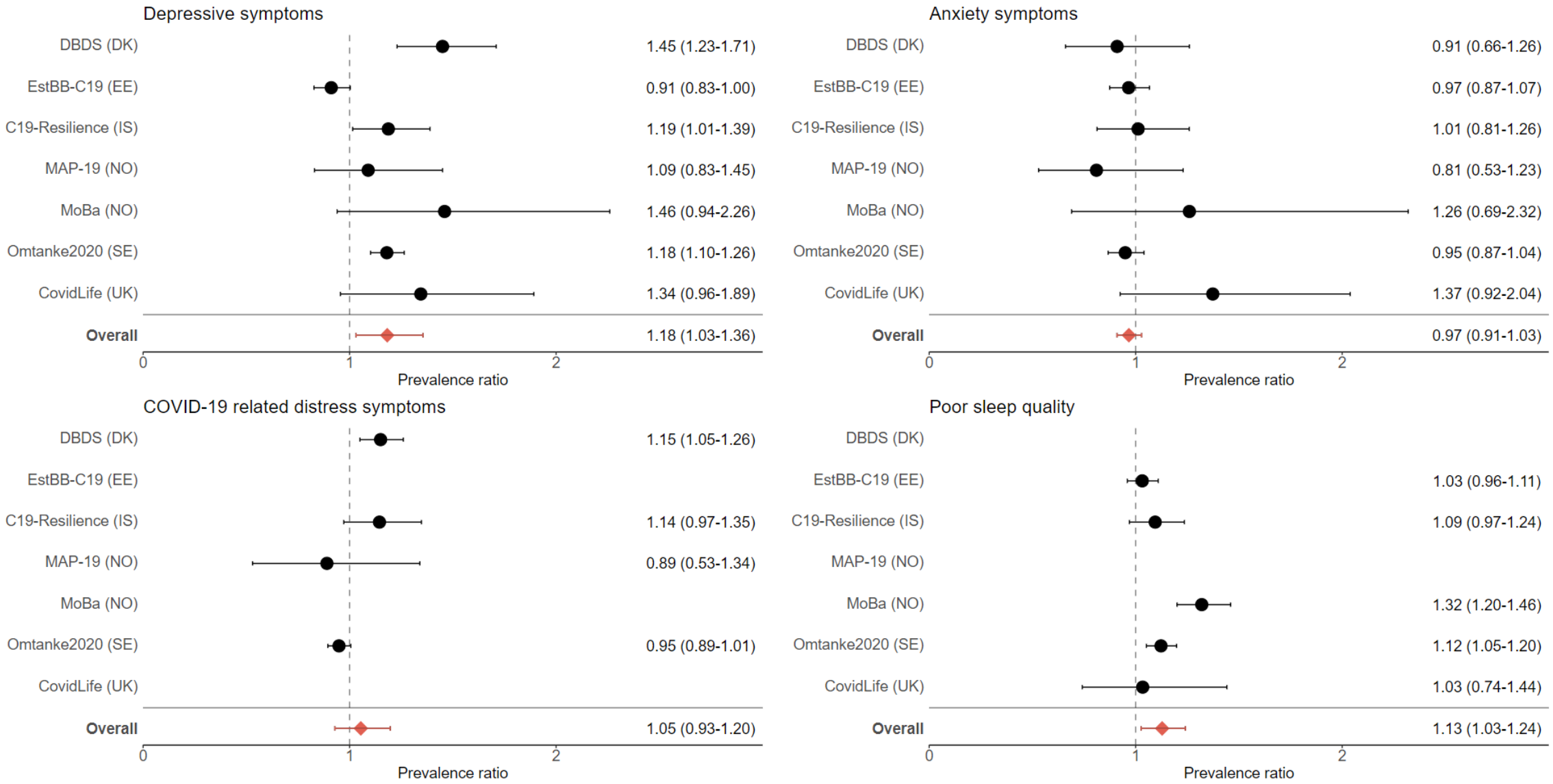
Outcomes: Symptoms of depression, anxiety and PTSD, and poor sleep quality
(dichotomized with cut-off)

N=247 249

	COVID-19 diagnosis n (%)	Others n (%)
Total	9979 (4.0)	237 270 (96.0)
DBDS (DK)	1111 (3.5)	29 806 (96.4)
EstBB C-19 (EE)	2121 (21.2)	7868 (78.8)
C-19 Resilience (IS)	1144 (5.3)	20 471 (94.7)
MoBa (NO)	1995 (1.5)	130 456 (98.5)
MAP-19 (NO)	110 (1.1)	9951 (98.9)
Omtanke (SE)	3175 (13.4)	20 523 (86.6)
CovidLife (UK)	323 (1.7)	18 195 (98.2)
Gender		
Male	3202 (32.1)	90 678 (38.2)
Female	6772 (67.9)	146421 (61.7)
Other	3 (0.0)	62 (0.0)
Missing	2 (0.0)	129 (0.1)
Age		
Mean age	*46.6*	*48.9*
18-29 years	1137 (11.4)	13 084 (5.5)
30-39 years	1701 (17.0)	26 266 (11.1)
40-49 years	3072 (30.8)	100 097 (42.2)
50-59 years	2512 (25.2)	58 002 (24.4)
60-69 years	656 (6.6)	21 861 (9.2)
70 years +	435 (4.4)	17 754 (7.5)
Missing	4 (0)	206 (0.1)
Education		
Compulsory or less	286 (2.9)	10 469 (4.4)
Upper secondary, vocational or other	2029 (20.3)	60 679 (25.6)
Bachelor's/ diploma university degree	2507 (25.1)	83 343 (35.1)
Master's or Ph.D.	1744 (17.5)	47 786 (20.1)
Missing or unavailable[a]	3413 (34.2)	34 993 (14.7)

