



Swedish Agency for Work  
Environment Expertise

# The Work Environment during Coronavirus Epidemics and Pandemics: A Systematic Review of Studies Using Quantitative, Qualitative, and Mixed-Methods Designs

2nd International PEROSH Conference on Prolonging Working Life

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Av Joel Malmén

Publicerad 21 september, 0

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Covidvård i Stockholmm Staffan Löwstedt/SvD

CORONAVIRUSET | SMITTAN I SVERIGE



# Antalet covidpatienter ökar kraftigt i Stockholm

För tredje veckan i rad har antalet sjukhusinläggningar för covid-19 ökat

# Aim

To systematically review research on work environments and employee health during coronavirus epidemics or pandemics.

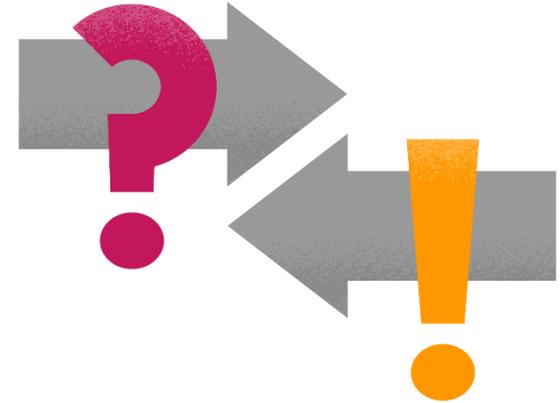
Nyberg, A.; Rajaleid, K.; Demmelmaier, I. The Work Environment during Coronavirus Epidemics and Pandemics: A Systematic Review of Studies Using Quantitative, Qualitative, and Mixed-Methods Designs. *Int. J. Environ. Res. Public Health* 2022, 19(11)



# Specific research questions

During an epidemic or pandemic caused by a coronavirus,

- How is the work environment affected?
- What are the associations between work environment factors and employee health?
- What are the effects of interventions to improve the work environment or health?



# Selection criteria

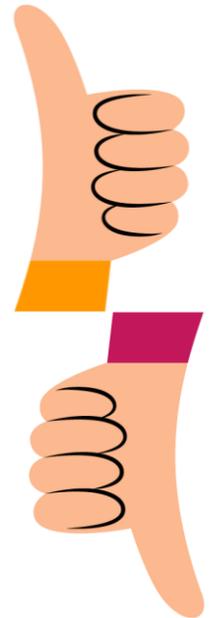
## The inclusion criteria for the present study were:

- Language: Swedish or English;
- Population: The working population;
- Exposure: Corona virus epidemic or pandemic (Covid-19, SARS, and MERS)
- Outcome: Work environment.

## No restrictions regarding:

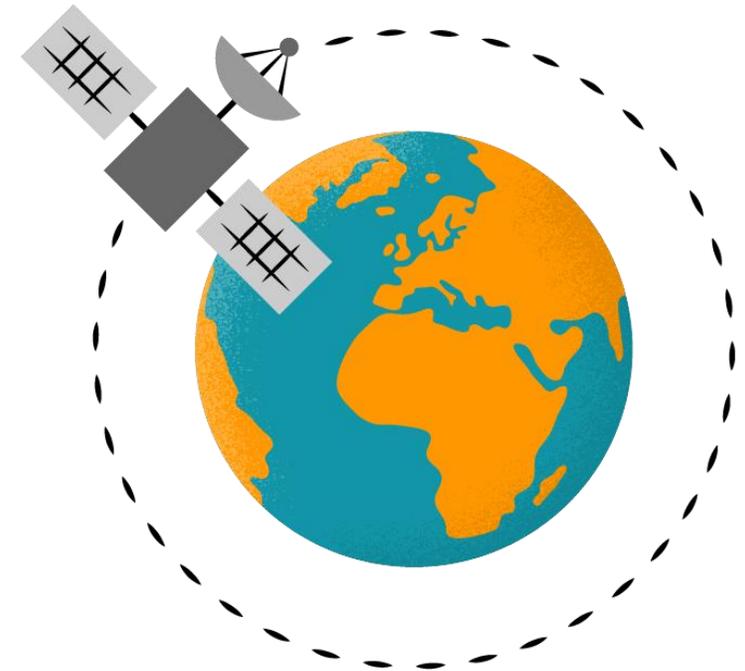
- Part of the world
- Labour market sector
- Study design
- Type of work environment
- Type of health outcome

