REACH-OUT:
Caring for the healthcare workforce post-COVID-19

A longitudinal mixed-methods study of post-COVID-19 outcomes in healthcare workers from diverse ethnicities

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Contents

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Introduction

REACH-OUT is a mixed-methods study that examines the long-term impacts of COVID-19 on healthcare workers (HCWS) from diverse ethnic backgrounds in the UK, estimating the prevalence of long COVID and understanding its impact on various aspects of their health.

This update report presents progress to date, which includes the completion of a systematic review and meta-analysis on the global prevalence of long COVID among HCWs (work package 1). Based on the main findings of this review, we also share some important implications and policy recommendations. Additionally, The REACH-OUT questionnaire, focusing on post-COVID-19 outcomes, was conducted (work package 1) with over 4,000 participants, including those from ethnic minority backgrounds. Recruitment for the longitudinal qualitative study (work package 3) involving HCWs has commenced, with 13 interviews conducted so far.

The REACH-OUT study

The REACH-OUT study aims to investigate the long-term impacts of COVID-19 on healthcare workers (HCWs) from diverse ethnic backgrounds in the United Kingdom (UK). The study is a collaboration between the NHS Race and Health Observatory and the University of Leicester, and it builds upon the UK-REACH project. The primary objectives of REACH-OUT are to estimate the prevalence of long COVID among HCWs, characterise the syndrome, and understand its effects on the mental, physical, and occupational health of HCWs and their work and home lives.

To achieve these goals, the study employs a mixed-methods approach. Firstly, a systematic review and meta-analysis to determine the global prevalence of long COVID among HCWs and identify the symptoms associated with the condition. This analysis will help identify common symptoms and their clustering patterns. Secondly, a longitudinal quantitative survey study using baseline and follow-up questionnaires to estimate the prevalence of long COVID in HCWs. This analysis will also investigate whether the prevalence of long COVID differs based on factors such as age, sex, ethnicity, and occupation.

Additionally, qualitative research will be used to gain insights into the short - and medium-term impacts of long COVID on HCWs. This qualitative component involves interviews and discussions with HCWs, their families, and their colleagues. By gathering qualitative data, the study aims to understand the personal experiences and perspectives of HCWs affected by long COVID.

The findings from the study will be used to enhance the understanding of how HCWs can be supported during their recovery process. The evidence generated through the study will contribute to developing effective support mechanisms for HCWs and inform policy recommendations aimed at facilitating the recovery of the healthcare system.

For further details on methods used, please read our previous report: https://www.nhsrho.org/wp-content/uploads/2022/11/RHO-REACH_OUT-Caring-for-the-healthcare-workforce-post-Covid-19.pdf

Progress to date

Work package one: Global prevalence of long COVID and its most common symptoms among healthcare workers: a systematic review and meta-analysis
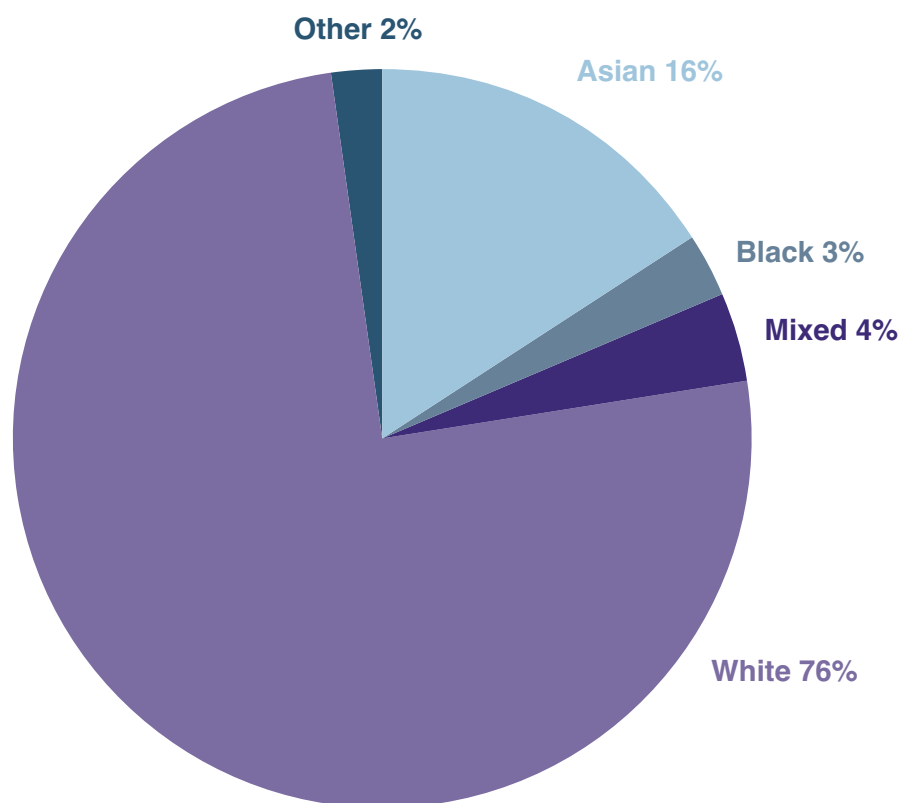
- The systematic review and meta-analysis protocol entitled "Prevalence of long COVID among healthcare workers: a systematic review and meta-analysis protocol" has been registered with PROSPERO (CRD42022312781) and published in the BMJ Open journal. Click here to access.