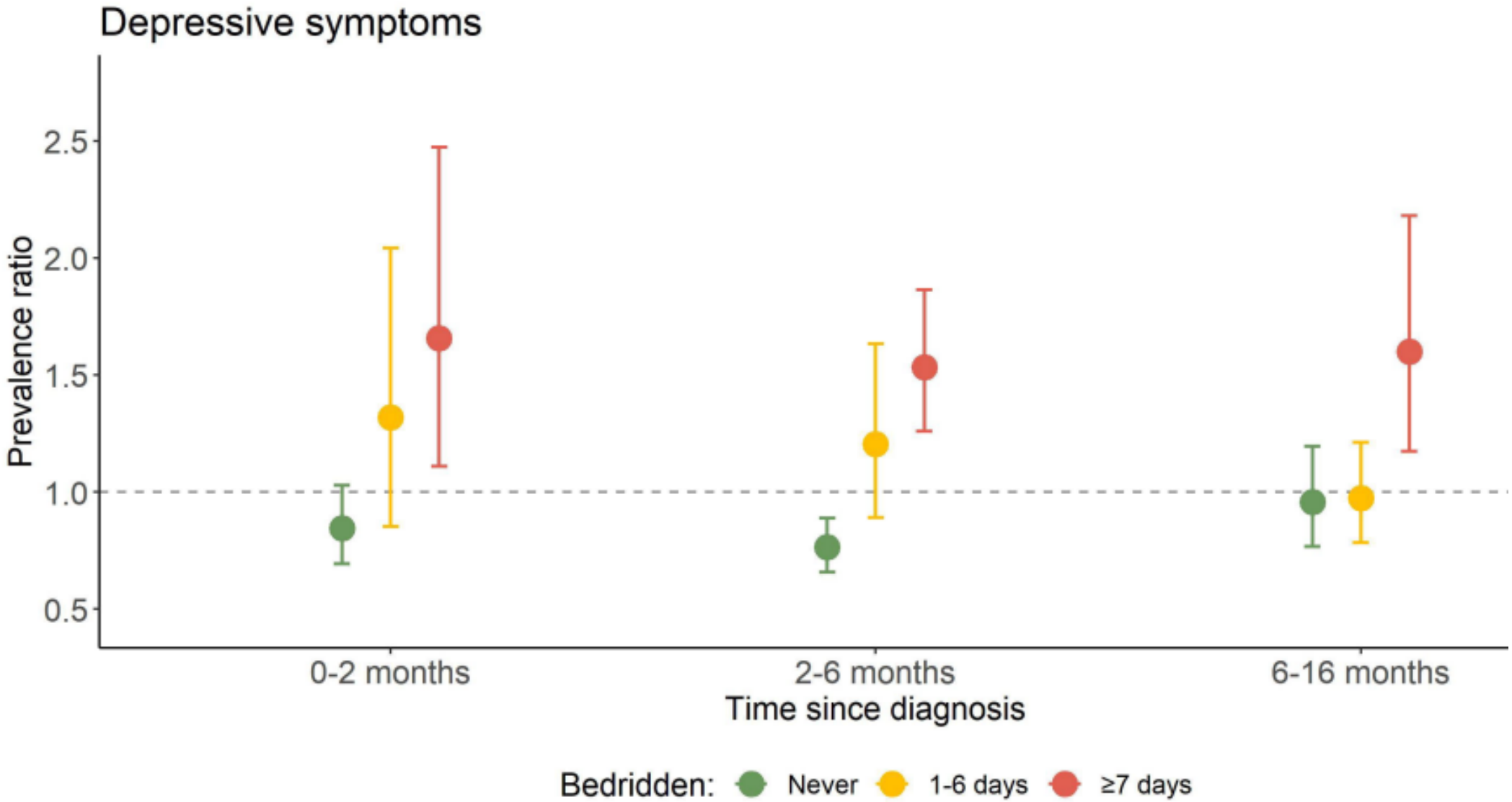
Magnúsdóttir et al., Lancet Public H

	COVID-19 diagnosis n (%)
Total	9979 (4.0)
Illness severity – Time bedridden	
Never bedridden	3160 (31.7)
Bedridden 1-6 days	2453 (24.6)
Bedridden 7 days or more	1613 (16.2)
Missing or unavailable[c]	2753 (27.6)
Illness severity – Hospitalized	
Non-Hospitalized	8000 (80.2)
Hospitalized	297 (3.0)
Missing or unavailable[d]	1682 (16.9)
Time since diagnosis	
< 8 weeks	3108 (31.1)
2-6 months	3642 (36.5)
7+ months	3229 (32.4)