**Only original articles published in peer-review journals were considered.**



# Search strategy

- developed by the review team in collaboration with a librarian at Uppsala University
- databases Cinahl, Medline, PsycInfo, and Web of Science
- searched for articles published up until October 2020



# Quality assessment

- Mixed Methods Appraisal Tool (MMAT)\*
- Different assessment criteria considered for each study design
- Each study given a quality score, 1-4 or 1-5 depending on study design
- Overall quality: High, medium, or low quality

\*Hong, Q.N.; Fàbregues, S.; Bartlett, G.; Boardman, F.; Cargo, M.; Dagenais, P.; Gagnon, M.-P.; Griffiths, F.; Nicolau, B.; O’Cathain, A.; et al. The Mixed Methods Appraisal Tool (MMAT) version 2018 for information professionals and researchers. *Educ. Inf.* 2018, 34, 285–291. <https://doi.org/10.3233/EFI-180221>.

# Results

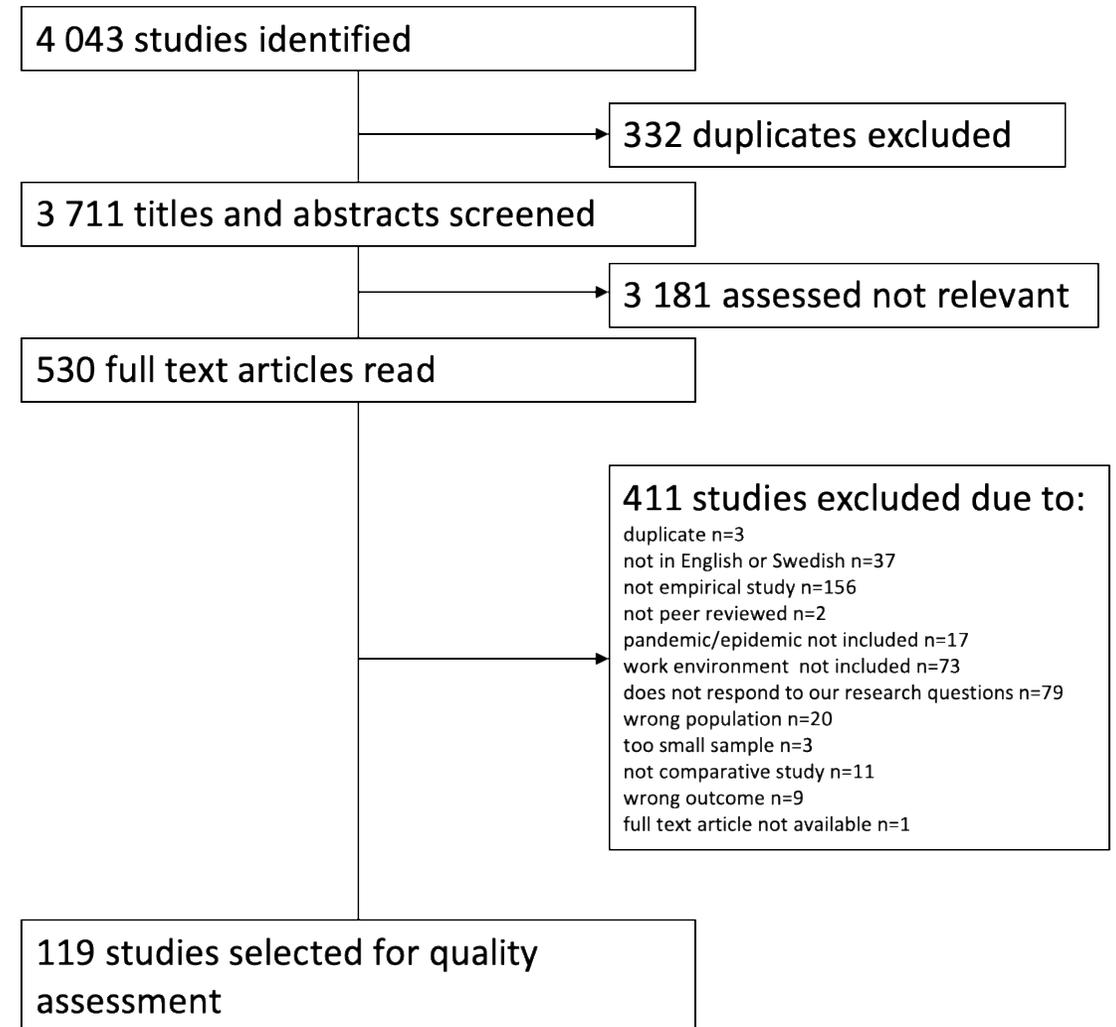
Of 119 studies 24 were excluded due to low quality