- Screening, data extraction, narrative synthesis, and meta-analysis for the systematic review has been completed. The manuscript, entitled "Global prevalence of long COVID and its most common symptoms among healthcare workers: a systematic review and meta-analysis" was submitted to The Lancet Global health journal on the 15th of May and is under review. A summary of the main findings is detailed below.

- The systematic review and meta-analysis abstract was submitted, accepted, and presented during poster session at the 33rd ECCMID (European Congress of Clinical Microbiology and Infectious Diseases), which took place in Copenhagen, Denmark, from 15 – 18 April 2023.

- The systematic review and meta-analysis abstract was submitted, accepted, and presented during a poster session at the Joint Respiratory Research Day, which took place in Nottingham, UK on the 12th of May 2023.

Work package two: Baseline and longitudinal quantitative survey study of healthcare workers from diverse ethnic backgrounds who have had COVID-19
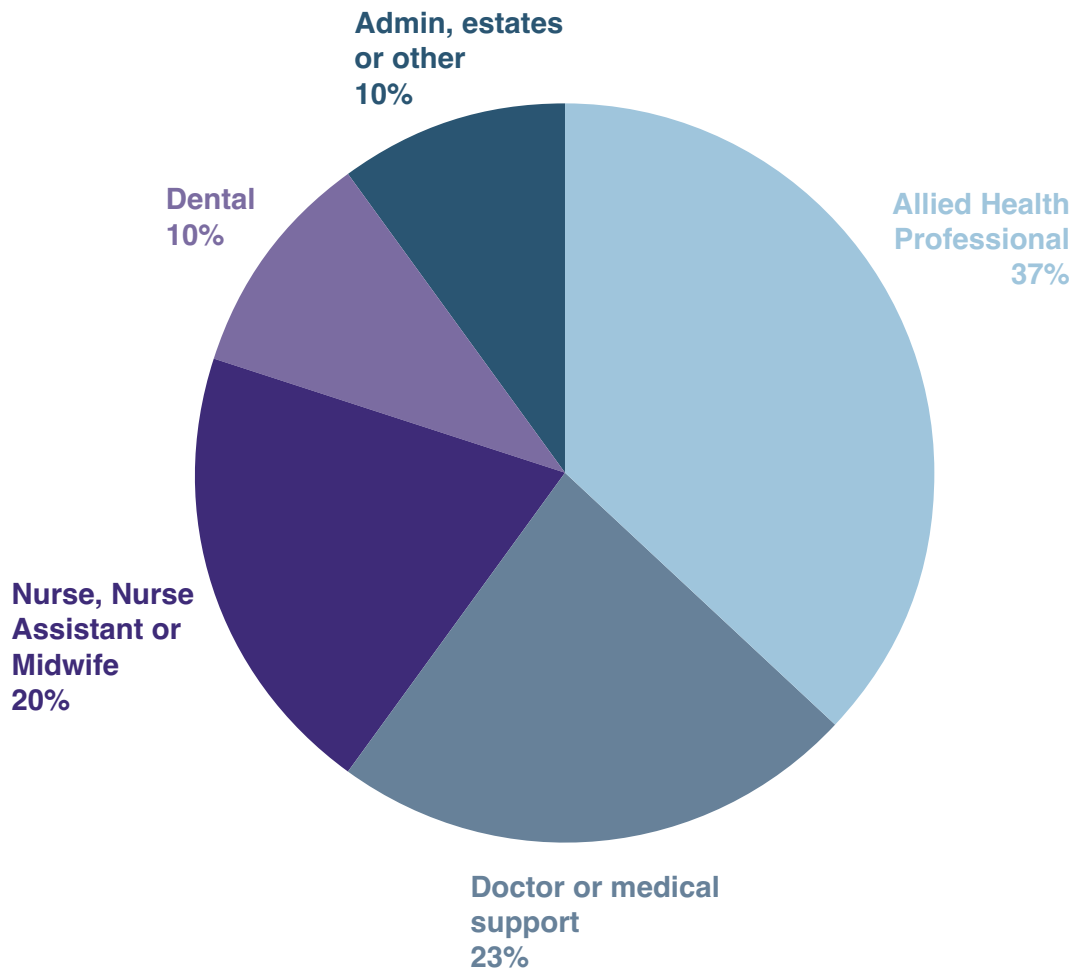
- The REACH-OUT questionnaire ran from June 2022 to October 2022, where 4,319 consented to REACH-OUT, 4,269 started the questionnaire, and 4,031 completed the questionnaire. 24% of respondents were from ethnic minority backgrounds (Figure 1) with a wide variety of job roles (Figure 2). The questions focused on post-COVID-19 outcomes, including long COVID and workforce recovery in HCWs from diverse ethnic backgrounds. Below is a sample of questions featured:

  - Thinking now about your most recent bout of illness, how long did that period last?

- How long did each of your COVID-19 symptoms last? (if you have had COVID-19 more than once, think about the longest episode you had)

- Did you take any of the following medications for your persistent symptoms of COVID-19? Please tick all that apply

- What should be done to help healthcare workers and the healthcare service recover from the pandemic?

- What is your experience of treatment and support available for you as someone experiencing long-COVID?

- The second REACH-OUT questionnaire is being designed and is planned to be available to the participants in Autumn 2023.

Figure 1. The ethnicity of respondents for REACH-OUT questionnaire

**Figure 2.** The job roles of respondents for REACH-OUT questionnaire

Admin, estates or other 10%

Dental 10%

Allied Health Professional 37%

Nurse, Nurse Assistant or Midwife 20%

Doctor or medical support 23%

Work package three: Longitudinal qualitative study of healthcare workers building on the existing UK-REACH qualitative study.

- Figure 3 illustrates our sampling technique. Participants (n=330) who shared their interest in participating from the qualitative study of UK-REACH (WP4) were purposively sampled to take part in WP3 of REACH-OUT in relation to ethnic background, gender, job role, and age. The majority of the invited sample are females (72.7%) with more than half (~53%) from ethnic minority backgrounds.
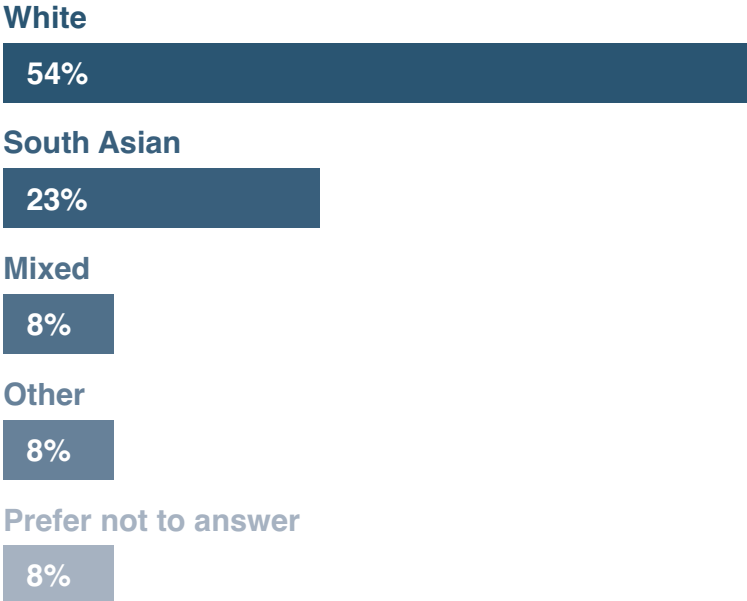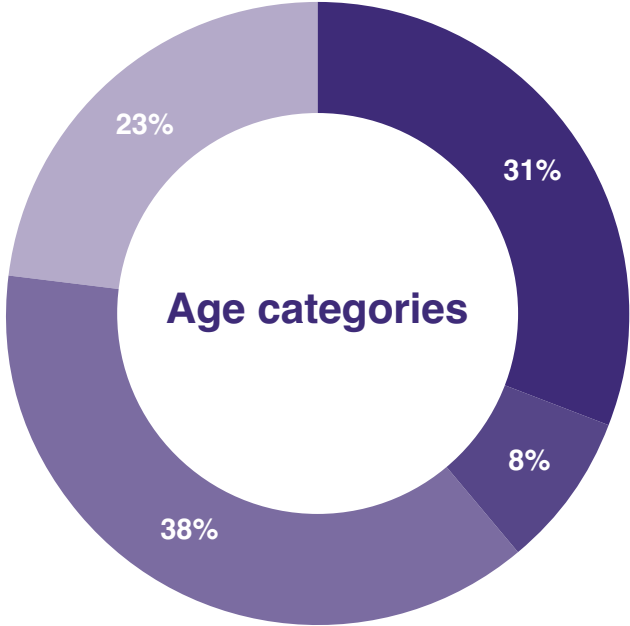
Figure 3. REACH-OUT WP3 flow chart
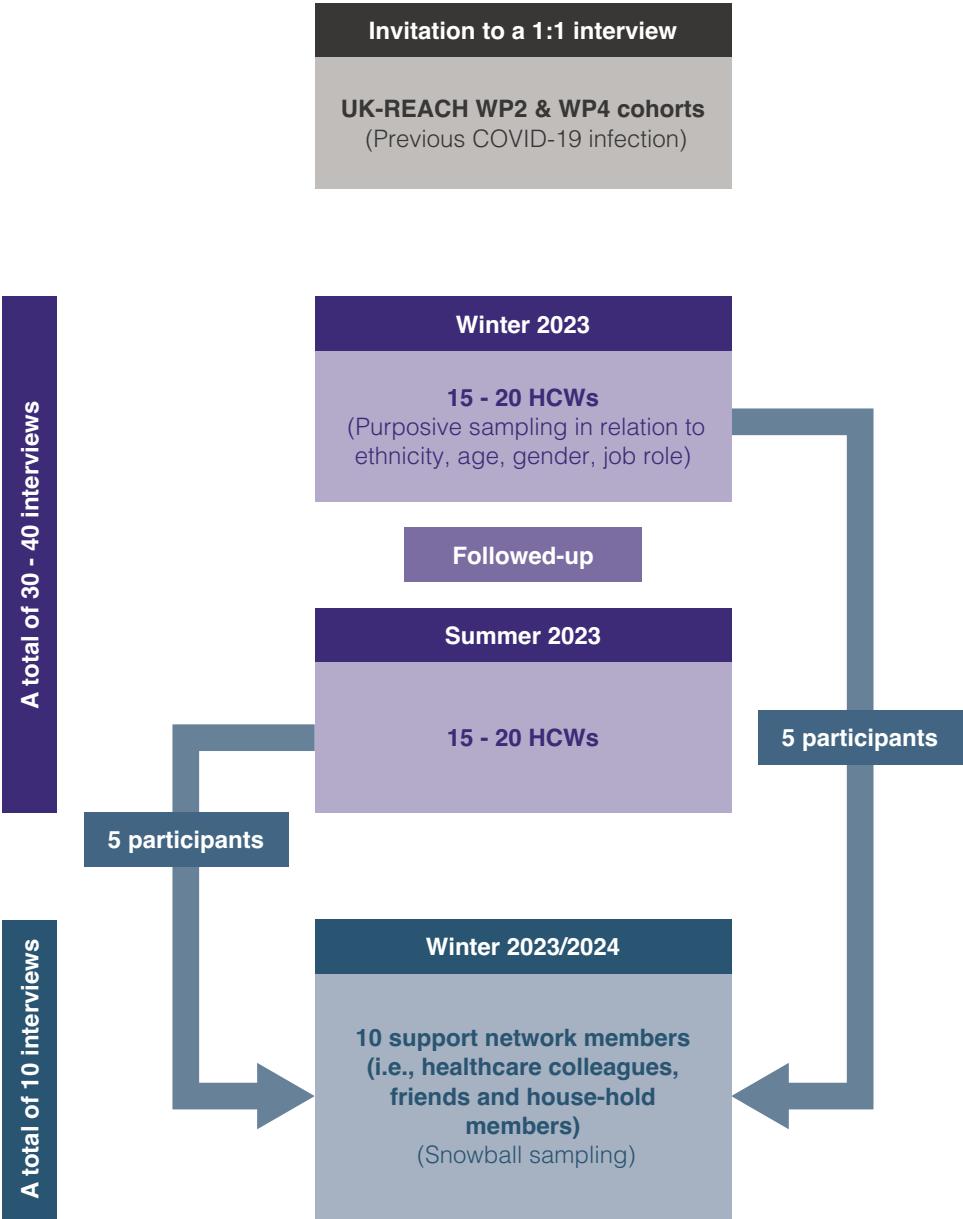
- Recruitment for phase one of WP3 began in March 2023. So far, 37 have consented and 13 interviews have been completed. Diagram 1 shows the main characteristics of the interviewed participants.