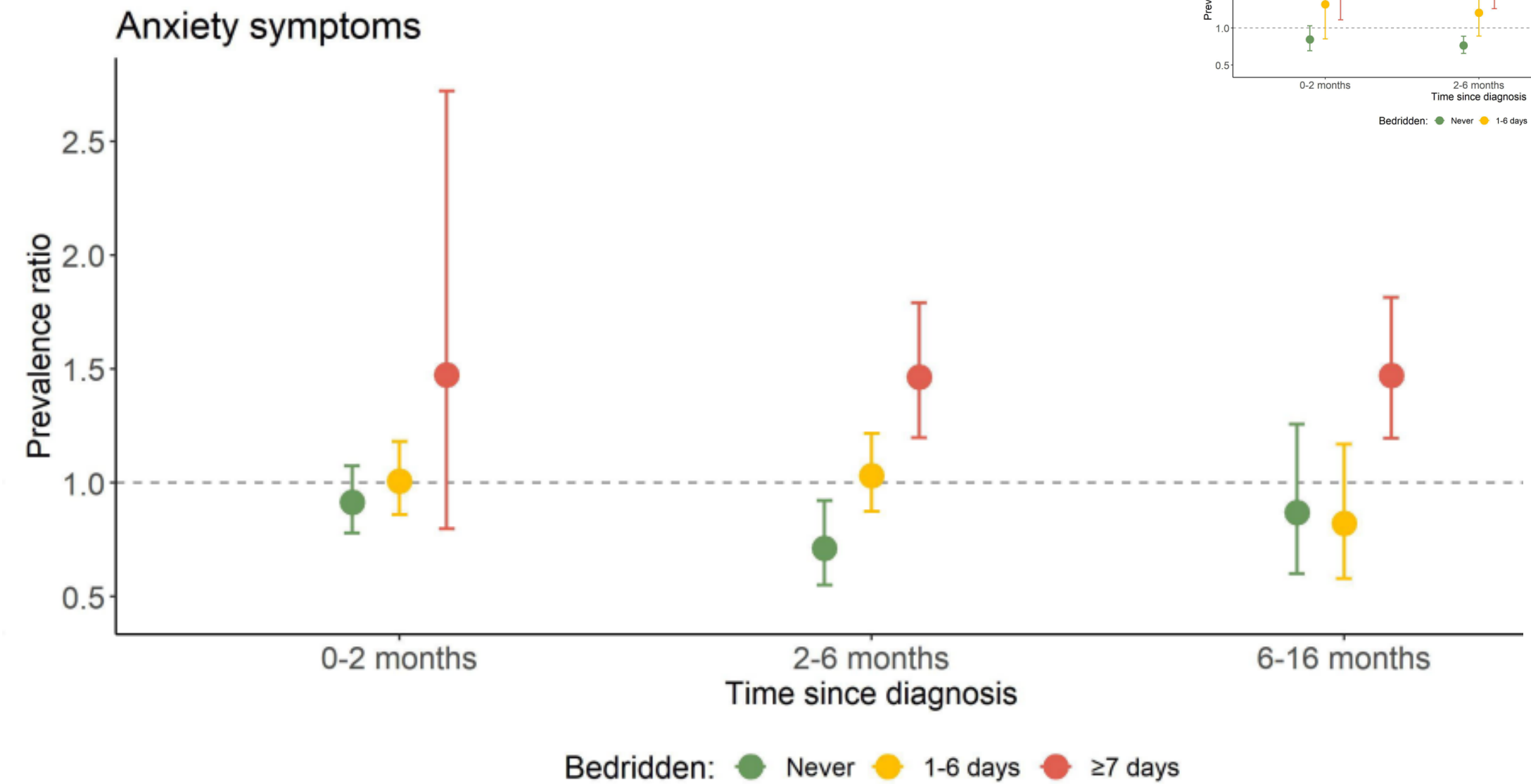


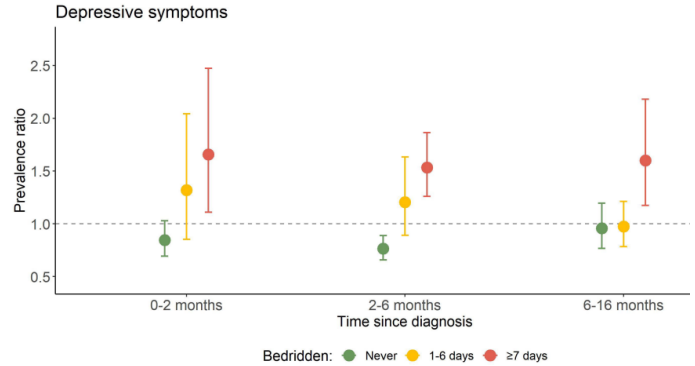
Covariates in all models: Gender, age, education, relationship status, history of diagnosis of any psychiatric disorder, chronic medical conditions, response period (April—June 2020; July—September 2020; October—December 2020; January—March 2021; April—August 2021), BMI and smoking.