Totally 95 studies

- 85 of health and social care
- 10 of other industries

Studies derive from all over the world

Most of them are about covid-19, but there are also studies about SARS and MERS



# Results

Most studies are about:

- Psychosocial work environment and symptoms of mental ill-health (depression, anxiety, burnout, stress-related disorders)

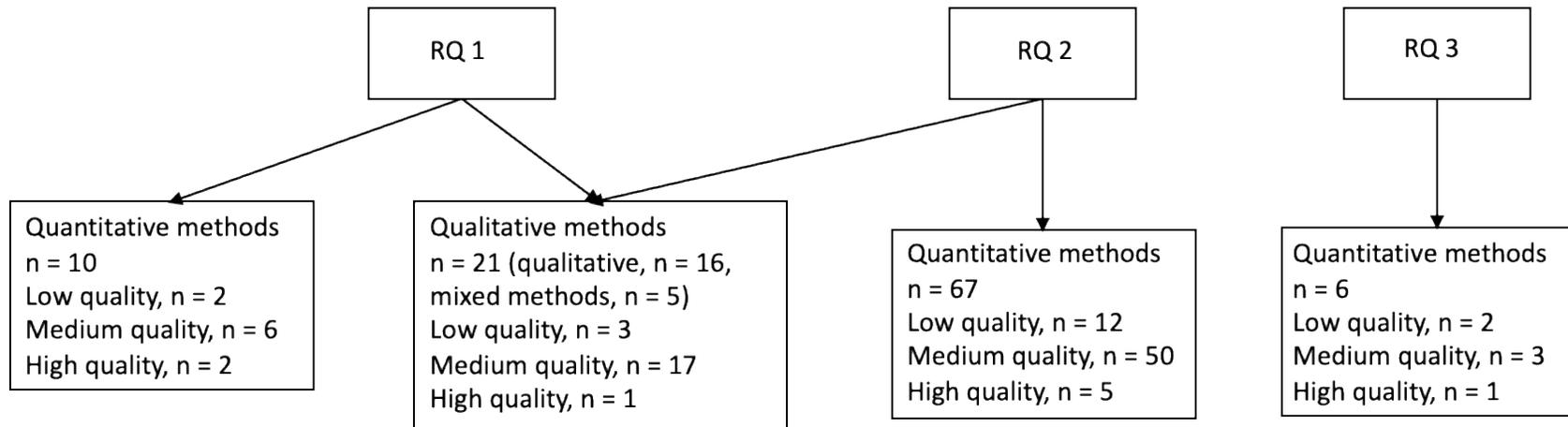
There are also studies about:

- Factors associated with risk of infection in the workplace
- PPE and skin reactions or headaches



# Results: Health and social care

85 studies of medium or high quality



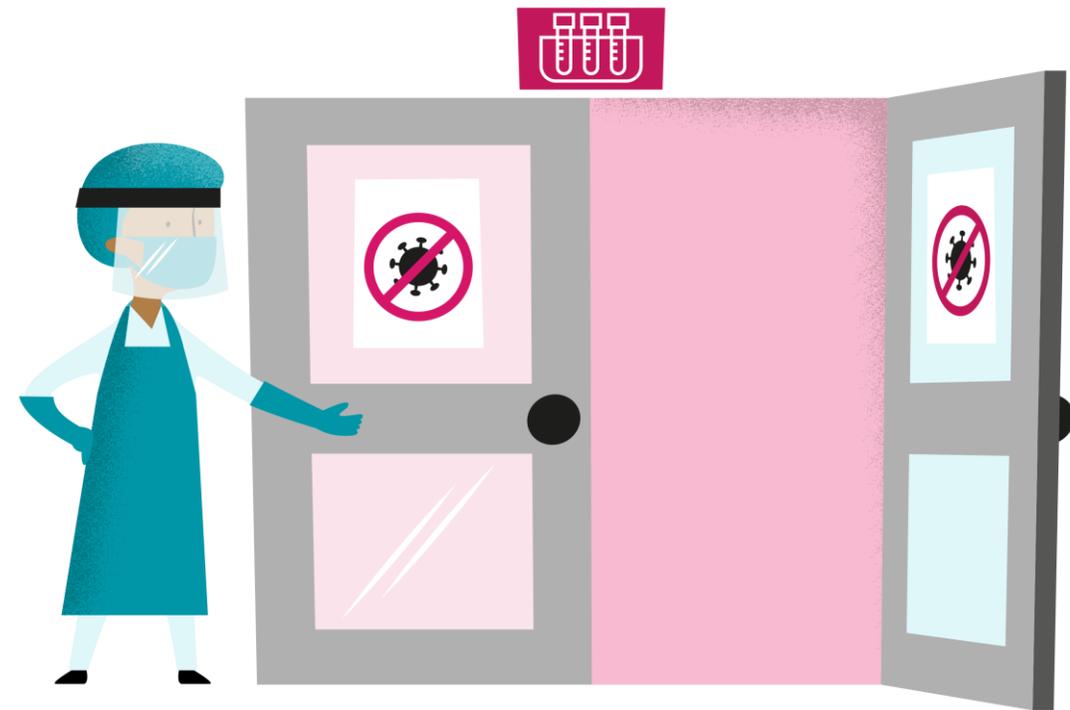
## Research questions (RQ):