Diagram 1. The demographic characteristics of WP3 participants

61.5%
Female

38.5%
Male

Age categories

31%

8%

38%

23%

| 30-39 | 40-49 | 50-59 | 60-69 |

White

54%

South Asian

23%

Mixed

8%

Other

8%

Prefer not to answer

8%

Main findings of work package one

Characteristics of included studies

A total of 6,481 HCWs from 28 articles were considered in this review. Sample sizes of HCWs who have had COVID-19 ranged widely, from 62 HCWs to 704 HCWs.

The mean age of the participants was reported in 17 articles. Of those articles, it ranged from 26 to 45 years.

Most studies (57%) were from Europe; 29% were from Asia, 7% were from Africa and 7% were from North America as shown in figure 4.

Only four of the 28 included studies reported on ethnicity. Two were peer-reviewed; one reported three categories (African, Caucasian and Coloured*), and the other classified ethnicity data into two categories (Caucasian, and other). Two articles were pre-prints that reported more specific categories of ethnicity.

Figure 4. Countries/Regions where included studies have been conducted
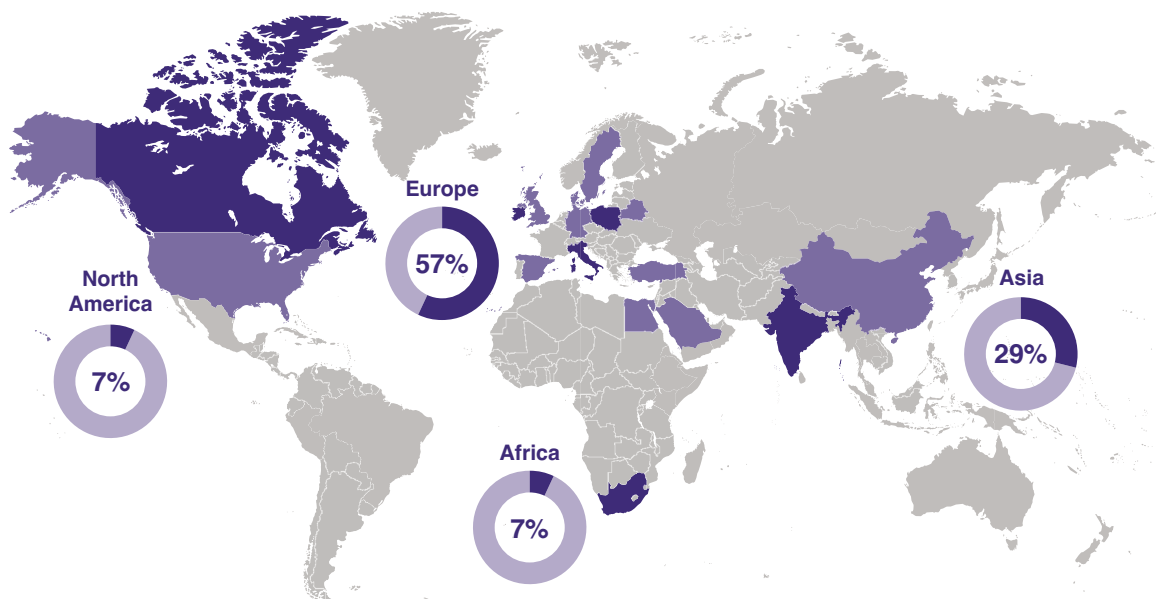
*The term 'Coloured' in this context is taken from a South African study, where the term is used to describe a group of people with a distinct ethnic identity.
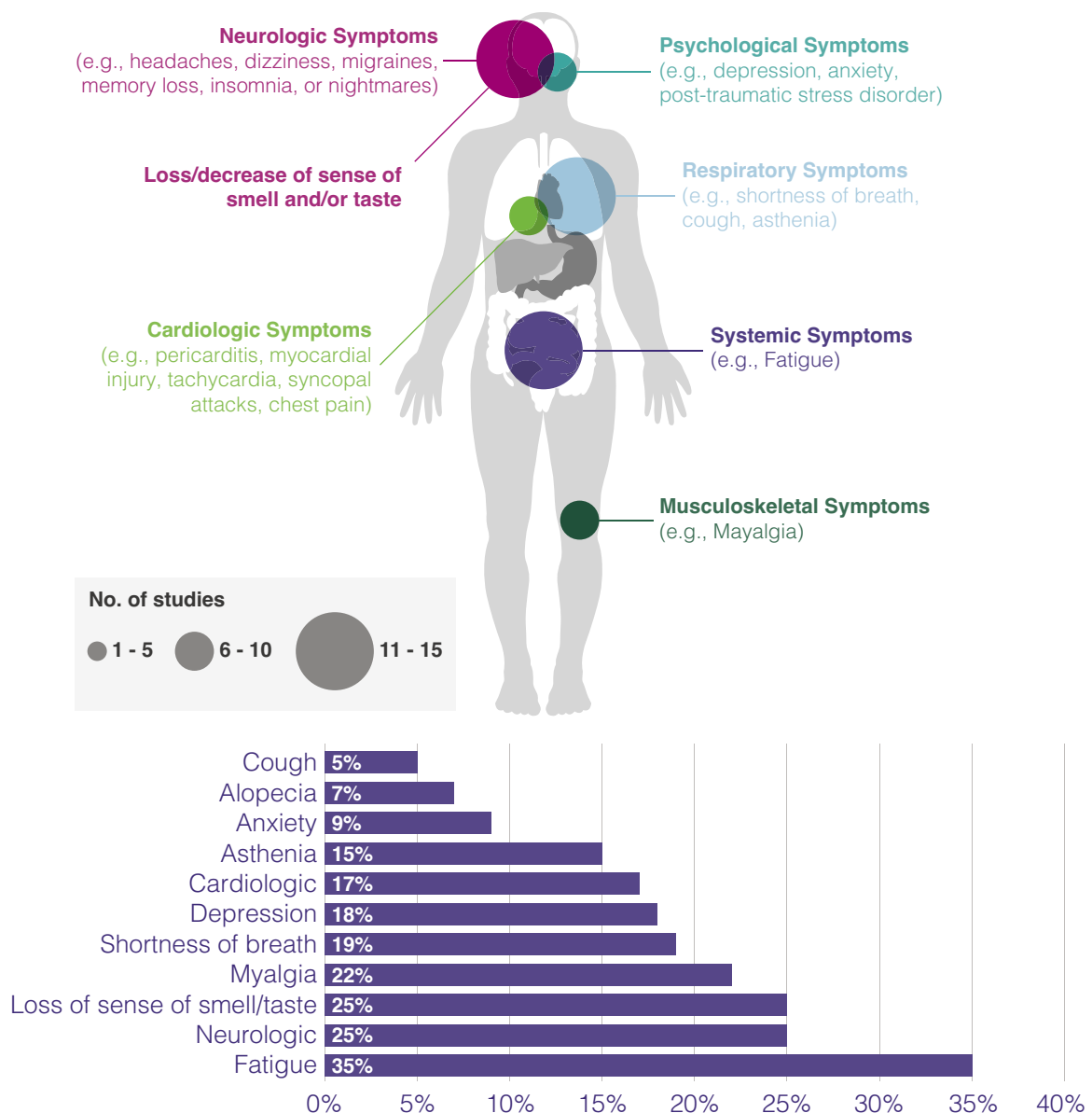
The prevalence findings

The pooled prevalence of long COVID amongst HCWs who survived acute COVID-19 was 40% (95 confidence intervals: 29%–51%, I2: 97.2%; 12 studies) with a mean follow-up period of 22.2 weeks for studies that stated the follow-up time.