16-month follow-up of mental health in COVID-19 patients

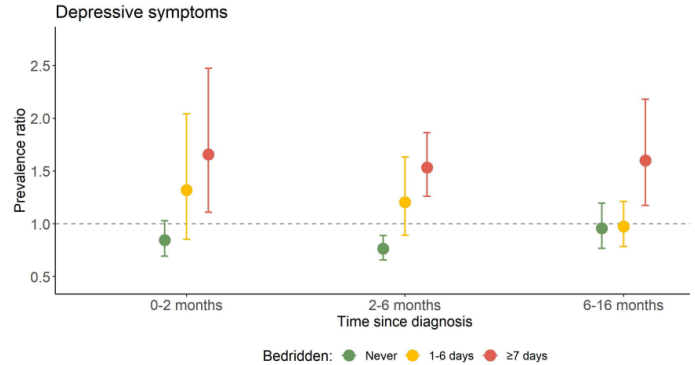


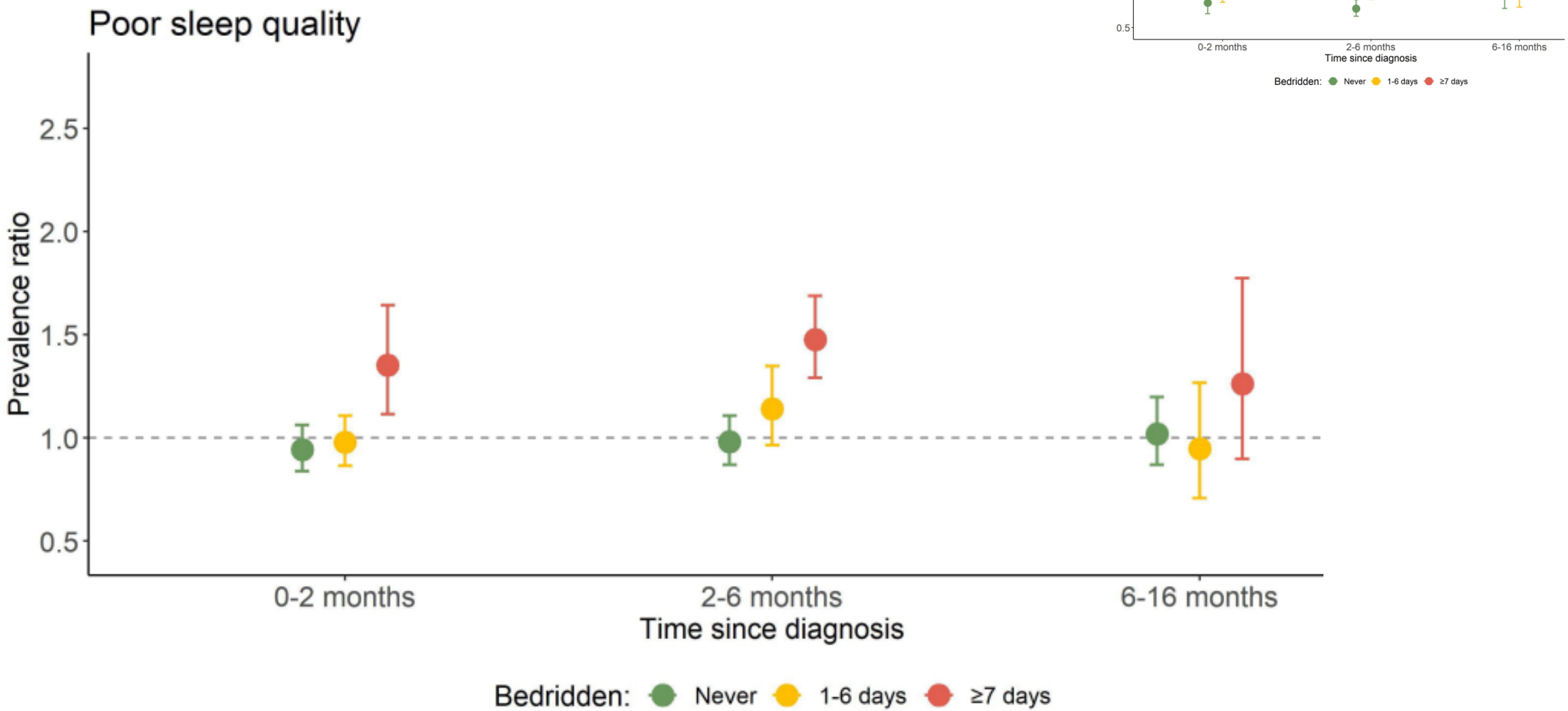
16-month follow-up of mental health in COVID-19 patients