During an epidemic or pandemic caused by a coronavirus,

1. How is the work environment affected?
2. What are the associations between work environment factors and employee health?
3. What are the effects of interventions to improve the work environment or health?

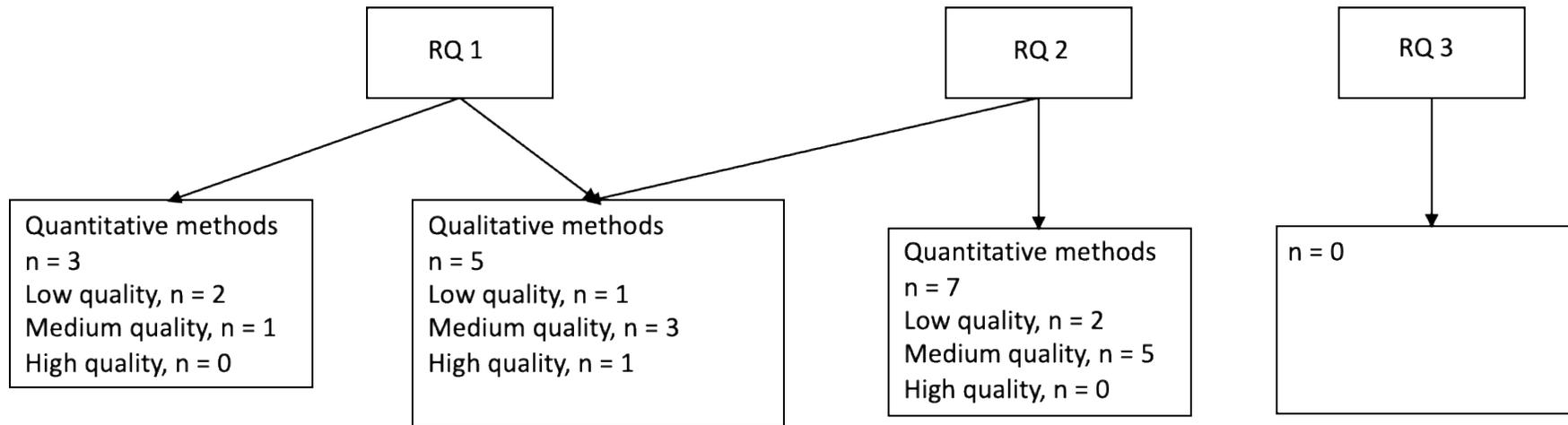
# Themes in health and social care

- Working in the frontline
- High job demands
- PPE and risk of infection
- Leadership and work organisation
- Lack of resources
- Competence and learning
- Support
- Stigma
- Interaction between work and private/family life
- Remote work