There was no statistically significant difference in the prevalence by region, although the pooled prevalence was higher in Asia (43%; 95% CI: 14%–72%; 3 studies), compared to Europe (41%; 95% CI: 27%–55%; 8 studies).

The most common symptoms and their prevalence are presented in Figure 5, with fatigue being the most prevalent symptom (35%; 95% CI: 15%–56%; 14 studies).

Figure 5. The most common symptoms of long COVID among HCWs infected with COVID-19 and their prevalence

Implications for policy and practice

Our findings provide an insight into the burden of long COVID among HCWs. Given the relatively high prevalence, healthcare services and policymakers need to prioritise long COVID care among HCWs. Long COVID among HCWs affects service delivery through prolonged staff absences due to sick-leave. If this is not attended to, it could impact on quality of care for patients. Apart from its impact on service delivery, long COVID has far-reaching implications for the workforce overall. This is because it affects the work patterns of HCWs (e.g., shifting from working full-time to work part-time) and causes negative psychological impacts, including fear and stress which could result in reduced work performance and intention to leave, all of which would place significant strain on an already overstretched health workforce.

We suggest the following implications and policy recommendations:

1. **Recognising long COVID as an occupational health Issue**
   Governments and relevant health authorities should officially recognise long COVID as an occupational health issue. This recognition would help ensure appropriate support, protection, and resources are allocated to address the unique challenges faced by healthcare professionals experiencing long COVID symptoms.

2. **Limited understanding of disparities**
   We recommend prioritising the collection and analysis of data on the ethnicity of HCWs affected by long COVID. This data can help policymakers develop targeted interventions, culturally-sensitive public health strategies, and resources to address the specific needs of HCWs from certain ethnic groups who may be at higher risk of infection, long COVID symptoms, or inadequate access to healthcare services.

3. **Enhancing occupational safety measures**
   Strengthening and enforcing occupational safety measures is crucial for preventing the transmission of COVID-19 in healthcare settings. Governments and healthcare institutions should mandate and strictly implement comprehensive infection prevention and control protocols, including adequate provision of personal protective equipment (PPE), regular testing, and vaccination programs for healthcare workers. This would reduce the risk of infection and subsequently minimise the occurrence of long COVID among HCWs.

4. **Developing comprehensive support programs**
   Establishing comprehensive support programs tailored to the needs of HCWs with long COVID. We recommend that governments would invest in initiatives that provide accessible and specialised healthcare services, including multidisciplinary clinics and rehabilitation centres, dedicated to addressing the unique symptoms and challenges associated with long COVID.

Additionally, mental health support, financial assistance, and workplace accommodations should be offered to healthcare workers experiencing prolonged illness and disability.

5. **Promoting Research and Education**
   Governments and healthcare organisations should prioritise funding for research on long COVID, specifically focusing on HCWs. There is a need for a standard definition and methods for measuring the prevalence of long COVID in the future. In addition, methods of data collection for long COVID among HCWs needs harmonisation to generalise findings from long COVID systematic reviews and to standardise outcome measures for long COVID. We recommend continued attention be focused on HCWs and characterising long COVID and its symptoms among them, as there is a need to assess the impact of long COVID on workforce capacity and to mitigate this. We also recommend more research on the actual effects of long COVID on the healthcare workforce.

6. **Strengthening occupational health surveillance**
   Governments should establish robust systems for occupational health surveillance to monitor the prevalence of long COVID among HCWs. Collecting data on the incidence, prevalence, and long-term impact of Long COVID would enable evidence-based decision-making, resource allocation, and policy development. Regular reporting, data sharing, and collaboration between national and international health agencies are vital to effectively address this growing global health concern.

These implications and policy recommendations serve as a starting point and can be further expanded and tailored to specific regional contexts with considerations of cultural and regional differences.

What comes next?

The next phase of the project will involve:

1. Finalising the design of the fifth questionnaire and making it available to participants by Autumn 2023.

2. Analysing the baseline questionnaire and the fourth questionnaire data for work package two.

3. Conducting further interviews with HCWs from the wider UK-REACH cohort for work package three.

4. Engaging with the REACH-OUT Professional Expert Panel group through meetings to provide updates on the study and to get their insights on the planned methods/ analysis.