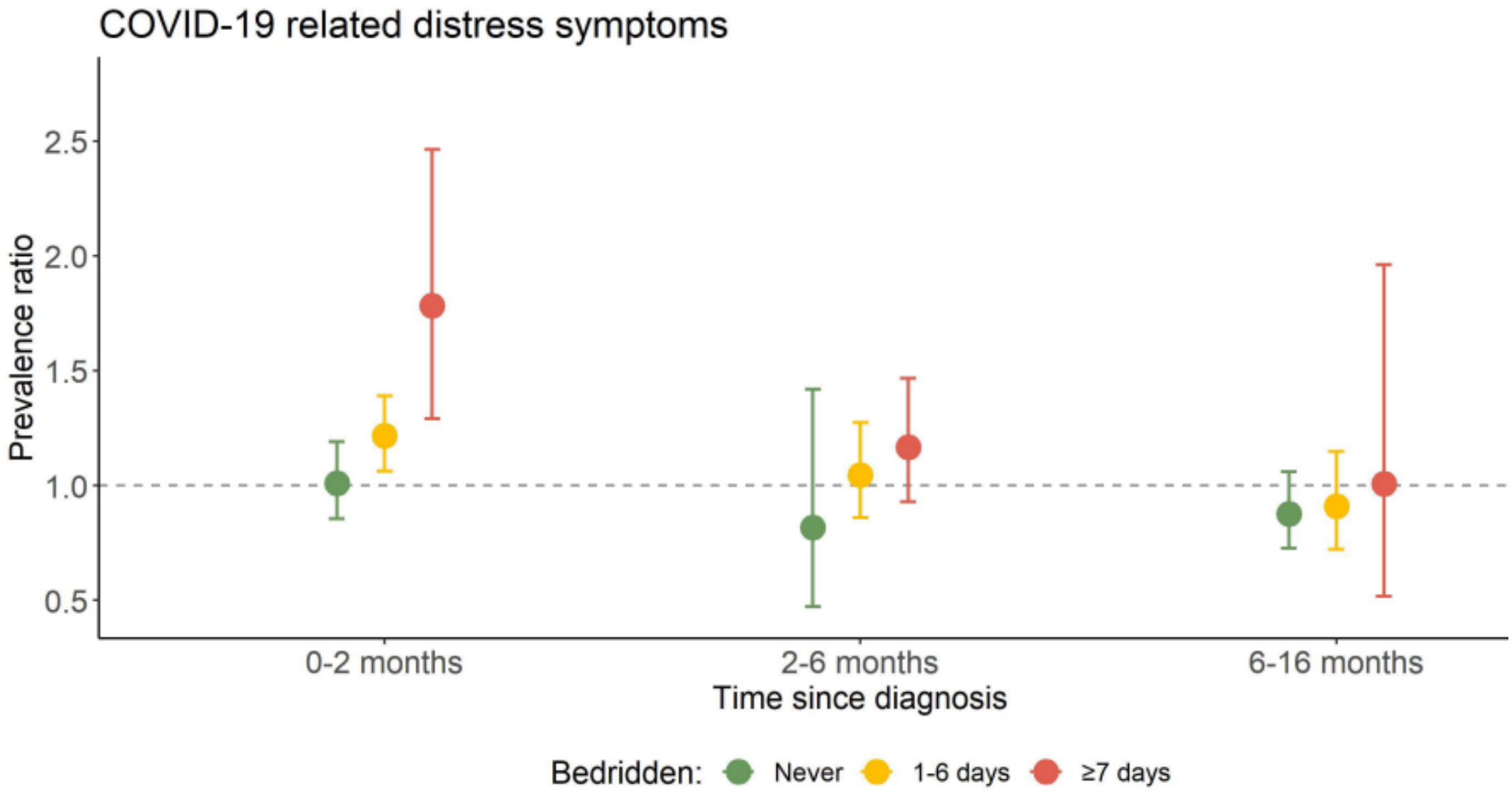




16-month follow-up of mental health in COVID-19 patients






COVID-19 related distress symptoms
Prevalence ratio
2.5
2.0
1.5
1.0
0.5
0-2 months
2-6 months
6-16 months
Time since diagnosis
Bedridden:
Never
1-6 days
≥7 days

Conclusion:

- Acute infection severity is associated with long-term mental morbidity among COVID19 patients

Mechanisms:

- the worry of having infected others and the unpredictable prognosis of COVID-19 (e.g. worrying about long-term health effects, or even death) → attenuated with time
- Persistent symptoms → due to continued physical long-COVID symptoms

→ the inflammatory processes among patients suffering severe acute illness

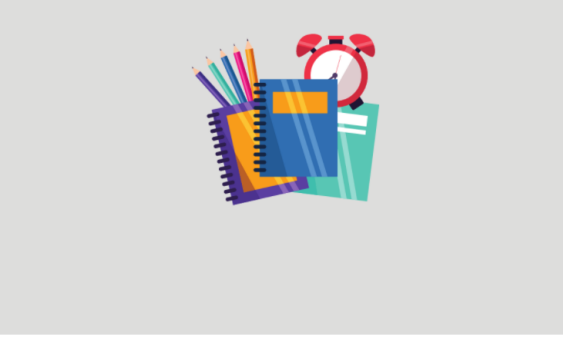
Conclusion

- COVID-19 is an important predictor of persistent mental health symptoms up to one year after diagnosis
- Individuals diagnosed with COVID-19 but never bedridden tended to have lower risk of adverse mental health symptoms
- Individuals bedridden due to COVID-19 for 7 days or longer showed 50-60% elevated symptom levels of depression and anxiety throughout the first year after diagnosis
  - Symptoms of posttraumatic stress were significantly attenuated after the first 2 months

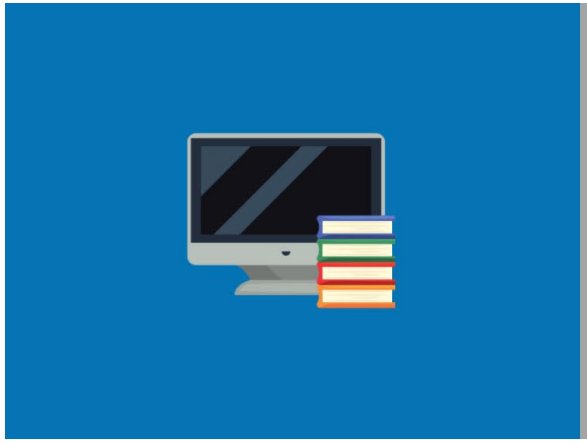
COVIDMENT: Focus on vulnerable and highly affected populations, But also the general population

Psychosocial Consequences Of The COVID-19 Pandemic

Illness Severity And Risk Of Mental Morbidities Among Patients Recovering From COVID-19