# Results: Other sectors

10 studies of medium or high quality



## Research questions (RQ):

During an epidemic or pandemic caused by a coronavirus,

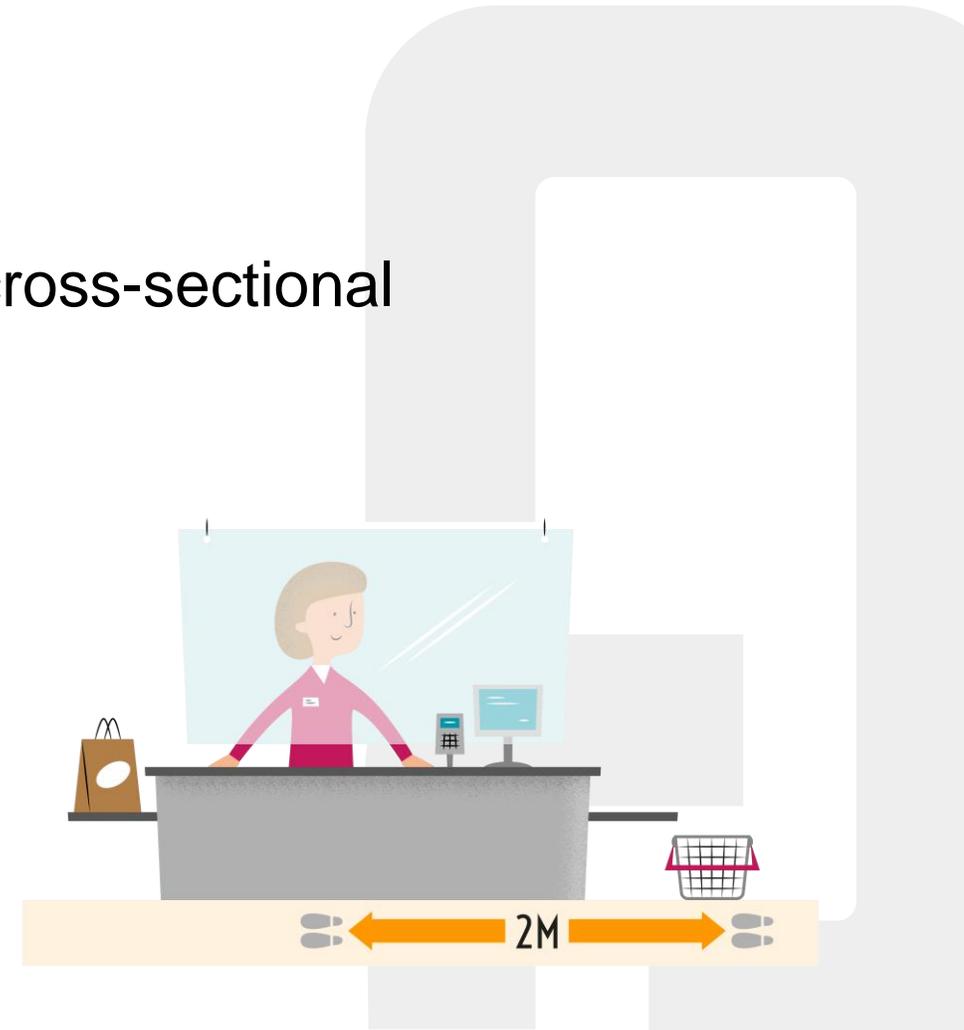
1. How is the work environment affected?
2. What are the associations between work environment factors and employee health?
3. What are the effects of interventions to improve the work environment or health?

# Conclusions

The scientific basis for all research questions

- Was insufficient (too few studies)
- Has methodological shortcomings (e.g. cross-sectional research design)

No firm conclusions can be drawn



# Preliminary conclusions: Health and social care

During a pandemic or epidemic, how is the work environment within health and social care affected?

- Quantitative (high workload) and qualitative (difficult work tasks) demands appear to increase
- Employees seem to quickly have to adjust to new routines and collaborations, work under great uncertainty and with lack of resources regarding personnel and PPE.
- The situation appears to demand an attentive leadership, regularly providing clear information and sufficient social support to employees.