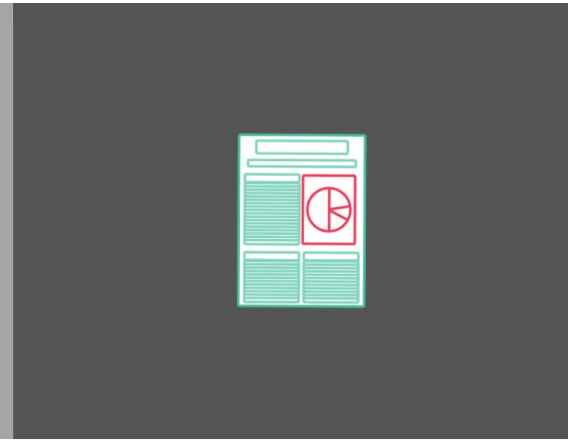


Cohort Profile: COVIDMENT: COVID-19 Cohorts On Mental Health Across Six Nations

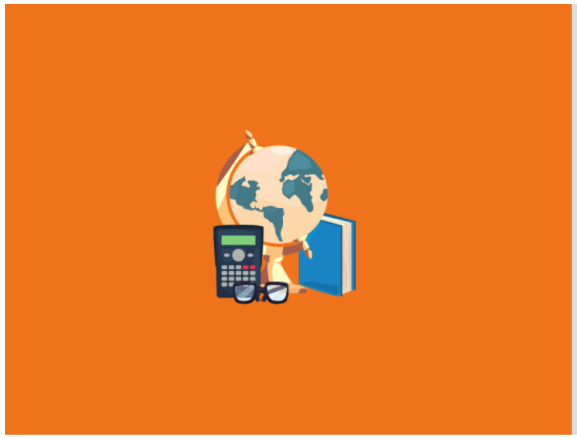


One-Year Mental Health Trajectories Of COVID-19 Patients Across 6 Nations

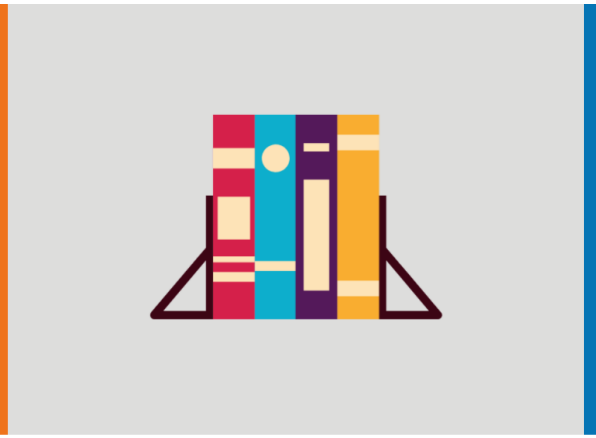
Polygenic Risk Score For Psychiatric Disorders And COVID-19 Related Outcomes



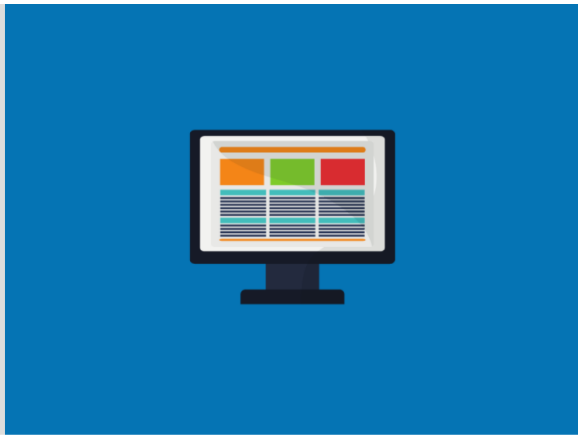
Mental Health Of Healthcare Workers In COVID-19



Mental Health Of Significant Others Of COVID-19 Patients



Cognitive Function And Fatigue Among COVID-19 Patients



The Psychological Impact Of Quarantine

NIPH
Norwegian Institute of Public Health

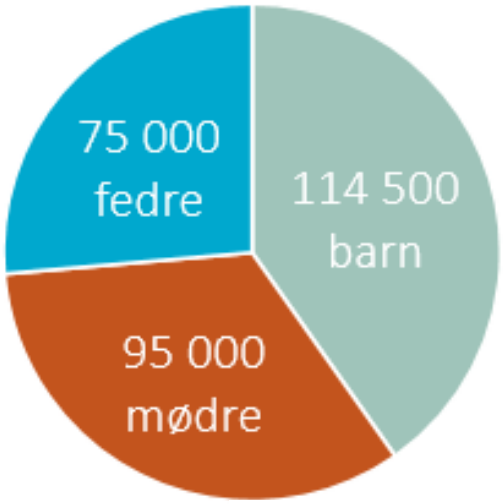
Norwegian Mother, Father and Child Cohort Study (MoBa)

STATUS: **ACTIVE**

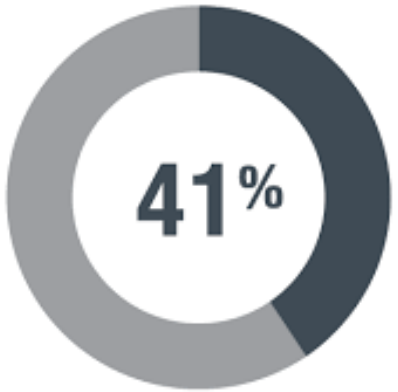
The Norwegian Mother, Father and Child Cohort Study is a unique study where over 90,000 pregnant women were recruited from 1998 to 2008. More than 70,000 fathers have participated.

moba

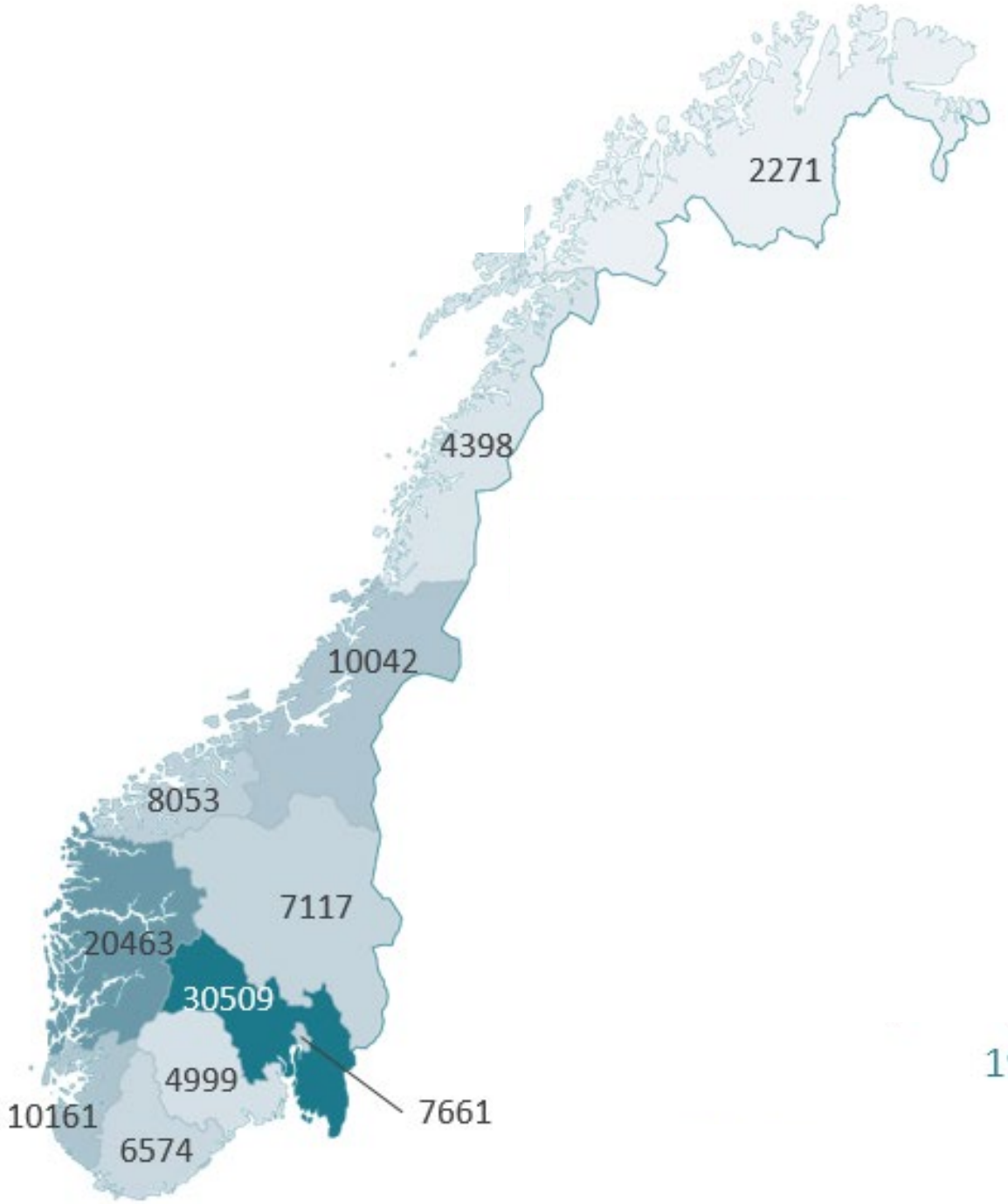
https://www.fhi.no/en/studies/moba/



284 500 participants



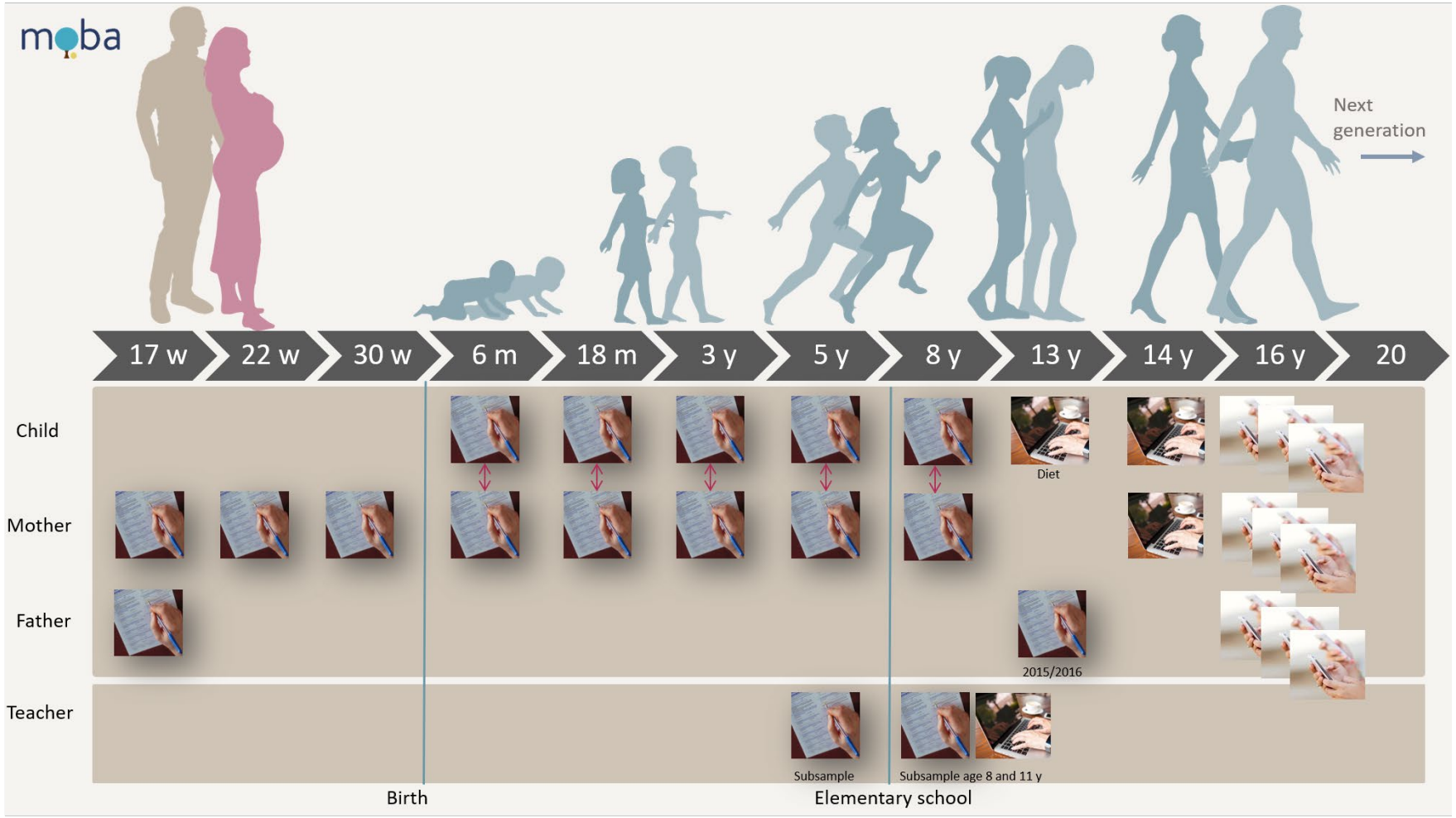
younger women, smokers, and women with low educational level were less likely to participate in MoBa (Nilsen et al., 2009).