# Preliminary conclusions: Health and social care

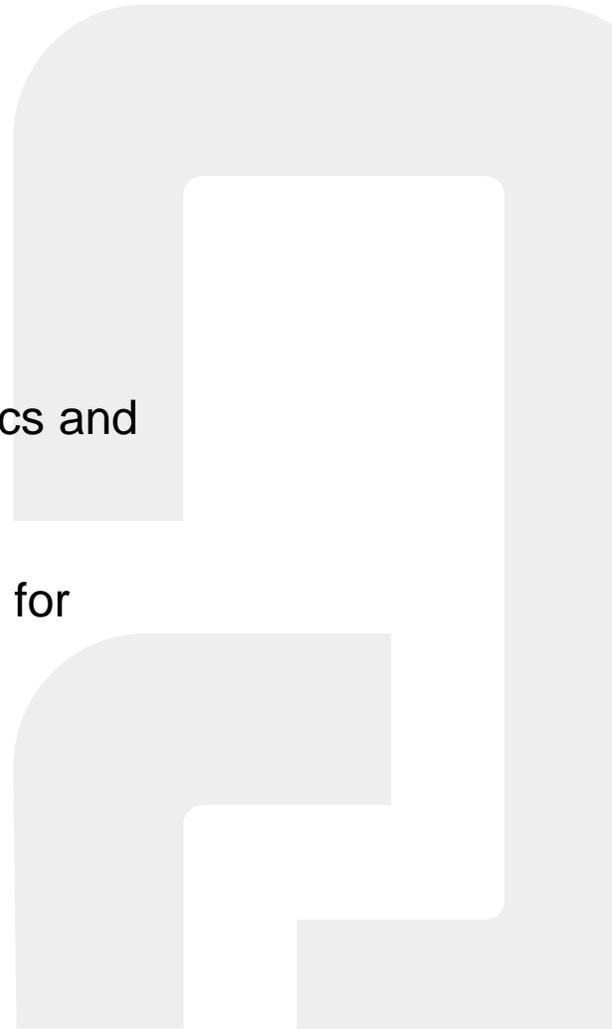
During a pandemic or epidemic, what are the associations between work environment factors and employee health?

Symptoms of mental ill-health among employees are associated with:

- Working with infected patients
- Lack of PPE
- High job demands
- Lack of competence to meet new demands
- Lack of social support at work
- Experiencing stigma related to working with infected patients (others avoid contact)

# Knowledge gaps

- Effects of work exposures on mental ill-health over time
- Effects of interventions to improve work environment and health
- Stigma of employees working with infected patients
- How sectors other than health and social care are affected during epidemics and pandemics
- How positive experiences in working life during the pandemic can be used for future development of work environments



# Key messages

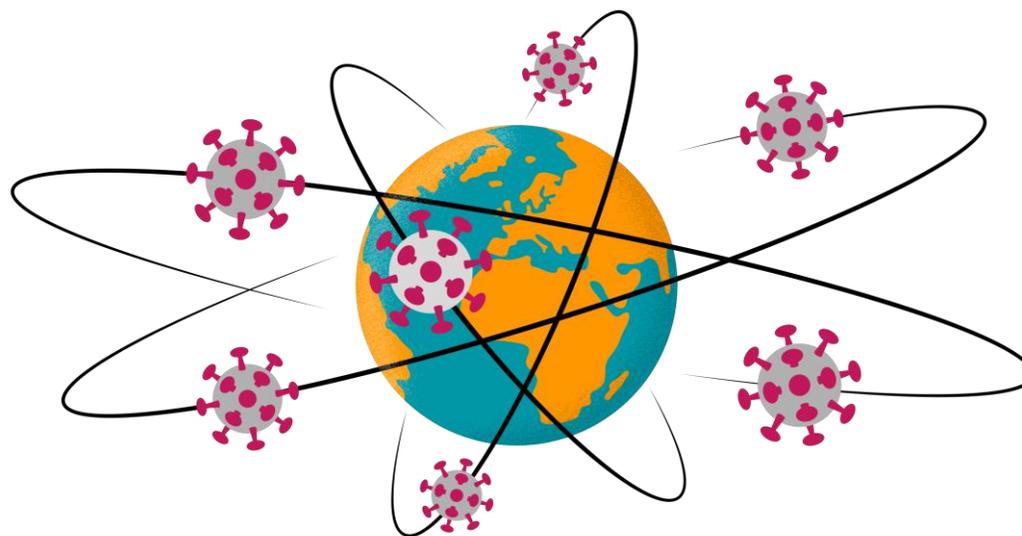
The work environment and mental health were strongly affected in healthcare employees during the first months of the COVID-19 pandemic.

Longitudinal studies are needed to evaluate the possible long-term consequences of severe and long-lasting stressors in the work environment during the COVID-19 pandemic within healthcare.

Studies evaluating the effects of interventions aiming to improve the work environment and mitigate negative health effects are needed to prepare for future pandemics.

Studies of higher quality with regards to sampling strategies, exposure and outcome measurements, control of possible confounders, etc. are needed to move the research field forward.

Studies from industries outside healthcare are needed to obtain a broader picture of how pandemics affect the work environment of entire labor markets.



# Thank you!

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