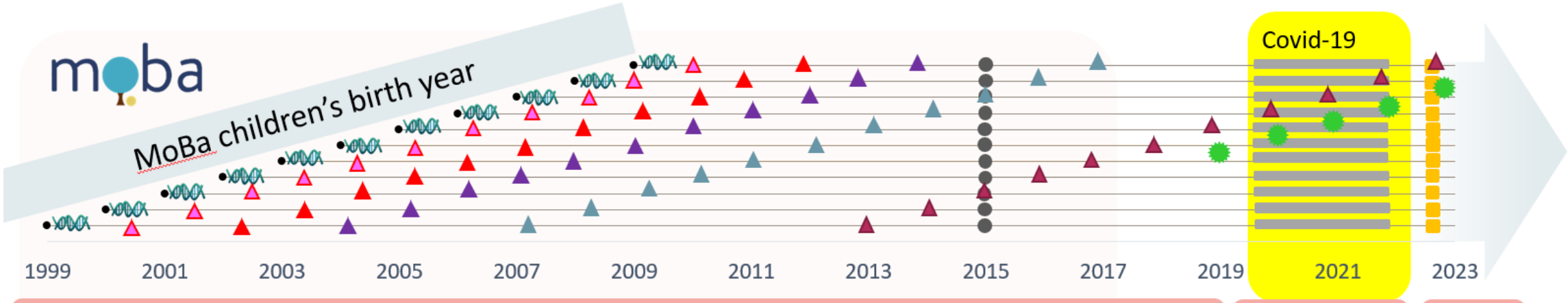


Birth year

First MoBa child was born October 1999
Last MoBa child was born July 2009

LONG FOLLOWUP




moba
MoBa children's birth year
Covid-19
1999
2001
2003
2005
2007
2009
2011
2013
2015
2017
2019
2021
2023
Rich data on environmental factors, parental behavior and characteristics, and child development and mental health from 3 data collections during pregnancy and 8 data collections from birth until the children were 17 yrs old
During Covid19
Post-Covid19
DNA collected during pregnancy/at birth
3 Qs during pregnancy (mothers/1 for fathers)
2 Qs (6 & 18 months) (mothers)
Q 3 yrs (mothers)
Q 5 yrs (mothers)
Q 8 yrs (mothers)
Q 14 yrs (mothers/adolescents)
Q father#2 (fathers)
MoBaYng 16-17 yrs (monthly to adolescents)
Covid19 Qs (biweekly to adults)
Post Covid19 Qs (adults/adolescents)

MoBa Corona

- Mother, father, youth (16-17,5 years)
- Every other week since march-april 2020 - current

- Invited:
  - 149 000 parents – responded: 75% (111 750)
  - 17 250 youth – responded: 50% (8 625)

including screening measures for depressive symptoms [measured with Patient Health Questionnaire-9 (PHQ-9),[32] Emotional State Questionnaire (EST-Q2)],[33,34] anxiety [General Anxiety Disorder-7 (GAD-7),[35] EST-Q2,[34] the Dimensional Obsessive-Compulsive Scale (DOCS-SF)],[36] PTSD [the Primary Care PTSD Screen for DSM-5 (PC-PTSD-5),[37] PTSD Checklist for DSM-5 (PCL) short form],[38] stress [Perceived Stress Scale 4 (PSS-4),[39] Perceived Stress Scale 10 (PSS-10),[40] Impact of Event Scale—Revised (IES-R-15)],[41] loneliness [UCLA Loneliness Scale version 3 (UCLA-3),[42] EST-Q2)][34] sleep [Pittsburgh Sleep Quality Index (PSQI),[43] EST-Q2,[34] Bergen Insomnia Scale (BIS)],[44] fatigue [EST-Q2,[34] Chalder Fatigue Questionnaire (CFQ)],[45] cognitive function [Patient-Reported Outcomes Measurement Information System (PROMIS) short form][46] as well as happiness (summarized in Table 2). In addition, participants in each cohort answered extensive questionnaires on general health and working and life conditions during COVID-19, as well as questions on COVID-19-specific factors, such as COVID-19 symptoms, SARS-CoV-2 infection status and hospitalization (see Supplementary Table S2, available as Supplementary data at IJE online, for a detailed overview of measures).

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